

**BANKI
KUU YA
KENYA**



**CENTRAL
BANK OF
KENYA**

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TENDER DOCUMENT

**TENDER FOR PROPOSED OFFICE OPTIMIZATION PHASE 3 – ELECTRICAL,
MECHANICAL AND PLANTING INFRASTRUCTURE UPGRADE IN EXTELCOMS
HOUSE FOR CENTRAL BANK OF KENYA, RESERVED FOR AGPO – WOMEN
CATEGORY.**

TENDER NO. CBK/039/2026-2027

CLOSING DATE: 10TH NOVEMBER 2026 AT 10:30 A.M.

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INVITATION TO TENDER (ITT) BY CENTRAL BANK OF KENYA

1. The *Central Bank of Kenya* invites sealed ***TENDER FOR PROPOSED OFFICE OPTIMIZATION PHASE 3 – ELECTRICAL, MECHANICAL AND PLANTING INFRASTRUCTURE UPGRADE IN EXTELCOMS HOUSE FOR CENTRAL BANK OF KENYA, RESERVED FOR AGPO – WOMEN.***
2. Tendering will be conducted under National Open Tender 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 *09: 00AM to 4:00PM* at the address: **The Director, General Services Department, Tel: +254 20 2861000/2860000, 5th Floor, Central Bank of Kenya, Haile Selassie Avenue, Nairobi, Email: supplies@centralbank.go.ke** during normal working hours.
4. A complete set of tender document containing detailed information may be downloaded from the PPIP website: www.tenders.go.ke OR Central Bank of Kenya website: www.centralbank.go.ke at no cost. Bidders who download the tender document are advised to forward their particulars immediately using the Email: supplies@centralbank.go.ke to facilitate any further clarification or addendum.
5. Prices quoted should be inclusive of all taxes and must be expressed in Kenya shillings and shall remain valid for a period of **140 days** from the closing date of the tender document.
6. Completed tender documents are to be enclosed in plain sealed envelopes marked with tender reference number and be deposited in the **Green Tender Box No. 3** at the main entrance, ground floor of **Central Bank of Kenya along Haile Selassie Avenue**, or posted using the address **Director, General Services Department, Central Bank of Kenya, P. O. Box 60000- 00200, Nairobi, Kenya, Haile Selassie Avenue** so as to be received on or **before 10th November 2026 at 10:30am**. Electronic Tenders *will not* be permitted.
7. Tenders will be opened immediately after the deadline date and time specified above or any deadline date and time specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives (who will be required to have personal identification document National ID/Passport).
8. Late tenders will be rejected.
9. The addresses referred to above are:

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

The Director, General Services Department

Central Bank of Kenya, Head Office in Nairobi on Haile Selassie Avenue 5th Floor,
P. O. Box 60000 – 00200, Nairobi
Tel. No. 020 2860000, E-mail address: supplies@centralbank.go.ke.

B. Address for Submission of Tenders.

Central Bank of Kenya, Head Office in Nairobi, Ground
Haile Selassie Avenue
Green Tender Box No. 3 at the main entrance, ground floor
P. O. Box 60000 – 00200, Nairobi

C. Address for Opening of Tenders.

Central Bank of Kenya, Head Office in Nairobi, Senior Staff Canteen on 6th Floor

**DEPUTY DIRECTOR
HEAD OF PROCUREMENT**

PART 1 - TENDERING PROCEDURES

SECTION I: INSTRUCTIONS TO TENDERERS

A General Provisions

1. Scope of Tender

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

2. Fraud and Corruption

- 2.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015, Section 62 “Declaration not to engage in corruption”. The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.
- 2.2 The Procuring Entity requires compliance with the provisions of the Competition Act 2010, regarding collusive practices in contracting. Any tenderer found to have engaged in collusive conduct shall be disqualified and criminal and/or civil sanctions may be imposed. To this effect, Tenders shall be required to complete and sign the “Certificate of Independent Tender Determination” annexed to the Form of Tender.
- 2.3 Unfair Competitive Advantage - Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. To that end, the Procuring Entity shall indicate in the **Data Sheet** and make available to all the firms together with this tender document all information that would in that respect give such firm any unfair competitive advantage over competing firms.
- 2.4 Unfair Competitive Advantage -Fairness and transparency in the tender process require that the Firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender being tendered for. The Procuring Entity shall indicate in the **TDS** firms (if any) that provided consulting services for the contract being tendered for. The Procuring Entity shall check whether the owners or controllers of the Tenderer are same as those that provided consulting services. The Procuring Entity shall, upon request, make available to any tenderer information that would give such firm unfair competitive advantage over competing firms.

3. Eligible Tenderers

- 3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.7 or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. Public employees and their close relatives (*spouses, children, brothers, sisters and uncles and aunts*) are not eligible to participate in the tender. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the tendering process and, in the event the JV is awarded the Contract, during contract execution. The maximum number of JV members shall be specified in the **TDS**.
- 3.2 Public Officers of the Procuring Entity, their Spouses, Child, Parent, Brothers or Sister. Child, Parent, Brother or Sister of a Spouse, their business associates or agents and firms/organizations in which they have a substantial or controlling interest shall not be eligible to tender or be awarded a contract. Public Officers are also not allowed to participate in any procurement proceedings.
- 3.3 A Tenderer shall not have a conflict of interest. Any tenderer found to have a conflict of interest shall be disqualified. A tenderer may be considered to have a conflict of interest for the purpose of this tendering process, if the tenderer:
- Directly or indirectly controls, is controlled by or is under common control with another tenderer; or
 - Receives or has received any direct or indirect subsidy from another tenderer; or
 - Has the same legal representative as another tenderer; or

- d) Has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process; or
- e) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender; or
- f) any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as Engineer for the Contract implementation; or
- g) Would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the contract specified in this Tender Document or
- h) Has a close business or family relationship with a professional staff of the Procuring Entity who:
 - i) are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract; or
 - ii) would be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.

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

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

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

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

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

3.9 A Firms and individuals may be ineligible if their countries of origin (a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country, or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country. A tenderer shall provide such documentary evidence of eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

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

3.11 Pursuant to the eligibility requirements of ITT 4.10, a tender is considered a foreign tenderer, if the tenderer is not registered in Kenya or if the tenderer is registered in Kenya and has less than 51 percent ownership by

Kenyan Citizens. JVs are considered as foreign tenderers if the individual member firms are not registered in Kenya or if are registered in Kenya and have less than 51 percent ownership by Kenyan citizens. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.

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

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

3.14 A Kenyan tenderer shall provide evidence of having fulfilled his/her tax obligations by producing a valid tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority.

4. Eligible Goods, Equipment, and Services

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

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

5. Tenderer's Responsibilities

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

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

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

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

B. Contents of Tender Documents

6. Sections of Tender Document

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

PART 1 Tendering Procedures

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

PART 2 Works Requirements

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

PART 3 Conditions of Contract and Contract Forms

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

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

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

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

7. Site Visit

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

8. Pre-Tender Meeting

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

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

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

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

9. Clarification and amendments of Tender Documents

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

10. Amendment of Tendering Document

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

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

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

C. Preparation of Tenders

11. Cost of Tendering

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

12. Language of Tender

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

13. Documents Comprising the Tender

13.1 The Tender shall comprise the following:

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

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

Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender, together with a copy of the proposed Agreement. The Tenderer shall chronologically serialize pages of all tender documents submitted.

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

14. Form of Tender and Schedules

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

15. Alternative Tenders

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

16. Tender Prices and Discounts

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

Discounts shall be submitted in accordance with ITT 16.4, provided the Tenders for all lots (contracts) are opened at the same time.

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

17. Currencies of Tender and Payment

17.1 Tenderers shall quote entirely in Kenya Shillings. The unit rates and the prices shall be quoted by the Tenderer in the Bill of Quantities, entirely in Kenya shillings. A Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya shall device own ways of getting foreign currency to meet those expenditures.

18. Documents Comprising the Technical Proposal

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

19. Documents Establishing the Eligibility and Qualifications of the Tenderer

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

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

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

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

19.5 The purpose of the information described in ITT 19.4 above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.

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

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

19.8 If a tenderer fails to submit the information required by these requirements, its tender will be rejected. Similarly, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the

information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.

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

- i) if the procurement process is still ongoing, the tenderer will be disqualified from the procurement process,
- ii) if the contract has been awarded to that tenderer, the contract award will be set aside,
- iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other persons have committed any criminal offence.

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

20. Period of Validity of Tenders

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

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

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

- a) in the case of **fixed price** contracts, the Contract price shall be the tender price adjusted by the factor specified in the **TDS**;
- b) in the case of **adjustable price** contracts, no adjustment shall be made; or in any case, tender evaluation shall be based on the tender price without taking into consideration the applicable correction from those indicated above.

21. Tender Security

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

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

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

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

21.4 If a Tender Security or Tender-Securing Declaration is specified pursuant to ITT 19.1, any Tender not

accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.

21.5 If a Tender Security is specified pursuant to ITT 21.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the Performance Security and any other documents required in the **TDS**. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined nonresponsive or a bidder declines to extend tender validity period.

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

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

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

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

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

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

22. Format and Signing of Tender

22.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 13 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 15, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies of the Tender, in the number specified in the **TDS** and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

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

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

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

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

D. Submission and Opening of Tenders

23. Sealing and Marking of Tenders

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

- a) in an envelope or package or container marked “ORIGINAL”, all documents comprising the Tender, as described in ITT 11; and
- b) in an envelope or package or container marked “COPIES”, all required copies of the Tender; and
- c) if alternative Tenders are permitted in accordance with ITT 15, and if relevant:
 - i) in an envelope or package or container marked “ORIGINAL –ALTERNATIVE TENDER”, the alternative Tender; and
 - ii) in the envelope or package or container marked “COPIES- ALTERNATIVE TENDER”, all required copies of the alternative Tender.

The inner envelopes or packages or containers shall:

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

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

24. Deadline for Submission of Tenders

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

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

25. Late Tenders

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

26. Withdrawal, Substitution, and Modification of Tenders

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

- a) prepared and submitted in accordance with ITT 22 and ITT 23 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION;” and
- b) received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 24.

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

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

27. Tender Opening

- 27.1 Except in the cases specified in ITT 23 and ITT 26.2, the Procuring Entity shall publicly open and read out all Tenders received by the deadline, at the date, time and place specified in the **TDS**, in the presence of Tenderers' designated representatives who chooses to attend. Any specific electronic Tender opening procedures required if electronic Tendering is permitted in accordance with ITT 24.1, shall be as specified in the **TDS**.
- 27.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelopes with the corresponding Tender shall not be opened, but returned to the Tenderer. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Tender opening.
- 27.3 Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Tender being substituted, and the substituted Tender shall not be opened, but returned to the Tenderer. No Tender substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Tender opening.
- 27.4 Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Tender. No Tender modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Tender opening.
- 27.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Tenderer and whether there is a modification; the total Tender Price, per lot (contract) if applicable, including any discounts and alternative Tenders; the presence or absence of a Tender Security or Tender-Securing Declaration, if required; and any other details as the Procuring Entity may consider appropriate.
- 27.6 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further for evaluation. The Form of Tender and pages of the Bills of Quantities are to be initialed by the members of the tender opening committee attending the opening. The number of representatives of the Procuring Entity to sign shall be specified in the **TDS**.
- 27.7 At the Tender Opening, the Procuring Entity shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 25.1).
- 27.8 The Procuring Entity shall prepare minutes of the Tender Opening that shall include, as a minimum:
- a) the name of the Tenderer and whether there is a withdrawal, substitution, or modification;
 - b) the Tender Price, per lot (contract) if applicable, including any discounts;
 - c) any alternative Tenders;
 - d) the presence or absence of a Tender Security, if one was required.
 - e) number of pages of each tender document submitted.
- 27.9 The Tenderers' representatives who are present shall be requested to sign the minutes. The omission of a Tenderer's signature on the minutes shall not invalidate the contents and effect of the minutes. A copy of the tender opening register shall be distributed to all Tenderers upon request.

E. Evaluation and Comparison of Tenders

28. Confidentiality

- 28.1 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderers or any other persons not officially concerned with the Tender process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 46.
- 28.2 Any effort by a Tenderer to influence the Procuring Entity in the evaluation of the Tenders or Contract award decisions may result in the rejection of its tender.
- 28.3 Notwithstanding ITT 28.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any **matter related to the tendering process, it shall do so in writing.**

29. Clarification of Tenders

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

30. Deviations, Reservations, and Omissions

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

31. Determination of Responsiveness

- 31.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the tender itself, as defined in ITT 13.
- 31.2 A substantially responsive Tender is one that meets the requirements of the Tender document without material deviation, **reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:**
- a) affect in any substantial way the scope, quality, or performance of the Work specified in the Contract; or
 - b) limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the tenderer's obligations under the proposed contract; or
 - c) if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsive tenders.
- 31.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 18, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.
- 31.4 If a tender is not substantially responsive to the requirements of the tender document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

32. Non-material Non-conformities

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

33. Arithmetical Errors

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

33.2 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, and subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive. and
- c) if there is a discrepancy between words and figures, the amount in words shall prevail

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

34. Currency provisions

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

35. Margin of Preference and Reservations

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

35.2 Where it is intended to reserve the contract to specific groups under Small and Medium Enterprises, or enterprise of women, youth and/or persons living with disability, who are appropriately registered as such by the authority to be specified in the **TDS**, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses/firms belonging to those specified groups are the only ones eligible to tender. Otherwise if no so stated, the invitation will be open to all tenderers.

36. Nominated Subcontractors

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

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

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

37. Evaluation of Tenders

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

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

- a) price adjustment due to discount offered in accordance with ITT 16;
- b) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT 39;
- c) price adjustment due to quantifiable non-material non-conformities in accordance with ITT 30.3; and
- d) any additional evaluation factors specified in the **TDS** and Section III, Evaluation and Qualification Criteria.

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

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

38. Comparison of Tenders

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

39. Abnormally Low Tenders

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

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

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

40. Abnormally High Tenders

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

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

- i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.
- ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case may be.

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

41. Unbalanced and/or Front-Loaded Tenders

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

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

- a) accept the Tender; or
- b) require that the total amount of the Performance Security be increased at the expense of the Tenderer

- to a level not exceeding a 30% of the Contract Price; or
- c) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works; or
- d) reject the Tender,

42. Qualifications of the Tenderer

- 42.1 The Procuring Entity shall determine to its satisfaction whether the eligible Tenderer that is selected as having submitted the lowest evaluated cost and substantially responsive Tender, meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.
- 42.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 19. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the Tender document), or any other firm(s) different from the Tenderer.
- 42.3 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in disqualification of the Tender, in which event the Procuring Entity shall proceed to the Tenderer who offers a substantially responsive Tender with the next lowest evaluated price to make a similar determination of that Tenderer's qualifications to perform satisfactorily.
- 42.4 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price.
- 42.5 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.
- 42.6 After evaluation of the price analyses, if the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

43. Best Evaluated Tender

- 43.1 Having compared the evaluated prices of Tenders, the Procuring Entity shall determine the Best Evaluated Tender. The Best Evaluated Tender is the Tender of the Tenderer that meets the Qualification Criteria and whose Tender has been determined to be:
- a) Most responsive to the Tender document; and
 - b) the lowest evaluated price.

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

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

F. Award of Contract

45. Award Criteria

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

46. Notice of Intention to enter into a Contract

- 46.1 Upon award of the contract and Prior to the expiry of the Tender Validity Period the Procuring Entity shall issue

a Notification of Intention to Enter into a Contract / Notification of award to all tenderers which shall contain, at a minimum, the following information:

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

47. Standstill Period

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

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

48. Debriefing by the Procuring Entity

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

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

49. Letter of Award

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

50. Signing of Contract

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

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

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

51. Appointment of Adjudicator

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

52. Performance Security

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

Forms included in Section X, Contract Forms, or another form acceptable to the Procuring Entity. A foreign institution providing a bank guarantee shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent bank is not required.

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

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

53. Publication of Procurement Contract

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

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

54. Procurement Related Complaints and Administrative Review

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

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

Section II - Tender Data Sheet (TDS)

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

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	A. General
ITT 1.1	<i>The name of the contract is TENDER FOR PROPOSED OFFICE OPTIMIZATION PHASE 3 – ELECTRICAL, MECHANICAL AND PLANTING INFRASTRUCTURE UPGRADE IN EXTELCOMS HOUSE FOR CENTRAL BANK OF KENYA, RESERVED FOR AGPO – WOMEN.</i> The reference number of the Contract is CBK/039/2026-2027 The number and identification of lots (contracts) comprising this Tender are [N/A]
ITT 2.3	The Information made available on competing firms is as follows: N/A
ITT 2.4	The firms that provided consulting services for the contract being tendered for are: N/A
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: N/A
ITT 3.12	Interested tenderers shall be required to have valid registration by National Construction Authority as Electrical works Category NCA 1 and above
	B. Contents of Tender Document
8.1	(A) Pre-Tender conference “shall” not be held (B) A pre-arranged pretender visit of the site of the works “shall not be held. However, bidders interested in visiting the site may do so at the following date, time and place: Date: 22nd October 2026 Time: 11:00am Place: Central Bank of Kenya, Extelcom House
ITT 8.2	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than four (4) days before closing date.
ITT 8.4	The Procuring Entity’s website where Minutes of the pre-Tender meeting and the pre-arranged pretender site visit will be published if any is PPIP website: www.tenders.go.ke OR Central Bank of Kenya website: www.centralbank.go.ke
ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity’s address is: (1) Name of Procuring Entity Central Bank of Kenya (2) Physical address for hand Courier Delivery to an office or Tender Box (City, Street, Building, Floor Number and Room) is Green Tender Box No. 3 located on Ground Floor, Central Bank of Kenya, Head Office, Nairobi, Haile Selassie Avenue, (3) Postal Address 60000 – 00200, Nairobi (4) Officer to be contacted. Director, General Services Department, Tel. No. 020 286 3402
	C. Preparation of Tenders
ITT 13.1 (h)	The Tenderer shall submit the following additional documents in its Tender: N/A
ITT 15.1	Alternative Tenders “shall not be” considered.
ITT 15.2	Alternative times for completion “shall be” permitted with prior approval by the client.
ITT 15.4	Alternative technical solutions shall be permitted for the following parts of the Works: N/A

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 16.5	The prices quoted by the Tenderer shall be: <i>“fixed”</i>
ITT 20.1	The Tender validity period shall be 140 days .
ITT 20.3 (a)	(a) The delayed to exceeding _____N/A_____ number of days. (b) The Tender price shall be adjusted by the following percentages of the tender price: (i) By _____N/A_____ % of the local currency portion of the Contract price adjusted to reflect local inflation during the period of extension, and (ii) By _____N/A_____ % the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension.
ITT 21.1	A Tender Security shall not be required A Tender-Securing Declaration shall be required.
ITT 21.5	On the Performance Security, other documents required shall be: No other documents required
ITT 22.1	In addition to the original of the Tender, the number of copies is One
ITT 22.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: Letter of Attorney
D. Submission and Opening of Tenders	
ITT 24.1	(A) For <u>Tender submission purposes</u> only, the Procuring Entity’s address is: Attention: Director, General Services Department Tender submission is: 10th November 2026 at 10:30am Tenderers <i>shall not</i> have the option of submitting their Tenders electronically.
ITT 27.1	The Tender opening shall take place at Central Bank of Kenya, Head Office in Nairobi, Haile Selassie Avenue, Senior Staff Canteen on 6th Floor Physical Address: Nairobi, Haile Selassie Avenue, Senior Staff Canteen on 10th November, 2026 at 10:30 a.m.
ITT 27.1	If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures specified: <i>N/A</i>
ITT 27.6	The number of representatives of the Procuring Entity to sign is a minimum of three officials
E. Evaluation, and Comparison of Tenders	
ITT 32.3	The adjustment shall be based on the <i>“average”</i> price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
ITT 35.2	The invitation to tender is extended to the following groups that qualify for Reservations: <i>N/A</i>
ITT 36.1	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 36.2	Contractor’s may propose subcontracting: Maximum percentage of subcontracting permitted is: <i>25% of the total contract amount</i> . 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 Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 36.3	The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: N/A For the above-designated parts of the Works that may require Specialized Subcontractors, the relevant qualifications of the proposed Specialized Subcontractors will be added to the qualifications of the Tenderer for the purpose of evaluation. N/A
ITT 37.2 (d)	Additional requirements apply. These are detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria.
ITT 51.1	The person named to be appointed as Adjudicator is “to be stated in the contract” of at an hourly fee of Shs. “To be stated in the contract” per day.
ITT 52.2	Other documents required are N/A
ITT 54.1	The procedures for making a Procurement-related Complaint are detailed in the “Notice of Intention to Award the Contract” herein and are also available from the PPRA website info@ppra.go.ke or complaints@ppra.go.ke. The address to be used for purpose of debriefing is: For the attention: Director, General Services Department Title/position: Director, General Services Department Procuring Entity: Central Bank of Kenya Email address: supplies@centralbank.go.ke In summary, a Procurement-related Complaint may challenge any of the following: 1. the terms of the Tendering Documents; and the Procuring Entity’s decision to award the contract. In summary, a Procurement-related Complaint may challenge any of the following: (i) the terms of the Tender Documents; and (ii) the Procuring Entity’s decision to award the contract.

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1. General Provision

- 1.1 Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the Kenya Shilling equivalent using the rate of exchange determined as follows:
 - a. For construction turn over or financial data required for each year -Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.
- 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 35.1. Any error in determining the exchange rates in the Tender may be corrected by the Procuring Entity.
- 1.2 This section contains the criteria that the Procuring Entity shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in **Section IV**, Tendering Forms. The Procuring Entity shall use **the Standard Tender Evaluation Report for Goods and Works** for evaluating Tenders.
- 1.4 The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. The tender that (i) meets the qualification criteria, (ii) has been determined to be substantially responsive to the Tender Documents, and (iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

2 Preliminary Examination for Determination of Responsiveness – Stage 1 of the Evaluation

At this first stage of the evaluation, bids will be examined to ensure they meet in all respects the eligibility criteria (including requirements in the qualification forms, tenderer's eligibility- confidential business questionnaire) and other requirements in the ITT and that the tender is complete in all aspects in meeting the requirements of “*Part 2 - Procuring Entity's Requirements*”. Tenders that do not pass the Preliminary Examination will not be considered further. In particular preliminary examination will be carried out as shown in the Table below:

Preliminary Examination and Mandatory Requirements Parameters

Preliminary Examination and Mandatory Requirements Parameters – Stage 1 of the Evaluation A: Main Contractor

No	Requirements	Compliance (YES/NO)
MR 1	Provide documentary evidence of the company's Certificate of Incorporation/Business Registration Certificate (Legal structure)	
MR 2	Provide copy of current CR 12 for Incorporated Firms	
MR 3	Provide copy of the company's current Certificate of Tax Compliance issued by Kenya Revenue Authority (KRA) valid at least up to the date of tender opening.	
MR4	Provide a copy of current Local Authority/County Business License/Single Business Permit	
MR 5	Submit a duly filled Original Form of Tender with a validity period of at least 140 days from the date of tender opening , in the format provided in the tender document.	
MR 6	Submit a completed company's profile using the business questionnaire attached.	
MR 7	Submit duly filled self-declaration forms as follows: i). On debarment from participating in Public Procurement (Form SD1) ii). That the person/tenderer will not engage in any corruption/fraudulent practices (Form SD2) iii). Declaration and Commitment to the Code of Ethics	
MR 8	Submit valid certificate for Access to Government Procurement Opportunities (AGPO) – Women Category from the National Treasury	
MR 9	Provide documentary evidence of liquid assets and/or availability of credit facilities of a value of at least Kshs.50 million (Kenya Shillings Fifty Million) . (Attach copies of certified bank statements for the last Six months (from February 2026 to August,2026) OR letter of credit line from a financial institution registered by Central Bank of Kenya. The documents provided may be verified for authenticity).	
MR10	Provide documentary evidence of the Company's valid Registration with Energy and Petroleum Regulatory Authority (EPRA) as Electrical Contractor Class A1	
MR 11	Provide documentary evidence of the Company's valid registration by National Construction Authority as an Electrical Works Contractor Category NCA 1	
MR 12	Provide documentary evidence in form of Audited Accounts for the Company for at least three (3) consecutive years 2023, 2024 and 2025 to indicate the Company has had an average annual turnover of Kenya Shillings Two hundred million (Kshs. 200 million) and above in the three years. The audited accounts MUST be signed by the auditor preparing the audited accounts (A copy of valid practicing license of the Auditor should be attached for the accounts to be considered for each of the audited years) and the candidate's Company	

No	Requirements	Compliance (YES/NO)
	Director(s).	
MR 13	Provide Manufacturer letter of Authority specifically addressed to Central Bank of Kenya and quoting the tender name for the following affirming compliance to specifications described in the bills of quantities: a) Electrical Installations (LV Switchboard, AVR, and Riser Busbar). b) Generator Installations	
MR 14	Submit a duly filled Tender-Securing Declaration Form in the format provided in this tender document.	
MR 15	Provide Commitment letter by the bidder for the following: a) Involve the original equipment manufacturers' authorized representatives during training and knowledge transfer. b) Undertake Support and Maintenance as per Manufacturers recommended procedures.	
MR 16	Mandatory site visit and site familiarization exercise at the location, date, and time specified by the Procuring Entity. Tenderers shall ensure that their authorized representative signs the official Site Visit Attendance Register maintained by the Procuring Entity during the site visit.	
Determination of Responsiveness (R/NR)		

Note: All Mandatory documents submitted by the bidders may be authenticated

Bidders shall be required to meet all the Mandatory Requirements to progress to stage 2 of the evaluation on Technical Evaluation on Qualifications.

Stage 2: Technical Evaluation on Qualification – Stage 2 of the Evaluation

Tenderers fully complying with mandatory requirements will be subjected to technical evaluation on qualification based on the technical parameters given below:

	Evaluation Attribute	Weighting Score	Max Score
T1	General Experience – (Electrical Installations). Provide a list of at least five (5) projects with <u>references (names and telephone of contact persons)</u> to which the company has undertaken either all or part of the following Electrical Installation Works valued at a minimum of KShs. 200,000,000.00 and above in the last 7 years. Note: Bidder to provide copies of contracts and/or completion certificates/letter from client clearly stating the nature of the contract, amount and completion date as proof of having undertaken the works.	Each reference will earn 3 marks	15
T2	Specific Experience - LV Switchboard, AVR, Generators, and Riser Busbar). Proof of at least four projects completed in the last Five years relevant to this contract in both complexity and magnitude. The projects submitted must have minimum contract values of Ksh. 100 Million or more for Electrical Installations and 50 Million or more for Generator Installations. (Contact Persons and their telephone contacts) Note: Bidder to provide copies of contracts, layout drawing of white space and/or completion certificates/letter from client clearly stating the nature of the contract, amount completion date as proof of having undertaken the works.	Each reference will earn 2.5 marks	10
T3	Commitment letter by the original equipment manufacturers' authorized representatives to offer Training and Knowledge transfer, and to undertake Support and Maintenance (LV Switchboard, AVR, Generators, and Riser Busbar). a) Proof/ Commitment letter from Manufacturer to offer Training and Knowledge transfer, and to undertake Support and Maintenance---5 Marks b) Not Proof...0Marks	Maximum 5 marks	5

	Evaluation Attribute	Weighting Score	Max Score
T4	Provide a list of at least Four (4) Qualified Technical Staff in the company relevant to the Works For any of the personnel provided to qualify, the following requirements MUST be met: A. All technical staff provided MUST have as a minimum eight years' post college experience in the works. Each personnel MUST indicate the firms he/she has worked in since graduation. B. Detailed Curriculum Vitae (CV's) of each staff MUST be attached. The Curriculum Vitae MUST state qualification, experience, and duration with the firm and active contacts of the staff. The contacts given in the Curriculum Vitae MUST be active email addresses. C. Certified copies of academic certificates MUST be provided. D. The role of each technical staff should be indicated Where personnel provide certificates of degrees from foreign institutions, a letter of recognition of the institution from the Commissioner of University Education of Kenya MUST be provided for the certificate to qualify		60
	Certified Project Manager Academic Qualification a) Holder of Degree in Construction Project Management / related Field – 5 Marks b) Holder of Diploma in Construction Project Management / related Field – 3 mark Professional Experience a) Certification with relevant professional bodies (PMI, PMP or other equivalent bodies – 5 Marks b) No Certification – 0 marks Relevant Experience a) Minimum 8 years of similar works experience – 5 Marks b) 5 - 8 years of similar works experience – 4 Marks c) 3 - 5 years of similar works experience – 3 Marks d) 1 - 3 years of similar works experience – 2 Marks e) No similar works experience– 0 marks	Max 15 marks	
	Registered Electrical Engineer Academic Qualification a) Holder of Degree in Electrical Engineering/ Technology Field – 5 Marks b) Holder of Diploma in Engineering/Technology – 3 mark Professional Experience c) Certification for Electrical works, EPRA Class A1 valid license – 5 Marks d) No Certification – 0 marks Relevant Experience e) Minimum 8 years of similar works experience – 5 Marks f) 5 - 8 years of similar works experience – 4 Marks	Max 15 marks	

	Evaluation Attribute	Weighting Score	Max Score
	g) 3 - 5 years of similar works experience – 3 Marks h) 1 - 3 years of similar works experience – 2 Marks i) No similar works experience– 0 marks		
	Electrical Engineer/EPRA Licensed Lead Technician Academic Qualification c) Holder of Degree in Electrical Engineering/ Technology Field – 5 Marks d) Holder of Diploma in Engineering/Technology – 3 mark Professional Experience c) Certification for Electrical works, EPRA Class A1 valid license – 5 Marks d) No Certification – 0 marks Relevant Experience a) Minimum 8 years of similar works experience – 5 Marks b) 5 - 8 years of similar works experience – 4 Marks c) 3 - 5 years of similar works experience – 3 Marks d) 1 - 3 years of similar works experience –2 Marks e) No similar works experience– 0 marks	Maximum 15 marks	
	Health & Safety Officer Academic Qualification f) Holder of Degree in Engineering or other related field from a recognized institution/Technology Field – 5 Marks g) Holder of Engineering or other related field from a recognized institution/Technology – 3 mark Professional Experience h) Certification for Registration with the Directorate of Occupational Safety and Health Services (DOSHS) valid license – 5 Marks i) No Certification – 0 marks Relevant Experience j) Minimum 8 years of similar works experience – 5 Marks k) 5 - 8 years of similar works experience – 4 Marks l) 3 - 5 years of similar works experience – 3 Marks m) 1 - 3 years of similar works experience – 2 Marks n) No similar works experience– 0 marks	Max 15 marks	
T5	Submit a comprehensive Method Statement detailing the proposed procedures for the supply, delivery, installation, testing, commissioning, and handing over of the LV Switchboard, Automatic Voltage Regulator (AVR), Generator Set(s), and Riser Busbar System. The method statement shall demonstrate a clear understanding of the project requirements and shall, at a minimum, include the following: i. Site assessment and verification of installation conditions. ii. Delivery, handling, storage, and protection procedures for all equipment.		5

	Evaluation Attribute	Weighting Score	Max Score
	iii. Installation methodology for LV switchboards, generators, AVR systems, busbar risers, supports, and associated accessories. iv. Interface and coordination arrangements with civil, architectural, mechanical, and electrical works. v. Quality assurance and quality control procedures, including inspection and testing plans (ITPs). vi. Health, Safety, Environment, and Risk Management measures during installation and commissioning. vii. Testing and commissioning procedures, including functional testing, load testing, synchronization tests where applicable, insulation resistance tests, earth continuity tests, and protection system verification. viii. Proposed work programme, resource allocation, and deployment schedule. ix. Manufacturer's recommendations and compliance with applicable IEC, BS, IEEE, Kenya Grid Code, and other relevant standards. x. Handover procedures, operation and maintenance manuals, as-built drawings, and training arrangements for the Employer's personnel. Excellent and detailed methodology covering all requirements: 5 Marks Good methodology covering most requirements: 4 Marks Fair methodology with minor omissions: 3 Marks Inadequate methodology with significant omissions: 2 Marks No methodology submitted: 0 Marks		
T16	Submit a comprehensive Risk Management Plan for the supply, installation, testing, commissioning, and handover of the LV Switchboard, Automatic Voltage Regulator (AVR), Generator Set(s), and Riser Busbar System. The Risk Management Plan shall identify potential risks that may affect the successful delivery of the works and provide appropriate mitigation measures to minimize their impact on cost, quality, safety, schedule, and operational performance Comprehensive risk identification, assessment, mitigation measures, contingency planning, and monitoring: 5 Marks Good risk management plan with minor omissions: 4 Marks Fair risk management plan addressing only key risks: 3 Marks Inadequate risk management plan with significant omissions: 2 Marks No Risk Management Plan submitted: 0 Marks		5
	Total		100

Tenderers will be required to score 75 % and above on the above Technical Evaluation on Qualification to qualify for technical evaluation on Specifications

3. Financial Evaluation

Tenderers that **score 75% and above** under Evaluation on Technical Qualification will have their bids subjected to financial evaluation. Financial Evaluation shall involve checking for completeness of the bill of quantities.

4. Recommendation of Award

The lowest evaluated bidder will be recommended for consideration of award of the tender.

SECTION IV: TENDERING FORMS

A). 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 therein for the sum of Kenya Shillings [[Amount in figures] _____] Kenya Shillings [amount in words] _____.

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

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

2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Project Manager's notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Special Conditions of Contract.
3. We agree to adhere by this tender until _____ [Insert date], and it shall remain binding upon us and may be accepted at any time before that date.
4. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us. We further understand that you are not bound to accept the lowest or any tender you may receive.
5. We, the undersigned, further declare that:
 - i) No reservations: We have examined and have no reservations to the tender document, including Addenda issued in accordance with ITT 10.2;
 - 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 21.8;
 - iv) Conformity: We offer to execute in conformity with the tendering documents and in accordance with the implementation and completion specified in the construction schedule, the following Works: [insert a brief description of the Works];

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

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

Option 2, in case of multiple lots:

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

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

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

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

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

x) Tender Validity Period: Our Tender shall be valid for _____ from the date fixed for the Tender submission deadline specified in TDS 24.1 (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 Performance Security in accordance with the Tendering document;

xii) One Tender Per Tender: We are not submitting any other Tender(s) as an individual Tender, and we are not participating in any other Tender(s) as a Joint Venture member or as a subcontractor, and meet the requirements of ITT 3.4, other than alternative Tenders submitted in accordance with ITT 15.3;

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

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

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

Name of Recipient	Address	Reason	Amount

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

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

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

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

- xix) Collusive practices: We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded. To this effect we have signed the “Certificate of Independent Tender Determination” attached below.
- xx) We undertake to adhere by the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal, copy available from _____ (*specify website*) during the procurement process and the execution of any resulting contract.
- xxi) We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:
- Tenderer's Eligibility; Confidential Business Questionnaire – to establish we are not in any conflict to interest.
 - Certificate of Independent Tender Determination – to declare that we completed the tender without colluding with other tenderers.
 - Self-Declaration of the Tenderer – to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.
 - Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal

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.

B). 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		

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
	process.		
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document.		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.		

f) Certification

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

Full Name _____ Title or

Designation _____

(Signature)

(Date)

C). CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

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

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

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

Name _____ Title _____ Date _____

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

D). SELF - DECLARATION FORM - 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: -

- D.** 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.
- E.** THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in
procurement proceeding under Part IV of the Act.
- F.** THAT what is deponed to herein above is true to the best of my knowledge, information and belief.

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

Bidder Official Stamp

E). SELF - DECLARATION FORMS FORM SD2 :

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

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

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

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

Bidder's Official Stamp

F). DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

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

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

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

Position.....

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

E-mail.....

Name of the Firm/Company.....

Date..... (Company Seal/ Rubber

Stamp where applicable)

Witness

Name Sign.....

Date.....

G). FORMEQUIPMENT

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

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

Omit the following information for equipment owned by the Tenderer.

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

H). FORM PER -1

Contractor's Representative and Key Personnel Schedule

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

Contractor' Representative and Key Personnel

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

I). FORM PER-2:

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

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

Name of Tenderer

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

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

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

J). 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: (daymonth year): _____ Countersignature

of authorized representative of the Tenderer:

Signature: _____ Date: (day month year): _____

APPENDIX 1- FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

A. Purpose

- B. 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.

C. Requirements

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

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

- a person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or asset disposal proceeding;
- A person referred to under subsection (1) who contravenes the provisions of that sub-section commits an offence;
- Without limiting the generality of the subsection (1) and (2), the person shall be: -
 - disqualified from entering into a contract for a procurement or asset disposal proceeding; or
 - if a contract has already been entered into with the person, the contract shall be voidable;
- The voiding of a contract by the procuring entity under subsection (7) does not limit any legal remedy the procuring entity may have;
- 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: -
 - shall not take part in the procurement proceedings;
 - shall not, after a procurement contract has been entered into, take part in any decision relating to the procurement or contract; and
 - shall not be a subcontractor for the bidder to whom was awarded contract, or a member of the group of bidder to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.
- 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;
- If a person contravenes subsection (1) with respect to a conflict of interest described in subsection (5)(a) and the contract is awarded to the person or his relative or to another person in whom one of them had a direct or indirect pecuniary interest, the contract shall be terminated and all costs incurred by the public entity shall be made good by the awarding officer. Etc.
- In compliance with Kenya's laws, regulations and policies mentioned above, the Procuring Entity:
 - a) Defines broadly, for the purposes of the above provisions, the terms set forth below as follows:
 - i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

- iii) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - iv) “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - v) “obstructive practice” is:
 - deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.
- b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:
- "fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal process or the exercise of a contract to the detriment of the procuring entity or the tenderer or the contractor, and includes collusive practices amongst tenderers prior to or after tender submission designed to establish tender prices at artificial non-competitive levels and to deprive the procuring entity of the benefits of free and open competition.
- c) Rejects a proposal for award¹ of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
 - d) Pursuant to the Kenya's above stated Acts and Regulations, may sanction or recommend to appropriate authority (ies) for sanctioning and debarment of a firm or individual, as applicable under the Acts and Regulations;
 - e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring (i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect² all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the PPRA or any other appropriate authority appointed by Government of Kenya; and
 - f) Pursuant to Section 62 of the above Act, requires Applicants/Tenderers to submit along with their Applications/Tenders/Proposals a “Self-Declaration Form” as included in the procurement document declaring that they and all parties involved in the procurement process and contract execution have not engaged/will not engage in any corrupt or fraudulent practices.

SECTION V: TENDERER QUALIFICATION FORMS

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

4.1 FORM ELI -1.1

Tenderer Information Form

Date: _____

ITT No. and title: _____

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

4.2 FORM ELI -1.2

Tenderer's JV Information Form

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

Date: _____

ITT No. and title: _____

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

4.3 FORM CON – 2

Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

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

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

as indicated below.			
Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)
<i>[insert year]</i>	<i>[insert percentage]</i>	Contract Identification: <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>

4.4 FORM FIN – 3.1:

Financial Situation and Performance

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

4.4.1. Financial Data

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

Type of Financial information in _____ (currency)	Historic information for previous _____ years, (amount in currency, currency, exchange rate*, USD equivalent)				
	Year 1	Year 2	Year 3	Year 4	Year 5
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

*Refer to ITT 15 for the exchange rate

4.4.2 Sources of Finance

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

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

4.4.3 Financial documents

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

- (a) reflect the financial situation of the Tenderer or in case of JV member, and not an affiliated entity (such as parent company or group member).
- (b) be independently audited or certified in accordance with local legislation.
- (c) be complete, including all notes to the financial statements.
- (d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements¹ for the _____ years required above; and complying with the requirements

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

4.5 FORM FIN – 3.2:

Average Annual Construction Turnover

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

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

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

4.6 FORM FIN – 3.3:

Financial Resources

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

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

4.7 FORM FIN – 3.4:

Current Contract Commitments / Works in Progress

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

Current Contract Commitments

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

4.8 FORM EXP - 4.1

General Construction Experience

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

Page _____ of _____ pages

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

4.9 FORM EXP - 4.2(a)**Specific Construction and Contract Management Experience**

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

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

4.10 FORM EXP - 4.2 (a) (cont.)**Specific Construction and Contract Management Experience (cont.)**

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

4.11 FORM EXP - 4.2(b)

Construction Experience in Key Activities

Tenderer's Name: _____

Date: _____

Tenderer's JV Member Name: _____

Sub-contractor's Name² (as per ITT 34): _____

ITT No. and title: _____

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

1. Key Activity No One: _

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

² If applicable

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

- 2. Activity No. Two
- 3.

FORM OF TENDER SECURITY-[Option 1–Demand Bank Guarantee]

Beneficiary: _____

Request for Tenders No: _____

Date: _____

TENDER GUARANTEE No.: _____

Guarantor: _____

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

[signature(s)]

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

FORMAT OF TENDER SECURITY [Option 2–Insurance Guarantee]

TENDER GUARANTEE No.: _____

1. Whereas [*Name of the tenderer*] (hereinafter called “the tenderer”) has submitted its tender dated [*Date of submission of tender*] for the [*Name and/or description of the tender*] (hereinafter called “the Tender”) for the execution of ___ under Request for Tenders No. _____ (“the ITT”).

2. KNOW ALL PEOPLE by these presents that WE of..... [**Name of Insurance Company**] having our registered office at.....(hereinafter called “the Guarantor”), are bound unto [*Name of Procuring Entity*] (hereinafter called “the Procuring Entity”) in the sum of..... (Currency and guarantee amount) for which payment well and truly to be made to the said Procuring Entity, the Guarantor binds itself, its successors and assigns, jointly and severally, firmly by these presents.

Sealed with the Common Seal of the said Guarantor this ____ day of _____ 20 ____.

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

- a) has withdrawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender (“the Tender Validity Period”), or any extension thereto provided by the Principal; or
- b) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers (“ITT”) of the Procuring Entity's Tendering document.

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

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

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

[Date]

[Signature of the Guarantor]

[Witness]

[Seal]

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

TENDER-SECURING DECLARATION FORM

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

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

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

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

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.
2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of *[insert number of months or years]* starting on *[insert date]*, if we are in breach of our obligation(s) under the bid conditions, because we – (a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the instructions to tenders.
3. I/We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer(s), upon the earlier of:
 - a) our receipt of a copy of your notification of the name of the successful Tenderer; or
 - b) thirty days after the expiration of our Tender.
4. I/We understand that if I am/we are/in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid, and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed..... Capacity / title (director

or partner or sole proprietor, etc.) Name:

.....Duly authorized to sign the bid

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

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

Appendix to Tender

Schedule of Currency requirements

Summary of currencies of the Tender for _____ *[insert name of Section of the Works]*

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

PART II - WORK REQUIREMENTS

SECTION V - DRAWINGS

Drawings to be provided during implementation (where applicable).

SECTION VI – Specifications

5.2: Bill of Quantities & Scope of Work

PART III - CONDITIONS OF CONTRACT AND CONTRACT FORMS

SECTION VIII - GENERAL CONDITIONS OF CONTRACT

These General Conditions of Contract (GCC), read in conjunction with the Special Conditions of Contract (SCC) and other documents listed therein, should be a complete document expressing fairly the rights and obligations of both parties.

These General Conditions of Contract have been developed on the basis of considerable international experience in the drafting and management of contracts, bearing in mind a trend in the construction industry towards simpler, more straightforward language.

The GCC can be used for both smaller admeasurement contracts and lump sum contracts.

General Conditions of Contract

A. General

1. Definitions

1.1 Bold face type is used to identify defined terms.

- a) **The Accepted Contract Amount** means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.
- b) **The Activity Schedule** is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.
- c) **The Adjudicator** is the person appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.
- d) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.
- e) **Compensation Events** are those defined in GCC Clause 42 hereunder.
- f) **The Completion Date** is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 53.1.
- g) **The Contract** is the Contract between the Procuring Entity and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.
- h) **The Contractor** is the party whose Bid to carry out the Works has been accepted by the Procuring Entity.
- i) **The Contractor's Bid** is the completed bidding document submitted by the Contractor to the Procuring Entity.
- j) **The Contract Price** is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.
- k) **Days** are calendar days; months are calendar months.
- l) **Day works** are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.
- m) **A Defect** is any part of the Works not completed in accordance with the Contract.
- n) **The Defects Liability Certificate** is the certificate issued by Project Manager upon correction of defects by the Contractor.
- o) **The Defects Liability Period** is the period **named in the SCC** pursuant to Sub-Clause 34.1 and calculated from the Completion Date.
- p) **Drawings** means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Procuring Entity in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.
- q) **The Procuring Entity** is the party who employs the Contractor to carry out the Works, **as specified in the SCC**, who is also the Procuring Entity.
- r) **Equipment** is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

- s) **“In writing” or “written”** means hand-written, type-written, printed or electronically made, and resulting in a permanent record;
- t) The Initial Contract Price is the Contract Price listed in the Procuring Entity's Letter of Acceptance.
- u) **The Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is **specified in the SCC**. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.
- v) **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.
- w) **Plant** is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.
- x) **The Project Manager** is the person **named in the SCC** (or any other competent person appointed by the Procuring Entity and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract.
- y) **SCC** means Special Conditions of Contract.
- z) **The Site** is the area of the works as **defined as such in the SCC**.
- aa) **Site Investigation Reports** are those that were included in the bidding document and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- bb) **Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.
- cc) **The Start Date** is **given in the SCC**. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.
- dd) **A Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.
- ee) **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.
- ff) **A Variation** is an instruction given by the Project Manager which varies the Works.
- gg) **The Works** are what the Contract requires the Contractor to construct, install, and turn over to the Procuring Entity, **as defined in the SCC**.

2. Interpretation

- 21 In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.
- 22 If sectional completion is specified in the SCC, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).
- 23 The documents forming the Contract shall be interpreted in the following order of priority:
 - a) Agreement,
 - b) Letter of Acceptance,
 - c) Contractor's Bid,
 - d) Special Conditions of Contract,
 - e) General Conditions of Contract, including Appendices,
 - f) Specifications,
 - g) Drawings,
 - h) Bill of Quantities⁶, and
 - i) any other document **listed in the SCC** as forming part of the Contract.

⁶In lump sum contracts, delete “Bill of Quantities” and replace with “Activity Schedule.”

3. Language and Law

- 31 The language of the Contract is English Language and the law governing the Contract are the Laws of Kenya.
- 32 Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Procuring Entity's Country when
 - a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country; or
 - b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

4. Project Manager's Decisions

- 41 Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the Procuring Entity and the Contractor in the role representing the Procuring Entity.

5. Delegation

- 51 Otherwise **specified in the SCC**, the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.

6. Communications

- 61 Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.

7. Subcontracting

- 71 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Procuring Entity in writing. Subcontracting shall not alter the Contractor's obligations.

8. Other Contractors

- 81 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Procuring Entity between the dates given in the Schedule of Other Contractors, as **referred to in the SCC**. The Contractor shall also provide facilities and services for them as described in the Schedule. The Procuring Entity may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

9. Personnel and Equipment

- 91 The Contractor shall employ the key personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of key personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.
- 92 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.
- 93 If the Procuring Entity, Project Manager or Contractor determines, that any employee of the Contractor be determined to have engaged in Fraud and Corruption during the execution of the Works, then that employee shall be removed in accordance with Clause 9.2 above.

10. Procuring Entity's and Contractor's Risks

- 101 The Procuring Entity carries the risks which this Contract states are Procuring Entity's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Procuring Entity's Risks

- 11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Procuring Entity's risks:
- a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to
 - i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or
 - ii) negligence, breach of statutory duty, or interference with any legal right by the Procuring Entity or by any person employed by or contracted to him except the Contractor.
 - b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the Procuring Entity's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.
- 11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is a Procuring Entity's risk except loss or damage due to
- aa) a Defect which existed on the Completion Date,
 - bb) an event occurring before the Completion Date, which was not itself a Procuring Entity's risk, or
 - cc) the activities of the Contractor on the Site after the Completion Date.

12. Contractor's Risks

- 12.1 From the Starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Procuring Entity's risks are Contractor's risks.

13. Insurance

- 13.1 The Contractor shall provide, in the joint names of the Procuring Entity and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles **stated in the SCC** for the following events which are due to the Contractor's risks:
- a) loss of or damage to the Works, Plant, and Materials;
 - b) loss of or damage to Equipment;
 - c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
 - d) personal injury or death.
- 13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 13.3 If the Contractor does not provide any of the policies and certificates required, the Procuring Entity may effect the insurance which the Contractor should have provided and recover the premiums the Procuring Entity has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 13.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.
- 13.5 Both parties shall comply with any conditions of the insurance policies.

14. Site Data

- 14.1 The Contractor shall be deemed to have examined any Site Data **referred to in the SCC**, supplemented by any information available to the Contractor.

15. Contractorto Construct the Works

- 15.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.

16. The Works to Be Completed by the Intended Completion Date

- 161 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

17. Approval by the Project Manager

- 171 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.
- 172 The Contractor shall be responsible for design of Temporary Works.
- 173 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary Works.
- 174 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.
- 175 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.

18. Safety

- 181 The Contractor shall be responsible for the safety of all activities on the Site.

19. Discoveries

- 191 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Procuring Entity. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.

20. Possession of the Site

- 201 The Procuring Entity shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date **stated in the SCC**, the Procuring Entity shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.

21. Access to the Site

- 211 The Contractor shall allow the Project Manager and any person authorized by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

22. Instructions, Inspections and Audits

- 221 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.
- 222 The Contractor shall keep, and shall make all reasonable efforts to cause its Subcontractors and sub-consultants to keep, accurate and systematic accounts and records in respect of the Works in such form and details as will clearly identify relevant time changes and costs.
- 223 The Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Procuring Entity and/or persons appointed by the Public Procurement Regulatory Authority to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Public Procurement Regulatory Authority. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 25.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Public Procurement Regulatory Authority's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Public Procurement Regulatory Authority's prevailing sanctions procedures).

23. Appointment of the Adjudicator

- 23.1 The Adjudicator shall be appointed jointly by the Procuring Entity and the Contractor, at the time of the Procuring Entity's issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority designated in the SCC, to appoint the Adjudicator within 14 days of receipt of such request.
- 23.2 Should the Adjudicator resign or die, or should the Procuring Entity and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the Procuring Entity and the Contractor. In case of disagreement between the Procuring Entity and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority designated in the SCC at the request of either party, within 14 days of receipt of such request.

24. Settlement of Claims and Disputes

24.1 Contractor's Claims

- 24.1.1 If the Contractor considers itself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give Notice to the Project Manager, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 30 days after the Contractor became aware, or should have become aware, of the event or circumstance.
- 24.1.2 If the Contractor fails to give notice of a claim within such period of 30 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub- Clause shall apply.
- 24.1.3 The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.
- 24.1.4 The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Procuring Entity's liability, the Project Manager may, after receiving any notice under this Sub-Clause, monitor the record- keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project Manager.
- 24.1.5 Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:
- a) this fully detailed claim shall be considered as interim;
 - b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Project Manager may reasonably require; and
 - c) the Contractor shall send a final claim within 30 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.
- 24.1.6 Within 42 days after receiving a Notice of a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within the above defined time period.
- 24.1.7 Within the above defined period of 42 days, the Project Manager shall proceed in accordance with Sub-Clause
- 24.1.8 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or

after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

24.1.9 Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

24.1.10 If the Project Manager does not respond within the timeframe defined in this Clause, either Party may consider that the claim is rejected by the Project Manager and any of the Parties may refer to Arbitration in accordance with Sub-Clause 24.4 [Arbitration].

24.1.11 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause 24.3.

242 Amicable Settlement

24.1.1 Where a notice of a claim has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a notice of a claim in accordance with Sub-Clause 24.1 above should move to commence arbitration after the fifty-sixth day from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

243 Matters that may be referred to arbitration

24.3.1 Notwithstanding anything stated herein the following matters may be referred to arbitration before the practical completion of the Works or abandonment of the Works or termination of the Contract by either party:

- a) The appointment of a replacement Project Manager upon the said person ceasing to act.
- b) Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.
- c) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
- e) Any dispute arising in respect of war risks or war damage.
- f) All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless the Procuring Entity and the Contractor agree otherwise in writing.

244 Arbitration

- 24.4.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 24.3 shall be finally settled by arbitration.
- 24.4.2 No arbitration proceedings shall be commenced on any claim or dispute where notice of a claim or dispute has not been given by the applying party within ninety days of the occurrence or discovery of the matter or issue giving rise to the dispute.
- 24.4.3 Notwithstanding the issue of a notice as stated above, the arbitration of such a claim or dispute shall not commence unless an attempt has in the first instance been made by the parties to settle such claim or dispute amicably with or without the assistance of third parties. Proof of such attempt shall be required.
- 24.4.4 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.
- 24.4.5 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.
- 24.4.6 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Project Manager, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Project Manager from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.
- 24.4.7 Neither Party shall be limited in the proceedings before the arbitrators to the evidence, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.
- 24.4.8 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Project Manager shall not be altered by reason of any arbitration being conducted during the progress of

the Works.

- 24.4.9 The terms of the remuneration of each or all the members of Arbitration shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

245 Arbitration with National Contractors

- 24.5.1 If the Contract is with national contractors, arbitration proceedings will be conducted in accordance with the Arbitration Laws of Kenya. In case of any claim or dispute, such claim or dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed, on the request of the applying party, by the Chairman or Vice Chairman of any of the following professional institutions;

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

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

246 Alternative Arbitration Proceedings

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

247 Failure to Comply with Arbitrator's Decision

- 24.7.1 The award of such Arbitrator shall be final and binding upon the parties.
- 24.7.2 In the event that a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to any other rights it may have, refer the matter to a competent court of law.

248 Contract operations to continue

- 24.8.1 Notwithstanding any reference to arbitration herein,
- a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
 - b) the Procuring Entity shall pay the Contractor any monies due the Contractor.

25. Fraud and Corruption

- 25.1 The Government requires compliance with the country's Anti-Corruption laws and its prevailing sanctions policies and procedures as set forth in the Constitution of Kenya and its Statutes.
- 25.2 The Procuring Entity requires the Contractor to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

B. Time Control

26. Program

- 26.1 Within the time stated in the SCC, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump sum contract, the activities in the Program shall be consistent with those in the Activity Schedule.
- 26.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.
- 26.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer

than the period stated in the SCC. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount stated in the SCC from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of a lump sum contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.

- 264 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

27. Extension of the Intended Completion Date

- 271 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.
- 272 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

28. Acceleration

- 281 When the Procuring Entity wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Procuring Entity accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Procuring Entity and the Contractor.
- 282 If the Contractor's priced proposals for an acceleration are accepted by the Procuring Entity, they are incorporated in the Contract Price and treated as a Variation.

29. Delays Ordered by the Project Manager

- 291 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.

30. Management Meetings

- 301 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- 302 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Procuring Entity. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

31. Early Warning

- 311 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 312 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

C. Quality Control

32. Identifying Defects

- 321 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.

33. Tests

- 331 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.

34. Correction of Defects

- 341 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the SCC. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 342 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.

35. Uncorrected Defects

- 351 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

D. Cost Control

36. Contract Price⁷

- 361 The Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.

37. Changes in the Contract Price⁸

- 371 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change. The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Procuring Entity.
- 372 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.

38. Variations

- 381 All Variations shall be included in updated Programs⁹ produced by the Contractor.
- 382 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.
- 383 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.
- 384 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

⁷In lump sum contracts, replace GCC Sub-Clauses 36.1 as follows:

36.1 The Contractor shall provide updated Activity Schedules within 14 days of being instructed to by the Project Manager. The Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to monitor and control the performance of activities on which basis the Contractor will be paid. If payment for materials on site shall be made separately, the Contractor shall show delivery of Materials to the Site separately on the Activity Schedule.

⁸In lump sum contracts, replace entire GCC Clause 37 with new GCC Sub-Clause 37.1, as follows:

The Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor's own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.

⁹In lump sum contracts, add "and Activity Schedules" after "Programs." ¹⁰In lump sum contracts, delete this paragraph.

- 385 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning
- 386 If the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 39.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work
- 387 Value Engineering: The Contractor may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following;
- a) the proposed change(s), and a description of the difference to the existing contract requirements;
 - b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs) the Procuring Entity may incur in implementing the value engineering proposal; and
 - c) a description of any effect(s) of the change on performance/functionality.
- 388 The Procuring Entity may accept the value engineering proposal if the proposal demonstrates benefits that:
- a) accelerate the contract completion period; or
 - b) reduce the Contract Price or the life cycle costs to the Procuring Entity; or
 - c) improve the quality, efficiency, safety or sustainability of the Facilities; or
 - d) yield any other benefits to the Procuring Entity, without compromising the functionality of the Works.
- 389 If the value engineering proposal is approved by the Procuring Entity and results in:
- a) a reduction of the Contract Price; the amount to be paid to the Contractor shall be the **percentage specified in the SCC** of the reduction in the Contract Price; or
 - b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the Contractor shall be the full increase in the Contract Price.

39. Cash Flow Forecasts

- 391 When the Program¹¹, is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

40. Payment Certificates

- 401 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.
- 402 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.
- 403 The value of work executed shall be determined by the Project Manager.
- 404 The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed¹².
- 405 The value of work executed shall include the valuation of Variations and Compensation Events.
- 406 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.
- 407 Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (which would be the tender price), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: *(corrected tender price – tender price)/tender price X 100*.

41. Payments

- 41.1 Payments shall be adjusted for deductions for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of each certificate. If the Procuring Entity makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.
- 41.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 41.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.
- 41.4 Items of the Works for which no rate or price has been entered in shall not be paid for by the Procuring Entity and shall be deemed covered by other rates and prices in the Contract.

42. Compensation Events

- 42.1 The following shall be Compensation Events:
- d) The Procuring Entity does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.
 - e) The Procuring Entity modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.
 - f) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.
 - g) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.
 - h) The Project Manager unreasonably does not approve a subcontract to be let.
 - i) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.
 - j) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Procuring Entity, or additional work required for safety or other reasons.
 - k) Other contractors, public authorities, utilities, or the Procuring Entity does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
 - l) The advance payment is delayed.
 - m) The effects on the Contractor of any of the Procuring Entity's Risks.
 - n) The Project Manager unreasonably delays issuing a Certificate of Completion.
- 42.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.
- 42.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager shall assume that the Contractor shall react competently and promptly to the event.

¹¹In lump sum contracts, add "or Activity Schedule" after "Program."

¹²In lump sum contracts, replace this paragraph with the following: "The value of work executed shall comprise the value of completed activities in the Activity Schedule."

424 The Contractor shall not be entitled to compensation to the extent that the Procuring Entity's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

43. Tax

431 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 30 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 44.

44. Currency of Payment

441 All payments under the contract shall be made in Kenya Shillings

45. Price Adjustment

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

$$P = A + B \text{ Im/Io}$$

where:

the Contract Price payable.

P is the adjustment factor for the portion of

A and B are coefficients¹³ **specified in the SCC**, representing the non-adjustable and adjustable portions, respectively, of the Contract Price payable and Im is the index prevailing at the end of the month being invoiced and IOC is the index prevailing 30 days before Bid opening for inputs payable.

452 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

46. Retention

461 The Procuring Entity shall retain from each payment due to the Contractor the proportion stated in the **SCC** until Completion of the whole of the Works.

462 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC 53.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an "on demand" Bank guarantee.

47. Liquidated Damages

471 The Contractor shall pay liquidated damages to the Procuring Entity at the rate per day stated in the **SCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the SCC. The Procuring Entity may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

472 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 41.1.

48. Bonus

481 The Contractor shall be paid a Bonus calculated at the rate per calendar day **stated in the SCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.

49. Advance Payment

- 491 The Procuring Entity shall make advance payment to the Contractor of the amounts stated in the SCC by the date stated in the SCC, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Procuring Entity in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.
- 492 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.
- 493 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

50. Securities

- 501 The Performance Security shall be provided to the Procuring Entity no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the SCC**, by a bank or surety acceptable to the Procuring Entity, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 day from the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year from the date of issue of the Completion Certificate in the case of a Performance Bond.

51. Dayworks

- 511 If applicable, the Dayworks rates in the Contractor's Bid shall be used only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.
- 512 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done.
- 513 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

52. Cost of Repairs

- 521 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

53. Completion

- 531 The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the whole of the Works is completed.

54. Taking Over

- 541 The Procuring Entity shall take over the Site and the Works within seven days of the Project Manager's issuing a certificate of Completion.

55. Final Account

- 551 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

⁻¹³ The sum of the two coefficients A and B should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the non-adjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other non-adjustable components. The sum of the adjustments for each currency are added to the Contract Price.

56. Operating and Maintenance Manuals

- 561 If “as built” Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the SCC.
- 562 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the SCC pursuant to GCC Sub-Clause 56.1, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the SCC** from payments due to the Contractor.

57. Termination

- 571 The Procuring Entity or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.
- 572 Fundamental breaches of Contract shall include, but shall not be limited to, the following:
- a) the Contractor stops work for 30 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager;
 - b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;
 - c) the Procuring Entity or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
 - d) a payment certified by the Project Manager is not paid by the Procuring Entity to the Contractor within 84 days of the date of the Project Manager's certificate;
 - e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;
 - f) the Contractor does not maintain a Security, which is required;
 - g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the SCC**; or
 - h) if the Contractor, in the judgment of the Procuring Entity has engaged in Fraud and Corruption, as defined in paragraph 2.2 a of the Appendix A to the GCC, in competing for or in executing the Contract, then the Procuring Entity may, after giving fourteen (14) days written notice to the Contractor, terminate the Contract and expel him from the Site.
- 573 Notwithstanding the above, the Procuring Entity may terminate the Contract for convenience.
- 574 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.
- 575 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 56.2 above, the Project Manager shall decide whether the breach is fundamental or not.

58. Payment upon Termination

- 581 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as specified in the SCC. Additional Liquidated Damages shall not apply. If the total amount due to the Procuring Entity exceeds any payment due to the Contractor, the difference shall be a debt payable to the Procuring Entity.
- 582 If the Contract is terminated for the Procuring Entity's convenience or because of a fundamental breach of Contract by the Procuring Entity, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

59. Property

- 591 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property

of the Procuring Entity if the Contract is terminated because of the Contractor's default.

60. Release from Performance

- 60.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Procuring Entity or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

SECTION IX - SPECIAL CONDITIONS OF CONTRACT

Except where otherwise specified, all Special Conditions of Contract should be filled in by the Procuring Entity prior to issuance of the bidding document. Schedules and reports to be provided by the Procuring Entity should be annexed.

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
A. General	
GCC 1.1 (q)	The Procuring Entity is Central Bank of Kenya, P. O. Box 60000-00200, Nairobi.
GCC 1.1 (u)	The Intended Completion Date for the whole of the Works shall be <i>six(6) months</i>
GCC 1.1 (x)	The Project Manager is <i>to be specified in the contract</i> , Central Bank of Kenya, P. O. Box 60000-00200, Nairobi.
GCC 1.1 (z)	The Site is located at Eldoret Branch, Eldoret and is defined in drawings No N/A
GCC 1.1 (cc)	The Start Date shall be agreed upon at the time of signing the contract.
GCC 1.1 (gg)	The Works consist of: • Electrical Installation works • Builders Works
GCC 2.2	Sectional Completions are: <i>N/A</i>
GCC 5.1	The Project manager <i>may</i> delegate any of his duties and responsibilities.
GCC 8.1	Schedule of other contractors: <i>N/A</i>
GCC 9.1	Key Personnel GCC 9.1 is replaced with the following: 9.1 Key Personnel are the Contractor's personnel named in this GCC 9.1 of the Special Conditions of Contract. The Contractor shall employ the Key Personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of Key Personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid. [insert the name/s of each Key Personnel agreed by the Procuring Entity prior to Contract signature.]
GCC 13.1	The minimum insurance amounts and deductibles shall be:) for loss or damage to the Works, Plant and Materials: <i>Kshs. 500,000.00.</i>) For loss or damage to Equipment: <i>Kshs. 500,000.00.</i>) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract: <i>Kshs. 500,000.00</i>) for personal injury or death: (i) of the Contractor's employees: <i>Kshs. 1,000,000.00.</i> (ii) of other people: <i>Kshs. 1,000,000.00.</i>

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
GCC 14.1	Site Data are: <i>[To be stated in the contract]</i>
GCC 20.1	The Site Possession Date(s) shall be: <i>[To be stated in the contract]</i>
GCC 23.1 & GCC 23.2	Appointing Authority for the Adjudicator: <i>[N/A]</i> .
	Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: <i>[N/A]</i> .
B. Time Control	
GCC 26.1	The Contractor shall submit for approval a Program for the Works within fourteen days from the date of the Letter of Acceptance.
GCC 26.3	The period between Program updates is <i>30</i> days.
	The amount to be withheld for late submission of an updated Program is amount in the subsequent certificate.
C. Quality Control	
GCC 34.1	The Defects Liability Period is 180 days.
D. Cost Control	
GCC 38.9	If the value engineering proposal is approved by the Procuring Entity the amount to be paid to the Contractor shall be <i>_N/A_%</i> .
GCC 44.1	The currency of the Procuring Entity's Country is Kenya Shillings.
GCC 45.1	The Contract <i>is not</i> subject to price adjustment in accordance with GCC Clause 45, and the following information regarding coefficients <i>does not</i> apply. The coefficients for adjustment of prices are: (a) <i>[insert percentage]</i> percent nonadjustable element (coefficient A). (ib) <i>[insert percentage]</i> percent adjustable element (coefficient B). (c) The Index I for shall be <i>[insert index]</i>.
GCC 46.1	The proportion of payments retained is <i>five percent (5%) of each payment certificate</i>
GCC 47.1	The liquidated damages for the whole of the Works are <i>0.05 percent of the contract amount</i> per day. The maximum amount of liquidated damages for the whole of the Works is <i>5percent</i> of the final Contract Price.
GCC 48.1	This clause will not be applicable in the contract
GCC 49.1	The Advance Payments shall be to a maximum of 20% of the contract amount less the provisional amount. It shall be paid at the discretion of the procuring entity and against an advance payment bank guarantee (Demand bank Guarantee). Where advance payment is allowed it shall be paid to the Contractor no later than 30days upon receipt of acceptable bank guarantee.
GCC 50.1	The Performance Security shall be inform of Demand Bank Guarantee in the amount(s) of 5 percent of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract Amount issued by a commercial bank registered by Central Bank of Kenya.
E. Finishing the Contract	
GCC 56.1	The date by which operating and maintenance manuals are required is immediately after

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	acceptance of the works by the project Implementation Team. This clause will Not be Applicable The date by which “as built” drawings are required is immediately after acceptance of the works by the project Implementation Team. This clause will Not be Applicable
GCC 56.2	The amount to be withheld for failing to produce “as built” drawings and/or operating and maintenance manuals by the date required in GCC 58.1 is <i>5percent of the contract amount</i> . This clause will Not be Applicable
GCC 57.2 (g)	The maximum number of days is 60 days.
GCC 58.1	The percentage to apply to the value of the work not completed, representing the Procuring Entity’s additional cost for completing the Works, is <i>to be stated in the contract</i>

SECTION X: CONTRACTS FORMS:

FORM No 1: NOTIFICATION OF INTENTION TO AWARD

This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender. Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form on the format below.

FORMAT

1. **For the attention of Tenderer's Authorized Representative**

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

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

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

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

3. **Notification of Intention to Award**

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

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

4. **Request a debriefing in relation to the evaluation of your tender**

Submit a Procurement-related Complaint in relation to the decision to award the contract.

a) The successful tenderer

- i) Name of successful Tender _____
- ii) Address of the successful Tender _____
- iii) Contract price of the successful Tender Kenya Shillings _____ (in words _____)

b) Other Tenderers

Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out. For Tenders not evaluated, give one main reason the Tender was unsuccessful.

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 deadline to request a debriefing expires at midnight on *[insert date]* (local time).
- b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (5) Business Days of receipt of this Notification of Intention to Award.
- c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:
 - i) Attention: *[insert full name of person, if applicable]*
 - ii) Title/position: *[insert title/position]*
 - ii) Agency: *[insert name of Procuring Entity]*
 - iii) Email address: *[insert emailaddress]*
- 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 emailaddress]*
- c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.
- d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available from the Website info@ppra.go.ke or complaints@ppra.go.ke.
You should read these documents before preparing and submitting your complaint.
- e) There are four essential requirements:

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

7. Standstill Period

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

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

Signature: _____ **Name:** _____

Title/position: _____ **Telephone:** _____ **Email:** _____

FORM NO. 2 - REQUEST FOR REVIEW

FORM FOR REVIEW(r.203(1))

PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

APPLICATION NO.....OF.....20.....

BETWEEN

..... APPLICANT

AND

..... RESPONDENT (Procuring Entity)

Request for review of the decision of the..... (Name of the Procuring Entity of dated the...day of 20.....in the matter of Tender No.....of 20..... for..... (Tender description).

REQUEST FOR REVIEW

I/We.....,the above named Applicant(s), of address: Physical address P. O. Box No..... Tel. No.....Email, hereby request the Public Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the following grounds , namely:

- 1.
- 2.

By this memorandum, the Applicant requests the Board for an order/orders that:

- 1.
- 2.

SIGNED(Applicant) Dated on.....day of/...20.....

FOR OFFICIAL USE ONLY Lodged with the Secretary Public Procurement Administrative Review Board on.....day of 20.....

SIGNED

Board Secretary

FORM NO 3: LETTER OF AWARD

[letterhead paper of the Procuring Entity] [date]

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

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

You are requested to furnish the Performance Security within 30 days in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the Tender Document.

Authorized Signature:.....

Name and Title of Signatory:.....

Name of Procuring Entity.....

Attachment: *Contract Agreement*.....

FORM NO 4: CONTRACT AGREEMENT

THIS AGREEMENT made the _____ day of _____, 20____, between _____ of _____ (hereinafter “the Procuring Entity”), of the one part, and _____ of _____ (hereinafter “the Contractor”), of the other part:

WHEREAS the Procuring Entity desires that the Works known as _____ should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Procuring Entity and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - a) the Letter of Acceptance
 - b) the Letter of Tender
 - c) the addenda Nos _____ (if any)
 - d) the Special Conditions of Contract
 - e) the General Conditions of Contract;
 - f) the Specifications
 - g) the Drawings; and
 - h) the completed Schedules and any other documents forming part of the contract.
3. In consideration of the payments to be made by the Procuring Entity to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Procuring Entity to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Procuring Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the Laws of Kenya on the day, month and year specified above.

Signed and sealed by _____ (for the Procuring Entity)

Signed and sealed by _____ (for the Contractor).

FORM NO. 5 - PERFORMANCE SECURITY

[Option 1 - Unconditional Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[insert name and Address of Procuring Entity]* **Date:** _____

_____ *[Insert date of issue]*

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

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ dated _____ with (name of Procuring Entity) _____ (the Procuring Entity as the Beneficiary), for the execution of _____ (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.
3. At the request of the Contractor, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (in words),¹ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.
4. This guarantee shall expire, no later than the Day of, 2.....², and any demand for payment under it must be received by us at the office indicated above on or before that date.
5. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

[Name of Authorized Official, signature(s) and seals/stamps].

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

¹ The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency of the Contract or a freely convertible currency acceptable to the Beneficiary.

² Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in

the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.

FORM No. 6 - PERFORMANCE SECURITY

[Option 2– Performance Bond]

[Note: Procuring Entities are advised to use Performance Security – Unconditional Demand Bank Guarantee instead of Performance Bond due to difficulties involved in calling Bond holder to action]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: _____ *[insert name and Address of Procuring Entity]* **Date:** _____
_____ *[Insert date of issue]*.

PERFORMANCE BOND No.: _____

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

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

SIGNED ON _____ on behalf of By _____ in the capacity of In the
presence of

SIGNED ON _____ on behalf of By _____ in the capacity of In the
presence of

FORM NO. 7 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[Insert name and Address of Procuring Entity]*

Date: _____ *[Insert date of issue]*

ADVANCE PAYMENT GUARANTEE No.: _____ *[Insert guarantee reference number]* **Guarantor:** _

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

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ (in words) is to be made against an advance payment guarantee.
3. At the request of the Contractor, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (in words _____)¹ upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
 - a) has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
 - b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.
4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Contractor on its account number _____ at _____.
5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the ____ day of _____, 2², whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.
6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

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

¹The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency of the advance payment as specified in the Contract.

²Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the

expiration date established in the guarantee.

FORM NO. 8 - RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ [Insert name and Address of Procuring Entity]

Date: _____ [Insert date of issue]

Advance payment guarantee no. [Insert guarantee reference number]

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

1. We have been informed that _____ [insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture] (hereinafter called "the Contractor") has entered into Contract No. _____ [insert reference number of the contract] dated _____ with the Beneficiary, for the execution of _____ [insert name of contract and brief description of Works] (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of [insert the second half of the Retention Money] is to be made against a Retention Money guarantee.
3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of [insert amount in figures] _____ ([insert amount in words _____])¹ upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.
4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number _____ at _____ [insert name and address of Applicant's bank].
5. This guarantee shall expire no later than the Day of, 2.....², and any demand for payment under it must be received by us at the office indicated above on or before that date.
6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

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

¹The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.

²Insert a date that is twenty-eight days after the expiry of retention period after the actual completion date of the contract. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.

FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM

INSTRUCTIONS TO TENDERERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the Tenderer by meeting one or more of the following conditions:

- Directly or indirectly holding 25% or more of the shares.*
- Directly or indirectly holding 25% or more of the voting rights.*
- Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.*

Tender Reference No.: _____ [insert identification no]

Name of the Assignment: _____ [insert name of the assignment] to:
_____ [insert complete name of Procuring Entity]

In response to your notification of award dated _____ [insert date of notification of award] to furnish additional information on beneficial ownership: _____ [select one option as applicable and delete the options that are not applicable]

I) We hereby provide the following beneficial ownership information.

Details of beneficial ownership

Identity of Beneficial Owner	Directly or indirectly holding 25% or more of the shares (Yes / No)	Directly or indirectly holding 25 % or more of the Voting Rights (Yes / No)	Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer (Yes / No)
<i>[include full name (last, middle, first), nationality, country of residence]</i>			

OR

ii) *We declare that there is no Beneficial Owner meeting one or more of the following conditions: directly or indirectly holding 25% or more of the shares. Directly or indirectly holding 25% or more of the voting rights. Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.*

OR

We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Tenderer shall provide explanation on why it is unable to identify any Beneficial Owner]

Directly or indirectly holding 25% or more of the shares. Directly or indirectly holding 25% or more of the voting rights.

Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer]"

Name of the Tenderer *[insert complete name of the Tenderer]_____

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

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

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

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

PART A:

GENERAL SPECIFICATIONS

FOR ELECTRICAL INSTALLATIONS

PART D: GENERAL SPECIFICATIONS FOR ELECTRICAL INSTALLATIONS

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PART A:

GENERAL ELECTRICAL SPECIFICATION

1 GENERAL

This section specifies the general requirement for plant, equipment and materials forming part of the Sub-contract Works and shall apply except where specifically stated elsewhere in the Specification or on the Contract Drawings.

1.1 Quality of Materials

All plant, equipment and materials supplied as part of the Sub-contract Works shall be new and of first class commercial quality, shall be free from defects and imperfections and where indicated shall be of grades and classifications designated herein.

All products or materials not manufactured by the Sub-contractor shall be products of reputable manufacturers and so far as the provisions of the Specification is concerned shall be as if they had been manufactured by the Sub-contractor.

Materials and apparatus required for the complete installation as called for by the Specification and Contract Drawings shall be supplied by the Sub-contractor unless mention is made otherwise.

Materials and apparatus supplied by others for installation and connection by the Sub-contractor shall be carefully examined on receipt. Should any defects be noted, the Sub-contractor shall immediately notify the Engineer.

Defective equipment or that damaged in the course of installation or tests shall be replaced as required to the approval of the Engineer.

1.2 Regulations and Standards

The Sub-contract Works shall comply with the current editions of the following:

- a) The Kenya Government Regulations.
- b) The United Kingdom Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.
- a) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
- d) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
- e) The Local Council By-laws.
- f) The Electricity Supply Authority By-laws.
- g) Local Authority By-laws.
- h) The Kenya Building Code Regulations.
- i) The Kenya Bureau of Standards
- j) Energy and Petroleum Regulatory Authority (EPRA) Standards and By-laws.
- k) Kenya Power and Lighting Company Standards.

1.03 Power Supply on Site

The supply voltage will be 11000V through a medium voltage metering panel and switchgear. There will be a 11000V/415V transformer, and the final circuits will be 240 volts single phase or 415 volts 3 phase 50 Hz. TN-S system, viz. separate neutral and protective conductor throughout the system.

2. INSTALLATION OF CABLES

2.01 General

Bending of cables shall be in accordance with table 52c of the IEE Regulations and no cable shall be bent to radius less than that specified by the cable manufacturers.

Cables shall be rated for the maximum connected load with due consideration to the following factors:-

- (i) Voltage drop not in excess of 4% of the nominal voltage.
- (ii) Ambient temperature.
- (iii) Degree of excess-current protection.
- (iv) Grouping.
- (v) Cables run under defined conditions.

2.02 Cables in conduits and Trunking

All cables shall be polyvinyl chloride (PVC) insulated to BS 6604, "PVC-insulated cables (non-armoured) for electric power lighting", 450/750 volt grade, unless an alternative is specified elsewhere in the contract documents. The quality and size of cables contained in any one conduit shall comply with IEE Regulation 529-7 and Appendix 12.

No cable with a cross-section area of less than 1.5mm² shall be used. All cables installed in a conduit or trunking system shall be PVC single insulated conductors and shall be colour coded in accordance with the IEE Regulation 524-3 and Table 52A.

Final sub-circuits shall be run in conduits separate from main or sub-main cables. All cables in conduit shall be drawn in simultaneously. All cables shall be drawn in without the use of excessive force, without the use of lubricants and the wiring shall be easily withdrawable.

2.03 PVC/SWA/PVC Cable

These cables shall comprise copper conductors unless specifically detailed otherwise, laid up with PVC fillers bedded with an extruded inner PVC sheath, armoured with a single layer of galvanized steel wires, aluminium or strip as specified, and covered overall with PVC sheath.

Cables shall be manufactured to BS 6346 "PVC insulated cables for electrical supply" with conductor dimensions and resistances in accordance with BS 6360 1969, "copper conductors in insulated cables and cords", Armouring shall be galvanised steel to BS 1442.

Attention is drawn to Chapter 52 of the IEE Regulations and Appendix 9. Where the armour wires of cables are used to provide protective conductor they shall comply with the requirements of Chapter 54 of the IEE Regulations, particularly section 543; alternatively, additional cables with copper conductors shall be installed to reduce the impedance to a level which ensures compliance with Section 543 of the IEE Regulations.

Unless permission is given by the Engineer, no joints will be allowed. In the event of joints being authorized, they shall be made using plastic boxes of approved design filled with an approved cold pouring plastic or resin compound. The cable box shall incorporate suitable copper tapes and clamps to bond the armouring of the jointed cables.

The PVC/SWA/PVC cables should be terminated in the cable manufacture's approved glands. These shall be of the compression type providing controlled radial compression of the sheath seal. The gland shall incorporate an armour clamping ring and earthing ring and, where used outdoors, a lead washer shall be used to ensure a watertight joint between the gland and the unit to which it is fitted. The earthing ring shall be rigidly fixed to the item of equipment and terminated using brass nuts, bolts and washers. All gland terminations shall be protected by a PVC shroud which shall fit tightly over the cables.

The electrical Sub-Sub-Contractor is responsible for determining the true nature and extent of cable routes. No claim on the grounds of lack of knowledge will be entertained. All cable routes shall be agreed with the Engineer. After the cables have been installed and terminated, but prior to putting into service, they shall be subjected to an insulation test of 500 volts and the results of these tests (recorded on test sheets) forwarded to the Engineer.

3. CONDUIT AND CONDUIT FACILITIES - MILD STEEL CONDUIT SYSTEM

3.01 Conduits

Conduits shall be installed as required by the IEE Regulations and as detailed in this specification. All metal conduits must be heavy gauge, seam welded, steel tube screwed conduits manufactured to BS 31, "steel tube screwed conduits and fittings for electrical wiring", Class B, BS 4568, "Steel conduit and fittings with thread of ISO form for electrical installation", for metric conduit, unless specified otherwise. Conduits shall be finished black stove enamelled, except in positions exposed to water (other than water used in construction), steam condensation or the action of weather, where hot galvanised conduits shall be used.

Any conduits work rejected by the Engineer shall be replaced at no extra cost. No conduit smaller than 20 mm in diameter or longer than 50mm diameter shall be used.

All bends in conduit shall be in accordance with the IEE Regulation 529-5, and made in a conduit bending machine fitted with a former of the correct radius for each conduit size.

Conduits shall be secured in an efficient pipe vice whilst being screwed. Conduit system shall be installed so as to ensure compliance with requirements of IEE Regulations 529-7. Attention is drawn to Appendix 12 of the IEE Regulations.

3.02 Conduit Fittings

Conduit fittings shall have same finish as the conduits being used and shall comply with BS 31 or BS 4586. All conduit fittings shall be screwed or loop-in malleable iron circular type, fitted with covers secured by brass screws. Rectangular adaptable steel boxes may be used on multi-conduit runs.

All circular type boxes must be fitted with long screwed spout conduit entries with the screwed thread terminating within the spout and the edges of the internal orifice of the box rounded and smoothed to act as a bush except for the adaptable steel rectangular boxes and loop-in conduit boxes, in which case male bush and coupling must be used for conduit connections. In concealed installation, boxes shall be fixed with the rims flush with the finished surface, but when, for any reason whatsoever, the rims are below the surface, suitable extension rings of the required depth shall be provided and installed to finish flush with the surrounding surfaces and with the lids of sufficient oversize (7.5 mm minimum all round) to cover the junction between box and plaster. In no case will the use of site-manufactured bends, sets, elbows, inspection elbows or tees be permitted.

3.03 Fixing of Conduits

All conduits must be firmly and rigidly fixed to be entirely without whip or movement. Space-bar saddles, or strap saddles, must be used on the timbers in roof spaces and will be allowed when the conduits are run on the underside of exposed unsealed floor or ceiling joints. Pipe hooks or crumpets will not be allowed except for security conduits in chases, or screeds, when the top of the hook must at least be 10 mm below the finished surface of the wall, or 25 mm below the floor finish. Pipe hooks shall be galvanised.

The finish of the saddles must in all cases conform to the finish of the supported conduits. Galvanised, sherardised or cadmium plated screws shall be used in all cases where galvanised conduits are installed.

The standard cast iron distance saddle, (single fixing base and two-screw fixing top), must be used for all conduits run on the surface of walls and ceilings etc., fixed at intervals of not more than 1.2 metres.

3.04 Conduit Runs and Concealment

The routes of the conduit installation shall be agreed with the Engineer prior to commencing the installation. Conduits shall be installed at least 150 mm from, and preferably under, any hot water pipes and at least 50 mm from other surface pipes and cables. Conduits shall be bonded to other surfaces in accordance with the requirements of IEE Regulations 413-2 and 547-4 to 547-7 inclusive.

Each continuity test shall be applied to the system before plastering, screeding, or casting of concrete is commenced. Surface work will be allowed where certain pre-fabricated methods of construction preclude the concealment of the runs, and or fair-faced brickwork or block work or other unplastered walls.

Conduit runs shall be planned to obviate the need for draw-in boxes, but where the use of such boxes is unavoidable they shall be accessible at all times and be fitted with covers. When Conduits are specified as being installed on the surface the runs must be arranged to render the whole system as neat and inconspicuous as possible, having regard to the existing architectural features. All vertical and horizontal runs must be taken where conduits converge and run together near distribution centres to obtain a symmetrical layout. The distance between the conduits shall be maintained through bends and sets and shall not vary noticeably.

3.05 Flexible Metallic Conduit

Flexible Conduit shall comply with the BS 731 part 1. "Flexible steel conduit and adaptors for the protection of electrical cables." It shall be used for the final connection from a rigid conduit installation to the terminal boxes of all the equipment provided with a means of positional adjustment and /or where vibration may reasonably be expected to occur.

Flexible conduits shall be PVC sheathed and shall be terminated using approved glands. In all instances a separate PVC insulated green and yellow coloured protective conductor complying with table 41A1 or 41A2 and section 543 of the IEE Regulations shall be installed, terminating at each end into purpose-made earthing terminals.

Under no circumstances will flexible conduits be accepted in lieu of sets and bends in a rigid conduit installation.

In normal circumstances flexible conduits shall have a minimum length of 300 mm and a maximum unstretched length of 800mm. It shall permit a full range of withdrawal, adjustment or movement of the equipment.

3.06 Locking, Bushing and Coupling

All conduit ends must be filed square and reamed before erection to ensure freedom from internal burrs and roughness.

Running couplings shall only be used on black enamelled steel conduit installations, and the use of this shall be kept to the minimum. All running couplings shall be secured by means of the lock nuts or lock rings, and the exposed thread painted after installation.

Every conduit connection to the equipment, boxes, distribution boards, loop-in boxes, cable trunking etc, shall be made by means of a screw coupling and a male hexagonal headed smooth bore brass bush. The smooth bore shall be fitted to secure the conduit to the item connected via a purpose-made clear hole to be closed by the bush and coupling when fitted. Paint must be removed from the surface of the item connected to allow it to be covered by the end of the coupling which shall be filed, clean and square, to ensure a good mechanical and electrical metal to metal joint. Any exposed area of metal from which paint has been removed must be made good in a matching paint. Bushes shall be fitted and tightened by means of correctly fitting spanners. Mutilated bushes damaged whilst being fitted must be removed and replaced.

Conduits connecting via couplings shall be connected by a means of 15 mm long threaded section and shall have a gap of approximately 2 mm between them. No thread shall be exposed except running couplings.

3.07 **Continuity and Earthing**

The whole of the conduit installations shall be mechanically and electrically sound and continuous throughout their length in accordance with the IEE Regulations.

Where the conduit system is used to provide a protective conductor it shall comply with the requirements of Chapter 54 of the IEE Regulations particularly Section 543; alternatively, a separate protective conductor shall be installed in the conduit to comply with Section 543 of the IEE regulations.

4. **CABLE TRUNKING-SHEET STEEL**

Trunking shall only be installed in situations which will remain readily accessible throughout the life of the buildings. No cable trunking shall be installed behind a plastered ceiling or in other inaccessible situations.

All cable trunking shall comply with BS 4678, part 1 "Steel surface trunking" and part 2 for "Steel underfloor (duct) trunking".

Sheet steel cable trunking may be used on installations employing steel conduits, for connecting two or more switchboards together or where several conduits would otherwise have to run alongside each other. Proper allowance should be made for the derating of cables installed together in a container system. The cables must be capable of carrying the current imposed by the equipment connected. Attention is drawn to Chapter 52 of the IEE Regulations, particularly Section 522, and Appendix 9: the current carrying capabilities of cables indicated shall not be exceeded. The Engineer must be consulted as to precise details concerning trunking routes and applications.

All lengths of trunking shall be heavy gauge zinc coated steel connected together by internally fitted rectangular couplings of sufficient width to provide a minimum bearing face of 25mm, to which the lengths shall be bolted on site or welded at the factory.

Adequate provision shall be made to allow for expansion.

All Tee pieces and bends shall be formed with similar means of connection and the inner radii area shall be such that cables will not be bent through a radius less than that prescribed in the IEE Regulations. Only bends and tees of approved pattern will be accepted.

All fixing screws within the trunking shall be of the round head type. The trunking shall have an over-lapping well-fitted lid securely fixed to the trunking by approved means that will avoid damage to the cables. Self-tapping screws shall not be used.

All necessary accessories including long sleeve couplings, end piece, bends, sets, tees, reducers, branches, fillets, pinracks, cable retainers etc., shall be purpose-made units rather than being fabricated on site.

Where a change in direction of trunking run occurs, the deviation should be effected by a purpose-made unit manufactured on similar lines to the bends and tee pieces described above. Where this is not practical, changes in direction shall be fabricated in a neat workmanlike manner. All joints shall fit closely and gaps will not be permitted. All burrs and sharp edges shall be removed and no screw shall protrude into the trunking.

Trunking shall be firmly attached to its associated equipment either by bolted flanges or by male bushes and couplings.

Where trunking is connected to equipment by means of flange connectors, the entry into the equipment shall be of the same cross-section as the trunking.

Where trunking does not terminate in equipment, the otherwise open end shall be capped with a cover suitable bolted in position.

Where communications, extra low voltage circuits (category 1) etc., are contained in a trunking, the requisite number of separate compartments shall be provided to segregate the wiring. Where conduits are taken off such trunking they shall not pass through other compartments unless prior permission is obtained from the Engineer.

The entire trunking is required to be recessed in the structure of the building, the finished edge of the trunking is to be installed flush with the plasterwork.

Trunking runs shall be so arranged that the lid or cover plate is always on the top or side and not underneath, unless this cannot be avoided, in which case the Engineer's permission shall be obtained.

Wherever trunking passes through walls, vertical partitions etc., a fixed piece of trunking lid shall be fitted to the trunking extended 25 mm either side of the wall or other barrier, this is to allow removal of the adjacent lid without disturbing the building fabric. Care shall be taken to ensure that no opening is left between the trunking and the building structure through which fire might spread. In addition a suitable barrier of incombustible material shall be provided and fitted inside the trunking, in accordance with the IEE Regulations 528-1. On vertical runs of trunking internal incombustible barriers shall be fitted at the distance between floors or 5m, whichever is the less, in accordance with IEE Regulations 523-6.

All necessary trunking support work, hangers, brackets and fixing requirements shall be provided by the electrical Sub-Sub-Contractor.

Earth links of the appropriate size and type shall be installed at every jointing coupling, manufactured bend, etc., throughout the entire trunking system. Where trunking is used to provide a protective conductor it shall comply with the requirements of Chapter 54 of the IEE Regulations, particularly Section 543; alternatively, a separate protective conductor shall be installed in the trunking to comply with section 543 of the IEE Regulations.

In cases where sheet steel trunking is installed and there is danger of movement, a flexible earth conductor shall be installed bonding all joints in the trunking. This shall be fitted in addition to the standard earth links. Cable retaining strips shall be fitted at 1 m intervals. Insulated cable support pins shall be fitted at intervals of 4 m in vertical runs of trunking and at the top of the vertical trunking.

5 CABLE TRAYS

Cable trays shall be formed from perforated steel of not less than 0.9 mm thickness up to and including 100 mm width - 1.25 mm thickness from 150 mm up to and including 300 mm width - and 2.00 mm thickness above 300 mm width. They shall be galvanised unless otherwise specified. Tray shall be adequately sized to support the cable without bunching.

Support shall be by means of steel brackets installed at intervals necessary to provide a rigid fixing and ensure that no undue deflection occurs in the complete installation. The brackets shall be galvanised prior to fixing. Dome-headed bolts, nuts and washers of finish suitable to the tray shall be used between tray and brackets.

Fixing to the surfaces of walls, ceilings, etc. shall be by means of expansion-type masonry plugs or bolts. Fixings shall be galvanised unless otherwise stated. Cable trays shall be installed using factory-formed bends, elbows, tees, couplers and risers etc. Site fabrication of elbows etc., will only be permitted with prior approval of the Engineer and where it is not possible to obtain the necessary factory-made item.

Where cuts have been made, the tray shall be painted with zinc rich paint.

Holes which have been cut to allow cables to pass through shall be suitably bushed.

Suspension sets shall comprise threaded M12 cadmium plated hanger rods together with nuts and locking washers, vertical hanger brackets, support channel, tray hold-down clips etc., all of which shall have a galvanised finish.

All cables shall be securely fixed to traywork and the complete installation must be carried out in a neat and workmanlike manner without crossovers. A 25% reserve margin in size and weight shall be allowed for all cable tray works.

Cables of 30 mm diameter and above shall be fixed using the appropriate size cable straps of approved manufacture.

On light duty multi-cable runs, cable straps of plastic coated metal shall be used to secure cables.

Bunching of cables will not be permitted.

Cables shall be clipped by means of copper or brass saddles and clips where high temperature or humid conditions are likely to be experienced. In all cases, saddles, clips, straps, etc., shall be fixed to the tray by means of brass screws or bolts and nuts.

6. PROTECTION OF PVC/SWA/PVC CABLES

6.01 General

Cable routing shall be such that the maximum degree of protection against accidental damage is obtained by running cables along the inside of channels and beams, etc.

Cables shall be laid in preformed trenches or duct throughout all paved areas. Ducts shall be installed for underground cables before the paving is constructed.

Cable ducts shall be sealed at both ends using materials which are resistant to any likely corrosive and insect attack in the area concerned.

All cables rising through floors and trench covers, except in switch rooms, shall be protected by a length of steel pipe which shall project at least 150 mm above the finished surface level.

The open end of the pipe shall be sealed with a suitable compound. Care must be taken that all phases of single core cables pass through the same protective steel duct.

6.02 Cables Direct in Ground

All excavation and backfilling of cable trenches will be carried out by the main Sub-Contractor unless otherwise specified, but the electrical Sub-Sub-Contractor shall in any case make sure that trenches are made to a depth as specified.

The electrical Sub-Sub-Contractor shall lay cables direct in the ground in the following manner:-

75 mm (3 inches) of dry fine sand shall be placed to form a bed for the cables. After cables have been laid they shall be covered with additional dry fine sand well punned over and around the cables to a level of 75 mm above the top of the uppermost cable. Mechanical punners shall not be used for this work. The electrical Sub-Sub-Contractor shall supply and install concrete cable tiles which shall be carefully placed over the cable forming each circuit.

Until all the cables have been laid in the trench and have been covered with their protective tiles, no sharp metal tools such as spades or fencing stakes, shall be used in the trench. Rollers used during laying of cables shall have no sharp projecting parts liable to damage the cables.

6.03 **Cables above Ground**

For main cable runs the cable shall be run on approved tray or ladder rack, and secured to it at intervals of not more than 400 mm horizontally and 600 mm vertically.

Cables shall be dressed together and fixed with a common saddle. If the number of cables is such as to require the tiering of cables, the number of tiers shall generally be two.

7 **TERMINATION OF CABLES**

Cables shall be terminated in accordance with Chapter 52 of the IEE Regulations, particularly Section 527.

Cables shall be terminated by one of the following methods:-

- (i) The cable conductors shall be sweated into lugs of the appropriate size for the cable and equipment terminal.
- (ii) The cable conductors shall be secured by compression type lugs of the correct size for the cable and equipment terminal.
- (iii) The cable conductors shall be secured in pinch screw terminals.
- (iv) The cable shall be secured by means of clamps.

Where cables are required to terminate at connectors, as at lighting points, such connectors shall secure all the strands of stranded cables. Care shall be taken to ensure that cables are not damaged during preparation for termination.

Cables terminating at pinch screw terminals shall be twisted together and single cables shall have the conductor doubled back to ensure adequate purchase for pinching screws.

Cables connected to lamp holders or other components at which heat is produced shall be insulated with heat resisting material capable of withstanding, without detriment, the temperature encountered.

All terminations on PVC/SWA/PVC insulated cables shall be by compression type glands of an approved design and manufacture with facilities for clamping the armouring the outer sheath of the cable.

Glands mounted outdoors shall incorporate a seal to prevent ingress of moisture into the gland, and all glands shall be fitted with a thermoplastic shroud.

Where circular terminations are to be made, these shall be completed using Ross Counterney terminals.

Where cables are terminated in "Klippon" type terminals with parallel faced jaws, the individual cores shall be terminated using the appropriate flat or hook blade crimped lugs. Where the terminal faces are concaved, the cores shall be terminated in wires pin crimped lugs.

The electrical Sub-Sub-Contractor shall avoid multiple connections under one screw or one pin. Where more than two wires are required, a common termination jumper bar shall be used.

Terminals shall be mounted on rails or supports. All internal wiring is to be clearly marked by markers.

8 **SEGREGATION OF SERVICES**

Cables of differing voltages shall be segregated so that there is no possibility of a fault in a power cable damaging any adjacent cables or imposing a different voltage upon them.

9 IDENTIFICATION OF CABLES

All cables shall be fitted with non-corrosive cable identification bands at each end, and at all changes of direction where they leave a group of cables. All cables cores connected to equipment having marked terminals shall be fitted with non-corrosive identification bands bearing markings corresponding to those of the terminals at both ends.

10. EARTHING

The whole of the metallic portion of the installation, other than current carrying parts, shall be electrically and mechanically bonded to the consumer's main earth terminal and also if applicable, to the lighting protection system or other points specified.

The installation shall be earthed in accordance with the Sixteenth Edition of the Regulations for Electrical Installation issued by the IEE, BS CP1013, "Earthing" and BS 6651 "The protection of structures against Lightning". The electrical Sub-Sub-Contractor's attention is drawn to Chapter 54 of the IEE Regulations.

A main earth terminal shall be supplied and installed adjacent to the electricity supply cable termination. The terminal shall be of ample size and capacity to suit the installation. All items of equipment, switchgear, etc., shall be bonded to this earth terminal using PVC insulated PVC sheathed cables, coloured green and yellow and sized in accordance with Tables 41A1 of the IEE Regulations. An invorine label reading **"SAFETY ELECTRICAL CONNECTION - DO NOT REMOVE"** in engraved upper case characters not less than 4.75mm high, shall be permanently fixed immediately adjacent to or on the earth terminal.

A heavy duty copper clamp complying with BS. 951 shall be used to bond the main protective conductor to the electricity supply cable armouring or metallic sheath (where applicable the armouring and sheath shall be bonded together).

All protective conductors shall, where possible, be enclosed within metal trunking or conduit serving switchgear, distribution board etc., so as to provide mechanical protection. Where protective conductors are run on building surfaces they shall be properly fixed and supported by means of PVC coated metal saddles along selected routes.

Earth continuity between separate items of switchgear, distribution boards etc., mounted adjacent to one another shall be affected by means of high conductivity continuous copper tape, or PVC sheathed cable, coloured green and yellow, and sized in accordance with the Table 41A1 or 41A2 and Section 543 of the IEE Regulations, connecting all items to the earth terminal.

All items of switchgear, accessories, luminaries, conduits, and the outer sheaths of MICS cables, the armouring of all PVC/SWA/PVC cables together with all other items of electrical plant and equipment shall be effectively earthed by means of a protective conductor in accordance with Table 41A1 and 41A2 and section 543 of the IEE Regulations.

At every terminal point on the fixed wiring an integral earth terminal shall be provide e.g. BESA boxes, accessory boxes etc. A protective conductor shall be provided and installed between this terminal and the earth terminal on the associated switch, socket outlet, luminaire etc.

Each circuit protective conductor shall be connected to a multi-way earth terminal provided and fixed within each distribution board. The earth terminal shall be provided with an adequate number of ways such that not more than one conductor per terminal shall be installed and the earthing conductors shall be connected in the same sequence as the current carrying conductors.

All metal piped services, e.g., Heating, Water and Gas Services, metal wastes and piped services at sinks, baths and showers etc., shall be bonded to the earth terminal in accordance with the IEE Regulations 413-2.

A 50mm section of each gas and water pipe, at position close to their entry into the relevant building, shall be cleaned and made smooth. A copper earthing clamp designed to permit the connection of protective conductors shall be provided and sized in accordance with Table 41A1 and 41A2 and Section 543 of the IEE Regulations.

The clamp shall be a proprietary type or shall be fabricated from high conductivity copper strip, minimum size 40 mm x 4 mm which shall encircle the cleaned sections of the pipe. A permanent label indelibly marked with the words, "**SAFETY ELECTRICAL CONNECTION - DO NOT REMOVE**" in legible type not less than 4.75 mm high, shall be permanently fixed at the points of connections.

The final connection of bonding conductors from gas, water pipes and other services to the earthing terminal shall not be completed until earth electrode and earth impedance tests have been satisfactorily completed.

Bonding connections to pipework shall be as unobstructive as possible where practicable shall be made in service ducts or accessible voids and shall be readily on the Record Drawings. All materials and sundry item shall be provided whether or not specifically mentioned, necessary to completely and effectively earth the installation. The installation shall be fully protected against dampness and corrosion and the effect of electrolytic action between dissimilar materials. A completely permanent installation shall be provided which shall be fully accessible for regular testing and inspection.

The value of earth resistance from any point of an installation to the general mass of earth shall be low enough to ensure operation of circuit protective devices and shall in any case not exceed four(4) ohms for electrical equipment, seven (7) ohms for lighting protection. Each earthing cable shall terminate in an approved design of cable lug.

Where earth conductors are run upon structures or walls they shall be fastened by means of heavy gauge non-ferrous fasteners not more than 0.75 m apart on horizontal runs and not more than 1.2 m apart on vertical runs and to give a minimum clearance of 4 mm from the fixing face.

In the event of the electrical sub-Sub-Contractor not being able to establish a suitable earth connection to the electricity supply cable, earth electrodes shall be installed which shall be galvanised or copper clad steel extendable rods not less than 16 mm diameter and not less than 1.2 m in length. Connections to electrodes shall be made by means of solderless mechanical clamps.

To avoid corrosion, all earth system connections shall be cleaned bright and immediately covered with silicon MS4 compound or approved equal.

Earth pits, where required, shall be in accordance with the Sub-Contractor's relevant drawings, with the facility to disconnect the earth ring while measuring the electrode earth resistance.

11 **LIGHTNING PROTECTION**

Lighting protection shall be provided on high buildings/structures more than 10 m in height. such protection shall be effected by bonding each individual building/structures direct to the earthing system, in accordance with the BS CP 326, by a minimum size of 170mm² conductor.

12 **FUSED-SWITCH UNITS, SWITCHFUSES AND ISOLATORS**

The above units comply with BS 5419 and shall be 500 volt type and installed where specified and indicated on the relevant drawings.

All switchgear shall be provided with suitable locks for padlocking the switches in the 'OFF' position. The cover shall be interlocked with the operating mechanism to prevent it from being opened in the 'ON' position. This interlocking shall also prevent the switch from being closed with the cover open unless for maintenance purposes. The cover shall be gasketed to prevent ingress of dust.

The switch action mechanism shall be of the parallel operation (double break type having cartridge fuses mounted switches) and shall be ASTA certified to meet adequately all the duties specified.

The end plates shall be removable for drilling for conduit or cable entry and shall be fitted with additional distance pieces where necessary. Switchgear boards shall be fixed to the wall/floor by Rawl bolts or other approved fixings.

No building alteration shall be allowed when moving the switchboard into position, the switchboard being supplied in sections to be built in position, if so required.

Switchgear shall be delivered to site when required to suit the progress of the works. Care shall be taken to preserve the manufacturer's paint finish. Any refurbishing etc. shall be carried out, using paint obtained from the switchboard manufacturer, to the original standard of finish.

All fuses in switchgear shall be HRC fuses sized for the fused-switch units or switch-fuses etc., in which they are incorporated. They shall be ASTA certified for compliance with BS 88, Category of Duty 440 A.C 5 Class 01 and in all cases fuse links shall be selected to provide circuits discrimination.

13 **CONTROL PANELS AND CUBICLES**

The details specified in clause 4.11 shall apply as far as fused switches, bus-bars and rating etc are concerned. The panels shall be constructed from rolled steel channel minimum size 60 mm x 30 mm deep x 5 mm or equivalent angle section clad with sheet steel of 3 mm gauge. 2 mm gauge may be used for covers and doors of not more than 1 m square.

Terminals shall be of the "Klippon" standards rail-mounted feed-through type or approved equal. All terminals shall be identified by means of numbered or lettered marking tags, which shall be identical to the number of letter applied to the cables. Cables shall be identified as terminations by means of cable markers as manufactured by "Klippon" or approved equal. 25% spare terminals capacity within wiring duct shall be provided. All components motors, starters, relays, timers, etc. shall be labelled showing their reference and function and these shall relate to the panels' schematic wiring diagram provided with the "As-built" drawing and manuals.

All control panels shall be fitted with multi-pole isolating switches through which all electricity supplies shall pass. The door(s) of the control panel shall not open unless the isolating switch is in the "off" position. A facility to lock the control panel-isolating switch in the "off" position shall be included.

14 **DISTRIBUTION BOARDS**

14.1 **General**

All distribution boards, unless stated otherwise, shall be miniature Circuit Breaker Distribution Boards and shall be of surface or flush type, as specified. Facilities for local isolation of the distribution boards shall be provided by either a local fused-switch unit or an integral isolating switch, whichever is specified.

Where surface mounted on a flush installation, all conductors shall terminate behind the board in an adequate box. For surface mounting, trunking shall be fixed between the board and ceiling level, or conduits run directly into the board. Adequate earth continuity connection shall be made between the various components.

14.2 **Fused Distribution Boards**

All fuse boards shall be of 500 volt rating to BS. 5486 part 11 "Particular requirements for Fuse boards". The details specified in clause 4.12 shall apply as far as cabinet and construction, cabling arrangements, bus bars, neutral bars, earthing and isolating switches are connected.

Fuse banks shall be spaced so as to obviate the necessity for insulating barriers, but protection shall be provided by means of insulating shields to prevent accidental contact with the main bus bars and connections.

All fuses lighting and heating circuits shall be of the HRC cartridge type, ASTA certified, for compliance with BS. 88, category of Duty 440 A.C 5 class 01.

14.3 **Miniature Circuit-Breaker Distribution Boards**

MCB distribution boards shall comply with BS. 5486 part 12 'Particular requirements for miniature circuits-breaker boards'. The cases shall be constructed of heavy gauge sheet steel, in such a manner as to afford rigidity and maximum ease of wiring for full size circuit and main cables.

The cover shall be provided with an efficient gasket or alternatively designed with generous overlapping edges to prevent the ingress of dust. Components shall not be manufactured from zinc alloy in conjunction with sheet steel where they are relied upon for earth continuity.

Where the cover is required to be lockable, cylinder type locks shall be provided, having two keys per lock. All locked distribution boards shall be handed to the Engineering Supervisor on completion of the works. The cases shall be provided with detachable cable/conduit terminating plates, which shall be reversible and interchangeable from top to bottom.

All screws and nuts used in the construction of the case shall be fitted with shake proof washers and care taken to ensure efficient earth continuity. An external earthing terminal with cable socket shall be fitted.

All MCB banks shall be fitted to frames, with robust locking plates provided to ensure the frames rigidly in the fixed position.

The banks shall be so spaced to obviate the necessity for insulating barriers, but protection shall be provided by means of insulating shields to prevent accidental contact with main bus bars and incoming mains cable.

Bus-bars shall be of high conductivity, hard drawn copper conductors connected to the MCB contacts by means of spring washered screws or bolts, unless plug-in type MCBs are specified.

Neutral bars shall be similar to the main bus bars and shall have two screw terminals per way for rating of 30 amps or over. Single screw connections will be allowed for capacities up to 30 amps. The neutral bars shall have one terminal for each MCB within the board, and connection of conductors to the neutral bar shall be in the same order as the MCB ways.

Where installations are carried out with cables with a protective conductor, all distribution boards shall also contain internal earthing bars similar to the neutral bars detailed above, with one terminal for each MCB within the board. Earthing conductors shall be connected in the manner described for neutral conductors to neutral bars.

Where a main integral isolating switch is provided in an MCB case it shall be arranged to isolate incoming live and neutral main cables from the bus-bars. The isolator switch shall be rated at 500 volts and of the quick make-and break pattern with positive action. Incoming and outgoing terminals shall be fitted with two clamping screws and outgoing conductors to the bus-bars shall be high conductivity hard drawn copper rods.

Isolating switches shall comply with IEE Regulations, Part 537, and shall be capable of carrying their full rated load continuously and shall 'make' or 'break' their full rated load without undue burning of the contacts.

14.4 Miniature Circuits Breaker (MCB)

All MCBs shall have movements which are positive in both directions (make and break) so as to enable units to be closed decisively by the operation of the handle, and to be able to assume the 'OFF' position unless the contacts are definitely separated, to safeguard against false indications.

The handle shall be trip free to make it impossible for the operator to hold the breaker in the closed position under faulty conditions. The operating mechanism and arc chambers of the circuit breaker shall be separated from the terminals and fixing screws.

Terminal identification shall be readily discernable as viewed from the front of the board with automatic and clear signal identification for both 'ON' and 'OFF' position.

All terminals shall be readily accessible from the front and each wiring chamber shall be closed by a screw fixed cover which protects the terminals and prevents dust from settling on the insulation.'

Where the full capacity of a distribution board is not required the electrical Sub-Sub-Contractor shall fix blanking plates in the vacant MCB housings. All MCBs shall be rated at 500 volts minimum, and comply with BS 3871. "Miniature and moulded case circuits breakers" and 4752 part 1, "Circuit breakers".

14.5 **Moulded Case Circuit Breakers (MCCB)**

Where specified, MCCBs shall be of the thermal/magnetic type, having a quick make, quick break, trip free mechanism which prevents the MCCB from being closed or held against short circuits or overloads. Tripping of every multi-pole MCCB shall be such that operation ensures simultaneous action in all phases.

Clear indication shall be provide for the three positions of operation of the mechanism - 'ON', 'OFF' and 'TRIPPED'. The operation shall be such that the MCCB shall trip automatically under fault conditions and, to reset, the dolly shall require first moving through the 'off' position. All MCCBs shall be provided with facilities for locking the breaker in 'OFF' position.

All MCCBs shall be rated at 500 volts minimum, be ASTA certified for this operational duty, and comply with BS. 3871 and BS. 4752 Part 1.

15 **LABELLING AND ENGRAVING**

15.1 **Labelling**

All fused-switch units, switch-fuses, switches, bus-bars chambers, distribution boards etc., and all items of equipment on the main panel shall be identified in accordance with section 514 of the IEE Regulations and shall have securely fitted externally a white 'Traffolyte', 'Formica' or other approved plastic laminate label engraved with 6 mm high black letters detailing the function of the equipment and any reference number.

Red, yellow, blue, plastic laminate phase discs shall be fixed inside all switchgear and distribution boards to indicate to which phase of the supply the various circuits are connected. The colourings shall comply with Part 524 of the IEE Regulations.

Each TP or TP & N item of switchgear shall have fitted on the cover a white plastic laminate label having 'CAUTION' - 415 VOLTS' engraved in 10 mm high red lettering.

5.2 **Engraving**

The electrical Sub-Sub-Contractor shall allow for engraving of all switched fused spurs, double pole switch accessories and any other accessories, which are customarily required.

The accessory plate shall be engraved in either black or red, capital letters 5 mm high, detailing and appliance or equipment being supplied by the accessory e.g., 'WATER PUMP' etc.

16 **MOUNTING HEIGHTS**

The approximate position of main switchgear, control equipment distribution boards, fittings and accessories shall be as indicated on the Drawings. Actual positions shall be determined on site by the Engineer.

Unless otherwise stated on the relevant drawings or directed by the Engineer the following mounting heights of all accessories above finished floor level shall be adhered to: -

Lighting Switches	1400 mm to centre
Socket Outlet and Spur	300 mm to centre (or 150 mm above work top level to centre)
Distribution Boards	1800 mm to lower edges.

All groups of accessories shall be in line either vertically or horizontally or as specified.

17 **LUMINAIRES**

All Luminaires shall be of the manufacture, size and type specified and shall comply in all respects to BS 4533 "Electric Luminaires".

The electrical Sub-Sub-Contractor shall supply and install all luminaires including lamps, lamp-holders, control gear, capacitors, glassware, diffusers or other attachments, heat resistant internal cables, fuses and terminals and all necessary suspension gear. In case where Luminaires are supplied by the client the Sub-Sub-Contractor shall deliver to site store, install, commission and set to work.

Unless otherwise stated, Luminaires shall be suitable for Class 1 normal indoor environments, giving a degree of protection against ingress of moisture or dust.

All Luminaires shall be assembled and installed in accordance with the respective manufacturer's instructions/recommendations, in the position and mounting heights specified.

Luminaires shall not be installed under dirty and hazardous site conditions, and any damage or deterioration to luminaires installed under these conditions shall be made good by the electrical Sub-Sub-Contractor.

The Luminaires shall be cleaned free of dust and dirt after completion of the installation. Where dirt, dust, corrosion or other conditions cause imperfections in the luminaires, they shall be replaced.

Luminaires, diffusers, attachments or glassware etc., shall be properly stored to final erection, in such a manner as to avoid damage of any kind.

Luminaires fixings shall generally be suitable for direct connection to conduit boxes or as otherwise specified. Luminaires not provided with suitable BESA box shall be modified as necessary.

Where a flexible cord supports, or partly supports, a luminaire the maximum mass supported by the cord shall not exceed the values set out in IEE Regulations 523-32.

The minimum cross-section area flexible core to the employed shall be 0.75mm².

Specified attention shall be given to Chapter 52 of the IEE Regulations, particularly Regulation 521-5 and 521-6, Appendices 9 and 10.

Pendant tungsten luminaires shall be fitted with heat resistant flexible cord complying with BS 6500, capable of continuous operation with a conductor temperature of 150 degrees C. The cable shall be of the circular multicore type, finished white, if not otherwise specified.

Ceiling mounted tungsten luminaires, spotlights and other luminaires of the category 'hot' luminaires shall be wired internally with cable suitable for continuous operation at 185 degree C. Where cable tails are provided they shall be of the heat resistant type capable of operation at 185 degree C.

Exterior luminaires, fixed to the walls of buildings etc., shall be wired such that final circuit wiring terminates within the luminaire. All final circuit cables so installed shall be provided with heat resistant sleeves from the connection point within the luminaire for a distance of 300 mm.

All fluorescent and other discharge luminaires shall be provided with an integral fused connector block. The rating of the fuse shall be in accordance with the manufacturer's instructions to protect the internal wiring of the luminaire and to provide discrimination between final circuit protection and luminaire protection.

All recessed and semi-recessed luminaires in ceilings shall be connected by three core 0.75 mm² high temperature flexible cord from the terminals of the luminaires to a plug-in ceiling rose fixed and connected to an accessible outlet box in the wiring system, within the suspended ceiling immediately above the luminaire. The ceiling rose shall be accessible via the opening provided in the ceiling.

The electrical Sub-Sub-Contractor shall ensure that the methods of suspension for luminaires are electrically and mechanically sound.

Luminaires suspended by means of tubes shall be fitted to ball joints allowing a swing of at least 20 degrees all round. Reliable earthing between the fixed and moving parts shall be provided by means of a flexible braided copper tape.

Fluorescent luminaires shall be provided with a minimum of two fixings, except in the case of recessed modular luminaires or surface-mounted luminaires exceeding 300 mm in width, where four number fixings (one from each corner) shall be provided by means of conduit drops or threaded rods.

Normally visible luminaires support shall be conduit. All fluorescent luminaires shall be solidly mounted with all assembly nuts, bolts and accessories made tight to prevent vibrations and noise. Anti-vibration packing shall be fitted where necessary. luminaires mounted direct to trunking shall be fixed by means of the manufacturer's recommended fixing assemblies.

Unless stated otherwise, all luminaire supports shall be fixed to the building primary structure. Luminaires shall not be supported from suspended ceiling unless otherwise specified. The electrical Sub-Sub-Contractor shall be responsible for mounting and fixing arrangements.

Break joint rings of approved colour shall be provided for all suspended luminaires and fluorescent battery luminaires where the batten is of insufficient width to cover completely the conduit box and its associated clearance hole in the ceiling.

The metalwork of all luminaires shall be effectively bonded to the earthing system in accordance with Chapter 54 of the IEE Regulations.

Care shall be taken to ensure that the internal wiring of luminaires and the cable of any fixed wiring shall not be in contact with high temperature areas in luminaires.

Lighting track shall be of the type, size, finish, number of circuits and manufacture specified and shall comply with the requirements of the relevant section of BS. 4533. The positions of luminaires as shown on the Drawings are approximate only and exact position shall be determined after reference to the Engineering supervisor.

18. CEILING ROSES

Surface mounted ceiling roses shall be of all insulated, high impact moulded plastic construction complying with BS. 67 and shall be suitable for direct attachment to conduit outlet boxes. Recessed or semi-recessed ceiling roses shall be manufactured from porcelain. Break joint rings shall be provided when used on flush conduit outlet boxes.

Ceiling roses shall not be connected to fixed wiring in such a manner that one of the terminals remains 'live' when the associated switch is in the 'off' position, unless that terminal is inaccessible to touch when the ceiling rose cover is removed, e.g. for replacement flexible cord.

Terminals shall be provided for switched live, neutral and protective conductors. Loop-in facilities shall also be provided.

19. LAMPS

Lamps shall be compatible with the luminaire for which they are intended and shall be of the wattage, type and colour specified. Lamps shall be of the correct voltage rating for the particular electricity supply concerned.

Tungsten filament lamps, unless otherwise specified, shall be of the 'PEARL' type and of the long-life type giving 2000 hours average life.

Luminaires designed to accommodate lamps with reduced physical dimensions shall be fitted with lamps of the mushroom type of approved equal.

EXTERNAL LIGHTING

External lighting system shall comprise the lighting points at the position shown on the Drawings and shall include the provision, erection and connection of all lighting columns, bollards, wall and ceiling luminaires and the provision and connection of all control gear together with the laying, jointing and connection of all necessary cables.

All excavation, trenching, backfilling etc., will be undertaken by the main Sub-Contractor.

All lighting columns shall be of the type specified, suitable for looping in and out three No.2 Core PVC/SWA/PVC cables of the specified size.

Where discharge lamps are specified the associated controlgear shall be mounted in the base of the column above the fused 'cut out', all on a timber board housed within the base of the column.

Each lighting column/bollard shall be completed with all adaptors, spigots, mounting brackets, luminaires, controlgear and lamps and shall be provided with a base compartment and locking door.

All column/bollards shall be fixed in the position specified.

Cable routes are shown on the relevant drawings and the electric Sub-Sub-Contractor shall lay the lighting cables in the trenches.

All connections shall be made in an approved manner, and the installations shall be finished complete and handed over in working order to the full satisfaction of the Engineer.

LIGHTING SWITCHES

Lighting switches shall be of the type, size and manufacture as specified.

Wall and ceiling switches shall comply with BS 3676. Wall and ceiling switches controlling A.C lighting circuits shall be rated 20 amp and be of the slow break quick make, type unless stated otherwise.

Where several switches on one phase are shown at one position, a ganged box shall be used.

Where switches at any location are connected to different phases, purpose-make phase barrier switches shall be installed. The phases shall be separated by means of rigidly fixed barriers and the cable for each phase shall be confined to the area enclosed by the barriers for that phase.

Switches connected to a particular phase shall have separate cover or covers fitted over each phase. The covers shall be engraved "CAUTION 415 VOLTS".

The switch plate of the specified finish shall be fitted over phase covers to render the switch unit indistinguishable from the switches that are not phase barrier switches.

Alternatively, each gang shall have its own piping and box for each phase, physically separated from other phases with similar arrangements.

For flush position on a plastered or equivalent finish wall, the switches shall have overlapping plates.

In any places where the finish is fair-faced brickwork, the wiring shall be installed on the back of the wall and make a back entry into the accessories. Each switch in these areas shall be neatly recessed and incorporate an overlapping plate.

For surface-mounted positions and such Plant Rooms, Electrical Switch room etc., employing a surface-mounted system or wiring, switches shall be surface-mounted, having metal front plates of an aluminium finish, mounted in matching metal boxes.

SOCKETS OUTLETS

All socket outlets and plugs shall be supplied and installed in accordance with the manufacture, type, sizes and finish specified.

All round pin 2A, 5A, 15A, and 30A socket outlets shall comply with the requirements of BS 546.

All sockets outlets shall be switched, unless otherwise specified.

All switched sockets outlets shall be complete with steel boxes of the same manufacture, complete with earth terminal.

Assemblies shall comply fully with the requirements of the IEE Regulations concerning the bonding of protective conductor terminals and each such terminal shall be connected by a conductor, having a minimum cross-sectional area of 2.5 mm², to a permanent earthing terminal incorporated in the associated box providing an effective, solid connection to the earth continuity conductor of the installation.

Where the assembly does not provide a reliable electrical contact between the cover plate and box with effective connection of metal operating bars and toggles, then an insulated earthing lead shall be provided, solidly connected to the metal plate and operating bar or toggle and terminating at the fixed earthing terminal incorporated in the associated box. 13 amp sockets will generally be installed using ring circuits in accordance with Appendix 5, Table 5A of the IEE Regulations.

All plugs shall be of moulded rubber or other resilient material complying with BS 1363 or BS 546. The plug shall have internal cord grip. 13 amp plugs shall be fitted with cartridge fuse links to BS 1362. The fuse rating shall be selected to give protection to the flexible cord or cable connected.

All fuses installed within 13 amp plug top, fused spurs, clock connections etc., shall be cartridge fuse links rated at 240 volts, ASTA certified for compliance with BS 1362 'General purpose fuse links for domestic and similar purposes', or BS 464 'Cartridge fuse links (rated at up to 5 amperes) for AC and DC service', or BS 2950 'Cartridge fuse-link for telecommunications and light electrical apparatus'.

All equipment, which is locally fused, shall have fitted fuses with characteristics, which are recommended by the manufacturer of the equipment.

If any appliance or equipment suffers due to incorrect fusing of the appliances, such appliances or equipment shall be repaired or replaced at the electrical Sub-Sub-Contractor's cost, to the satisfaction of the Engineer.

INSPECTION AND TESTING

A visual inspection shall be made in accordance with IEE Regulations 612-1. References shall be made to appendix 14 of the IEE Regulations, which is a checklist for initial inspection of installations.

The electrical installation shall be inspected and tested by the electrical Sub-Sub-Contractor in accordance with part 6 of the IEE Regulations.

Where any part of installation is to be concealed within a building, fabric tests shall be made to ensure that the installation is satisfactory prior to concealment.

Upon completion of the works the whole installation shall be subjected to the tests detailed hereafter and every defect shall be noted, corrected and brought to the notice of the Engineer.

All tests shall be witnessed by the Engineer to his full satisfaction and he shall be given at least one week's notice in writing of the proposed tests.

All labour and test instruments shall be provided by the electrical Sub-Sub-Contractor and the instruments shall be correctly calibrated and certified for the limits of accuracy required and shall be operated by competent person. If, in the Engineer's opinion, a particular instrument is not suitable, then an acceptable alternative shall be provided. The Engineer shall be at liberty to demand the use of any testing instrument or apparatus that he may reasonably consider to be necessary in the execution of the testing.

In the event of the installation failing to pass the test, the Engineer has the full authority of the Employer to deduct from the Contract Price all reasonable expenses incurred, due to him being required to attend a repetition of the test.

The following items, where relevant, shall be tested in the sequence indicated. Standard methods of testing, in respect of some of the following regulations of this section, are given in Appendix 15 of the IEE Regulations.

- i) Continuity of ring final circuit conductors.
- ii) Continuity of protective conductors, including main supplementary equipotential bonding.
- iii) Earth electrode resistance.
- iv) Insulation resistance.
- v) Insulation of site-built assemblies.
- vi) Protection of barriers or enclosures provided during erection.
- vii) Insulation of non-conducting floors and walls.
- viii) Polarity.
- ix) Earth fault loop impedance.
- x) Operation of residual current devices and fault voltage operated protected devices.

Upon completion of all tests and commissioning, two copies of detailed certificates shall be provided by the electrical Sub-Contractor to show that the equipment, materials, installation etc., have been tested and commissioned. One copy of each, duly completed and signed shall be submitted to the Engineer within 154 days of the results being obtained. The second copy of the certificates shall be retained to be included with operator and maintenance manuals.

The results of the test and details of completion for the electrical test shall be detailed on the Test and Completion Certificates respectively; issued by the National Inspection council for Electrical Installation Contracting or other approved authority.

24 AS BUILT DRAWINGS, AND DOCUMENTATION

Within one month of the date of completion the electrical Sub-Contractor shall provide 3 prints of all electrical drawings showing the electrical installations "As built". In case the electrical Sub-Contractor fails to provide "As Built" drawings as required, these will be prepared by others at the expense of the electrical Sub-Contractor.

APPENDIX 1

SUPPLEMENTARY SPECIFICATION FOR PVC INSULATED CABLES

AND NON-METALLIC CONDUITS WIRING SYSTEM.

1. PVC 1 CABLE

The wiring shall be carried out in 250-volt grade or 440 volt grade for 3-phase PVC Insulated cable, as specified elsewhere run in non-metallic conduit. The cable shall be of the sizes specified on the drawing.

2. INSTALLATION OF WIRING

Cable shall be drawn into accessories, distribution boards and switchgear after the erection of the conduit system. Under no circumstances shall it be permitted to draw cable into an incomplete section of the conduit installation.

3. JOINTS IN CABLES

The wiring shall be carried out on the looping-in principle. All joints shall be made at the terminals of main switches, distribution boards, ceiling roses, switches and socket outlets, etc. and fixed apparatus only. No joints shall be made in boxes unless approved.

4. CAPACITY OF CONDUITS

The cable shall run in the conduit so as not to exceed the capacities as set out in Appendix 4 (Table 4) of the IEE Regulations (17th Edition with current amendments).

Conduits shall be best quality new super high impact grade heavy gauge 'A' riding PVC unplasticised conduits as manufactured by Metro Concepts EA limited suitable for plain connections.

Conduit of sizes less than 20 mm shall not be used without the written authority of the Engineer.

5. BENDING

The conduit shall be bent and formed strictly in accordance with the manufacturer's instructions: -

- i) Small size, i.e. 20 and 25 mm shall be bent cold by inserting the correct size bending spring. It is essential for right angle bends that the conduit is bent past 90 degrees to allow for "spring back".
- ii) Large size of conduit shall be pre-heated before inserting rubber cord to prevent kinking. Conduit badly formed or bent or damaged in any way, shall not be used.

6. JOINTING

Joints shall be made water-tight by the use of 'Egaweld' cement applied with a brush or rug. 'Egaweld' shall be applied to the complete circumference of conduit. Conduit shall be thoroughly cleaned at the ends to ensure a good adhesion of the fittings. 'Egaweld' shall not be permitted to enter into the conduit.

7. CONDUIT FITTINGS

All conduit fittings and accessories, including couplers, ordinary clips, saddles, pipe hooks, reducers, stopping plugs, lockouts and male and female bushes shall be manufactured dimensionally, similar to B.S.S. 31/1940. Solid tees shall not be used. Solid inspection elbows or bends or inspection tees shall be used only in exceptional circumstances and then only with D.R.'s approval.

Where it eases the installation of cast-in-situ back entry boxes on the loop-in system, purpose made bends manufactured by Egatube and comprising a tight bend with a push socket at one end and a threaded socket at the other end may be used with the D.R.'s approval.

8. **FIXING OF CONDUITS**

Conduit shall be installed on the loop-in system and shall either be cast-in-situ in the main concrete structure, concealed in chases cast in concrete walls, or chases cut in solid partition walls, run in ceiling spaces or in hollow partitions of floors, or concealed below the floor screed, whichever shall prove to be the most suitable method of installation for use in the building under construction. Unless it is clearly specified or shown on the drawing, the method of installing conduit shall be subjected to the approval of the D.R.

Sunken conduit run in chases in walls shall be fixed by means of mild steel pipe hooks or non-metallic saddles spaced not more than 1 m apart. Where conduit is concealed behind plaster it shall be sunk to a depth of either 10 mm below finished plaster level, or installed flush with the structural wall level before application of plaster, whichever is the lesser depth.

Conduit fixed on the surface of walls or ceiling shall be fixed by spacer bar saddles fixed not more than 1 m apart.

Surface conduit shall also be fixed 230 mm on both sides of all boxes, the box itself securely fixed. Where such an arrangement of boxes and saddles would prove to be both unsightly and unnecessary, short lengths of conduit not exceeding 1 m in length between boxes need not be secured further than by connection to the adjacent boxes. In such cases the D.R. reserves the right to insist upon additional fixing being provided, should he for any reason whatsoever consider such additional fixing necessary.

Where two or more lines of conduit run parallel to each other, on the surface of walls, etc., the distance between them shall not be less than 15mm and conduits shall not cross.

Conduit shall be installed in such a manner as to prevent interference with other services and shall be kept at least 180 mm clear of gas or water pipes, and heat in excess of 68 degrees C.

A means of expansion shall be provided in conduit runs in excess of 6 m without any bend or set, by use of 'Egetude' expansion couplings, which shall also be used at building expansion joints.

Conduit cast-in-situ shall be frequently secured to the steel reinforcement work, with heavy binding wire to prevent movement of the conduit and conduit boxes during the pouring and vibrating of the concrete. Outlet boxes shall be securely fixed to the shuttering with nails, or by means, which shall be visible as a marker on removal of the shuttering only where marks can be concealed. Conduit shall be installed after the first grid of steel reinforcement work is securely fixed and all open ends of conduits shall be protected by couplings plugged with a suitable non-metallic stopping plug. The number of right angle bends in conduit cast-in-situ shall not exceed two between boxes.

Immediately prior to installation the wiring all conduit and fittings shall be dried and cleaned out by drawing through a cloth swab. Rawl plugs shall be used for fixing to brickwork, self-tapping screws for fixing to aluminium section, raw nuts, raw-anchors spring toggles, gravity toggles or rawlbolts, shall be used for fixing to other materials as approved by the D.R.

Corners shall be turned by easy bends or sets made in accordance with the manufacturer's instructions without altering the section or splitting conduit.

9. **CIRCULAR INSPECTION**

Boxes will not be permitted in floors unless approved. Boxes cast-in-situ must face downwards from the ceiling/floor section. Small standard circular non-metallic conduit boxes, conforming dimensionally with B.S. 31/1940 with standard circular non-metallic (4mm) lids and nylon fixing screws, shall be provided and fixed at all junctions.

The above circular boxes or equivalent looping boxes shall be provided and securely fixed for all ceiling points. When the conduit is run on the surface, all circular boxes for ceiling points shall be fixed with screws.

Where ceiling roses occur and the ceiling box is recessed below the finished level of the ceiling, suitable extensive rings to accommodate the ceiling rose must be provided. Where ceiling boxes, including extension rings, are flush with the ceiling surface, break joints rings shall be provided to hide the joints.

Where a non-metallic outlet box of thermoplastic material is used for the suspension of a lighting fitting, care shall be taken to ensure that the temperature of the box does not exceed 60 degrees c. The weight suspended from the box shall not exceed 3 kg.

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

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

Conduit and trunking shall be mechanically and electrically continuous. Conduit shall be tightly screwed between the various lengths so that they butt at the socketed joints. The internal edges of conduit and all fittings shall be smooth, free from burrs and other defects. Oil and other insulating substance shall be removed from the screw threads. Where conduits terminate in fuse-gear, distribution board, adaptable boxes, non-spouted switchboxes, etc., they shall, unless otherwise stated, be connected thereto by means of smooth bore male brass brushes, compression washers and sockets. All exposed threads and abrasions shall be painted (using an oil point for black enamelled tubing and galvanised tubing immediately after the conduits are erected. All bends and sets shall be made cold without altering the section of the conduit. The inner radius of the bend shall not be less than four (4) times the outside diameter of the conduit. Not more than two right angle bends will be permitted without the inter-position of a draw-in box. Where straight runs of conduit are installed, draw-in boxes shall be provided at distances not exceeding 15 m. No tees, elbows, sleeves, either of inspection or solid type, will be permitted.

Conduit throughout shall be of sufficient section and so arranged with draw-in boxes to allow easy drawing in and out of any one or all of the cables in the conduit.

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

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

Conduits installed and buried in walls shall allow a minimum of 15 mm cover. These conduits and those cast-in-situ concrete slabs shall be given one coat of rust prevention paint before installation of conduit and before concrete is placed. Sunk circular conduit boxes shall be provided with break joint rings of white moulded material or metal.

Surface conduit shall be run in square symmetrical lines and shall be marked on site for approval before installation. Conduits shall be fixed by means of distance saddles spaced at not more than 1.2 m for 20mm and 50mm conduit and 1.5 m for larger sizes. Conduits shall be fixed each side of conduit boxes at a distance not exceeding 250 mm, and the saddles shall be equally spaced.

Where conduit runs enter specified areas requiring flameproof equipment, barrier boxes shall be inserted immediately before the conduit enters the flameproof area.

All conduit installed within this area shall be solid drawn galvanised, as shall be conduit fittings and accessories and Buxton Certified as suitable for Group 11 Hazards. Equipment shall comply with B.S 229, B.S.S. 889, and Code of Practice C.P. 1003. In no case shall conduits from different distribution boards be connected at one box, likewise cables from different distribution boards shall not be housed in the same conduit specified.

All conduit boxes, except loop-in pattern concrete floor shall be fixed direct to the structure apart from the support provided by the conduits. Box lids where required shall be heavy gauge metal, secured by means of zinc plated or cadmium steel screws. All adaptable boxes and lids of the same size shall be interchangeable.

Boxes used in conjunction with mineral insulated copper sheathed cable boxes shall be galvanised and painted after erection.

Draw-in boxes in the floor are generally to be avoided but where they are essential they must be grouped in positions approved by the D.R. and covered by suitable floor straps, with non-ferrous tray and covers.

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

The Sub-Contractor must take full responsibility for the fillings of all covers, but the fillings in materials will be supplied and the filling shall be carried out by the Main Building Sub-Contractor.

Where it is intended to fix enclosed lighting fittings directly to a box to suspend a fitting of weight in excess of 3 kg., Egetude steel insert clips shall be used.

10. **SWITCH AND SOCKET OUTLET BOXES**

All boxes intended for switches, socket outlet or other outlets shall be fitted with brass ferrules to accommodate fixing screws.

11. **STOPPING PLUGS**

All spare ways in junction boxes, etc., left for possible future extensions shall be fitted with the stopping plugs.

12. **EARTHING**

Where fittings and accessories require earthing, an earth continuity conductor be run through the conduit. The earth continuity conductor shall be a green coloured PVC insulated copper wire of minimum size 2.5 sq. mm and shall be continuous between terminals. Where the earth terminal is formed by a brass screw and washer, "Ross Courtney" type terminations shall be used. All switch, socket outlet, ceiling boxes etc., shall be supplied with an earth terminal.

13. **EARTH CONTINUITY**

Each final sub-circuit that is required to be earthed shall be provided with its own individual earth continuity conductor which shall be run from a terminal on the earth bar in the distribution board or consumer's control unit protecting any particular final sub-circuit.

PART B:

PARTICULAR SPECIFICATION

FOR ELECTRICAL INSTALLATIONS

PART B:

PARTICULAR SPECIFICATIONS FOR ELECTRICAL INSTALLATIONS

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PART B:

PARTICULAR SPECIFICATIONS

SECTION 1: GENERAL

1.01 The Electrical Contractor shall supply labour and supply, deliver, install, fix, connect, test, label, and commission the electrical works, clean, complete and working to every detail as described in the specification and by related specifications to the satisfaction of the Consulting Engineer/Architect and the Client.

1.02 **Exclusions**

Excluded from this contract is:-

- i) Control panels for motor-starters and internal wiring between control-panels, motor thermostat, etc.

SECTION 2

SUPPLY AND DISTRIBUTION

2.01 Supply and Distribution system

The electrical power supply is from a ground-mounted transformer located within the premises inside the power room at the ground floor. The transformer supplies power through cable ladders to the Main LV Switchboard located at the basement level. Power is then distributed to the electrical riser busbar system via cable trays and cable ladders, for onward distribution within the building.

Unless specifically stated otherwise, vertical power distribution shall be via riser (bus-bar) trunking with tap-offs per floor. Exact trunking details to be given at the time of approving shop drawings for the main switchboard.

2.02 Main Switch Boards

There are 2 No. 2000A main switchboards in this contract. Each switchboard has a 1600A mains incomer. One switchboard shall be used during temporary connections, and later for redundancy (Switchboard 2).

The schematics for the main switchboards are shown on drawings. The specific technical details, including the various components of the switchboards are shown in the bills of quantities, as highlighted below:

Type: Free-standing purpose made front access Main LV Switchboard (Fully Type-Tested Assemblies – TTA), modular, metal clad, manufactured in 14 SWG galvanised mild steel sheet and finished in cream (or appropriate colour) powder coating as shown on the schematics. The busbar ratings to be 2000A (3-PHASE) as shown. The Switchgear to be as ABB, Schneider Electric or equivalent and approved, complete with communication coils for BMS (the other details as per Particular Specifications).

BMS Compatibility: Incorporation of RS485 ports for BMS system linked to all MCCBs, Digital energy meters, AVR system and the Generator Auto changeover system.

Protection: The entire switchboard assembly to be Form 4b, i.e. totally safe with all live parts completely inaccessible on opening the outside cover, minimum IP54.

Power Factor Correction: 350kVars Automatic Power Factor Correction Capacitor Bank switched in 4 step of 50 KVars, 4 steps of 25 KVars, 4 steps of 10 KVars, and 2 steps of 5 KVars. The bank to be made from low-loss bio-degradable capacitive units, complete with earthed enclosure. All the contactors, controls and indicator lamps, including a digital read-out screen to be included, complete with 500A TPN Motorized MCCB with adjustable time-delay (adjustable from 200A-500A).

All switch fuses, fuse switches, MCB's, MCCB's including meters shall be of reputable manufacture meeting current British and Kenya Standards as stipulated in the general specifications. Any other quality that does not strictly meet these standards shall not be acceptable.

All incoming circuit breakers in the Main Switchboard to be motorized and set at different timings to allow for sequential loading of the standby generator.

2.03 **An Automatic Voltage Regulator**

There is 1 No. 1000kVA Automatic Voltage Regulator with the following specifications:

Rating:	1000 kVA
Power Supply:	3 Phase, 415V/240V
Input Voltage Tolerance:	20% (from 332V to 498V for 3 Phase, and 192V to 288V for 1 Phase)
Operation:	Independent correction for each Phase
Output:	+/- 0.5% of 415V/240V
Input Frequency:	50/60Hz +/- 5%
Rated Current:	1391 Amps
Admitted Load Variation:	0 to 100%
Admitted Load unbalance:	Up to 100%
Correction Speed:	18ms/V
Waveform distortion:	<0.2%
Efficiency:	> 98%
Cooling:	Natural air cooled (free convection, with fans from 35° C)
Ambient temperature:	-10° C to + 40 ° C
Storage temperature:	-20° C to +60 ° C
Relative Humidity:	90% (without condensate)
Warranty:	Not less than 2 Years

The AVR to be complete with 7-position selector to read input/output (PH/PH), internal trimmer to adjust output voltage +, Pilot lamps for operating status, Input/Output terminals boards.

2.04 **Riser Busbars**

The contract has 1 set of 1800A, 660V, 3-phase, 5-conductor, insulated copper busbar, to IP54 degree of protection, conductor cross-sectional area 800mm² (80mm x 10mm) with 4 active conductors, a short circuit capacity (peak/RMS) of 84/32 kA, with maximum voltage drop (mV per ampere per meter) of 0.06 and an average weight in Kg/m of 12.4. The riser busbar has a feed-in unit complete with 1600A TPN MCCB in bonded metallic enclosure and 350A TPN MCCB-type pull-out tap-off units per floor. Additionally, there is a 4-hour ceramic fibre fire barrier completely fitting the trunking at floor slab penetrations.

PART C:

**TECHNICAL SPECIFICATIONS
FOR 2No. 600 KVA SOUND-PROOFED, SELF-
SYNCHRONIZED STANDBY GENERATOR SETS**

**PART C: TECHNICAL SPECIFICATIONS FOR SUPPLY AND INSTALLATION OF 2No. 600 KVA
SOUND-PROOFED SELF SYNCHRONIZED STANDBY GENERATOR SETS AND THE ASSOCIATED
ANCILLARY**

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SUPPLY AND INSTALLATION OF 2No. 600 KVA SOUND-PROOFED, SELF SYNCHRONIZED STANDBY GENERATOR SETS AND THE ASSOCIATED ANCILLARY

TECHNICAL SPECIFICATIONS

1. SCOPE OF WORKS AND SERVICES

- 1.1 The work covered by this specification includes the supply, delivery, installation, setting at work, commissioning to the satisfaction of the Architect/Engineer and maintenance for a period of twelve months, of two Diesel Engine Generating Sets complete with all necessary auxilliary equipment and as indicated.

2. RELATED DOCUMENTS

- 2.1 The specification shall be read in conjunction with any supplementary specification(s), schedule(s) and drawing(s) issued with it and enumerated in the invitation to tender. In the event of a discrepancy between this specification, drawing issued with it, or the bills of quantities forming part of the contract, the bills of quantities shall take precedence, followed by the drawings.
- 2.2 The words 'as indicated', 'where indicated', 'unless otherwise indicated' refer to items or requirements indicated elsewhere in the tender documents issued in connection with the contract e.g. on a drawing, in a supplementary specification or in Schedule 1.

3. REGULATIONS

- 3.1 The equipment shall comply with all relevant statutory standards and regulations current at the date of tender (unless otherwise indicated) and in particular the following:
- 1) I.E.E. Regulations for the Electrical Equipment of Buildings.
 - 2) Regulations under the Electrical Power Act.
 - 3) Factories Act.
 - 4) Any special regulations issued by the local Electricity or Water Undertakings.
 - 5) Energy and Petroleum Regulatory Authority Standards
 - 6) Kenya Power and Lighting Standards

4. STANDARDS

- 4.1 The equipment and all components shall comply with all relevant British Standards and Codes of Practice or other equal and approved standard specifications and codes. Where the equipment or part of it complies with other internationally recognized standards which are less stringent than British Standards or Codes or Practice, then the difference is to be stated in writing and must accompany the tender submission.

5. OPERATING CONDITIONS

- 5.1 The equipment and all components shall be suitable for operation in ambient conditions of 5° to 40° centigrade and up to 100% relative humidity in an unheated ventilated building.
- 5.2 All ratings of equipment and components shall be interpreted as site ratings and NOT sea level or other ratings. Details of the site are given in the bills of quantities.
- 5.3 Contractor is deemed to have visited the site and if unable to locate it to apply to the Client for directions to enable him to do so. The Contractor is deemed to have acquainted himself therewith as its nature, position, means of access, etc., and no claim in this connection will be allowed. No claim will be allowed for travelling or other expenses which may be incurred by the Contractor in visiting the site or preparing a tender for the contract works, and subsequent site visits to be called by the Architect during the contract period.

- 5.4 The sets shall be capable of operating continuously and satisfactorily in a medium dust laden atmosphere as defined in BS 1701 and in accordance with BS 5514.

6. FUNCTIONAL REQUIREMENTS

- 6.1 The sets shall be used for emergency operation (standby power operation). It shall be possible to start, operate and stop the sets manually independently of any automatic features.
- 6.2 Within the operating conditions specified (Section 5) the sets shall be capable of starting and accepting full load within the shortest possible time and in any case not more than 10 seconds. Any special features included to achieve this shall be stated in Schedule 2.
- 6.3 The sets shall have a Synchronizing Auto Start Control Module such as DSE8610 (minimum) for self-synchronization without the need for an additional Synchronizing panel. The control module shall be BMS ready (to be complete with RS-485 for generator BMS integration).

7. PERFORMANCE

- 7.1 The output rating of the set is kVA, the voltage, the number of phases and the frequency shall be as specified in Schedule 1.
- 7.2 Within the operating conditions specified, each set, equipped with its standard air intake filters, shall be capable of delivering its rated output continuously at rated voltage and 0.8 lagging power factor and of delivering 10% in excess of the continuous maximum for a period of one hour in any 12 hour period.
- 7.3 The steady state voltage shall be maintained within 2½% of the rated voltage under the control of the voltage regulator between the cold start ambient conditions and the maximum working temperatures, at any load from no load to 10% overload and from unity to 0.8 lagging power factor. After any change of load the voltage shall not vary by more than plus or minus 15% of the rated voltage and shall return to within plus/minus 3% within 3 seconds and to within plus/minus 2.5 % of rated voltage within 15 seconds. On starting the voltage overshoot shall not exceed 15% and shall return to within 3% in not more than 3 seconds.
- 7.4 The governing of the set shall be such that the steady load speed band shall not exceed 1% of rated speed. Sudden removal of the full load at rated frequency shall not cause the frequency to rise above 10% of rated frequency and it shall return to within 5 % of rated frequency within 3 seconds. The resultant steady state frequency shall return to 4% within 15 seconds. If full load is then reimposed the frequency shall not fall below 94% of rated frequency and shall return to 99% within 3 seconds and to the rated frequency within 15 seconds.
- 7.5 The cyclic irregularity of the set at full load shall not be worse than 1/150.
- 7.6 The deviation of the waveform of the voltage output from a pure sine wave shall not exceed the limits specified in BS 2613.
- 7.7 Radiated interference shall be suppressed to the limits specified in B.S. 800 and B.S. 833.

8. SET ARRANGEMENT

- 8.1 The set and its auxiliaries shall be mounted on a sufficiently substantial underbase. All items which must be held in correct relative alignment shall be located by means of dowels.
- 8.2 The set shall be designed and supplied for operation bolted to the floor on robust antivibration and shock absorbing devices.
It shall have adjusting screws for optimum setting and levelling and be so designed and installed that no appreciable engine vibration shall be transmitted to the floor or to any surroundings.

- 8.3 A new generator house will be constructed. The Sub-Contractor shall provide early enough full details of fixing requirements, and any modifications that may be necessary for the proposed house and foundation. Particularly, the Sub-Contractor appointed to supply the generator must confirm if the proposed house is adequate for the generator in terms of height, length, width and provision of natural ventilation. The Sub-Contractor will be responsible for the cost of modifying the generator house if he fails to provide the above information immediately.

The Sub-Contractor shall however provide means for bolting down the set. If the plinth provided is not sufficient the Sub-Contractor shall arrange to extend it to the Architect's satisfaction.

- 8.4 Bearings shall be suitable for operation over long periods without the need for replacement of the lubricant. Oil lubricated bearings shall be fitted with a visible oil level gauge.

9. DIESEL ENGINE

- 9.1 The engine shall be designed for satisfactory operation on fuel oil complying with BS 2869 Class D and the lubricating oils stated in Schedule 2.

- 9.2 The governor shall control the frequency with the limits stated in Section 7.4. Manual speed adjustment shall be provided over a range $\pm 5\%$ of the rated speed at any load.

- 9.3 The engine shall be totally enclosed, with forced lubrication from an integral pump having on the suction side a coarse strainer and on the delivery side a dual 'full flow' fine filter fitted with a changeover cock incorporating pressure by-passes, so that the oil flow to the engine is maintained if the filter should chock.

Alternatively a single filter of the self-cleaning type fitted with a by-pass relief valve and having the same filtration performance may be provided. The capacity of the lubricating oil system shall be sufficient to enable the engine to run continuously for 72 hours.

- 9.4 A filter fitted with by-pass relief shall be inserted in the fuel line immediately before the pump(s). The fuel filter element shall be incapable of passing particles larger than 5 micrometers. The fuel system shall be so arranged that fuel resulting from filter, pump or pipe spillage shall be incapable of entering the engine pump.

- 9.5 Air filters complying with BS 1701, Grade 'A' or Grade 'B' suitable for use in a medium atmosphere shall be fitted on the engine air intake(s).

- 9.6 No significant critical speed of the complete shaft system, including the generator, shall be within 15% of the rated speed.

- 9.7 A manually reset overspeed trip shall be fitted to stop the engine if its speed exceeds the rated speed by 15%. A mechanical trip is preferred but an electrical overspeed trip may be offered. Both types shall be equipped with a pair of contacts which close on operating of the trip. If the device is belt driven, at least two belts shall be provided and the drive shall be capable of carrying full load with one belt removed.

- 9.8 The set shall be arranged such that on shut-down the cooling water temperature shall not rise with residual heat so that the high water temperature lock-out operates (Section 23.1 (4) (a)).

- 9.9 The engine shall be naturally aspirated as indicated in Schedule No. 1.

- 9.10 Starting shall be by means of electricity supplied from a starter battery. The starter motor shall be of the axial type, de-energised by a device operated from the engine.

- 9.11 Suitable means shall be provided for turning by hand the engine main shaft and the associated generator to facilitate inspection and overhaul. A means of manual starting is to be provided as indicated in Schedule No. 1.

- 9.12 The engine shall be capable of being started from any crank position.

- 9.13 A thermostatically controlled 240 - volt immersion heater may be fitted in the engine lubricating oil sump to facilitate starting. The heating surface loading of any lubricating oil heater(s) shall not exceed 0.015 watt per sq. milimetre to avoid carbonisation of the oil.
- 9.14 An efficient exhaust silencer with adequate draining facilities shall be supplied, and as indicated in Schedule 1 shall be installed in the generator house with the exhaust discharge into the steel chimney. The exhaust silencer shall be so arranged that it may be readily relocated if required.

10. FUEL STORAGE TANK

- 10.1 The fuel storage tank shall be located close to the building and in the current Kenya laws relating to fuel storage close to buildings or be mounted on a plinth, which shall be properly fenced. Type of location is given in Schedule 1.

A minimum capacity of the tank shall be as per schedule 1. The tank shall be fitted with a hand operated fuel transfer pump and the necessary piping to allow the transfer of fuel from it to the daily service tank.

- 10.2 A three-way cock shall be fitted in the line from the tank to the engine to enable fuel to be supplied from a source other than the fuel tank. The position of the cock shall be clearly marked "TANK", "OFF" and "AUXILLARY".
- 10.3 The daily service fuel tank shall be equipped with a clearly visible plastic tube fixed vertical on its side to enable the level of the fuel in the tank to be seen readily. In addition to that it shall be supplied with drain, vent, overflow and inlet and outlet connections.

11. ENGINE INSTRUMENTS

- 11.1 The following instruments shall be provided:

- 1) a lubricating oil pressure gauge
- 2) a tachometer
- 3) a water thermometer
- 4) an exhaust gas pyrometer or thermometer mounted near the manifold.
- 5) lubricating oil thermometers on the inlet to and outlet from the engine, when a lubricating oil cooler is fitted.

12. COOLING SYSTEM

- 12.1 The engine shall be both air cooled and water cooled as indicated in Schedule 1.

13. AIR COOLING OF ENGINE

- 13.1 Cooling air for the engine and lubricating oil shall be provided by fan(s) mechanically driven from the engine. The cooling system shall be adequate for the total requirements of the engine when running on continuous full load and on 10% overload for one hour in accordance with BS 5514 and under the conditions of Section 5.
- 13.2 The engine shall be so designed that the cooling air discharges into or is drawn through a reasonable airtight ducted assembly enclosing the lubricating oil cooler, the cylinder barrels and the cylinder heads of the engine.

This assembly shall terminate in a flanged outlet to which trunking shall be readily attached, to enable hot air from the cooling system to be ducted and discharged outside the building together with exhaust.

Belt driven fans shall have at least two belts and the drive shall be capable of transmitting the full load with one belt removed. The cooling air temperature shall be controlled so as to maintain a safe working temperature of the cylinder head(s) and the engine shall shut down if the maximum is exceeded (see section 22.1 (4) (b)).

14. WATER COOLING OF ENGINE

- 14.1 A radiator of the air blast type shall be provided. It shall either have separate section for water and for lubricating oil or be arranged for jacket water cooling only.
- 14.2 Belt driven fans shall be provided with at least two belts and the drive shall be capable of transmitting the full load with one belt removed.
- 14.3 Circulation of the jacket water and lubricating oil through the respective radiator sections and/or heat exchanger shall be by means of pumps mechanically driven by the engine. Belt driven pumps shall be provided with at least two belts and the drive shall be capable of transmitting the full load with one belt removed.
- 14.4 An easily visible flow indicator provided with contacts shall be fitted in the water outlet from the engine; the contacts shall close in the 'no-flow' condition and shut down the set.

Alternatively in thermosyphon systems and scaled or pressurised radiator systems the flow indicator may be dispensed with providing the engine shuts down by the operation of the high temperature or low oil pressure safety devices in accordance with Section 22.1.
- 14.5 A thermostatically controlled diverter valve shall be inserted in the engine water discharge pipe with a return to the circulating pump section, to maintain the circulating water at the optimum temperature irrespective of load. Alternatively a thermostatic by-pass will be accepted.
- 14.6 A radiator makeup/expansion tank, fitted with float control inlet shall be provided. If a sealed or pressurised unit is offered the tank may be dispensed with.
- 14.7 Where indicated in Schedule 1 provision shall be made on the radiator framework to permit the attachment of ducting for the discharged air.
- 14.8 A thermometer shall be mounted near the cylinder head(s) to indicate water temperature. Where a lubricating oil cooler is fitted, inlet thermometers shall be mounted at the oil to and outlet from the engine. Alternatively, thermocouples may be provided at all thermometer positions and taken out to an instrument panel.
- 14.9 Adequate drains shall be provided at low points in the water and lubricating oil systems of the radiator and, where applicable, of the heat exchanger.

15. ALTERNATOR AND EXCITER

- 15.1 The alternator shall be directly coupled to the engine and be sized such that it will accept the maximum output of the engine including overload.
- 15.2 Where the alternator is of the rotating armature type a slipring shall be provided for the neutral.
- 15.3 The alternator shall be capable of operating within the range of $\pm 5\%$ of the nominal voltage according to the setting of the automatic voltage regulator.
- 15.4 Three-phase machines shall be star connected, and a diagram showing the terminal markings and phase rotation shall be provided in the terminal box. Cables connecting the machine winding and machine terminals shall not have a higher derating factor for temperature than the windings.
- 15.5 Machines shall be both clean protected and drip proof. Overall drip proof covers will be accepted.

15.6 The insulation shall comply with BS 2757 excluding Classes Y and A. The insulation shall have an oil, moisture and fungus proof finish, with a surface which will not retain dust or condensation, it shall be possible to put the set in service after long periods, in unheated storage without the necessity for drying up the insulation.

15.7 The alternator shall be capable of withstanding a short circuit for three seconds when under the control of the automatic voltage regulator.

16. EXCITATION

Alternators using exciters with commutators shall be designed for an excitation voltage of full load of not less than 50 volts unless prior approval is given.

16.2 Where rotary exciters are fitted they may be direct coupled or driven by Vee-belts or chains. The speed of belt or chain driven exciters shall not be within 5% of a multiple of the alternator speed. Vee belt drive shall have at least two belts and shall operate satisfactorily if one belt is removed. Special attention shall be given to ensure satisfactory commutation, brush life and freedom from voltage drift. The neutral and running, positions of the brushes shall be clearly marked.

16.3 If static excitation and/or control system are offered, a description of the equipment and method of operation shall be submitted for approval.

17. ELECTRICAL CONTROL PANELS

A control panel shall be provided to accommodate the following:

- 1) An automatic voltage regulator
- 2) A hand field regulator and a 'HAND AUTO' switch
- 3) An alternator field switch
- 4) Meters (Section 21)
- 5) A neutral earthing link
- 6) A change - over - Contactor

18. AUTOMATIC VOLTAGE REGULATOR

The automatic voltage regulator shall be of a type which will maintain its adjustment for long period without attention. It shall be provided with an adjustment for setting the level of the controlled voltage to within $\pm 5\%$ of the nominal voltage.

19. HAND FIELD REGULATOR

19.1 The hand field regulator shall give stable control of the voltage from 90% of the normal voltage at no load when cold to normal voltage at 10% over-load when hot, under the specified operating conditions.

If a static excitation system is offered which does not permit the use of a hand field regulator this shall be stated in the Tender together with performance details.

19.2 If the hand field regulator must be left in a precise position when the set is under the control of the automatic voltage regulator then this position shall be clearly marked.

20. METERS

The following meters shall be provided. They shall comply with BS.89, Table 7.

- 1) One maximum demand ammeter in each line
- 2) One voltmeter, and a selector switch to read line to line and line to neutral voltages.
- 3) A frequency meter
- 4) A field ammeter
- 5) Maximum KVA meter and Kilowatt hour meter.

21. AUTOMATIC STARTING PANEL

- 21.1 Automatic starting panel shall be provided which shall contain all necessary equipment for controlling the automatic starting and stopping of the set, lubricating oil priming (if necessary), auxiliaries, fault warnings and shut-downs. All faults, warnings and shut-downs shall be separately indicated. There shall be test facilities for indication lamps etc., preferably by means of a single test button.
- 21.2 Means shall be provided for isolating all supplies to the starting panel either by an isolating switch or by withdrawable fuses. For external use, a 24 volt battery supply from fused outlet terminals shall be provided only when the engine is running and in service (see Section 28.3).
- 21.3 The starting and control circuits shall be rated at 2 amps at the control circuit voltage.
- 21.4 A selector switch shall be fitted having three positions as follows:
 - 1) 'Local' In this position it shall be possible to start and stop the set by push buttons mounted on the panel.
 - 2) 'Remote' In this position the set shall be capable of being started and stopped from a remote circuit.
 - 3) 'Off' In this position all the automatic features shall be inoperative.
- 21.5 When the set is stopped other than under lock-out conditions it shall be self resetting, ready for the next start.
- 21.6 In the 'Off' position (Section 2.4 (3)) or with the automatic equipment disconnected, the set shall be suitable for starting by manual means, e.g. by cranking or direct operation of the starter solenoid.
- 21.7 All switches and push buttons shall be clearly marked to indicate their function.
- 21.8 It shall be possible to operate the "Start and Stop" buttons and the three-position switch and to see the "Set Failure" indications without opening the panel doors.

22. AUTOMATIC CHANGEOVER CONTACTOR UNIT

- 22.1 Where the functional requirements (see Section 6) indicate the set is to be used for automatic standby or mains failure duty a contactor unit shall be provided which on failure of the normal electricity supply will automatically initiate the starting of and effect the transfer of load to the standby generator.
The unit shall be incorporated in the Automatic Starting Panel (see Section 21).
- 22.2 Where failure of the normal supply is referred to, it shall be defined as the complete loss of voltage or the falling below 85% of the normal voltage between any two lines or line and neutral.
- 22.3 The power circuit shall consist of two contactors feeding the distribution branch to which the load will be directly connected. One contactor shall control the normal supply, the other the standby supply, they shall be electrically and mechanically interlocked so that they cannot both be closed at the same time.
- 22.4 On the failure of the normal supply (Section 22.2) the unit shall operate in the following manner:-

- 1) After a delay, adjustable from 0 to 5 seconds (to avoid operation by a transient dip in voltage) a signal shall be given to start the standby generating set.
 - 2) On receipt of a signal from the standby generating set that it is ready to take the load, and providing that the failure of the normal supply still persists, the normal supply contactors shall open and the standby contactor shall close. If the normal supply has been restored before the changeover has taken place, the contactors shall not operate and the starting relay contacts shall open to initiate the shutting down of the standby generating set.)
- 22.5 When the standby supply is in operation and the normal supply is restored and remains within 10% of rated voltage on all phases for a pre-set time (adjustable upto to 30 seconds) the standby contactor shall open and the normal supply contactor shall close; the starting relay contacts shall then open to shut down the standby generating set.
- 22.6 Provision shall be made so that automatic return to normal supply can be prevented if required (Section 22.9 (s)).
- 22.7 Once a start signal has been sent to the standby generating set the engine starting sequence shall be allowed to continue until the set is ready to take the load before a stopping signal is sent.
- 22.8 By the additional external connections the following facilities shall be available:-
- 1) Remote starting of the standby generating set and transfer of the load to it.
 - 2) Restoration of the normal supply on failure of the standby generating set.
- 22.9 Each switch shall be labelled with its duty and each position shall be marked. The following switches shall be provided and fitted:-
- 1) A Contactor Control Switch with make before break contacts and 'Hand' and 'Auto' positions. In the 'Hand' position the unit shall be controlled by the 'Contactor Hand Control Switch' (Section 23.9 (2)). In the 'Auto' position the unit shall operate automatically irrespective of the position of the 'Contactor Hand Control Switch'.
 - 2) A Contactor Hand Control Switch with 'Standby' and 'Normal' positions. This switch shall enable either contactor to be closed when the 'Contactor Control Switch' is in the 'Hand' position.
 - 3) An Auto Return Switch having 'On' and 'Off' positions. In the 'On' position the return to normal supply shall be automatic when the normal supply is restored. In the 'Off' position the standby supply contactor shall remain closed when the normal supply is restored.
 - 4) Contactor By-Pass Switches shall be provided to enable the essential load circuits to be served direct from the normal supply to enable the generator and/or the control equipment to be serviced. The by-pass switches shall be provided with a suitable and conspicuous label warning against leaving the generator in the disconnected position.
- 22.10 Indicating lamps or illuminated panels shall be provided on the front of the panel. They shall be appropriately labelled, easily visible and shall give the following information:
- 'Normal Supply Available'
 'Standby Supply Available'
 'Normal Supply in Use'
 'Standby Supply in Use'
- 22.11 A push button labelled 'Test' shall be provided to enable a failure of normal supply to be simulated. If the button is pressed and released the equipment shall complete the starting sequence, and when the set is ready to take load it shall be shut down. If the button is held depressed the equipment shall change over to the standby supply when the set is ready to take load.
- 22.12 The control circuit supply will be either 12 volts d.c. or 24 volts d.c. depending upon the starting battery and charger (see section 28).

No current shall be drawn from the control supply when the unit is accepting the normal power supply.

23. LOCK-OUT

23.1 The set shall stop and lock out to prevent further starting when:

- 1) It fails to start when the electric starter motor has been in operation for 20 seconds under automatic start conditions;
- 2) The lubricating oil pressure falls to a value at which it would be unsafe to continue running the engine;
- 3) The cooling water does not flow, where the engine is fitted with a visible flow indicator on the cooling water system.
- 4)
 - a) in water cooled engines the cooling water temperature exceeds a predetermined limit
 - b) in air cooled engines the cylinder head temperature exceeds a safe maximum
- 5) The overspeed trip has operated.

23.2 Failure of the circuits concerned in sub-sections 23.1(2) to 23.1(5) shall not cause a set to shut down.

24. FAULT INDICATION

Each lock-out detailed in Section 23.1 shall be indicated by a lamp on the panel together with an indication of the fault causing the shut-down. The fault warning lights shall be set to operate before the lock-out.

25. LOCK-OUT REMOTE INDICATION CIRCUIT

Where indicated in Schedule 1, an auxiliary circuit suitable for 2 amps 50 volts d.c. and 1 amp 250 volts a.c. shall be provided with a contact which is open when the set is available and closed when it is locked-out. This lock-out circuit shall be connected to terminals for the connection of external wires to provide remote indication of lock-out.

26. LOCK-OUT RESET

Reset of the lock-out shall be by hand.

27. FIRE SERVICE TERMINALS

27.1 Where indicated in Schedule 1 an emergency stop circuit shall be provided with terminals marked FS1 and FS2. These terminals shall be initially fitted with a link and are for optional connection to a remote fire switch. Opening of this circuit shall stop the set if it is running, and as long as the circuit remains open the set shall be incapable of being started by 'Hand' or 'Automatic' control. This circuit shall be self-resetting so that the set is available for automatic starting when the circuit is restored.

27.2 Terminals shall be provided in the battery circuit for optional connection to a fire service battery switch. Opening of this switch shall isolate the control circuits from their supply.

28. STARTING BATTERY AND CHARGER

28.1 The battery shall be either 12 or 24 volts and capable of withstanding the loads imposed upon it by its specified duties. It may be of lead-acid or alkaline type, but **MAINTENANCE FREE** and shall be of sufficient capacity for four starts in succession once in an eight-hour period. Auxiliary circuits connected to the battery shall be protected by fuses.

28.2 The battery shall be used to supply any automatic starting and control equipment, and relay operation shall not be impaired when the battery is supplying current to the starter motor.

- 28.3 A single phase supply for battery charging shall be available from the set when it is in service, and where circumstances permit, from an external supply (Section 17(9)).

A charger shall be provided which will recharge the battery after engine starting and maintain it in a charged condition when the set is standing or is in service. It shall also supply the load of any automatic starting and control equipment, and any additional load upto 24 volts level when the set is running and in service. An alternative quick charge rate shall be provided. The charger shall be fitted with an ammeter to measure the charge and discharge current excluding the starter motor current.

9. WIRING

Power cables and small wiring cables interconnecting major components shall be of the heat and oil resistant type and shall be metal sheathed or run in metal ducts or metal conduit, which shall be flexible where appropriate. All cabling and small wiring shall be coded and terminated with lugs or be soldered; the terminations shall be clearly marked with the numbers and letters of terminals to which they are connected. Terminals shall be numbered or lettered, easily accessible and fitted with individual insulating barriers or adequately spaced barriers shall be fitted to separate control terminals from power wiring terminals.

30. EARTHING AND EARTH FIELD

- 30.1 All metal work housing electrical equipment shall be bonded to a brass earthing terminal of not less than ISO bolt M10.
- 30.2 Where indicated in Schedule 1 an earth field is to be provided suitable for requirements.

31. CONTACTORS

Contactors shall have magnetic circuits designed for a.c. or d.c. operation and shall be rated in accordance with BS 775 for Uninterrupted Duty and Utilization Category AC4. Four-pole contactors shall be fitted for three-phase equipment and two-pole contactors for single phase equipment. Main and auxiliary contacts shall be silver faced or better.

32. RELAYS

- 32.1 Relays shall preferably be of the sealed type mounted in approved plug-in bases with spring loaded retainers but if this is not practicable they shall be mounted on individual sub-bases and wired so that easy access is obtained to soldered connections. Unsealed relays shall be enclosed in individual or common dust protecting cases.
- 32.2 Time delays, if of the pneumatic type, shall operate on filtered air. The thermal type of time delay relay will not be accepted.

33. FUSES

Fuses shall comply with BS 88, category of duty AC 46, fusing factor class A1. A spare fuse cartridge for each pole shall be mounted inside each equipment.

34. RECTIFIERS AND CAPACITORS

- 34.1 Rectifiers and capacitors shall be suitable for any transient voltages likely to be encountered during the operation of the equipment and for the internal operating temperature of the enclosures at the specified maximum external ambient temperature.
- 34.2 Electrolytic capacitors will not be accepted unless approved for a specified purpose.

35. ENCLOSURES FOR ELECTRICAL AND CONTROL EQUIPMENT

Enclosures for electrical and control equipment shall be drip proof and dust protecting, with adequate front and rear access as necessary for maintenance and repair. Special attention shall be given to the method of construction and to the mounting of the components to minimize the effect of vibration. Diagrams of connections in durable form shall be mounted inside the enclosures.

36. GUARDING

All live and moving parts shall be adequately guarded to prevent injury to personnel.

37. INFORMATION PLATES

A non-ferrous metal rating plate shall be fixed on the front of the alternator control panel door, giving the following information:

Continuous output	kVA at 0.8 p.f.
Voltage	V -phase - wire
Frequency	Hz
Speed	rev/min
Control Supply	v.d.c
Maker's Serial Number	
Year of Manufacture	

38. DANGER PLATES

Since this set is automatically started a reversible plate 400 x 250 mm shall be fixed by screws in a prominent position on each side of the set. One side of the plate shall be blank and painted the same colour as the set; the other side of each plate shall be signal red (BS 2660, colour 0-006) with the following inscription in white.

**DANGER
THIS MACHINE IS AUTOMATICALLY CONTROLLED
DO NOT WORK ON IT UNTIL
STARTING EQUIPMENT IS ISOLATED
OR DISCONNECTED AND CAUTION
NOTICES ARE DISPLAYED**

39. TROPICALISATION OF COMPONENTS

All components shall be fully tropicalised and protected against mould growth.

40. FINISH

- 40.1 All ferrous metal works shall be either painted or processed to give a rust proof coating.
- 40.2 Ferrous metal work to be painted shall first be either shot blasted or thoroughly wire brushed to remove all scale and oxide and immediately given one brushed coat or two sprayed coats of primer. After not less than 4 hours, one brushed or two sprayed undercoats followed by one brushed or two sprayed finishing coats of heat and oil resisting quality paint shall be applied.
- 40.3 Successive coats of paint shall be of slightly differing shades. Interior surfaces of electrical equipment enclosures shall be finished white and all external surfaces shall be finished grey (BS 2660, colour 9-097). Engine crank cases shall not be painted internally unless the paint is resistant to the lubricating oil.

41. MAINTENANCE MANUAL

- 41.1 Upon Practical completion of the Works the Sub-Contractor shall furnish to the Engineer four copies of a Maintenance Manual relating to the installation forming part of all of the Works.
- 41.2 The Manual shall contain full operating and maintenance instructions for each item of equipment, plant and apparatus set out in a form dealing systematically with each system. It shall include as may be applicable to the Sub-Contract Works the following and any other items listed in the text of the Specification hereinafter.
- 1) System Description
 - 2) Plant
 - 3) Valve Operation
 - 4) Switch Operation
 - 5) Procedure of Fault Finding
 - 6) Emergency Procedure
 - 7) Lubrication Requirements
 - 8) Maintenance and Servicing Periods and Procedures
 - 9) Colour coding Legend for all Services
 - 10) Schematic and wiring Diagrams of Plant, Apparatus and switchgear.
 - 11) Record Drawings, true to scale, reduced to International A4 size.
 - 12) Lists of Primary and Secondary Spares.
- 41.3 The Manual is to be specially prepared for the Contract Works, and Manufacturers' standard descriptive literature and plant operating instruction cards will not be accepted for inclusion unless exceptionally approved by the Engineer. The Sub-Contractor shall, however, affix such cards, if suitable, adjacent to plant and apparatus. One spare set of all such cards shall be furnished to the Engineer.
- 41.4 Manuals shall be printed on good quality paper preferably International A4 size and shall have stiff covers of durable material. The maker's name and the rating of the set shall appear on the front covers.

42. DRAWINGS

The Sub-Contractor shall provide to the Architect four sets of the following drawings:-

- 1) Where indicated, a building drawing showing details of cable entries, pipe entries and ducts required, and the exhaust system.
- 2) A general arrangement drawing showing the principal dimension and weight of the set.
- 3) A general arrangement of the diesel engine.
- 4) A general arrangement of the alternator and exciter showing terminal markings, polarity and phase rotation.
- 5) A general arrangement of the electrical control panel(s).
- 6) A schematic and wiring diagram of the electrical control panel(s).

43. WORK TESTS

- 43.1 The set shall be tested as a unit at the manufacturers works (or else where by agreement) for output and performance generally in accordance with the requirements of BS 649 and BS 2613. The Engineer shall be given adequate notice in writing of the date and time of the works tests and he, or his representative shall if he so desires, be present at such tests and be given all reasonable facilities for his own inspections during the course of the tests.

- 43.2 Whether or not the Engineer or his representative attends the tests, he shall be furnished by the Sub-Contractor with copies of all relevant test certificates.

44. COMMISSIONING

- 44.1 The Contractor shall include for fully commissioning the set and its control equipment and, for the purpose of the required tests, shall provide all necessary instruments, tools, fuel and lubricating oil.

- 44.2 The following tests and checks as applicable shall be carried out by the Contractor in the presence of the Engineer or his representative.

- 1) Check that the main frame is level in all directions, Engine and generator shafts are in proper alignment and the vibration absorbing devices are properly installed and located.
- 2) Check water and sump oil levels and that the water jacket and radiator heaters (if fitted) are in working order.
- 3) Check the battery electrolyte level and the specific gravity.
- 4) Examine the containers in which the fuel and lubricating oils were delivered and check that the types and grades of oils are as recommended for the units.
- 5) Ensure that sufficient fuel oil is in the tank for a two hours test run.
- 6) Check that all radiator and engine block water drain points are free from sludge and other blockages.
- 7) Check engine bolts, main drive coupling, valve clearances, fuel pump settings, governor settings, pipe line connections, water hose, exhaust couplings, flexible pipework etc., and where a separate cooling water tank is fitted, that the water level is satisfactory and the ball valve and over flow work.
- 8) Check all outgoing connections on the generator and at the control panel. All lugs for principal connections shall have clean and bright contact surfaces. A suitable abrasive material shall be used where necessary.
- 9) Check access panels and doors for proper opening and closing and for the functioning of any interlocks fitted.
- 10) With the set isolated from the main supply and the selector switch in the 'manual' position, start the engine by means of the 'start' push button and allow it to run upto normal speed. Check that during the time the engine starter motor is in operation, the mains battery charger is automatically switched off to avoid its being overloaded by the reduction in voltage across the battery. Where a battery charging dynamo is fitted, Check that the main battery charger is disconnected by the operation of the auxilliary Sub-Contactor during the time the engine is running.
- 11) Check instruments and gauges for normal operation and response and that the generator voltage is being maintained within the prescribed limits, making due allowance for no load conditions. Compare the reading of the frequency meter with that of the engine tachometer, where both are fitted.
- 12) Stop engine by turning selector switch to 'off' position and verify that generator contactor opens at between 95%. and 85% of normal voltage.
Re-check water and oil levels.

- 13) Turn selector switch 'to auto' position. Disconnect the sensing circuit supply and check that the set starts, the mains contactor opens, and the generator contactor closes in correct order.
Reconnect the sensing circuit to verify that the Engine stops on the restoration of the mains supply and the contactors operate correctly.

Check voltage sensing and time delays on each phase in turn and also that the push buttons for mains failure simulation and Engine stopping operate correctly.

NOTE: Running of the engine for any length of time under no-load conditions is undesirable and tests calling for such operation should be carried out in as short a time as possible consistent with thoroughness.

- 14) Operate the necessary isolators and switches to put the set on standby for the essential services network with the selector switch in the 'Auto' position, and using the mains failure simulation push, verify that the set operates correctly with the appropriate time delay for taking up load and that the carrying of the load and its distribution over the three phases are satisfactory.
- 15) Run the set at various loads for periods totalling at least 30 minutes. Check the voltage and current in each phase in turn and that the voltage and frequency are being maintained within the required limits with large alterations of loads.

Note the rate of charge on the dynamo ammeter with the engine running (if a dynamo is fitted) and the rate of charge on the battery charging ammeter with the engine stopped. Check against manufacturer's recommendation and adjust charging rates if necessary.

- 16) Check the operation of the turbo-charger unit(if fitted) and the colour of the exhaust gas at various loads.
- 17) Check that the various engine safeguards operate satisfactorily.
- 18) Check the vibration absorbing devices for proper operation and that the performance of all flexible connections both mechanical and electrical, are satisfactory.
- 19) When all tests are satisfactory and agreed with the Architect or his representative, the lubricating oil and water levels shall be finally checked, the fuel oil tank replenished and the set left in normal operating order.
- 20) An initial supply of all lubricating oils and greases shall be provided by the Sub-Contractor.
- 21) Additional lubricating oil shall be provided for recharging the engine sump once together with a supply of lubricating oils and greases to cover the normal use and servicing of the set during the 12 months maintenance period referred to in section 47.

45. SPARE PARTS

The Sub-Contractor shall submit with his tender a separate priced list of spare parts, including any optional extras which he recommends should be purchased for the set and its control equipment and which are not supplied as standard with the unit.

46. **TOOLS**

A complete set of tools and general and special testing equipment shall be provided, including grease and oil guns, necessary for the normal maintenance of the set and its controls. The tools shall of the best quality, the spanners being of chromevanadium steel and shall be contained in a suitable robust steel tool box with lid fitted with a lock and two keys. All tools and testing equipment may be used by the Sub-Contractor in the execution of the Contract works but will not be accepted as part of the Contract works unless they are handed over in clean and undamaged condition, in perfect working order and effectively in new condition.

47. **MAINTENANCE**

47.1 The Sub-Contractor shall maintain the complete set and associated control equipment forming the unit for a period of twelve of calender months from the date that the unit is put into commission and regular use.

47.2 During the maintenance period, the Contractor shall at his own expenses:-

- 1) Make good any defects in the unit and replace any parts that fail or show signs of weakness or undue wear in consequence of faulty design, workmanship or materials on notification of the defect.
- 2) Visit the site and with all diligence attend to any such defect that arises within 48 hours of receiving notification of the defect.
- 3) Carry out regular examination and serving of the unit at the intervals laid down by the manufacturer or every three months, whichever is the sooner; the service examination to include all necessary adjustments, greasing, oiling, cleaning changing of lubricating oils to keep the unit in sound and efficient working order.
- 4) Instruct the maintenance personnel in the proper operation, care and maintenance of the set and it's equipment.

47.3 If during the maintenance period the unit is or is likely to be out of use for a period greater that 48 hours, due to the unit or part thereof developing a defect attributable to faulty design, workmanship or materials, or due to neglect of maintenance by the Sub-Contractor, the Sub-Contractor shall at his own expense immediately provide and install on free loan a suitable temporary unit for use until the required repair or replacement has been satisfactorily undertaken and the original set (or its replacement) put into proper working order.

47.4 At the end of the twelve months period of maintenance the Sub-Contractor shall (in addition of the normal servicing work) carry out a comprehensive examination and test of the set and its auxiliaries, including the checking of the operation of controls and safeguards, to ensure that the unit is in proper working order and in satisfactory condition for handing over to the client whose representative shall be present at such examination and test.

Signed (as in form of Tender) _____

Name of Contractor _____

Official Stamp _____

Date _____

PART D:

APPENDICES TO THE TECHNICAL

SPECIFICATIONS

FOR 2No. 600KVA GENERATOR

INSTALLATIONS

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDICES TO TECHNICAL SPECIFICATIONS

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SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS
APPENDIX NO. 1

INFORMATION TO THE TENDERER

Section	Item	Requirements
5.	Operating Conditions:-	
5.1	Site (address and details)	Central Bank of Kenya, P. O. Box 60000, NAIROBI
5.2	Altitude	1795 m asl
5.3	Temperature range humidity	As stated in Part 3, Technical Specifications to operate in Unheated building
5.4	Dust conditions if not as stated	
6	Functional requirements	Automatic Mains failure
7.	Performance	600kVA,415/240V, 3-Phase ON SITE. The Engine to be configured for Standby Continuous performance
8.1	Set arrangement	
	Weather proof roof and removable side panels	Required
9.2	Remote governor control	Electronic governor required
9.9	Aspiration	Natural
9.11	Manual starting for sets larger than 35 kW	Required
9.15	Silencer Details of additional pipework and fittings if required	Required
10.1	Daily service tank	Required

APPENDIX No. 1 (Contd)

Section	Item	Requirements
10.2	Manual transfer pump	Required
10.3	Fuel storage tank (external)	Required
10.4	Fuel jettison cock, fuel tank	
11	Engine Instruments Details if not as stated	Required.
12.	Cooling system	Water/Air
14.2	Water cooling Radiator mounting	On engine
14.8	Provision for hot air ducting	Required
17. 18.	Electrical control panel	
	17(1) main switch	Circuit breaker
	17(2) provision for parallel running	Required
	17(4) alternator field circuit	Switch
	17(10) "exciter"	Required
20(5)	Kilowatt meter	Required
25.	Lock-out remote indication circuit	Required
26.1	Service terminals	Required
30(2)	Earth field	Required
42(1)	Building drawings, as comments to issued drawings.	Required

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 2

INFORMATION TO BE SUPPLIED BY THE TENDERER

Item	Details
1. Diesel Engine	
Make and type	
Bore	
Stroke	
Net continuous rating in HP (B.S. 5574)	
a) at sea level	
b) on site	
Speed	
Year this type put into service	
Total number sold	
a) World wide	
b) in East Africa	
c) in Kenya	
Supercharger: make and type number in use	
Thermometers: make and type	
Air cooling:-	
Quantity of air required	
details of ducting required	
Water cooling:-	
details of water cooling circuits	

APPENDIX No. 2 (Contd)

Item	Details
Radiator: make and type	
length	
breadth	
height	
Heat exchanger: make and type	
Aspiration	
Quantity of air required	
2. Auxiliaries	
Lubricating oil circuits	
Filters	
Coolers	
Primary pumps	
Tachometer and drive	
Governor	
Special cold start devices	
Running hours meter	
Safety devices:-	
High temperature	
Low pressure (lubricating oil)	
Cooling water flow trip	
Over speed trip	
Speed sensing devices	
Lubricating oil thermometers:-	
Number	
position(s)	
Water thermometer:-	
position	
Starting battery and charger	
3. Lubrication	
Recommended oil(s)	

APPENDIX No. 2 (Contd)

Item	Details
4.	Alternator and Exciter Make and type Bearings Insulation (B.S. 2757) Quantity of cooling air required
5.	Electrical Control Panel Automatic voltage regulator: make and type where mounted (if not on panel) Control circuits and wiring diagrams Relays:- make and type method of delayed operation Meters: make and type Circuit Breaker: make and type
6.	Automatic Changeover Motorised Breakers Dimensions Type and control switches Current drawn from control supply under standby conditions Type of mounting Contactor: make and type Relays : make and type Fuses : make and type

APPENDIX No. 2 (Contd)

Item		Details
7.	Performance Data	
	Fuel consumption	
	Rated Output %	Fuel Consumption L /hr
	110	
	100	
	75	
	50	
8.	Exhaust Fans	
	Type	
	Rating	
9.	Generator Set	
	Full Length	mm
	Width	mm
	Hieght	mm
	Weight	Kg

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS
APPENDIX NO. 3

DATA FROM THE TENDERER

1. Initial sound level measured in accordance with the N.E.M.A. standards (Must be less than 81 dBA at 1m) dBA
2. Means of vibrations dampers mounted on the generator set to prevent vibrations to be transferred from the generator set to the building

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 4

LIST OF TOOLS TO BE SUPPLIED WITH EACH SET

The following tools shall be handed over to the Client or Engineer before completion of the contract:-

Item	Description	Price	KShs.
1.	Metal tool box with lock and keys		
2.	Set of 8 No. Chrome vanadium ring spanners in sizes to suit the set		
3.	Set of 8 No. Chrome vanadium open-ended spanners in sizes to suit the set		
4.	Set of screwdrivers, 75 mm, 200 mm and 300 mm plus one 200 mm Philips type		
5.	One set of feeler gauges		
6.	One grease gun to suit greasing points		
7.	One oil can, trigger type		
8.	One Hydrometer and Plastic Filler bottle with pouring spout		
Total carried forward to Price Summary Schedule.			

The tenderer shall give below details of any special tools which he recommends should be purchased as an optional extra.

Item	Description	Price	KShs.

Signed: (as in Tender) _____

Date: _____

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 5

LIST OF SPARE PARTS AND LUBRICANTS TO BE SUPPLIED WITH EACH SET

The following items shall be handed over to the Client or Engineer before completion of the contract.

These items shall not be used by the Sub-Contractor to carry out his normal maintenance.

Item	Description	Price	KShs.
1.	Oil Filters - 3 Nos.		
2.	Air Filters - 3 Nos.		
3.	One injector to suit the set		
4.	One set of fan belts comprising belts		
5.	One set of indicator bulbs comprising bulbs		
6.	One set of indicator lenses comprising lenses		
7.	One overhaul kit		
8.	One set of fuses comprising fuses		
9.	One 200 litre drum of sump grade oil		
10.	One 2 kilogram tin of grease of grade		
11.	One 10 litre plastic container of distilled water		

The tenderer shall give below details of any other spares which he recommends should be purchased as optional extra.

Item	Description	Price	KShs.

Signed: (as in Tender) _____

Date: _____

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 6

EARTHING

Item	Description	Price	KShs.
1.	Supply and install, for each set, 4 No. steel cored copper earth rods, 1200 mm x 12 mm threaded for extension, connected by brass clamps to 30 metres of 25 mm x 3 mm copper earth tape laid in trenches of minimum depth 300 mm and fixed to the wall of the generator room with brass spacer bar saddles at 1 metre of intervals, connected to the station earth bar via a brass test clamp.		
Total carried forward to Price Summary			

Note: The earthing must be carried out strictly as above.

Signed: (as in Tender) _____

Date: _____

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 7

DRAWING, LITERATURE, MANUALS AND DELIVERY PERIOD

1. Details of Drawings, Literature, manuals etc. included with tender documents.
2. Time in **weeks** from acceptance of tender to delivery of equipment on site. _____Weeks
3. Time in **weeks** from acceptance of tender to commissioning of set(s)._____Weeks

Signed: (as in Tender) _____

Date: _____

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 8

WARRANTY

The warranty period for the set and all its auxiliaries, from the date of commissioning,

will be _____months

(Note: A minimum of 12 months is required).

Signed: (as in Tender) _____

Date: _____

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 9

FOREIGN CURRENCY

State Foreign currency used in the pricing and rate of exchange to the Kenya Shilling.

1 _____(Foreign Currency) = _____Shillings.

Signed: (as in Tender) _____

Date: _____

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 10

ANNUAL MAINTENANCE

Cost of Annual Maintenance shall be Ksh. _____ per year.

Signed: (as in Tender) _____

Date: _____

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 11

EXTERNAL FUEL TANK

- 4,500 litres external, transportable diesel fuel tank, double-walled tank construction consisting of a 5mm (4 gauge) primary steel tank and a 3mm (10 gauge) secondary steel tank.
 - Baffled internally to reduce product movement should the unit be moved with contents
 - Recessed spill box area under lockable lid to secure transfer pump.
 - Accessible and removable tank manway for internal tank maintenance and cleaning.
 - Aluminium gauged dipsticks, 1 x galvanized updraft vent breather system and multiple port fittings.
 - Fuel transfer pump with hose connection
 - Sectional cut-outs on sides of spill box to allow flexible hoses or pipework to external requirements
 - Connection for 15mm diameter class B gms pipe with “CRANE” gate valve and union.
 - 6m long 15mm diameter class B gms pipe
 - 4 No. Galvanized malleable iron elbow
 - 20mm diameter drain pipe with “CRANE gate valve
 - Clear accurately-calibrated level indicating tubing connection on the outside.
 - Safe Fill Level of 4,500 Litres (Maximum Capacity of 4,800 Litres)
 - Forklift pockets and certified tie down/lifting points at each corner.
 - All other accessories

KSh. _____

SUPPLY AND INSTALLATION OF 2No. 600KVA SOUND-PROOFED STANDBY GENERATOR SETS

APPENDIX NO. 12

HOT AIR DUCTING

Hot air-duct comprising:

1.	Galvanized mild steel sheet 3mm thickness	-	30 m ²
2.	Square hollow section tubes 50mm x 50mm, 3mm thickness	-	120 m
3.	Heat resistant fibre glass	-	60 m ²
4.	Allow for welding the metal and applying prime coat of paint	-	Item
5.	50mm x 50mm x 3mm weldmesh in front of ventilation duct	-	10 m ²

PART E:

BILLS OF QUANTITIES

FOR ELECTRICAL INSTALLATIONS AND

ASSOCIATED WORKS

BILLS OF QUANTITIES FOR ELECTRICAL INSTALLATIONS AND ASSOCIATED SERVICES

CONTENTS:

CLAUSE NO.	DESCRIPTION	PAGE NO.
1.	General Notes to Tenderers	E3
2.	Statement of Compliance	E6
3.	Bills of Quantities	E7

BILLS OF QUANTITIES AND SCHEDULE OF UNIT RATES

1. General Note to Tenderers

- 1.1 The total of the prices in the summary of prices shall include for the whole of the Contract works in accordance with the specifications as defined before and shall be carried forward to Form of Tender.
- 1.2 Any prices omitted from any item, section or part of the price schedule shall be deemed to have included in another item, section or part.
- 1.3 The prices shall include for all obligations under the Contract including and not limited to:
- a) Supply of any materials, equipment, apparatus, fittings, spares and tools
 - b) Insurance
 - c) Clearing and forwarding
 - d) Delivery, handling and storage at site
 - e) Packing for storage
 - f) Replacing any defective or damaged item
 - g) Installation
 - h) Testing
 - i) Painting
 - j) Commissioning
 - k) Maintenance during the defects liability period
- 1.4 Any tenderer whose firm uses the title “Engineer” or “Engineering” must provide evidence of registration of at least one of the directors by the Engineers Registration Board of Kenya to avoid disqualification.
- 1.5 Any tenderer who fails to price the General items will be deemed to have allowed 5% of his tender price to cover these items, i.e. 5% of the total tender price will be deducted as preliminaries, if the tenderer does not enter specific prices against items of preliminary.
- 1.7 The contractor is instructed to read all the pages, and all the items of the Bills of Quantities very carefully. Should there be an apparent omission of words or figures, or should the sub-contractor be in doubt about the precise meaning of any word or figures, or for any reason whatsoever feel more clarification is necessary, either in the drawings or Bills of Quantities, to facilitate reasonable pricing of the tender document, he should inform the engineer at once so that the correct interpretation or clarification may be given before tendering. No liability will be accepted on mistakes and/or omissions which should have been corrected in the format above.
- 1.8 The specification should be priced in Kenya Currency i.e Shillings and cents.
- 1.9 The following meanings/interpretations shall be attached:-

. Lighting Point: "Install a lighting point complete with concealed diameter 20mm H.G PVC conduit, conduit couplers, box, wiring in 3x1.5mm² SC-

	PVC-CU cables and all accessories, but excluding the light switch".
. Socket Outlet:	"Install 13A power outlet comprising concealed diameter 25mm H.G PVC conduit, conduit couplers, box, ring main wiring in 6x2.5mm ² SC-PVC-CU cables and all accessories including 13A switched socket". All socket outlets <u>must</u> have safety shutters on both live and neutral.
. 20A DP Outlet:	"Install outlet for 20A DP switch comprising concealed diameter 25mm H.G PVC conduit, wiring in 3x4.0mm ² SC-PVC-CU cables, box, 20A DP switch with neon light and all accessories".
. Consumer Unit:	"Supply and install SP/N power consumers unit, complete with SP/N integral isolator".
. Distribution Board:	"Supply and install TP/N power distribution board, complete with TP/N integral isolator."
. Main Switchboard:	Supply and install main switchboard free standing complete with all switchgear, as per schematics shown.
. Meterboards:	Supply and install metal clad meterboards C/W all switchgear.
. Earthing:	"Protective multiple earthing to Kenya Power and Lighting Co. Standards, comprising 1200mm deep-driven pure electrolytic copper earth electrode, electrode clamps, 16mm ² yellow/green earth lead, earth pit complete with cover and all accessories".
. Labelling:	"Comprehensive, concise and instructive permanent labelling of all the sub-circuits, complete with identification of the sizes of all the sub-circuit cables, permanent traffolyte identification of the board such as "DB. A" and identification of the sizes of the sub-mains and their origin e.g "Board A: Supply: 4x16mm ² SOURCE: DB.1"
. Blanking Plates:	"Supply and install blanking plates in all the spare ways."

- 1.10 Unless specifically stated otherwise, all light fittings will be as Thorn manufacture. All power accessories, sockets, telephone outlets, TV outlets, distribution boards/consumer units, switches, spur outlets etc must either be Crabtree, MK or Merlin Gerin. Approved equivalent makes may be accepted subject to the engineer's prior approval.
- 1.11 The Sub-contract is for supplying, delivering, fixing/installing, testing, commissioning and setting to work to the full satisfaction of the Engineer/Architect and the Sub-contractor's price must include all cost for the entire process.
- 1.12 All conduits/ducts must be heavy gauge. Where steel pipes are specified, they must be minimum of class B in strength.
- 1.13 The installation shall be carried out strictly in accordance with the provision of the 17th Edition of Wiring Regulation as published by the Institution of Electrical Engineers, Great Britain, the most current relevant standards issued by the Kenya Bureau of Standards, and with strict adherence to the safety requirements and by-laws of the Kenya Power and Lighting Co. Ltd.
- 1.14 The contractor shall ensure that the highest standards of workmanship and highest quality materials are used at all times. Inferior workmanship and low quality materials shall be rejected and replaced at the contractors own cost.

- 1.15 The sub-contractors shall be solely responsible for the correct and accurate ordering of materials in accordance with the drawings and Bills of Quantities.
- 1.16 No claims on advance payment and/or materials off-site will be allowed unless the sub-contractor advances valid reasons acceptable to the employer. Should a claim on advance payment be allowed, the sub-contractor will be required to submit an Advance Payment Bond for the full value claimed.
- 1.17 The sub-contractor shall strictly follow the Main Contractor's programme of works and (the sub-contractor) must ensure that at no time does his activities cause delays to the Main Contractor.
- 1.18 This is a fixed price sub-contract, and the sub-contractor is expected to allow (in his unit rates) for generous fore-casts on fluctuations.
- 1.19 The Bills of Quantities shall be read in conjunction with Notes to All Tenderers, Preliminaries, General Specifications, Particular Specifications and all the relevant drawings.
- 1.20 A rate or price shall be entered against each item in the priced Bills of Quantities whether quantities are stated or not. The cost of items against which the contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bills of Quantities.
- 1.21 The whole cost of complying with provisions of the contract shall be included in the items provided in the Bills of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of work.
- 1.22 General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bills of Quantities. Reference to the relevant sections of the contract document shall be made before entering prices against each item in the priced Bills of Quantities.
- 1.23 Provisional sums and contingencies included and so designated in the Bills of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer.
- 1.24 Errors in pricing will be corrected by the Employer for any arithmetic errors in computation or summarization as follows:-
- a) Where there is a discrepancy between amounts in figures and amounts in words, the amount in words will govern.
 - b) Where there is discrepancy between the unit rate and the total amount derived from the multiplication of the unit price and the quantity, the unit rate quoted will govern unless in the opinion of the employer, there is an obviously gross misplacement of the decimal point in the unit prices, in which event the total amount as quoted will govern and the unit rate will be corrected.
- 1.25 Other than ceiling mounted fixtures, accessories, light fittings etc, all the other mounting heights will be re-confirmed with the Engineer/Architect on site.
- 1.26 All light fittings must be complete with appropriate lamps, bulbs, tubes, starters, control gear etc as applicable. Where a light fitting has multiple lamps, tubes, bulbs, each lamp/tube/bulb must have its own separate choke/starter/p.f. correction capacitor/control gear etc.
- .

2 Statement of Compliance

- a) I confirm compliance of all clauses of the General Conditions, General Specifications, Particular Specifications, Technical Specifications in this tender.
- b) I confirm I have not made and will not make any payment to any person, which can be perceived as an inducement to win this tender.

Signed.....*for and on behalf of the Tenderer*

Date:

Official Rubber Stamp:



**Haile Selassie Avenue
P.O. Box 60000 - 00200 Nairobi Kenya
Telephone: 2861000/2863000
Fax 340192/250783**

Email: supplies@centralbank.go.ke

TENDER DOCUMENT

**TENDER FOR PROPOSED ELECTRICAL
INSTALLATIONS UPGRADE**

at

EXTELCOM HOUSE

for

CENTRAL BANK OF KENYA

TENDER NO.



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	<u>SECTION NO. 3</u> <u>PRELIMINARIES & CONDITIONS OF CONTRACT</u> <u>BILL NO.1</u> <u>NOTES. PREAMBLES & GENERAL PRELIMINARIES</u> Note: All Rates shall be inclusive of VAT and PPRA Capacity Building Levy <u>Parties and project responsibility matrix</u> <u>Project Management Team</u> CBK Project Team shall be responsible for overall management of the project and shall remain overall approver and decision-making organ of the project. <u>The Consultant</u> CBK has appointed consultants for the Project, who shall have delegated authority and responsibility for contract administration and supervision and shall herein be referred to as 'the Consultant'. <u>The Contractor</u> The Contractor means the entity contracted to execute the Works, including its personnel, agents and subcontractors, and shall be responsible for executing the Works in accordance with the Contract Conditions. It shall herein be referred to as 'the Contractor'.	
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Item No	Description	Amount Kes
<u>Abbreviations</u>		
Abbreviations used in these Bills of Quantities shall be interpreted as follows:		
"Approved"	shall mean	approved by the Consultant and CBK
"As Directed"	shall mean	directed by the Consultant
"Architect/Engineer"	shall mean	the Consultant
"B.S."	shall mean	the current British Standard.
"BMS"	shall mean	Building Management System.
"C. M" or "M3"	shall mean	Cubic metres
"CCTV"	shall mean	Closed Circuit Television
"CV"	shall mean	Curriculum Vitae
"Ditto"	shall mean	The whole of the preceding description except as qualified in the section in which it occurs. Where it occurs in brackets it shall mean the whole of the preceding description which is contained within the approximate brackets.
"GIFA"	shall mean	Gross Internal Floor Area
"GBA"	shall mean	Gross Building Area as measured in accordance with RICS and IPMS guidelines.
"Kg"	shall mean	Kilograms
"KPC"	shall mean	Kenya Power Company
"L.M" or "M"	shall mean	Linear Metre
"M.S"	shall mean	Measured separately
"No" or "N"	shall mean	Number
"S.M" or "M2"	shall mean	Square Metres
"VAT"	shall mean	Value Added Tax
"CBK"	shall mean	Central Bank of Kenya Office
"UPS"	shall mean	Uninterrupted Power Supply
"PV"	shall mean	Photovoltaic
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C2: CBK - Official



Item No	Description	Amount Kes
	<u>Early Warning Requirement</u> It shall be a condition of this Contract that upon it becoming reasonably apparent to the Contractor that he has incurred losses and/or expenses due to any of the Contract Conditions, or by any other reason whatsoever, he shall present such claim or intent to claim notice to the Project Manager within the Contract period and in accordance with Conditions of Contract Clauses No. 19 and No. 24. No claim shall be entertained upon the expiry of the said Contract period. <u>Request for information</u> All requests from the Contractor shall be in writing in the form of a RFI pro- forma containing the following basic information: i) Contractor's Name ii) Project Name iii) Author of RFI iv) RFI Number v) RFI Date vi) Subject Title vii) Subject Matter. RFIs shall be issued in numerical order. Where multiple pro forma booklets are produced, they shall use consecutive series. <u>Prohibition of publicity</u> CBK premises are classified as a "Protected Area" under the Protected Areas Act, Cap. 204, Laws of Kenya, together with the Protected Areas Order, 2019, Legal Notice No. 152 of 2019. The Contractor shall not, without the prior written consent of CBK, use the Central Bank of Kenya's name, logo or any information related to the Project for advertising, marketing or publicity purposes. The Contractor shall not issue any press release or public announcement, or engage in any form of media communication regarding the Project, without the prior written approval of the Central Bank of Kenya. <u>Statement of works (brief description of works)</u> The works will comprise preparatory tracing, identification and labelling of existing sub-main cables, removal of redundant cabling and switchboards, and provision of temporary power and controlled shutdowns during load migration. The main installation will include new Form 4b low-voltage switchboards with motorised protection, automatic changeover and bypass arrangements, power-factor correction equipment, an automatic voltage regulator, a copper riser busbar, associated XLPE copper cabling, earthing, surge protection and Building Management System interfaces. The scope also includes power supplies to the lift installations, two 600 kVA standby generators with synchronising and load-sharing controls, fuel, exhaust and associated cabling systems, comprehensive testing and commissioning, statutory liaison, working and as-installed drawings, maintenance manuals, training and initial maintenance, together with all builders' works and making good associated with the installations.	
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C2: CBK - Official

Item No	Description	Amount Kes
	<u>Implementation options & Central Bank of Kenya's direct contracts</u> The Central Bank of Kenya shall have the right to employ other Contractors (hereinafter referred to as "Direct Contractors") to execute any special or other works whether contained in this Contract or not, concurrently with the work being executed under this Contract. In addition, the Central Bank of Kenya shall have the right to send on to the Works any furniture, furnishings, curtaining, carpeting and fittings and have same installed by their own employees or by Direct Contractors. The Contractor shall not be entitled to any percentage, profit or discount on the value of any work executed by "Direct Contractors but shall nevertheless allow these Direct Contractors and the Central Bank of Kenya's employees to have access to the Works, allocate reasonable space in the building for the storage of their materials, tools and equipment, and co-ordinate the work of and "attend upon" such Direct Contractors as necessary all to the satisfaction of the Consultant and CBK. Any such costs associated with such direct contracts shall be deemed included in the Bid. The Contractor shall have the duty to undertake all such works as measured in the required quality and hence must ensure adequate rates are provided. The Contractor shall allow such Direct Contractors to work on site without encumbrances and shall ensure that all direct contractors are inducted into the safety regime of the Contractor. <u>Accommodation and labour camps on site</u> No accommodation on site will be permitted for the Contractors staff or work people including those of sub-contractors other than the security staff. The Contractor shall NOT be permitted to house any other workers on site. The Contractor should make their own arrangements to house the workers elsewhere and/or organize for their transportation to and from site. Any application for exemption from this requirement shall be at CBK's discretion. <u>Area to be occupied by the Contractor to be approved and authorised by CBK</u> The area of the Site that may be occupied by the Contractor for storage and for erecting workshops and similar facilities shall be defined on site by the Consultant and CBK. All Contractor operations, including the storage of equipment, materials, supplies and parts within CBK premises or property, shall be confined to areas authorised or approved by CBK. The Contractor's personnel shall not enter or pass through, or store or dispose of any equipment or materials in, any area within CBK's premises or property without appropriate authorisation from CBK.	
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Item No	Description	Amount Kes
	<u>Minimum requirements at substantial completion</u> The Contractor shall have completed the Works, including the following items before the issuing of a "Notice of Certificate of Substantial Completion. External Cleaning: The Contractor shall Clean out manholes, pits, sumps and drains, remove debris, nails, washers and other foreign matter from external floor slabs and sweep free of metal shavings and dust Thoroughly clean all works, , taking great care not to scratch or damage the surfaces; any scratched or damaged surfaces will be required to be repaired or replaced at the Contractor's cost, clear debris any scratched or damaged glass will be required to be replaced at the Contractor's cost Remove all hoardings, fences and temporary buildings and structure The Contractor shall: Remove debris and surplus material, paying particular attention to concealed spaces such as plumbing ducts, lift wells, lifts wells, cupboards and the like Thoroughly clean internal surfaces, including glass and mirrors strictly following the manufacturer's or supplier's printed instruction and paying particular attention to removing dust, paint, spots, finger marks, stains, excess adhesive, smears and other blemishes, taking great care not to scratch or damage the surfaces; any scratched or damaged surfaces will be required to be replaced at the Contractor's cost Remove labels, protective paper and the like from sanitary ware and other items Ease doors and operable windows, adjust oil and clean hinges, locks, closers, floor springs and other hardware Check locks for satisfactory operation as appropriate and arrange for immediate remedial action where keys do not operate Account for all keys delivered to the site and pay for the supply and installation of all lock cylinders and keys where the full complement of keys cannot be produced Systematically label keys with stamped metal or plastic tags and hand over to CBK, clearly <u>Statutory regulations and bye laws</u> The Contractor shall comply with all local regulations and by-laws of the Local Authority, including serving notices and paying fees. <u>Police regulations</u> The Contractor is to allow for complying with all instructions and regulations of the Police Authorities.	
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Item No	Description	Amount Kes
	<u>Prime cost sums and rates</u>	
	a. The words "Prime Cost" (or the initials "PC") wherever appearing in the Contract Documents shall mean net cost exclusive of any trade, cash or other discount whatsoever but inclusive of the cost of packing. Such cost shall be the sums due to the Sub-Contractor or Supplier after adjustment where applicable in respect of measurements or rates. b. Any increases or decreases in these Prime Cost Sums and Rates resulting from the adjustments and properly paid by the Contractor shall be added to or deducted from the Contract Sum in the final account. In substantiation the Contractor will be required to produce to the Consultant all quotations, invoices and receipted accounts as shall be necessary to show the details of the sums actually paid. c. Prime Cost Rates shall be deemed to be exclusive of VAT, delivery to site and fixing. Any sum added by the Contractor in these Bills of Quantities in respect of profit upon any Prime Cost will be deducted at the final settlement of accounts and a sum will be added the amount of which will bear the same proportion to the sum added as the net amount properly expended bears to the original PC sum.	
	<u>Fair wages</u>	
	The Contractor shall pay rates of wages and observe hours and conditions of labor not less favorable than the minimum rates of remuneration and minimum conditions of employment applicable. The Contractor is to comply with the Regulation of Wages and Conditions of Employment Act, Building and Construction Industry Wages Council and is to be responsible for compliance by sub-contractors employed in the execution of the Contract. If required, the Contractor is to notify the Consultant and CBK of the name and addresses of all such sub-contractors. Any Contractor or sub-contractor not so complying will not be permitted to bid for other work for such period as CBK may determine. Should a claim be made to the Consultants alleging the Contractor's default in payment of fair wages of any workman employed on the Contract and if proof thereof satisfactory to the Consultant is furnished in accordance with the Contract, the Consultant may, failing payment by the contractor, recommend payment of the claim by CBK and offset from any monies due or which may become due to the Contractor under this contract. The Contractor shall furnish to the Consultant, where so required, such particulars of the rates of wages, hours and conditions of Contract referred above, as the Consultant may direct.	
	<u>Standards levy & PPRA Levy</u>	
	The Contractor is required to ascertain at their own cost of any legal notices, regulations or laws which require payment by the Contractor of a Standard levy to the Kenya Bureau of Standards.	
	<u>Training levy</u>	
	The Contractor is required to ascertain at their own cost of any legal notices, regulations or laws which require payment by the Contractor of a Training levy for any Contract.	
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Section No. 3

Bill No. 1

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	<u>PRELIMINARIES & CONDITIONS OF CONTRACT</u>	
	<u>BILL NO.2</u>	
	<u>PARTICULAR PRELIMINARIES</u>	
	<u>Contractor's investigation for service infrastructure & other utilities</u>	
A	No work involving, adjacent to, or potentially affecting existing services shall commence until the Contractor has undertaken a thorough investigation, verification and validation of the existing service infrastructure, including services installed under previous contracts or by others. The Contractor shall review all available information, survey and inspect existing services and allow for planning the Works, particularly where the Works involve connections, tapping, isolation, diversion, extension, modification or integration with existing systems. The Contractor shall not rely solely on drawings or other records provided and shall undertake appropriate physical verification, inspection, testing, tracing and investigation to confirm the actual location, configuration, capacity, condition and operational status of existing services before commencing the affected Works. Any discrepancy between the available documentation and actual site conditions shall be promptly reported to the Consultant and CBK. Protection of Existing Services The Contractor shall exercise all reasonable skill, care and diligence in identifying, locating and protecting all existing services throughout execution of the Works. The Contractor shall take all necessary precautions to prevent the accidental cutting, disconnection, damage, isolation, interference with or disruption of existing services. Where the identity, location, condition or operational status of an encountered service is uncertain, the Contractor shall immediately notify the consultant. Connections and Tie-Ins to Existing Systems All proposed connections, tapping points, tie-ins, diversions or modifications to existing systems shall be identified and coordinated in advance. Before undertaking any such activity, the Contractor shall verify that the existing system is suitable for the proposed connection and shall submit the relevant method statement, drawings, technical details, risk assessment, isolation procedure and reinstatement arrangements for review and approval. No connection, isolation, switching, shutdown or modification of an existing operational service shall be undertaken without approval from CBK and coordination with the Consultant and other relevant stakeholders.	
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	Planned Service Interruptions and Shutdowns The Contractor shall identify, sufficiently in advance, all activities that may require the temporary shutdown, isolation or interruption of existing services. A detailed Shutdown and Service Interruption Plan shall be submitted to CBK for approval prior to carrying out the affected Works. The plan shall, as applicable, identify: a) The service or system to be affected; b) The reason for the proposed interruption; c) The areas, operations and users likely to be affected; d) The proposed date, commencement time and duration; e) The isolation and shutdown procedure; f) The sequence of the proposed Works; g) Temporary or alternative service arrangements; h) Resources, personnel, tools, equipment and materials required; i) Contingency and emergency response arrangements; j) Testing and commissioning procedures; k) Reinstatement and restoration procedures; and l) Responsible personnel and communication arrangements. Service interruptions shall be programmed to minimise disruption to CBK's operations and shall only take place during periods agreed and approved by CBK. The Contractor shall provide a mitigation plan to ensure business continuity during shutdowns, including the provision of temporary services and utilities such as power, hired generators, water and any other affected utilities. Temporary Services and Business Continuity Where the Works require interruption of an existing service, the Contractor shall, where required to maintain CBK operations, provide suitable temporary services or alternative arrangements for the entire duration of the interruption. Temporary provisions may include, as applicable: a) Temporary electrical power supply; b) Backup or standby generators; c) Temporary UPS systems; d) Temporary water supply and storage; e) Temporary ICT or communication arrangements; f) Temporary lighting; g) Temporary pumping or drainage arrangements; h) Temporary cooling or ventilation; i) Associated cabling, distribution equipment and connections; j) Fuel and other necessary consumables; and k) Hire or leasing of temporary plant and equipment. The Contractor shall ensure that temporary arrangements have adequate capacity, reliability, safety and redundancy appropriate to the services being supported and shall maintain such arrangements until the permanent services have been satisfactorily	
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	reinstated, tested and accepted. Unless expressly provided otherwise in the Contract, the Contractor shall be deemed to have allowed in its Tender for all temporary arrangements reasonably necessary for the execution of the Works and maintenance of business continuity. Pre-Work Review and Detailed Run-Through Prior to undertaking any critical activity, shutdown, service isolation, tie-in or other operation having the potential to affect CBK's business continuity, the Contractor shall conduct a detailed pre-work review and run-through with the Consultant, Project Manager, CBK representatives and other relevant stakeholders. The review shall confirm, as a minimum: - The proposed sequence and methodology; - Roles and responsibilities of all parties; - Access and security arrangements; - Isolation and switching procedures; - Availability of labour, materials, tools and equipment; - Temporary service arrangements; - Health and safety requirements; - Identified risks and corresponding mitigation measures; - Communication and escalation protocols; - Emergency and contingency arrangements; and - Testing, commissioning and restoration procedures. Where considered necessary due to the criticality or complexity of the proposed activity, CBK may require the Contractor to undertake a mock exercise, simulation, demonstration or trial run before authorising the actual works. The purpose of such exercise shall be to demonstrate the Contractor's preparedness, validate the proposed sequence and procedures, confirm coordination between all parties and identify any deficiencies requiring correction before the actual intervention. Restoration of Services Following completion of any work affecting an existing service, the Contractor shall undertake all necessary inspection, testing, commissioning and verification to demonstrate that the affected service has been fully and safely restored. The Contractor shall not consider the intervention complete until the service has been confirmed as operational and CBK has been notified accordingly. Any existing service damaged or disrupted as a consequence of the Contractor's activities shall be immediately made safe and reinstated to the required operational condition, without prejudice to any other rights or remedies available under the Contract. <u>Security of works (within allocated site area)</u> A The Contractor shall be fully responsible for the security and safeguarding of the Works, including all temporary works, materials, plant, equipment, tools, stores and other property belonging to or under the control of the Contractor, its subcontractors, suppliers and	
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	personnel. The Contractor shall provide and maintain all necessary security measures including, where applicable, security personnel, temporary hoarding, barriers, controlled access points, security lighting, warning signage and other appropriate precautions necessary to safeguard the Works, CBK property, personnel, visitors and members of the public. Maximum precautions shall at all times be exercised to preserve and uphold the existing security arrangements within and around the CBK premises. Compliance with CBK Security Requirements The Contractor shall comply at all times with CBK security regulations, procedures, access-control requirements and instructions applicable to the premises, including any additional security measures or directions issued by CBK Security during execution of the Works. The Contractor shall liaise and coordinate closely with CBK Security in respect of: - Personnel vetting and clearance; - Access-control procedures; - Issuance and management of access passes; - Vehicle clearances; - Delivery and removal of materials; - Entry and removal of tools, plant and equipment; - Designated access gates and routes; - Working and storage areas; - Restricted and prohibited areas; and - Any other security requirements applicable to the Works. All proposed security arrangements shall be subject to the review and approval of CBK Security. Provision of Security Personnel Where dedicated security personnel are required for the Contractor's site, stores, temporary facilities or working areas, the Contractor shall obtain approval from CBK, the security service provider prior to deployment within the CBK premises. The Contractor shall make all necessary arrangements and allowances for the provision of such security services for the duration required under the Contract. Approval or acceptance of security personnel by CBK shall not relieve the Contractor of its responsibility for the security of the Works and its property. Personnel and Subcontractor Security Clearance All Contractor's employees, subcontractors, suppliers, agents and other personnel requiring access to the CBK premises shall undergo the applicable security vetting and clearance procedures prior to being granted access. Where required as part of the security vetting process, the Contractor, its subcontractors, vendors, suppliers or personnel shall provide the necessary clearance certificates, identification documents or other information required by CBK Security. The Contractor shall allow adequate time in its mobilisation and work programme for	
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	completion of security vetting, processing of clearance certificates and clearance procedures. Failure or delay in obtaining the required clearance shall not permit unauthorised access to the premises. Ground Passes and Identification Contractor's personnel and vehicles requiring regular access to the CBK premises shall obtain the appropriate Ground Passes, badges, vehicle passes or other access credentials as required by CBK Security. All personnel shall: a) Carry the prescribed identification and access credentials while within the CBK premises; b) Wear or display their Ground Pass or identification badge clearly and visibly at all times, where required; c) Produce such identification whenever requested by CBK Security or other authorised personnel; d) Use only the access gates, routes and areas authorised for their use; and e) Immediately report the loss, theft or damage of any access credential to CBK Security. Access credentials shall not be transferred, exchanged, shared or used by any person other than the individual or vehicle to whom they were issued. Additional Personnel and Vehicles. Any additional or replacement personnel, subcontractors, suppliers or vehicles requiring access during the course of the Works shall undergo the same applicable security vetting, approval and clearance procedures before accessing the premises. The Contractor shall therefore maintain and regularly update its schedule of approved personnel, subcontractors and vehicles and submit revisions to CBK Security as required. Movement Within the CBK Premises The movement of the Contractor's personnel, subcontractors, suppliers and agents shall be strictly confined to the designated Works areas, approved access routes, storage areas, welfare facilities and other areas specifically allocated or authorised by CBK. All areas outside the Contractor's designated and authorised working areas, including areas beyond the approved temporary hoarding or site boundaries, shall be regarded as Out of Bounds unless express permission has been granted by CBK. Under no circumstances shall the Contractor, its employees, subcontractors, suppliers or agents enter restricted, controlled or non-designated areas without prior authorisation. The Contractor shall ensure that all persons under its control understand and comply with these restrictions. Conduct of Contractor's Personnel The Contractor shall ensure that its personnel maintain a high standard of professional conduct, discipline and behaviour while within the CBK premises. Personnel shall not engage in: a) Loitering outside designated work or welfare areas; b) Horseplay or disorderly conduct;	
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	c) Unauthorised movement around the premises; d) Unauthorised interaction with CBK operations, equipment or facilities; e) Photography, video recording or other recording unless specifically authorised by CBK; f) Interference with security systems or procedures; or g) Any other conduct contrary to CBK security requirements or instructions. CBK may require the immediate removal from the premises of any person who fails to comply with applicable security requirements or whose conduct is considered inappropriate or prejudicial to the security or orderly operation of the facility. Security Checks and Inspections The Contractor shall make its personnel, vehicles, tools, materials, plant and equipment available for security inspection, verification and clearance whenever required by CBK Security. The Contractor shall anticipate and make appropriate allowance within its work programme for routine security procedures, which may include: a) Identification and badge verification; b) Personnel security checks; c) Vehicle inspection and verification; d) Tool and equipment inspections; e) Materials and delivery checks; f) Verification of items being removed from the premises; and g) Periodic renewal, revalidation or reauthorisation of access credentials. The Contractor shall plan its activities accordingly and shall not circumvent security procedures in order to avoid delays. Failure or Lapse of Security Clearance No person or vehicle shall be permitted access where the required security clearance, Ground Pass, identification, authorisation or other access credential is absent, expired, suspended, withdrawn or otherwise invalid. The Contractor shall be responsible for monitoring the validity of all security clearances and access credentials applicable to its personnel and vehicles and shall arrange renewals or reauthorisations sufficiently in advance. Security Breaches The Contractor shall be responsible for ensuring compliance with security requirements by all persons under its control, including its employees, subcontractors, suppliers, agents, visitors and security personnel. Any actual or suspected security breach, loss of access credentials, unauthorised access, suspicious activity or other security-related incident involving the Contractor or persons under its control shall be reported immediately to CBK Security and the Consultant/Project Manager. The Contractor shall fully cooperate with CBK in any investigation arising from a security incident and shall promptly implement any corrective or preventive measures instructed by	
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	CBK. Compliance with these security requirements shall not relieve the Contractor of any responsibility or obligation under the Contract relating to the protection, care and security of the Works.	
	<u>Phased implementation and sectional completion</u>	
A	Fast-Tracking and Priority Sections	
	CBK may require particular sections, areas or elements of the Works to be prioritised or fast-tracked for early completion and handover ahead of the overall Completion Date. Where the Contractor is subsequently instructed to revise the sequence or priority of the Works, the Contractor shall promptly review and update its programme and submit the revised programme for approval in accordance with the Contract.	
	Phasing and Sequencing of the Works	
	The Contractor shall accommodate the required phased implementation of the Works and shall ensure that its construction programme clearly identifies, as applicable: The Bidder may propose alternative phasing or sequencing arrangements where these provide demonstrable programme, operational or technical advantages. Where required, the Bidder shall submit with its Tender a proposed methodology and phasing plan demonstrating how the required milestones and overall Completion Date will be achieved. Any alternative proposal shall clearly identify its implications and shall be subject to review and written approval by CBK and the Consultant.	
	Contractor's Allowance for Phased Implementation	
	The Bidder shall be deemed to have taken into account, in its Tender Price and construction programme, all phasing, sequencing, sectional completion and milestone requirements identified or reasonably ascertainable from the Tender and Contract Documents. Accordingly, no additional payment or adjustment to the Contract Price shall arise solely from the Contractor's failure to adequately allow for such identified phasing requirements in its Tender. Similarly, the Contractor shall not be entitled to additional time or cost arising solely from its own failure to properly plan, coordinate, resource or execute the Works in accordance with the approved phasing and programme.	
	Sectional Completion and Milestones	
	The Contractor shall programme and resource the Works to achieve each such date without prejudice to its obligation to complete the entirety of the Works within the overall Contract Completion Period. Where the Contract provides for Liquidated Damages in respect of sectional completion, failure to complete a specified section by the applicable Sectional Completion Date shall render the Contractor liable for the Liquidated Damages expressly stated in the Contract for that section, subject to the terms and conditions of the Contract. The application of Liquidated Damages to a particular section shall not relieve the Contractor of its obligation to proceed diligently with and complete the remaining Works within the applicable contractual completion dates.	
	Overall Completion and Defects Liability Period	
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	Notwithstanding any phased or sectional completion of the Works, the entirety of the Works shall be completed within the overall Contract Completion Period, unless otherwise adjusted in accordance with the provisions of the Contract. Unless otherwise expressly provided for sectional handover under the Contract, the Defects Liability Period for the Works shall commence from the certified date of completion of the whole of the Works. Where the Contract expressly provides for separate possession, sectional completion or sectional handover, the commencement of the applicable Defects Liability Period shall be determined in accordance with those provisions. No Relief from Contractual Obligations Phased implementation, sectional completion, prioritisation or early handover of any portion of the Works shall not relieve the Contractor from its responsibility as per the contract. <u>Working hours and overtime</u> A The Contractor's working hours shall be in agreed with CBK. The bank reserves the right to change working hours to suite the operations of the Bank. The Contractor shall liaise with the Consultant and CBK for approval of any other working hours. The Contractor shall be responsible for any extra costs for overtime working that they consider necessary in order to complete the work within the contract period or recover delays. <u>Insurances</u> B The Contractor shall obtain and shall, for the term of the contract and any extension thereof, maintain policies of insurance (policies as prescribed in the conditions of contract), with reputable insurance companies approved by CBK. Minimum policy requirements All insurance policies providing the minimum insurance coverage shall i) Name the Central Bank of Kenya as an additional insured except worker compensation. In addition, the general liability policy shall contain cross liability clause. ii) Include waiver of subrogation of the contractor's insurers rights against the Central Bank of Kenya. iii) Provide that CBK shall receive sixty (60) days' written notice from the insurance carrier, underwriter or provider prior to any cancellation or change of insurance coverage provided under the insurance policy or policies concerned. iv) Include the provision for primary and non-contributing basis with respect to any other insurance that may be available to CBK. v) Name the CBK as loss payee for any claims resulting from this contract. vi) The Contractor shall be responsible to fund all amounts within any policy deductible or retention.	
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	<u>Performance bond</u>	
A	The contractor shall provide to the Central Bank of Kenya, performance security in the form of appended bank guarantee (first demand guarantee) in accordance with prescribed form specimen. The performance security shall be in the percentage prescribed in the conditions of contract and shall remain valid and in force until the end of defects liability period.	
	<u>Waste management</u>	
B	The Contractor shall be responsible for the collection, segregation, temporary storage, handling, transportation and disposal of all waste generated from the Works. Waste management activities shall be undertaken in a manner that maintains good housekeeping, prevents contamination of recyclable materials, and minimises adverse environmental, health, safety and operational impacts.	
	Segregation of Waste	
	The Contractor shall provide a designated and properly maintained waste storage and segregation area at a location approved by CBK. Where applicable, hazardous, contaminated, chemical, electrical, electronic or other controlled waste shall not be mixed with general construction waste and shall be separately contained, stored, handled and disposed of in accordance with the applicable statutory requirements and approved procedures.	
	Waste Containers and Identification	
	The Contractor shall provide a sufficient number and capacity of skips, bins or other suitable containers for each identified waste stream. Each waste container shall: a) Be colour-coded according to the approved Waste Management Plan; b) Be clearly and permanently labelled on all readily visible sides to identify the type of waste permitted within the container; c) Be positioned to allow safe access for depositing and collection of waste; d) Be maintained in a safe, clean and serviceable condition; and e) Where necessary, be covered or otherwise protected to prevent scattering of waste, dust generation, water ingress or contamination.	
	The Contractor shall brief its employees, subcontractors and suppliers on the waste segregation requirements and shall ensure that waste is deposited only in the appropriate designated containers.	
	Collection and Removal	
	Waste containers shall be monitored and emptied, replaced or removed at appropriate intervals and before reaching their maximum safe capacity. The Contractor shall not permit containers to overflow or become so full that waste is deposited in an incorrect container or outside the designated waste storage area.	
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Item No	Description	Amount Kes
	<u>Hazardous substances</u>	
A	The Contractor shall be responsible for the identification, laboratory analysis and safe removal of all hazardous substances arising from the execution of the Works, including contaminated soil, asbestos, lead, lead-based paint, polychlorinated biphenyls (PCBs) and similar materials, in accordance with approved standards for the removal and handling of hazardous substances.	
	<u>Environmental Management Plan (EMP)</u>	
B	The Contractor shall develop, implement, regularly review and update a project-specific Contractor's Environmental Management Plan (CEMP) and shall submit to the Consultant and CBK for review and approval prior to commencement of the relevant Works.	
	As a minimum, the CEMP shall address:	
	a) Environmental Management Structure: Roles, responsibilities, reporting lines and personnel responsible for environmental protection, monitoring and compliance.	
	b) Training and Awareness: Environmental induction, training, toolbox talks and awareness programmes for employees, subcontractors and suppliers.	
	c) Environmental Risks and Controls: Project-specific constraints, environmental risk assessments, method statements, mitigation measures and responsibilities.	
	d) Monitoring, Auditing and Reporting: Environmental inspections, monitoring, audits, correspondence, reporting and record-keeping procedures.	
	e) Incidents and Emergencies: Procedures for environmental incidents, emergencies, spill response, non-conformances and corrective actions.	
	f) Waste Management: Segregation, storage, reuse, recycling and lawful disposal of construction, demolition, solid, hazardous and toxic waste.	
	g) Chemicals and Hazardous Materials: Safe storage, handling, use and disposal of fuels, oils, chemicals and hazardous substances, including appropriate Safety Data Sheets.	
	h) Water and Drainage: Temporary drainage, water conservation, water quality, wastewater management, erosion and sedimentation control.	
	i) Pollution Control: Management of dust, emissions, air quality, noise, vibration, light pollution, spills, refuelling and other potential sources of pollution.	
	j) Site and Ecological Protection: Protection of vegetation, landscaping, ecological features, archaeological resources and other sensitive areas.	
	k) Soil and Excavated Materials: Management, stockpiling, reuse, transportation and disposal of soil and excavated materials, including management of borrow pits and other material sources where applicable.	
	l) Plant and Construction Activities: Environmental controls relating to construction methods, plant, machinery, equipment, access roads, deliveries and construction traffic.	
	m) Reinstatement: Restoration and reinstatement of areas, surfaces, landscaping and infrastructure affected by the Works.	
	n) EIA/ESIA Requirements: Compliance with all applicable environmental mitigation measures, approvals, conditions and special requirements arising from the project's EIA/ESIA.	
	The Contractor shall implement practical measures to minimise energy and water consumption, emissions and construction waste, including, where applicable:	
	a) Use of energy-efficient lighting, including LED lighting;	
	b) Control of unnecessary lighting and light pollution;	
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Item No	Description	Amount Kes
	c) Switching off plant and equipment when not in use and minimising engine idling; d) Metering and monitoring water consumption; e) Prevention of water wastage and leakage; f) Dust and construction emissions control; and g) Prioritising material reuse, recovery and recycling over disposal.	
	Records and Compliance The Contractor shall maintain adequate environmental compliance records, including inspection and audit reports, waste disposal and recycling records, training records, monitoring records, incident reports, corrective actions, material data sheets and applicable permits or approvals. Such records shall be available to the Consultant and CBK upon request and submitted as part of the project close-out documentation where required. The CEMP shall be reviewed and updated throughout the Works to reflect changes in construction activities, site conditions, identified risks or statutory requirements. Approval of the CEMP shall not relieve the Contractor of any obligation or responsibility under the Contract. <u>Hoarding requirement</u> A The contractor shall provide temporary hoarding to hoard off the site / activities from the rest of other areas (offices, corridors, passages etc). The bidder shall propose a hoarding plan for approval and shall maintain the same throughout the construction period and be removed upon completion. The contractor shall allow for the cost of relocation where required to achieve the phasing of works. <u>Hoarding requirements</u> a) External hoarding: Pre-painted corrugated sheet covering on and including painted mild steel framing / timber studs: colour to approval b) Internal hoarding: Marine ply covering fixed on and including painted mild steel framing / timber studs <u>Dust screens / nets</u> B The contractor shall provide temporary heavy gauge netting to screen off dust and debris from in occupied areas (offices, corridors, passages etc) and between floors where required. The bidder shall propose a plan for approval and shall maintain the same throughout the construction period and be removed upon completion. The contractor shall allow for the cost of relocation where required to achieve the phasing of works.	
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Item No	Description	Amount Kes
	<u>Occupational health & safety</u>	
A	All bidders shall be expected to have operational knowledge and strictly comply to the Occupational Health & Safety Act, 2007. The site shall have a competent Health & Safety Officer who shall enforce compliance of the Act. Safety officers shall be required to prepare the safety policy specific to the construction site. The 'golden rules' of the site safety shall be summarized and pinned on the notice board. As part of safety policy, visitors (and any new person to site) shall be taken through a safety moment and induction session with a view to ensure the understanding of site safety. In addition to complying with the requirements of the Occupational Safety & Health Act 2007 and the Factories Act, the Contractor and Sub-Contractors shall be required to comply in all respects with the Factories (Building Operations and Work of Architectural Construction) rules All contractors staff together with visitors to site shall be expected to have safety helmet (to specific color codes), reflector jackets and safety boots (at the bare minimum) together with all other PPE safety gear necessary for their areas of operation. NOTE: The Contractor will be held responsible and shall give written Notice not later than Seven (7) days after the beginning of the building operations included in this Contract stating the particulars included in this Contract. The Contractor will further be required to identify a Site Safety Officer in accordance with the above Rules who will be responsible for the health and safety of workers on the site. A log of all incidences, accidents and near misses shall be entered into incidence logbook by competent personnel. The Contractor, subcontractors and their agents are required to study, understand and comply with the health safety strategic management plan and Health and Safety specification appended to the bid document.	
	<u>Site levels</u>	
B	Before commencing work the Contractor must arrange for and agree with the Consultant the existing site levels and similarly establish and agree on a benchmark.	
	<u>Setting out</u>	
C	The Contractor shall set out the Works in accordance with the dimensions and levels shown on the drawings and shall be responsible for the correctness of all dimensions and levels so set out and will be required to amend all errors arising from inaccurate setting out at their own cost and expense. Setting out will be done using survey equipment that is able to use Global Positioning System (GPS) signals to minimize errors as much as possible. In the event of any error or discrepancy in the dimensions or levels marked on the drawings being discovered, such errors or discrepancies must be corrected and reported by the Contractor to the Consultant and CBK. The setting out of works shall include setting out of all subcontractor's work. The survey plan established shall be submitted to the Consultant and CBK for approval, use and retention. The Land Surveyor shall establish at least six (6) additional benchmarks which shall be handed over to CBK on completion of works for future reference.	
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Item No	Description	Amount Kes
	<u>Contractor working area, access and movements</u>	
A	The Contractor's working storage and dumping area, and all their activities will be confined to locations to be as indicated in bid site layout drawings and agreed with the Consultant and CBK at the commencement of the works. The movement of the Contractor's vehicles and workmen will be restricted to areas and routes to be agreed with the Consultant before commencing the Contract Works and these should strictly be adhered to throughout the course of the Contract unless otherwise agreed.	
	<u>Temporary roads</u>	
B	Site access roads Upon the completion of the Works the Contractor shall remove such temporary roads, temporary culverts, bridges etc., and make good and reinstate all works and services disturbed to the satisfaction of the Consultant.	
	<u>Sample display and store</u>	
C	The Contractor shall allow under this item for construction of a lockable space for storage of approved samples.	
	<u>Carting away</u>	
D	The Contractor shall remove all temporary works, rubbish, debris and surplus materials from the site as they accumulate and upon completion of the works, remove and clear away all plants, equipment, rubbish, unused materials, and stains and leave in a clean tidy state to the satisfaction of the Project Manager. The whole of the works shall be delivered up clean, complete and perfect in condition in every respect to the satisfaction of the Project Manager.	
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Item No	Description	Amount Kes
	<u>As built drawings</u> A The Contractor and all Subcontractors shall engage competent and suitably qualified drafting personnel to prepare accurate As-Built Drawings using AutoCAD, Autodesk Revit or other approved specialist design software, as appropriate to the Works. As-Built Drawings shall accurately represent the Works as actually constructed and installed, including all above-ground, concealed and below-ground works and services. Draft copies shall be submitted electronically to the Consultant for review prior to final submission. Final As-Built Drawings shall be provided in both: a) Editable/native format, including DWG, RVT or other approved format; and b) Non-editable format, including PDF. Drawing Requirements As-Built Drawings shall be properly coordinated, dimensioned, referenced and drawn to suitable scales, generally as follows: a) Site Plans: 1:250; b) General Layouts: 1:100; c) Details: 1:10, 1:20 or 1:50; or d) Such other scales as may be directed or approved by the Consultant. The drawings shall clearly indicate, where applicable, the actual locations, routes, sizes, levels, inverts, depths, capacities, identification references, valves, stopcocks, access points, junctions, fittings, changes in direction, termination points and other relevant installation details necessary for the future operation, maintenance, alteration and identification of the Works. Services to be Recorded As-Built Drawings shall record all services installed, modified, diverted or affected by the Contractor and Subcontractors. The Contractor shall maintain As-Built Drawings progressively throughout the construction period and shall not defer their preparation until completion of the Works. Final coordinated As-Built Drawings shall be submitted together with the Operation and Maintenance Manuals and other required handover documentation. Submission and acceptance of complete and accurate As-Built Drawings shall be a condition precedent to certification of Practical/Substantial Completion, as applicable under the Contract. Approval or acceptance of the As-Built Drawings by the Consultant or CBK shall not relieve the Contractor of responsibility for their completeness, accuracy or compliance with the Works as actually executed.	
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Item No	Description	Amount Kes
	<u>Shop drawings & Other specialist Works</u>	
A	The Contractor shall prepare and submit for review and approval by the Consultant and CBK all required shop drawings, coordination drawings and specialist drawings, including those prepared by Subcontractors and specialist suppliers. Drawings shall be prepared using AutoCAD, Autodesk Revit or other approved software appropriate to the Works. Shop drawings shall be fully coordinated with the Contract Drawings, Specifications, existing installations and the work of other trades and shall clearly indicate all dimensions, levels, interfaces, supports, access requirements, openings, penetrations and other information necessary for proper execution and coordination of the Works. Contractor's Review and Submission Before submission, the Contractor shall check, coordinate and verify all shop drawings, manufacturer's drawings, certified prints and related technical information for compliance with the Contract Documents and site conditions. a) All submissions shall be signed or stamped by the Contractor confirming that they have been reviewed and coordinated, and shall include, as a minimum: b) Project and drawing title; c) Specification Section/Drawing reference; d) Contractor/Subcontractor name; e) Drawing number and revision; f) Date of submission; and g) Name and signature of the person responsible for the Contractor's review. The Contractor shall submit the required electronic copies together with four (4) printed copies, or such other number as may be directed by the Consultant or CBK. Review and Approval Following review, the Contractor shall promptly incorporate all comments and amendments and resubmit the drawings until the required approval is obtained. The Consultant's and/or CBK's review or approval shall be limited to general conformity with the design intent, Contract Documents, spatial coordination and interfaces with other Works, and shall not constitute confirmation of the accuracy of dimensions, quantities, fabrication details, installation methods or other matters for which the Contractor remains responsible. No fabrication, procurement or installation of work requiring an approved shop drawing shall commence until the relevant drawing has received the required approval. Programme and Coordination The Contractor shall maintain a Shop Drawing and Submittal Schedule/Register and shall allow sufficient time in the construction programme for preparation, coordination, review, amendment and resubmission of all shop drawings without delaying the Works. Delays arising from late, incomplete, inaccurate or inadequately coordinated submissions by the Contractor or its Subcontractors shall not constitute grounds for additional cost or extension of time.	
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Item No	Description	Amount Kes
	<u>Materials, tools, plant and scaffolding</u>	
A	Allow for providing all scaffolding, plants, crane, forklift, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for use of nominated Sub-Contractors as described herein. No timber used for scaffolding, formwork or temporary works of any kind afterwards in the permanent works Quality of material and work is to be of the highest standard. All materials and workmanship used in the execution of the works shall be of the best quality and description unless otherwise described. Any materials for the works condemned by the Consultant and CBK shall immediately be removed from the site at the Contractor's expense. All such plant, tools and scaffolding shall comply with all regulations whether general or local in force throughout the period of the Contract and shall be altered or adapted during the Contract as may be necessary to comply with any amendments in or additions to such regulations.	
	<u>Off-site storage of materials</u>	
B	Where storage of materials for the Works is required off-site, the Contractor shall ensure that the materials are insured in the name of the Central Bank of Kenya, stored in a secure undercover location, packaged or protected to prevent damage during delivery and storage, certified as belonging to the Central Bank of Kenya where payment for unfixed materials is sought, located close enough to the site to allow inspection by CBK, and secured in accordance with the Contract where early payment is required. Generally, payment for materials stored off-site shall not be allowed unless approved by CBK. The Contractor shall arrange for inspection by the Consultant and CBK of materials, components, and fabricated items at the relevant factories, warehouses, or other sources for quality-control inspection of samples, prototypes, testing, examples of custom-made work, and similar items.	
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Item No	Description	Amount Kes
	<u>Deliveries & removal</u>	
A	The project is located within an active and fully operational facility, where normal business activities and other operational functions, will continue throughout the duration of the Works. The Contractor shall therefore plan, coordinate and execute all deliveries of materials, goods, tools, plant and equipment in a manner that does not obstruct, disrupt or cause inconvenience to the normal operations of CBK and other tenants/visitors. The Contractor shall comply with the following requirements: 1. Initial Mobilisation and Start-Up Deliveries Major initial deliveries required for mobilisation should, where practicable, be undertaken prior to commencement of the working days or on Saturdays, subject to prior approval and clearance by CBK. 2. Deliveries During Normal Working Days Deliveries made during normal working days shall be scheduled outside peak periods when staff are arriving at the facility. 3. Advance Notification and Security Clearance The Contractor shall provide CBK with a minimum of forty-eight (48) hours' advance notice of all planned deliveries to allow sufficient time for the necessary security clearances, access arrangements and internal coordination. 4. Access and Designated Delivery Routes All deliveries shall be made exclusively through designated access gates and routes approved by the CBK Security Team. The Contractor shall ensure that all delivery personnel, vehicles and associated equipment comply with the applicable CBK security and access-control procedures. 5. Prior Approval No delivery shall be undertaken without the necessary prior approval and clearance from CBK Security. CBK reserves the right to reschedule, restrict or temporarily suspend deliveries where such deliveries may interfere with security requirements, conferences, meetings, operational activities or other activities within the facility. 6. Heavy and Oversized Deliveries Deliveries involving heavy, oversized or abnormal loads shall, in addition to the above requirements, be planned and undertaken in accordance with applicable Local Authority requirements and restrictions governing delivery times, vehicle access and movement of heavy loads.	
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Item No	Description	Amount Kes
	<u>Works to be executed in a highly sensitive environment</u>	
A	The Works shall be undertaken within an active, occupied and fully operational facility. The Contractor shall therefore exercise a high degree of care, coordination, professionalism and attention to detail in the planning and execution of the Works. The Contractor shall plan, coordinate, review and execute all activities in a manner that safeguards business continuity, maintains safety and security, and minimises disruption to normal operations. Without limiting the Contractor's general obligations under the Contract, the Contractor shall: Minimise Disruption and Nuisance: Plan and execute the Works so as to minimize noise, dust, vibration, obstruction, congestion and any other nuisance or inconvenience to CBK staff, visitors and ongoing operations. Maintain Business Continuity: Ensure that construction activities do not unnecessarily interrupt, impede or compromise CBK's normal business activities, services, meetings, conferences, access routes or other operational requirements. Where an activity has the potential to cause disruption, it shall be planned and coordinated with CBK in advance. Safety and Security: Comply fully with all applicable CBK safety, security, access-control and operational procedures. Movement of personnel, materials, tools, plant and equipment within the facility shall be properly coordinated and undertaken only through approved routes and areas. Planning and Coordination: Carefully plan and sequence the Works, taking into consideration the operational nature of the facility. Activities that may affect operations shall be communicated in advance. Continuous Monitoring: Continuously monitor site conditions and the impact of the Works on surrounding operations. The Contractor shall promptly respond to and address any unforeseen conditions, operational concerns or instructions arising during execution of the Works. Professional Conduct: Ensure that all employees, subcontractors, suppliers and other personnel engaged in the Works maintain professional, courteous, respectful and appropriate conduct when interacting with CBK staff, visitors and other authorised persons within the facility. Compliance with CBK Instructions: Promptly comply with reasonable instructions issued by CBK relating to operational requirements, safety, security, access, working arrangements and the protection of ongoing business activities. Collaborative Approach: Maintain a proactive and collaborative approach throughout the execution of the Works, including regular coordination with CBK representatives and other relevant stakeholders to identify and resolve potential conflicts or operational constraints before they adversely affect the Works or CBK operations.	
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Item No	Description	Amount Kes
	<u>Cooperation with stakeholders and other contractors on site</u>	
A	Collaboration with CBK team is mandatory to ensure smooth integration of contractor activities with ongoing site management tasks. Bidders' attention is drawn to the fact that other works by other vendors will be running concurrently. Cooperation by all parties, including syncing deliveries and use of any CBK designated areas for storage of materials, waste etc shall be required. The contractor must ensure open and constant communication with these teams, addressing any potential impacts to operations well in advance.	
	<u>Site visit</u>	
B	Bidders shall be required to visit the site at a date to be advised by CBK, to acquaint themselves with the nature of the site, access to site, delivery logistics, source of various materials and all matters relating site and its operations. Bidders shall be required to liaise with CBK for additional information on site visit arrangement including clarity on date and time of visit and security clearance procedures. The bidder and any of their personnel or agents shall be required to request for conditional permission to enter the site upon complying with all security procedures as shall be required. The permission shall be deemed to be based upon the bidder, their personnel and agents indemnifying CBK and their personnel and agents from and against all liability and upon the bidder being responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses (however caused) which would not have arisen other than due to the exercise of such permission. The bidder is required to visit the site and shall be deemed to have acquainted themselves therewith as to the nature of the site, position and means of access etc and no claim in this connection will be allowed before or after award of the contract. No claims will be allowed for travelling expenses which may be incurred by the bidder in visiting the site or preparing the bid for the works.	
	<u>Supervision</u>	
C	The Works shall be executed under the direction and to the entire satisfaction of the Consultant, who shall have CBK's specifically delegated authority and shall always have access to the Works and to the yards and workshops of the Contractor or other places where work is being prepared for the building works.	
	<u>Proprietary materials and alternatives</u>	
D	Where a particular proprietary material, product, item, method or system is identified in the Contract Documents, such identification shall establish the required quality, character, appearance, functionality, performance, durability, compatibility, maintainability and warranty requirements of the specified item. Unless expressly stated otherwise in the Contract Documents, identification of a proprietary item shall not necessarily imply that no alternative may be considered. However, any proposed alternative shall be subject to prior review and written approval by CBK and shall demonstrate equivalence or superiority to the specified item in all material respects. Proprietary materials, products and systems identified in the Contract Documents shall be regarded as the specified and preferred basis of design. The Contractor shall not substitute any such item without prior written approval.	
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Item No	Description	Amount Kes
	Requirements for Proposed Alternatives Where the Contractor proposes an alternative to a specified proprietary material, product, method or system, the proposed alternative shall: - Be equal to or better than the specified item in terms of quality, technical performance, durability, functionality, reliability, maintainability and service life; - Match the required design intent, visual appearance, finish, texture, colour and architectural character, where appearance forms a material part of the specification; - Be compatible with adjoining materials, components, systems and completed elements of the Works; - Meet or exceed the applicable standards, codes, statutory requirements and performance criteria specified in the Contract Documents; - Provide warranties, guarantees and after-sales support that are equal to or better than those applicable to the specified proprietary item; and - Not adversely affect the design, performance, programme, cost, safety, operation, maintenance or integrity of any other part of the Works. Where natural materials are specified, artificial, imitation, printed, patterned or otherwise manufactured products purporting to replicate the appearance of the specified natural material shall not be regarded as visually equivalent unless expressly accepted in writing by CBK. Submission of Proposed Alternatives Any proposal for substitution shall be submitted sufficiently in advance to allow adequate time for technical review, consultation and approval before procurement, manufacture, fabrication or installation. The Contractor shall submit comprehensive information necessary to enable proper evaluation of the proposed substitution, including, as applicable: - Manufacturer's name, product identification and country of manufacture; - Product data sheets, catalogues and technical literature in English; - Samples, mock-ups, finishes and colour selections, where applicable; - Evidence of conformity with the standards cited in the Contract Documents; - Independent test certificates and reports, where applicable; - Evidence demonstrating compliance with all specified performance criteria; - Documentary evidence demonstrating that the proposed alternative meets or exceeds the technical and design intent of the specified item; - Documentary evidence demonstrating equal or better compliance with relevant codes and standards; - Warranty and guarantee information; - Details of local technical support, spare parts, servicing and maintenance requirements, where applicable; - Reasons for proposing the substitution; - Identified benefits or advantages to CBK; - A statement detailing all revisions required to the Contract Documents arising from the proposed substitution; - A statement identifying any consequential modifications required to other parts of the Works;	
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Item No	Description	Amount Kes
	o) A statement detailing any effect on the approved construction programme, including procurement lead times; p) A statement of all cost implications, including any consequential costs arising outside the Contractor's immediate scope of work; and q) Evidence demonstrating that the proposed substitution is fully compatible with and as effective as the specified proprietary item. CBK may require additional information, samples, testing, demonstrations or mock-ups where considered necessary for evaluation of the proposed alternative. Conditions for Consideration of Substitutions A proposed substitution shall only be considered where: a) It is submitted sufficiently early to permit proper evaluation without delaying the Works; b) The Contractor provides satisfactory evidence that the specified proprietary item is unavailable or cannot reasonably be obtained within the constraints of the approved construction programme; or c) The Contractor demonstrates that the proposed alternative provides a demonstrable technical, operational, commercial or lifecycle benefit to CBK without compromising the requirements or design intent of the Contract Documents. Failure by the Contractor, its subcontractors or suppliers to place orders, procure materials or make necessary arrangements in sufficient time shall not constitute an acceptable justification for substitution. Any delay and additional cost arising from the preparation, assessment, rejection, resubmission or approval of a proposed substitution shall not, in itself, constitute grounds for an extension of time or additional payment where the substitution has been proposed at the Contractor's initiative. Approval of Substitutions No proposed substitution shall be incorporated into the Works without prior written approval by CBK. Approval of a substitution shall not: a) Relieve the Contractor of any obligation or responsibility under the Contract; b) Constitute acceptance of any reduction in quality, performance or specified requirements; c) Transfer responsibility for compatibility, coordination or performance of the alternative to CBK; or d) Entitle the Contractor to additional payment or an extension of time unless expressly agreed in writing in accordance with the Contract. The Contractor shall remain fully responsible for the performance, suitability, compatibility, coordination and fitness for purpose, where applicable under the Contract, of any approved alternative.	
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Item No	Description	Amount Kes
	<u>General and special attendance</u>	
A	The Contractor shall be deemed to have allowed for providing all general attendance and special attendance necessary for the proper execution, completion, testing, commissioning, and maintenance of his works. General attendance shall include, but not be limited to, site management, supervision, labour, access to work areas, coordination with other contractors, unloading, handling, storage of materials, attendance at meetings, setting out, cleaning, waste disposal, and all other routine support services required for the execution of the works. Special attendance shall include, but not be limited to, the provision of scaffolding, lifting equipment, hoisting facilities, temporary supports, temporary weather protection, plant, tools, testing equipment, power, water, security measures, protection of completed works, and any other specialist services or facilities necessary for the proper execution of the works. The Contractor shall make his own arrangements for all such attendance and no separate or additional payment shall be made in respect thereof. All costs associated with the provision of general attendance and special attendance shall be deemed to be included in the Contract Sum.	
	<u>Transport to and from the site</u>	
B	The Contractor shall include in their fixed unit-rates, for the transport of materials, workmen, etc., to and from the site of the proposed Works, at such hours and by such routes as are permitted by the authorities.	
	<u>Contract samples & prototypes</u>	
C	Samples and Prototypes listed in the Trade Sections of the Specification shall be obtained and submitted in sufficient time to permit proper evaluation, approval and where necessary modification and re-submission prior to any requirement to commence fabrication or stockpile materials for work for which the Sample or Prototype is required as a Control. Delays caused by or arising from the late submission of Samples or Prototypes shall not be, nor deemed to be, a justification for any claim for an extension of time for completion of the Works or cost variation to the contract. Inspections off site: Where appropriate, allow for inspection of samples and prototypes in the factory. Where the factories are located in areas outside Nairobi and other countries, the contractor shall allow for all costs including travel and accommodation for consultant's staff travel for inspection and assessment of samples, equipment, materials and any other prototypes as required or directed by the Consultant and CBK.	
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Item No	Description	Amount Kes
	<u>Submission Procedure:</u>	
A	All samples submitted for review shall be identified by an attached label showing the project name, Contractor's name, the word "Sample", the sample number and numbered consecutively in order of submission. Acceptance: Samples shall be accompanied by the Contractor's Sample Submission and Acceptance Form' containing the following information: i) Project name ii) Contractor's names iii) sample number iv) Date of samples v) Sample generic name vi) Sample description vii) Building location viii) Specification Section name ix) Space for Consultants' review notes and acceptance x) Space for CBK review Notes and remarks xi) Acceptance Large Samples: Samples of a bulky nature may be kept on site for review with a request for review made to the appropriate reviewer. Sample Room: The Contractor shall provide on the site a designated Sample Room	
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Item No	Description	Amount Kes
<u>Operation and maintenance manuals</u>		
A	The Contractor and all Subcontractors shall prepare and submit comprehensive Operation and Maintenance (O&M) Manuals for all installations, equipment, systems, finishes and other items required by the Contract Documents, including corrosion protection systems and structural steel finishes. The O&M Manuals shall include, as applicable: a) Scope and Description: Description of the works, systems and installations provided, including application and installation methods. b) Equipment and Component Schedule: Inventory of installed materials, equipment and components, including type, model, manufacturer, supplier and relevant identification details. c) Operating Procedures: Detailed instructions for normal operation, start-up, shutdown and emergency operation, where applicable. d) Inspection and Maintenance: A tabulated inspection, testing and preventive maintenance schedule indicating the required frequency, procedures and level of routine attention throughout the service life of each component. e) Manufacturer's Information: Relevant manufacturer's technical literature, data sheets, operating instructions and maintenance recommendations. f) Safety Information: Details of applicable safety features, controls, precautions and emergency procedures. g) Specialist Contacts: Contact details of relevant manufacturers, suppliers, installers, applicators and authorised service providers. h) Warranties and Guarantees: Copies of applicable manufacturer's, supplier's, Subcontractor's and installation warranties and guarantees. i) Testing and Commissioning: Relevant inspection, testing, commissioning and performance records and certificates. j) Maintenance Requirements: Recommended cleaning, servicing, repair, replacement and maintenance procedures, including recommended consumables and spare parts where applicable. k) As-Built Information: Reference to and incorporation of the relevant approved As-Built Drawings necessary for the effective operation and maintenance of the Works. The Manuals shall be project-specific, indexed, clearly organised and provided in both editable and non-editable electronic formats, together with any hard copies required under the Contract. Draft O&M Manuals shall be submitted sufficiently in advance for review and comment. Final approved O&M Manuals, incorporating all required amendments, shall be submitted as part of the handover documentation and prior to certification of Substantial/Practical Completion, unless otherwise provided under the Contract.	
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Item No	Description	Amount Kes
	<u>Services coordinator</u>	
A	The Contractor shall employ a suitably experienced Building Services Coordinator, who shall be responsible for coordinating the installation, testing and commissioning of the building services. The Building Services Coordinator shall ensure that coordinated services drawings are prepared and clearly demonstrate compliance with the documented requirements. The Coordinator shall coordinate the mechanical, electrical, plumbing, ICT, security and fire-protection designs; review drawings for clashes and conflicts; ensure compliance with uptime requirements, applicable standards, local building regulations and CBK technical standards; and chair MEP coordination meetings. The Coordinator shall also coordinate the installation of server racks, containment systems, overhead and underfloor services, power whips, busbar systems and fibre pathways; ensure hot-aisle/cold-aisle design integrity, adequate airflow management and required maintenance clearances; and coordinate utility power systems, transformers, generators, UPS systems, ATS systems, busways, PDUs, earthing and bonding. The Coordinator shall coordinate the services inspection and handover processes, the training of Central Bank of Kenya personnel and/or operators' staff in the operation of the services systems, and the integration of the new systems with the existing systems, to the satisfaction of the Consultant and CBK.	
	<u>Public and private roads, pavement, etc.</u>	
B	The Contractor will be required to make good at their own expense any damage they may cause to the present approach road surfaces during the period of the Works.	
	<u>Contractors' superintendence</u>	
C	The Contractor shall constantly keep on the Works a literate English-speaking Agent or Representative, competent and experienced in the kind of work involved, who shall give their whole time to the superintendence of the Works. Such Agent or Representative shall receive on behalf of the Contractor, directions and instructions from the Consultant and such directions and instructions shall be deemed given to the Contractor in accordance with the Conditions of Contract. The Agent shall not be replaced without the specific approval of the Consultant. It is to be a specific condition of this Contract that the contractor shall provide onsite throughout the period up to the date for Practical Completion a suitably qualified, experienced and competent person to ensure that the works are carried out to the standard required by the specifications and detailed on the Drawings; and shall ensure that upon any termination of employment a suitable replacement is found. The Consultant may interview the Contractor's proposed Representative. Curriculum Vitae of past experience and qualifications. The personnel proposed for the works shall have relevant experience in similar works. CBK's decision will be final regarding the suitability of the proposed Representative.	
Carried to Collection Kshs Section No. 3 PRELIMINARIES & CONDITIONS OF CONTRACT Bill No. 2 Particular Preliminaries Electrical & Power Infrastructure Upgrade Tender Bill of Quantities		



Item No	Description	Amount Kes
	<u>Traffic arrangements</u>	
A	The designated routes and zones outlined form the foundation of a detailed traffic management plan, ensuring the safe and efficient movement of vehicles and pedestrians within the Facility. The Contractor will be required to agree the access route to the site with the Central Bank of Kenya before commencement of the Contract Works and must adhere to this route throughout the course of the Contract, unless agreed otherwise. All Temporary Roads must be constructed and maintained to ensure stability, reduce dust, and accommodate heavy vehicle with pedestrian routes and crossings shown designated for safe passage of personnel across traffic areas. These crossings will be supported by physical barriers and appropriate signage. The Contractor may be required to observe certain traffic rules and regulations pertaining to the use by their vehicles of the roads adjacent to the site. These rules and regulations should be investigated by the contractor at the commencement of the Contract. All traffic flow, as indicated on the routes, must incorporate: Speed limit enforcement zones. Clearly marked stop points at intersections. Emergency vehicle routes that are kept clear at all times. Temporary signage and lighting must be installed at all critical points identified in the diagram to guide vehicle and pedestrian movement safely.	
	<u>Schedule of works</u>	
B	The contractor shall prepare and submit a detailed project schedule of works for approval by CBK and the Consultant in accordance with the Contract. The schedule of works is to be in a computerized format done in Primavera, Microsoft Project, or any other approved software or format. The schedule of works should clearly indicate the critical path, and the Contractor will update the schedule on a monthly and/or weekly basis during the course of the Contract clearly indicating the actual dates against the approved baseline dates. The schedule shall show in detail the construction time and order in which each section of the work is to be carried out and be sub-divided into elements, trades and tasks. The time schedule is to be agreed with the Consultant. At the end of each month the Contractor is to incorporate actual start and finish dates into the time schedule and produce a construction schedule update and analysis for the Consultant. The analysis is to show actual start and finish dates, identify out of sequence work, critical activities and any constraints which have or may affect the progress of the works. During the execution of the works the Contractor will incorporate any changes to the time schedule only if approved 'in writing' by the Consultant arising for whatsoever reason and produce a revised schedule. The Contractor will provide the Consultant with soft editable copy of the time schedule including monthly updates and analyses together with four printed copies of the relevant data. Note: The contractor shall allow in the overall schedule of works, published holidays as per the annual calendar and further allow a cumulative contingency of twenty (20) calendar days for temporary suspension or rescheduling of activities arising from unavoidable CBK operational or institutional events. Such allowance shall be incorporated into the Contractor's programme and Tender Price and shall not, to the extent covered by the stated allowance, constitute grounds for additional cost or extension of time.	
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Item No	Description	Amount Kes
	<u>Sub-contractors' attendance</u>	
A	The Contractor shall provide general and special attendance to Sub-Contractors as required for the proper execution of the Sub-Contractor Works. General attendance shall include use of the Contractor's scaffolding while erected on site, provision of power, water, lighting, watching, sanitary accommodation, mess rooms, welfare facilities, space for offices, stores, plant, and materials, and clearing away rubbish produced by Sub-Contractors. Special attendance shall include taking delivery, meaning the provision of unskilled labour necessary to unload plant and materials received on site and place them within the Sub-Contractor's storage space or store, and hoisting, meaning the provision of unskilled labour and use of the Contractor's standing plant to assist in raising Sub-Contractor plant and materials to the required levels, but not placing them in final position. GENERAL ATTENDANCE - The following services are described as "allow for general attendance" a. Use, for the purpose of the Sub-Contractor Works of any scaffolding belonging to or provided by the Contractor while it remains so erected upon the site, provided that no warranty or other liability on the part of the Contractor or the sub-contractors shall be created or implied in regard to the fitness, condition or suitability of the said scaffolding. b. Provision of power, water, lighting, watching and attendance for the purpose of the Sub- Contractor Works c. Use of sanitary accommodation, mess rooms and welfare facilities d. Provision of space for erection of offices or stores or space for storage of plant and materials) Clearing away rubbish produced by them SPECIAL ATTENDANCE. The following services are applied under a separate item and were described under the following headings shall mean. a. "Taking delivery" shall mean the provision of unskilled labor necessary to attend upon the sub- contractor's workmen for the purpose of unloading plant and materials when received upon the site and placing in position within the Sub- Contractor's storage space or store. b. "Hoisting" shall mean the provision of unskilled labor and the use of any Contractor's standing plant for the purpose of assisting the Sub- Contractor's workmen in hoisting the Sub- Contractor's plant and materials to the various levels but not placing in its final position	
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Item No	Description	Amount Kes
	<u>Water</u>	
A	The Contractor shall provide at their own risk and cost all water for use in connection with the Works including the work of sub- contractors; make arrangements with the Local Authority for the installation of a separate meter for all water used by the contractor throughout the Contract and pay all costs and fees in connection therewith. The Contractor shall also provide temporary storage tanks and tubing, etc., as they may consider necessary and clear away at completion. All tanks for permanent retention/incorporation shall not be used for this item. Alternatively, the Contractor may make separate arrangements at their own risk with the Central Bank of Kenya for the use of the water from the existing water supply on site and for paying all charges thereto including connection and consumption. No guarantee is given on the availability of water or its quality. No claims for lack of water or water pressure will be entertained. All water shall be fresh, clean and pure, free from earthy, vegetable or organic matter, acid or alkaline substance in solution or suspension. Water used in the mixing of concrete shall conform to BS EN 1008:2002-Mixing water for concrete Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete.	
	<u>Lighting and power</u>	
B	The Contractor shall provide at their own risk and cost all artificial lighting and power for use on the works, including all sub-contractors and specialists' requirements and including all temporary connections, wiring, fittings etc., and clearing away on completion, The Contractor shall pay all fees and obtain all permits in connection therewith. The Contractor may install their own generator on site with the approval of the Kenya Power Company Ltd. (K.P.C.) and the Central Bank of Kenya, if required. All such temporary works shall be cleared away on completion. No claims due to lack of electricity or due to power fluctuations will be accepted. All watching and lighting shall comply with the requirements of CBK and the Consultant.	
	<u>Concrete tests</u>	
C	Benchmark and Testing of Concrete NOTE: The Contractor must allow for all costs in connection with the making of the cubes, curing, transport, crushing by Local Authority and obtaining the test certificate: to BS EN 206 and BS 8500 Set of four 150 x 150 x 150 mm concrete test cubes in sufficient quantity as shall be directed by the consultant.	
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Item No	Description	Amount Kes
	<u>Other tests</u>	
A	The Contractor shall be required to carry Site Acceptance Tests (SATs) and other tests as shall be required during the execution of the works as directed. Testing shall include provision of power, water and all other consumables where required. Such tests shall be documented and copies submitted to the Consultant. Sufficient notice shall be given prior to undertaking designated tests requiring to be witnessed. 5 working days for site tests; and 10 working days for local pre-delivery tests. The contractor shall allow for submission of samples for testing by approved independent specialist authority accredited to undertake testing works. Any tests undertaken on site shall use instruments calibrated by accredited authority. Tests shall include but not limited to the following: Note: Testing and commissioning shall include all chemicals, power, fuel amongst other pre-conditions necessary to achieve the testing procedure. This will also include connections to existing systems. The contractor shall pay for all fees required for testing. <u>Site office, contractor's temporary buildings</u> B The Contractor shall inspect the Site and provide, erect, maintain and, upon completion, remove all temporary offices, storage and welfare facilities necessary for the proper execution of the Works. The location, layout and standard of all temporary facilities shall be subject to the approval of CBK and the Consultant. Offices and Storage The Contractor shall provide adequate, secure and weatherproof temporary office and storage accommodation for its personnel, materials, tools and equipment, including: - Suitably furnished and adequately lit Contractor's site offices; - Secure, watertight stores and sheds for materials, tools and equipment; - A separate furnished office and storage facility of not less than 15 m² for the exclusive use of Subcontractors and Suppliers; and - Air-conditioning to office and enclosed storage areas, where required. Storage of materials within the existing building shall not be permitted without prior written approval of the Consultant and CBK and shall comply with any restrictions or conditions imposed. Welfare and Sanitary Facilities The Contractor shall provide and maintain adequate welfare facilities for its personnel and those of its Subcontractors, including: - Portable eco-toilets at approved locations; - Washing and hand-cleaning facilities; - Safe and adequate potable drinking water, including chilled/boiling water dispensers where required; - First-aid facilities; - Suitable shelter from rain and weather; and - Other welfare facilities required under the Contract. All facilities shall be maintained in a clean, hygienic, sanitary and serviceable condition throughout the Works. Office Amenities and Consumables Where required, temporary office facilities shall include: - Appropriate furniture and fittings; - Reception/waiting area with seating and storage for visitors' coats and umbrellas; - Tea room with suitable cutlery, crockery, glasses and serving equipment;	
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Item No	Description	Amount Kes
	d) Refrigerator, microwave oven, hot plate and dishwasher; e) Serving trays, trolley, water jugs, thermos flasks and similar meeting accessories; and f) Consumables including tea, coffee, sugar, soap, detergent, toilet paper and potable drinking water. The Contractor shall be responsible for the servicing, cleaning, maintenance and replenishment of the facilities and consumables throughout the required period. Meetings and Catering The Contractor shall provide reasonable non-alcoholic refreshments for scheduled site meetings as required under the Contract. Cooking and eating facilities for workers shall not be established or operated within the Site without prior written approval from CBK. Where approved, such facilities shall be located, operated and maintained strictly in accordance with CBK's security, health, safety and housekeeping requirements. All temporary facilities shall be maintained to the satisfaction of CBK and the Consultant and shall be removed upon completion, with the affected areas cleaned and reinstated to their original or specified condition. <u>Temporary structures</u> A The Contractor shall allow for providing and clearing away on completion of the Works such as temporary hoardings, fencing, gates, planked walkways, guard rails, etc. may be necessary for the protection of the workers, occupants of the building and adjacent structures and for the proper execution of the Works. All such temporary structures shall be constructed with the approval of the Consultant and CBK's full satisfaction and in such a manner as to cause minimum inconveniences and disturbance to pedestrians and road users using the adjacent roads. All such temporary structures shall comply in all respects with the National laws, rules and regulations currently in force and applicable to such structures. All temporary structures shall be erected in a manner so that the unloading or loading of materials causes minimum obstruction to the use of adjacent roads and other facilities. (a) All temporary structures shall be kept properly lit throughout the periods of darkness and any corners or projections shall be painted white. (b) Temporary structures shall not be used or permitted to be used for advertisement purposes except with the consent of the Consultant. (c) All temporary structures shall be always maintained in good order and condition to the satisfaction of the Consultant. (d) All temporary structures shall be removed when so required by the Consultant or at the end of the period for which it is required. The Contractor shall indemnify and shall keep CBK indemnified against any expense, loss, claim or in connection with the temporary structures <u>Telephone</u> B The Contractor is not required to provide a telephone but may provide one for its own convenience and shall pay all associated costs and charges.	
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Item No	Description	Amount Kes
	<u>Adverse weather conditions</u>	
A	The Bidder is referred to the Kenya Meteorological Department's monthly historical weather data and records for the preceding ten years. The Contractor's Method Statement and Programme shall explain how the wet seasons anticipated during the Contract Period will be accommodated within the Contract Period. The Contractor shall also make a reasonable allowance in the overall programme for recovery following adverse rainfall, including mopping up and removing water from excavations and trenches. "Adverse Weather Conditions" means weather conditions that are severe, unusual and unexpected.	
	<u>Temporary disposal of rainwater</u>	
B	The Contractor shall provide and maintain all necessary temporary gutters, downpipes, chutes, drains, etc. for conveying rainwater from the buildings. The Contractor shall allow for temporary drainage, pumping and piping for keeping the premises and site free from accumulation of water at all times.	
	<u>Site photographs</u>	
C	The Contractor shall seek approval and allow for taking digital site photographs on a weekly basis to the satisfaction of the Consultant. Soft copies of the photographs shall be provided to CBK and the Consultant. Hard copies shall be filed in a clean project album supplied by contractor on site and handed over to CBK on completion of the project Note: CBK is a restricted site and therefore the Contractor shall strictly observe security guidelines while taking photos. Photographs outside of the construction site shall not be allowed.	
	<u>Sign board</u>	
D	The Contractor shall visit and inspect the Site and shall provide, erect where directed, maintain throughout the building operations and remove upon completion one approved temporary notice board in accordance with the Consultant's standard design. The notice board shall provide a brief description of the Works and display the names of the Central Bank of Kenya, the Consultant and the Contractor, with sufficient space to add the names of nominated Subcontractors and Suppliers when known. Lettering relating to the Consultant shall not exceed 50 mm in height.	
	<u>Contractor's report</u>	
E	The Contractor shall provide to the Consultant progress report on a weekly and monthly basis (or as directed by the Consultant) for onward transmission to CBK. The Contractor's report shall be in approved format, and shall include project overview, progress charts, milestones, deliveries to site, achievements and any challenges in period under review. The report shall further provide weekly look-ahead, testing results, labor and equipment statistics, approved project photographs, Quality Assurance & Quality Control (QA/QC) documentation, list of notices, claims, safety statistics, environmental statistics, comparison of planned and actual progress, matters arising, early warning, log of Request for Information (RFI) & Request for Approvals (RFA) together with any mitigation measures for any delays.	
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Item No	Description	Amount Kes
<u>Other CBK contractors and contractor's specialists</u>		
A	The Contractor shall accept responsibility for providing the following services for direct contracts and specialists as before described: i) GENERAL ATTENDANCE. The following services are described as "allow for general attendance": (a) Use, for the purpose of other CBK contractor's Works of any scaffolding belonging to or provided by the Contractor while it remains so erected upon the site, provided that no warranty or other liability on the part of the Contractor or other CBK contractors and contractor's specialists shall be created or implied in regard to the fitness, condition or suitability of the said scaffolding; (b) Provision of water, lighting, watching and attendance for the purpose of the direct contractors and contractor's specialists. (c) Use of sanitary accommodation, mess rooms and welfare facilities. (d) Provision of space for erection of offices or stores or space for storage of plant and materials. (e) Clearing away rubbish produced by them. ii) SPECIAL ATTENDANCE. The following services are stated under a separate item and were described under the following headings shall mean; (a) "Taking delivery" shall mean the provision of unskilled labor necessary to attend upon the supplier's workmen for the purpose of unloading plant and materials when received upon the site and placing in position within storage space or store; (b) "Hoisting" shall mean the provision of unskilled labor and the use of any Contractor's plant for the purpose of assisting other CBK supplier's workmen in hoisting their plant and materials to the various levels but not placing in its final position. (c) "Providing Power" shall mean the provision of power during the course of the Works and during the period of maintenance.	
<u>Protection of work</u>		
B	The Contractor shall cover up and protect all finished work from damage including provision of temporary plywood or polythene sheet. In the event of any damage occurring to the Works, materials, fiber cables, power cables, security infrastructure, sewer line, drains, gullies, paths or other works on the site in temporary possession of the Contractor for the purpose of this Contract, either from the weather, want of proper protection, defects, or insufficiency of the Works or any other cause whatsoever during the progress of the Works, the Contractor alone shall be responsible and shall without extra charge, immediately make good all damage and pay all costs which may be levied.	
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Section No. 3

Bill No. 2

Particular Preliminaries

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Section No. 3

PRELIMINARIES & CONDITIONS OF CONTRACT

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Particular Preliminaries

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SECTION SUMMARY - PRELIMINARIES & CONDITIONS OF CONTRACT

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Item No	Description	Unit	Quantity	Rate	Amount Kes
	<u>As item above, but for Record (As-Installed)</u> <u>Drawings comprising:</u>				
A	1. Fully dimensioned drawings of all plants and apparatus. 2. General arrangement drawings of equipment, plant etc. 3. Routes – types and sizes and arrangement of all pipework. 4. System schematics and trunking diagrams showing all salient information relating to control and instrumentation. 5. Grading charts 6. Wiring and piping diagrams of plant and apparatus. 7. Schematic diagram of individual plants and switch and control boards. 8. All the required operating instructions for all panels, boards, control panels etc.		Item		
B	Prepare and submit Maintenance Manuals for all items installed.		Item		
C	Provide a year's (12 months') initial maintenance upon expiry of the Defects Liability Period. The maintenance to be carried out every quarter (3 months) for a period of 12 months.		Item		
D	All other items of general preliminary to cover, but not limited to:- 1. Attendance on all other sub-contractors, such as for Mechanical Installations, Communications/structured cabling Installations, Security Installations, Generator Installations, etc. 2. Hiring and keeping a Supervisor/Foreman on site 3. Constant supervision of the works. 4. Provision of all the required spares. 5. Testing and Inspection of materials/works. 6. Provision of labour camps. 7. Storage of materials. 8. Initial maintenance (During Defects Liability) 9. Providing water/electricity for the works. 10. Protection of the works/materials 11. Clearing away on completion. 12. Preparing Final Account. 13. Providing all Test Certificates, etc.		Item		
	Carried to Collection			Kshs	
	Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 1 General Items Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	To ensure that Electrical equipment are provided to specifications, allow for Workshop/factory visit for 8 No. persons (Engineer, Architect, 5No. IAC members and 1 Project Manager) to visit the manufacturing factory/Workshop to verify the equipment specifications and witness all the relevant factory/workshop tests before approval. The Contractor shall submit a pre-approved itinerary, test plan, and itemised budget. Reimbursement is limited to reasonable, supported actual cost up to the stated sum; unused balance remains with the Employer and no expenditure outside the written approval is payable. The cost of the visit to include:- i) Local transport ii) Accommodation for the seven, if any, at a hotel/resort not less than 4 star in rating. iii) All upkeep costs and daily per diem of not less than USD 400 per person iv) All the necessary tools/Instruments required for undertaking a complete workshop/factory test. v) The tenderer to ensure the seven team members above are accompanied by a technically qualified/experienced skilled representative from their offices to guide the team and answer all questions that may arise). vi) Tenderer to fully coordinate all logistics related to the travel in a timely manner.		Item		7,000,000.00
B	Allow for training of the client's technical team on the Operation, Troubleshooting, and Maintenance of the Power Supply System Equipment. The training to be conducted by the equipment manufacturer or an Authorized Representative, duly certified to offer such trainings (Manufacturer's Letter of Authority to be submitted.) The training should be conducted for a minimum of 3No. days, via a workshop, and must be witnessed by the Engineer. The training must be sufficient to ensure correct operation of the LV switchboard and switchgear, Riser busbar, and the Automatic Voltage Regulator. Certificates to be issued after the training. Allow for facilitation of the training including transporting client / engineer to and from workshop, accommodation and per diem allowances		Item		500,000.00
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Section No. 4

Bill No. 1

General Items

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	<u>SECTION NO. 4</u>				
	<u>ELECTRICAL POWER INSTALLATIONS</u>				
	<u>BILL NO.2</u>				
	<u>PREPARATORY, REDUNDANCY & TEMPORARY WORKS</u>				
	Note:				
	1. All Rates shall be inclusive of <u>VAT and PPRA Capacity Building Levy</u>				
	2. Allow for protection of all existing works and services during execution of works.				
	3. Tenderers shall visit the site, review drawings to ascertain the exact nature and extent of the work to be done and shall carefully examine the site conditions to inform their pricing as no claim for any extra work due to failure to comply with this requirement will be allowed.				
	4. All existing works shall be propped, strutted, protected , underpinned where required and prepared as necessary before any demolitions.				
	5. Temporary barriers, Dust proof netting and hoarding screens should be erected to demarcate the construction site from other areas (corridors, adjacent rooms & spaces, clinic, gym spaces etc) to contain any dust, particles or such matter from falling/entering usable areas.				
	6. Contractor to provide cranes, hoists, lifting equipment and allow for loading, haulage and offloading of equipment to clients designated store (approx. 10km from CBD).				
A	a) Carefully trace all the sub-mains cables from the two switchboards at the basement floor and identify the areas served.		Item		
B	b) Carry out comprehensive labelling of the cables in (a) above. This should include labeling of the cable origin (circuit breaker/fuse), cable size, floor served, and the specific area served.		Item		
	Carried to Collection			Kshs	
	Section No. 4				
	ELECTRICAL POWER INSTALLATIONS				
	Bill No. 2				
	Preparatory, Redundancy & Temporary Works				
	Electrical & Power Infrastructure Upgrade				
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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	c) Carefully decommission, remove, record and deliver all redundant & unused cables to the Employer at the location directed by the Engineer, with a jointly signed inventory and handover receipt. Title remains with the Employer; no disposal is permitted without prior written instruction'.		Item		
B	a) Carefully trace all the sub-mains cables from the riser busbar and identify the areas served.		Item		
C	b) Carry out comprehensive labelling of the cables in (a) above. This should include labeling of the cable origin (circuit breaker/tap-off point), cable size, floor served, and the specific area served.		Item		
D	c) Carefully decommission and uninstall/remove all the sub-mains cables that are not in use from the riser busbar, and hand over to the client.		Item		
E	Supply, install, test, commission and set to work a Free-standing purpose made front access Main LV Switchboard (Fully Type-Tested Assemblies – TTA), modular, metal clad, manufactured in 14 SWG galvanised mild steel sheet and finished in cream (or appropriate colour) powder coating as shown on the schematics. The busbar ratings to be 2000A (3-PHASE) as shown. The Switchgear to be as ABB, Schneider Electric or equivalent and approved, complete with communication coils for BMS (the other details as per Particular Specifications), complete with the following:- a) Digital multimeter capable of measuring voltage in the range 0 – 1000V, 3-phase current in the range 0-2000A, and all power system parameters (KW, KVA, KWHr, KVAR, Frequency, P.F, harmonics and all the parameters). The multimeter to have an accessible terminal for connecting an external printer, and should be complete with selector switches for viewing/displaying the various parameters. (b) Set of neon phase presence indicator lamps (c) 2 sets of 5 No. 2000A TPN insulated copper bus bars (supply and load) (d) 3 No. 1600A TPN MCCB (adjustable in 0.4-1 i.e 640A-1600A range). The MCCB to be motorized and have both electrical and mechanical inter-lock. All other MCCBs as per the existing switchboard (e) 2 No. 1250A TPN motorized MCCBs as shown, but adjustable in the range 500 –1250A for the Riser busbar and Existing Switchboard. (f) 1 No. 800A TPN motorized MCCBs as shown, but				
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Item No	Description	Unit	Quantity	Rate	Amount Kes
	adjustable in the range 320 –800A (g) 1 No. 630A TPN motorized MCCBs as shown, to old switchboard - A (h) 1No. 450A TPN MCCBs (i) 7No. 350A TPN MCCBs as shown for floor sub mains switchboards for maintained power. (j) 1No. 125A TPN MCCBs on the supply side as shown, for fire pumps. (k) 3No. 63A TPN MCCBs as shown for Lifts (l) Sufficient space for KPLC Meter, cutouts and CTs. (m) Sufficient spare capacity for future development (n) Sealable studs for all cover plate screws and all necessary accessories (o) 6mm perspex viewing window (p) Heavy duty rubber lining for all the perspex viewing windows (q) 415V three-phase surge diverter as Furse ESP 415, wired as shown, complete with HRC fuses, enclosure with viewing window. (r) Carry out comprehensive labelling of all the bus bars, CT chambers, circuit breakers etc. of the above board, indicating the areas served, outgoing cable sizes etc. (s) Comprehensive protective multiple earthing of the above board in 1500mm long 12mm diameter pure electrolytic copper earth rod deep driven to permanent moisture level, copper clamp. 120mm ² green earth lead complete with all accessories. (Note: Use parallel rods if effective earthing cannot be achieved with 1 No. rod). t) 1No. 1600A TPN automatic change-over system, with electrical and mechanical interlock. The change-over contactors to be TELE-MECANIQUE, minimum rating 1600A. A manual by-pass system, rated at 1600A TPN should also be provided across the change-over system and it must be capable of by-passing both mains and generator supplies in alternation. All the delay timers for pre-ignition, time to load, and return to mains supply to be provided. An actual setting to be agreed upon before main switchboard is assembled. Clear indicator lamps for “mains available”, “mains on load”, “generator available”, generator on load”, together with corresponding permanent labels should also be provided. The change-over and by-pass system to be incorporated in the main switchboard assembly. (q) Incorporation of RS485 ports for BMS system linked to all MCCBs, Digital energy meters, AVR system and the Generator Auto changeover system Note: The entire switchboard assembly to be Form 4b, i.e. totally safe with all live parts completely inaccessible on opening the outside cover, minimum				
	Carried to Collection			Kshs	
	Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 2 Preparatory, Redundancy & Temporary Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



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Item No	Description	Unit	Quantity	Rate	Amount Kes
	IP54. The switchboard to be priced as a unit with all the components (a to q) - This switchboard to be used as a Temporary Switchboard during transition/migration and as a redundant/back-up switchboard thereafter (Switchboard 2)		Item		
A	a) 350KVars automatic power factor correction capacitor bank switched in 4 step of 50 KVars, 4 steps of 25 KVars, 4 steps of 10 KVars, and 2 steps of 5 KVars. The bank to be made from low-loss bio-degradable capacitive units, complete with earthed enclosure. All the contactors, controls and indicator lamps, including a digital read-out screen to be included.	No	1		
B	b) 500A TPN Motorized MCCB with adjustable time-delay, for the Capacitor bank and to be adjustable from 200A-500A	No	1		
C	c) 2 x [4x240mm ² + 1x120mm ²] XLPE/SC/PVC copper cable [Please Note: Unit Price to be price of 2 x [4x240mm sq. + 1x120mm sq.] cable	m	10		
D	d) Cable lugs for the above cable complete with hydraulic crimping	No	20		
E	a) Allow a provisional sum of Kshs. Two Million, (Kshs2,000,000.00) for re-routing the mains incomer, relocation of the existing meter and expressly instructed attendance. Expenditure is permitted only against the Engineer's prior written instruction, shall be supported by measurement and records, and shall be valued under the Contract. Any unexpended balance remains with the Employer; no additional payment is due for work reasonably included elsewhere.		Item		2,000,000.00
F	b) 4 x [4x400mm ² + 1x240mm ²] XLPE/SC/PVC copper cable [Please Note: Unit Price to be price of 4 x [4x400mm sq. + 1x240mm sq.] cable - for the Main LV Switchboard 2	m	20		
G	c) Cable lugs for the above cable complete with hydraulic crimping	No	60		
H	a) Allow for termination of the Generators to the New LV Switchboard 2.		Item		
J	b) 4 x [4x400mm ² + 1x240mm ²] XLPE/SC/PVC copper cable [Please Note: Unit Price to be price of 4 x [4x400mm sq. + 1x240mm sq.] cable for the above.	m	20		
	Carried to Collection			Kshs	
	Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 2 Preparatory, Redundancy & Temporary Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	c) Cable lugs for the above cable complete with hydraulic crimping	No	40		
B	a) Allow for termination of the Existing LV Switchboard loads to the New LV Switchboard 2.		Item		
C	b) Allow for all the necessary cabling for the above, complete with lugs and hydraulic crimping.		Item		
D	Allow for power shutdown, provision of temporary power during shutdown, and risk mitigation during implementation of re-routing of mains incomer, termination of generators to the new LV Switchboard, and termination of existing LV Switchboards. as described above		Item		
E	Disconnection and re-routing of all the loads on the riser busbar to a temporary power supply.		Item		
F	Decommissioning, uninstallation and removal of the existing riser busbar (from second floor to eleventh floor)		Item		
G	Decommissioning, uninstallation and removal of the existing LV Switchboards at the basement floor.	No	2		
H	Making good all the areas affected by the removal of the above items.		Item		
Carried to Collection				Kshs	
Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 2 Preparatory, Redundancy & Temporary Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities					



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Section No. 4
Bill No. 2
Preparatory, Redundancy & Temporary Works

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Kshs

Section No. 4
ELECTRICAL POWER INSTALLATIONS
Bill No. 2
Preparatory, Redundancy & Temporary Works
Electrical & Power Infrastructure Upgrade
Tender Bill of Quantities



Item No	Description	Unit	Quantity	Rate	Amount Kes
	<u>SECTION NO. 4</u>				
	<u>ELECTRICAL POWER INSTALLATIONS</u>				
	<u>BILL NO.3</u>				
	<u>POWER SUPPLY & DISTRIBUTION</u>				
	Note: All Rates shall be inclusive of <u>VAT and PPRA Capacity Building Levy</u>				
	<u>Supply, install, test, commission and set to work the following.</u>				
A	Free-standing purpose made front access Main LV Switchboard (Fully Type-Tested Assemblies – TTA), modular, metal clad, manufactured in 14 SWG galvanised mild steel sheet and finished in cream (or appropriate colour) powder coating as shown on the schematics. The busbar ratings to be 2000A (3-PHASE) as shown. The Switchgear to be as ABB, Schneider Electric or equivalent and approved, complete with communication coils for BMS (the other details as per Particular Specifications), complete with the following:- a) Digital multimeter capable of measuring voltage in the range 0 – 1000V, 3-phase current in the range 0-2000A, and all power system parameters (KW, KVA, KWHr, KVAr, Frequency, P.F, harmonics and all the parameters). The multimeter to have an accessible terminal for connecting an external printer, and should be complete with selector switches for viewing/displaying the various parameters. (b) Set of neon phase presence indicator lamps (c) 2 sets of 5 No. 2000A TPN insulated copper bus bars (supply and load) (d) 3 No. 1600A TPN MCCB (adjustable in 0.4-1 i.e 640A-1600A range). The MCCB to be motorized and have both electrical and mechanical inter-lock. (e) 1 No. 1250A TPN motorized MCCBs as shown, but adjustable in the range 500 –1250A for the Riser busbar (f) 1 No. 800A TPN motorized MCCBs as shown, but adjustable in the range 320 –800A (g) 1 No. 630A TPN motorized MCCBs (h) 1No. 450A TPN MCCBs (i) 7No. 350A TPN MCCBs as shown for floor sub mains switchboards for maintained power. (j) 1No. 125A TPN MCCBs on the supply side as shown,				
	Carried to Collection			Kshs	
	Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 3 Power Supply & Distribution Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



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Item No	Description	Unit	Quantity	Rate	Amount Kes
	for fire pumps. (k) 3No. 63A TPN MCCBs as shown for Lifts (l) Sufficient space for KPLC Meter, cutouts and CTs. (m) Sufficient spare capacity for future development (n) Sealable studs for all cover plate screws and all necessary accessories (o) 6mm perspex viewing window (p) Heavy duty rubber lining for all the perspex viewing windows (q) 415V three-phase surge diverter as Furse ESP 415, wired as shown, complete with HRC fuses, enclosure with viewing window. (r) Carry out comprehensive labelling of all the bus bars, CT chambers, circuit breakers etc. of the above board, indicating the areas served, outgoing cable sizes etc. (s) Comprehensive protective multiple earthing of the above board in 1500mm long 12mm diameter pure electrolytic copper earth rod deep driven to permanent moisture level, copper clamp. 120mm ² green earth lead complete with all accessories. (Note: Use parallel rods if effective earthing cannot be achieved with 1 No. rod). t) 1No. 1600A TPN automatic change-over system, with electrical and mechanical interlock. The change-over contactors to be TELE-MECANIQUE, minimum rating 1600A. A manual by-pass system, rated at 1600A TPN should also be provided across the change-over system and it must be capable of by-passing both mains and generator supplies in alternation. All the delay timers for pre-ignition, time to load, and return to mains supply to be provided. An actual setting to be agreed upon before main switchboard is assembled. Clear indicator lamps for "mains available", "mains on load", "generator available", generator on load", together with corresponding permanent labels should also be provided. The change-over and by-pass system to be incorporated in the main switchboard assembly. (q) Incorporation of RS485 ports for BMS system linked to all MCCBs, Digital energy meters, AVR system and the Generator Autochangeover system Note: The entire switchboard assembly to be Form 4b, i.e. totally safe with all live parts completely inaccessible on opening the outside cover, minimum IP54. The switchboard to be priced as a unit with all the components (a to q) - Switchboard 1		Item		
	Carried to Collection			Kshs	
	Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 3 Power Supply & Distribution Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	b) 1600A TPN Motorized MCCB with adjustable time-delay, enclosed in the Main Switchboard Assembly and to be adjustable from 640A-1600A	No	1		
B	c) 1600A TPN Manual by-pass system across the AVR to be complete with 2 No. 1600A TPN Manual change over switches and incorporated in the main switchboard assembly	No	1		
C	a) 1 set of 1800A, 660V, 3-phase, 5-conductor, insulated copper busbar, to IP54 degree of protection, conductor cross-sectional area 800mm² (80mm x 10mm) with 4 active conductors, a short circuit capacity (peak/RMS) of 84/32 KA, with maximum voltage drop (mV per ampere per meter) of 0.06 and an average weight in Kg/m of 12.4. The riser busbar to comprise the following:-				
	i) 4m 3p + N + PE straight unit copper conductors	No	12		
D	ii) Centre Feed Unit	No	1		
E	iii) Edge-wise elbows	No	24		
F	iv) Flat-wise elbow (indoor neutral)	No	24		
G	v) Busbar-feed unit complete with 1600A TPN MCCB in bonded metallic enclosure	No	1		
H	vi) 350A TPN MCCB-type pull-out tap-off units	No	12		
J	vii) 4-hour ceramic fibre fire barrier completely fitting the trunking at floor slab penetrations	No	11		
K	viii) Mechanical/Electrical junction box for expansion control	No	1		
L	ix) Any other items to complete riser busbar installation (please list the items)		Item		
M	NOTE: The busbars to be made from PURE ELECTROLYTIC COPPER. No alternatives will be accepted. Allow for performing confirmatory resistivity tests		Item		
Carried to Collection				Kshs	
Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 3 Power Supply & Distribution Electrical & Power Infrastructure Upgrade Tender Bill of Quantities					



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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	b) 1No. 1250A TPN automatic change-over system, with electrical and mechanical interlock. A manual by-pass system, rated at 1250A TPN should also be provided across the change-over system and it must be capable of by-passing both Switchboard 1 and Switchboard 2 supplies in alternation. All the delay timers to be provided and actual setting to be agreed upon before assembly. Indicator lamps for "Switchboard 1 available", "Switchboard 1 on load", "Switchboard 2 available", "Switchboard 2 on load", together with corresponding permanent labels should also be provided. The change-over and by-pass system to be in a firmly bonded metallic panel with all the properties of the Main Switchboard.		Item		
B	c) 3 x [4x400mm ² + 1x240mm ²] XLPE/SC/PVC copper cable [Please Note: Unit Price to be price of 3 x [4x400mm sq. + 1x240mm sq.] cable - from the Main LV Switchboards to the change-over panel to the Riser Busbar on second floor	m	50		
C	d) Cable lugs for the above cable complete with hydraulic crimping	No	50		
D	a) 4 x [4x400mm ² + 1x240mm ²] XLPE/SC/PVC copper cable [Please Note: Unit Price to be price of 4 x [4x400mm sq. + 1x240mm sq.] cable - for the Main LV Switchboard 1 and the AVR	m	40		
E	b) Cable lugs for the above cable complete with hydraulic crimping	No	120		
F	Allow for transfer of the loads from LV Switchboard 2 to the New LV Switchboard 1, complete with all the cabling and accessories.		Item		
G	a) Allow for termination of the Generators to the New LV Switchboard 1.		Item		
H	b) 4 x [4x400mm ² + 1x240mm ²] XLPE/SC/PVC copper cable [Please Note: Unit Price to be price of 4 x [4x400mm sq. + 1x240mm sq.] cable for the above.	m	20		
J	c) Cable lugs for the above cable complete with hydraulic crimping	No	40		
K	Allow for power shutdown, provision of temporary power during shutdown, and risk mitigation during the above load transfers.		Item		
Carried to Collection				Kshs	
Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 3 Power Supply & Distribution Electrical & Power Infrastructure Upgrade Tender Bill of Quantities					



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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	Carry out comprehensive inspection, testing, configuration and certification of the complete installation in accordance with BS 7671:2018 (18th Edition), including every amendment effective at the tender closing date, applicable Kenyan laws, EPRA requirements and KEBS-adopted standards. Submit signed test schedules, calibration certificates, settings, as-built records and statutory certificates as a condition of taking-over'		Item		
Carried to Collection				Kshs	
Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 3 Power Supply & Distribution Electrical & Power Infrastructure Upgrade Tender Bill of Quantities					



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Item No	Description	Quantity	Rate	Amount Kes
	<u>SECTION NO. 4</u>			
	<u>ELECTRICAL POWER INSTALLATIONS</u>			
	<u>BILL NO.4</u>			
	<u>POWER SUPPLY FOR LIFT INSTALLATIONS</u>			
	Note: All Rates shall be inclusive of <u>VAT and PPRA Capacity Building Levy</u>			
	<u>Supply, install, test, commission, and set to work the following:</u>			
A	a) 4-way TP/N Power Distribution Board as ABB, Schneider Electric, or any other approved equivalent, complete with 100A TP/N integral isolator, MCB units, blanking plates for unused spareways, and all accessories including lockable cover. (DB Lift)	No	3	
B	b) MCB units of the specified ratings with breaking capacity of 10kA as ABB or approved equivalent. i. 10A SP	No	3	
C	ii. 40A TP	No	3	
D	iii. Blanking plates for all un-used spareways	No	6	
E	iv. Carry out concise permanent labeling for all the sub-circuits		Item	
F	a) 4C 16mm ² PVC/SWA/PVC copper cable for the DBs above	m	120	
G	b) Cable glands for the above cable	No	6	
H	c) Cable lugs for the above cables, complete with hydraulic crimping	No	24	
J	d) Carry out concise permanent labeling for all the circuits in the DBs above	No	3	
K	e) Carry out Protective Multiple Earthing (PME) for the Distribution Boards above to KPLC/EPRA requirements.	No	3	
L	a) 40A TPN local isolator as telemecanique or approved equivalent for lift motor	No	3	
	Carried to Collection		Kshs	
	Section No. 4			
	ELECTRICAL POWER INSTALLATIONS			
	Bill No. 4			
	Power Supply for Lift Installations			
	Electrical & Power Infrastructure Upgrade			
	Tender Bill of Quantities			



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Item No	Description	Quantity	Rate	Amount Kes
A	b) 4C 10mm ² flexible PVC-PVC- copper cable between 40A isolators above and lift motor, complete with lugs and all the accessories.	m 60		
B	Outlet for 13A metal-clad twin socket outlet complete with 20mm class B galvanized steel conduits, twin steel box and all accessories including 13A twin Metal-clad socket at 1400mm affl.	No 12		
C	Outlet for extract fan in the lift shaft, comprising box, concealed PVC conduit, wiring in 3 x 4.0 mm ² SC-PVC-CU cables and all accessories including 20A DP switch with neon light.	No 3		
Carried to Collection				Kshs
Section No. 4 ELECTRICAL POWER INSTALLATIONS Bill No. 4 Power Supply for Lift Installations Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



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Section No. 4

Bill No. 4

Power Supply for Lift Installations

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Section No. 4
ELECTRICAL POWER INSTALLATIONS
Bill No. 4
Power Supply for Lift Installations
Electrical & Power Infrastructure Upgrade
Tender Bill of Quantities



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SECTION SUMMARY - ELECTRICAL POWER INSTALLATIONS

Bill No		Page No		Amount
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2	Preparatory, Redundancy & Temporary Works	4/2/6		
3	Power Supply & Distribution	4/3/7		
4	Power Supply for Lift Installations	4/4/3		
5	Provisional Sums	4/5/1		
	Sub Total for ELECTRICAL INSTALLATIONS		Kshs	
	CONTINGENCY SUM	Item		10,000,000.00
	Tenderer's Name:			
				
	Address:			
	.			
	Signature:			
	Date:			
	Stamp:			
	Witnessed by:			
	Designation:			
	.			
	Signature:			
	Date:			
	Carried to Final Summary		Kshs	
	Section No. 4			
	ELECTRICAL POWER INSTALLATIONS			
	Electrical & Power Infrastructure Upgrade			
	Tender Bill of Quantities			



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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	As item above, but for Record (As-Installed)				
	Drawings comprising:				
	i) Fully dimensioned drawings of all plants and apparatus.				
	ii) General arrangement drawings of equipment, plant etc.				
	iii) Routes – types and sizes and arrangement of all pipework.				
	iv) System schematics and trunking diagrams showing all salient information relating to control and instrumentation.				
	v) Grading charts				
	vi) Wiring and piping diagrams of plant and apparatus.				
	vii) Schematic diagram of individual plants and switch and control boards.				
	viii) All the required operating instructions for all panels, boards, control panels etc.		Item		
B	Prepare and submit Maintenance Manuals for all items installed.		Item		
C	Provide a year's (12 months') initial maintenance upon expiry of the Defects Liability Period. The maintenance to be carried out every quarter (3 months) for a period of 12 months.		Item		
D	All other items of general preliminary to cover, but not limited to:-				
	i) Attendance on all other sub-contractors				
	ii) Hiring and keeping a Supervisor/Foreman on site				
	iii) Constant supervision of the works.				
	iv) Provision of all the required spares.				
	v) Testing and Inspection of materials/works.				
	vi) Provision of labour camps.				
	vii) Storage of materials.				
	viii) Initial maintenance (During Defects Liability)				
	ix) Providing water/electricity for the works.				
	x) Protection of the works/materials				
	xi) Clearing away on completion.				
	xii) Preparing Final Account.				
	xiii) Providing all Test Certificates, etc.		Item		
Carried to Collection				Kshs	
Section No. 5					
GENERATOR INSTALLATIONS					
Bill No. 1					
General Items					
Electrical & Power Infrastructure Upgrade					
Tender Bill of Quantities					



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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	To ensure that the generator sets are provided to specifications, allow for Workshop/factory visit for 8 No. persons (Engineer, Architect, 5No. IAC members & 1 Project manager - PFM) to visit the manufacturing factory/Workshop to verify the equipment specifications and witness all the relevant factory/workshop tests (as detailed in item No. 27 above) before approval. The Contractor shall submit a pre-approved itinerary, test plan and itemised budget. Reimbursement is limited to reasonable, supported actual cost up to the stated sum; unused balance remains with the Employer and no expenditure outside the written approval is payable. The cost of the visit to include:- i) Local transport ii) Accommodation for the seven, if any, at a hotel/resort not less than 4 star in rating. iii) All upkeep costs and daily per diem of not less than USD 400 per person iv) All the necessary tools/Instruments required for undertaking a complete workshop/factory test. v) The tenderer to ensure the seven team members above are accompanied by a technically qualified/experienced skilled representative from their offices to guide the team and answer all questions that may arise). vi) Tenderer to fully coordinate all logistics related to the travel in a timely manner.		Item		7,000,000.00
B	Allow for training of the client's technical team on the Operation, Troubleshooting, and Maintenance of the Generator. The training to be conducted by the equipment manufacturer or an Authorized Representative, duly certified to offer such trainings (Manufacturer's Letter of Authority to be submitted.) The training should be conducted for a minimum of 3No. days, via a workshop, and must be witnessed by the Engineer. Certificates to be issued after the training. Allow for facilitation of the training including transporting client / engineer to and from workshop, accommodation and per diem allowances.		Item		500,000.00
Carried to Collection				Kshs	
Section No. 5 GENERATOR INSTALLATIONS Bill No. 1 General Items Electrical & Power Infrastructure Upgrade Tender Bill of Quantities					



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Section No. 5

Bill No. 1

General Items

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Section No. 5
GENERATOR INSTALLATIONS
Bill No. 1
General Items
Electrical & Power Infrastructure Upgrade
Tender Bill of Quantities



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Item No	Description	Unit	Quantity	Rate	Amount Kes
	<u>SECTION NO. 5</u>				
	<u>GENERATOR INSTALLATIONS</u>				
	<u>BILL NO.2</u>				
	<u>STANDBY GENERATORS & ASSOCIATED WORKS</u>				
	Note: All Rates shall be inclusive of <u>VAT and PPRA Capacity Building Levy</u>				
A	Supply of 2 No. 600kVA sound-proofed standby diesel generator sets, 415V/240V 3-phase, 1500 rpm, Max 81 dBA at 1m, 100% loading. The Generator Engine to be as Perkins, Cummins, Catapillar or any approved equivalent. The generators to have Synchronising Auto Start Control Module such as DSE8610 (minimum) or approved equivalent, for self synchronization without the need for an additional Synchronizing panel. The control module should be BMS ready (to be complete with RS-485 for generator BMS integration). (*Site rating to be achieved in Nairobi which is at 1,795m asl. Supplier to state actual sea-level rating as per appendices 1 and 2)	No	2		
B	An intelligent Synchronising and Load Sharing Control Panel/ combiner box, as appropriate for the 2No. 600KVA generator sets with remote audible alarm for failure and busbar arrangement. The control panel should be complete with the following and to be approved: Generator selector controls wired such that the generators will come 'ON' in sequential order, if one fails then the others come on automatically. It should also have an auto and semi auto selection switch and gen1/gen2 direct selection switch. If the load is less than 450KVA, then one Gen Set should come on, else all two sets come on at the same time. If the load is less than 450KVA but constant for more than 4hours, then the two sets operate alternately. The panel to be complete with all breakers and accessories, and must be BMS ready (complete with RS-485 for BMS integration) and to be approved. Please present a wiring diagram for approval before fabrication. - Provisional	No	1		
C	Installation of 2No Generating sets including the Synchronizing Panel/combiner box	No	2		
	Carried to Collection			Kshs	
	Section No. 5 GENERATOR INSTALLATIONS Bill No. 2 Standby Generators & Associated Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	Supply of base fuel tanks (900-1000lts)		Item		Included
B	Installation of base fuel tanks		Item		Included
C	Supply of control panel(s), (complete with ov/uv relays)		Item		Included
D	Installation of control panel(s)		Item		Included
E	Supply of Automatic changeover contactor unit(s)	No	2		
F	Installation for Automatic changeover contactor unit(s)	No	2		
G	Comprehensive and detailed testing/ Commissioning of the sets as per full procedures set out in the Technical Specifications		Item		
H	Supply and installation of fuel transfer pump	No	1		Existing
J	Supply and installation of the fuel transfer pump pipework to interconnect the base fuel tanks	No	1		
K	Cost of tools as per Appendix No. 4	No	2		
L	Cost of spares as per Appendix No. 5	No	2		
M	Cost of earthing as per Appendix No. 6	No	2		
N	Industrial silencer for the generator sets	No	2		
P	Dia. 100mm, 3mm thick galvanized stainless steel tube exhaust system for generators complete with brackets and black industrial gloss paint	m	120		
Q	Hot air ducting as per details shown in Appendix 12	No	2		
R	4500 lts (4.5m3) external fuel tank as Orca OST-4500 or approved equivalent as per details shown in Appendix No. 11 and to be complete with 3000litres of fuel		Item		
S	Allow for performing 100% full load testing of the generators above with 100% resistive load. Contractor to allow for all the necessary cabling and communications. Photograph of the resistor bank to be enclosed with the load.		Item		
T	Introduce external anti-vibration dumpers to supplement the factory-made ones	No	2		
Carried to Collection				Kshs	
Section No. 5 GENERATOR INSTALLATIONS Bill No. 2 Standby Generators & Associated Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities					



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Item No	Description	Unit	Quantity	Rate	Amount Kes
A	Any other items (to be detailed)		Item		
B	a) 2 x [4x240mm ² + 1x120mm ²] XLPE/SC/PVC copper cable [Please Note: Unit Price to be price of 2x[4x240mm sq. + 1x120mm sq.] cable, from each of the 2No. Generators to the Synchronizing Panel.	m	80		
C	b) Cable lugs for the above cable complete with hydraulic crimping	No	60		
D	a) 3C 4mm ² PVC/SWA/PVC copper control cable	m	80		
E	b) Cable glands for the above cable	No	12		
F	c) Cable lugs for the above cable	No	48		
G	4.5 Kg carbon dioxide gas fire extinguisher complete with Pressure Gauge, initial charge and mounting brackets.	No	2		
H	9 kg dry powder fire extinguisher complete with initial charge and mounting brackets	No	2		
Carried to Collection				Kshs	
Section No. 5 GENERATOR INSTALLATIONS Bill No. 2 Standby Generators & Associated Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities					



September 2026

Item No	Description	Unit	Quantity	Rate	Amount Kes
A	The following mandatory tests to be performed on the 2 No. generator sets to the full satisfaction of the Client and all the parties to the contract:- i. Off-load tests for EACH set ii. Full-load tests for EACH set with resistive loads, up to 110% loading iii. Complete testing and demonstration of the Synchronizing panel iv. Demonstration of the performance and function of the Synchronizing panel including alternative simulation of plant failure, alternative duty performance of each set as pre set change-over, times taken for the "standby" set to kick in upon the capacity of "duty" set being exceeded, v. Detailed log-ins of alternative performance of the two sets over a 24-hour period of non-stop running at full load. The supplier must demonstrate ability of the sets to run alternately at the preset set change-over times over the 24 hour period vi. Provision of all the required instrument, tools and fuel required to undertake a 24-hour full-load performance testing of all sets while on load vii. All the required cabling and terminations between the Generators, Synchronizing Panel and the dry-loads. The cables to be the same sizes/numbers as measured elsewhere in this document		Item		
Carried to Collection					Kshs
Section No. 5 GENERATOR INSTALLATIONS Bill No. 2 Standby Generators & Associated Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities					



September 2026

SECTION SUMMARY - GENERATOR INSTALLATIONS

Bill No	
1	General Items
2	Standby Generators & Associated Works
3	Warranty
	Sub Total for 2NO. GENERATOR INSTALLATIONS
	CONTINGENCY SUM
	Tenderer's Name:
	
	Address:
	.
	Signature:
	Date:
	Stamp:
	Witnessed by:
	Designation:
	.
	Signature:
	Date:

Page No		Amount
5/1/4		
5/2/5		
5/3/1		
	Kshs	
Item		5,000,000.00

Carried to Final Summary

Section No. 5
GENERATOR INSTALLATIONS
Electrical & Power Infrastructure Upgrade
Tender Bill of Quantities

Kshs



September 2026

Item No	Description	Unit	Rate
	<u>SECTION NO. 7</u>		
	<u>SCHEDULE OF RATES & DAYWORKS</u>		
	<u>BILL NO.1</u>		
	<u>SCHEDULE OF RATES</u>		
	Note: The Bidder is required to fill in the rate for items described below. These rates must be contractors' all in rates inclusive of taxes.		
	<u>FOUNDATION WORKS</u>		
	<u>Bulk excavation in normal soil, red loam soil or compacted murram fill: backfill selected approved material and cut to spoil all arisings from site to an approved off-site tipping area authorised by the Local Authorities including payment of permit fees</u>		
A	Excavation for trenches: depth not exceeding 1.5m	m3	
B	Excavation for foundations: in red loamy soils, compacted murram filling: not exceeding 1.5 metres deep from existing ground level	m3	
	<u>Fill & disposal of excavated materials</u>		
C	Backfill and compact selected excavated material around foundations : compacted in layers not exceeding 150mm thick: including re-excavation from spoil heaps, double and multiple handling where required: BS 1377 Part 4/AASHTO T99.	m3	
D	Remove surplus excavated materials from site: including re-excavation from spoil heaps, double and multiple handling where required.	m3	
	<u>Protection of foundations</u>		
E	Keep excavations free from all water including ground water, storm water and subterranean water by bailing, pumping and any other method proposed by the contractor.		
F	Planking and strutting to sides of all excavations to keep excavations free from all fallen materials. The contractor shall provide shop drawings and methodology of protecting sides of excavation, underpinning and lateral support to the approval of consultants		
	<u>COMPACTION, DISPOSAL AND FILLING</u>		
G	Approved Murram Filling compacted to 98% MDD in layers not exceeding 150mm thick; all to the Consultant's approval.	m3	
	Section No. 7 SCHEDULE OF RATES & DAYWORKS Bill No. 1 Schedule of Rates Electrical & Power Infrastructure Upgrade Tender Bill of Quantities		



September 2026

Item No	Description	Unit	Rate
A	300mm Thick approved quality natural stone hardcore: hand packed: to receive surface bed	m2	
B	50mm thick quarry dust over hardcore bed; compacted	m2	
	<u>Termite treatment</u>		
	<u>Bid rate shall allow within the unit rate build up for treating vertical sides of excavation and around building plinth as per manufacturers printed instructions, quantity indicated herein is measured flat overall on net ground floor surface beds, provide ten year written guarantee</u>		
C	Highest quality chemical anti-termite treatment to subsoil or fillings : approved insecticide as manufactured to approval: provide ten year written guarantee against insect and termite infestation	m2	
	<u>DAMP PROOFING & WATER PROOFING</u>		
	<u>Damp proof membrane</u>		
D	One layer 1000 gauge clear polythene sheet : white colour: with 300mm side and end laps : areas measured nett with no allowance for laps : to horizontal surfaces	m2	
	<u>Foundation Walling</u>		
	<u>Selected approved quality natural masonry stone (7N/mm²) : in cement and sand (1:3) mortar : 20 gauge x 25mm wide hoop iron reinforcement and column-wall ties in every alternate course: to</u>		
E	200mm Thick Natural stone masonry walling foundations	m2	
	<u>DEMOLITION & REINSTATEMENT WORKS</u>		
F	Careful demolition: 200mm Thick masonry block wall: including carting away all arising: Rate to include all support required during demolitions	m2	
G	Careful demolition: 200mm Thick reinforced concrete wall/floor: including carting away all arising: Rate to include all support required during demolitions	m2	
H	Carefully remove ceiling finishes and allow for reinstatement of all areas: to match existing.	m2	
J	Carefully remove / demolish existing floor finishes and allow for reinstatement of all areas: to match existing.	m2	
	<u>CORE DRILLING WORKS</u>		
K	Core drilling: 200mm thick reinforced concrete floor slab: rate to include hiring of all tools and specialist: bidder to undertake inspection for services prior to drilling	No	
Section No. 7 SCHEDULE OF RATES & DAYWORKS Bill No. 1 Schedule of Rates Electrical & Power Infrastructure Upgrade Tender Bill of Quantities			



September 2026

Item No	Description	Unit	Rate
A	Core drilling: 200mm thick reinforced concrete wall: rate to include hiring of all tools and specialist: bidder to undertake inspection for services prior to drilling	No	
B	Core drilling: 200mm thick reinforced masonry block wall: rate to include hiring of all tools and specialist: bidder to undertake inspection for services prior to drilling	No	
C	Cutting for services: 300 x 600mm thick reinforced concrete floor slab: rate to include hiring of all tools and specialist: bidder to undertake inspection for services prior to drilling	No	
	<u>CHASING TO SURFACES</u>		
D	Chase through/ cut along reinforced concrete wall / floor: for services: make good all disturbed areas	m	
E	Chase through / cut along masonry block wall / floor: for services: make good all disturbed areas	m	
F	Chase to make a niche: overall size 600 x 600mm: for services: make good all disturbed areas	No	
	<u>MASONRY BLOCK WALL: WITH HOOP IRON</u>		
G	200mm Thick masonry block wall	m2	
H	150mm Thick masonry block wall	m2	
J	200mm Thick interlocking precast concrete wall	m2	
	<u>GENERATOR PLINTHS</u>		
K	<u>Class 25/20mm reinforced concrete</u>	m3	
L	Formwork to edges: girth 150 - 225mm	No	
M	10mm Diameter Reinforcement bars	kg	
N	12mm Diameter Reinforcement bars	kg	
	<u>FIRE STOPS</u>		
P	Supply and fix: 6mm Thick chequered plate: complete with steel fixing framework: painted with intumescent paint	m2	
Q	Supply and fix: intumescent fire-rated expanded foam system tested in accordance with ASTM E814/UL 1479: to opening size 600 x 1200mm		
Section No. 7 SCHEDULE OF RATES & DAYWORKS Bill No. 1 Schedule of Rates Electrical & Power Infrastructure Upgrade Tender Bill of Quantities			

C2: CBK - Official



September 2026

Item No	Description	Unit	Quantity	Rate	Amount Kes
	<u>General Notes</u>				
	<u>DAYWORKS</u>				
	The Consultant may, if in their opinion it is necessary or desirable, order in writing that any additional or substituted work shall be executed on a Daywork basis. The Contractor shall then be paid for such work in accordance with Dayworks rates and percentage additions to be agreed with the Consultant. The Contractor shall furnish to the Consultant all receipts or vouchers as may be necessary to prove the amounts paid and before ordering materials shall submit to the Consultant quotations for the same for their approval. In respect of all work executed on a Daywork basis the Contractor shall, during the continuance of such work, deliver each day to the Consultant a list in duplicate of the names, occupation and time of all workmen employed on such work and a statement also in duplicate showing the description and quantity of all materials and plant used thereon or thereof (other than plant which is included in the percentage addition on net amount of wages). One copy of each list and statement will, if correct or when agreed, be signed by the Consultant and returned to the Contractor. At the end of each month the Contractor shall deliver to the Consultant a priced statement of the labour, material and plant (except as aforesaid) used and the <u>Contractor shall not be entitled to any payment unless such lists and statements have been fully and punctually rendered</u>. Provided always that, if the Consultant shall consider that any reason the sending of such list or statement by the Contractor in accordance with the foregoing provision was impracticable, they shall nevertheless be entitled to authorize payment for such work either as Daywork (on being satisfied as to the time employed and plant and materials used on such work) or at such value thereof as they shall consider fair and reasonable.				
	Carried to Collection			Kshs	
	Section No. 7 SCHEDULE OF RATES & DAYWORKS Bill No. 2 Day Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



Item No	Description	Unit	Quantity	Rate	Amount Kes
	The Contractor will be paid for Dayworks carried out during the course of the Works, while other operations are in progress, at the rates set out in this Schedule. Profit and Overheads are not to be included in the rates but stated as an additional percentage at the end of the Labour, Materials and Plant sections of the Dayworks Schedule. The basic unit rates to be inserted in the Dayworks Schedule shall be the rates which the Contractor has used in determining the unit rates inserted elsewhere in this Bid Document. Only time engaged on the actual works will be allowed. In the event of Labour or Plant having to be brought to the Site from outside specifically for the item of Daywork, then a reasonable allowance for traveling time shall be considered, any such allowance shall be agreed before the Daywork Item is executed. <u>General Notes on Rates for Labour</u> The Daywork rates quoted for Labour are to be the inclusive net amounts payable, including wages, bonuses and all allowances paid to operatives directly engaged on dayworks (including those operating mechanical plant and equipment). The Daywork rates shall include for use of hand tools and consumables, ordinary non-mechanical plant, stagings, scaffolding tarpaulin, use of electric power, light and water for the works, etc., and all special inducements water for the works, etc., for working in Nairobi. The rates shall also be deemed to include for the extra cost of public holidays, other holidays with pay, medical costs, bonuses, sick leave, termination indemnity pay and the like. Unless specifically authorised in writing by the Consultant, non-productive overtime or special rates for overtime will not be admissible. The cost of all supervisory and administrative staff, including Consultants, Foremen, Clerks, Storemen, Secretaries, Assistants and the like, is to be included in the percentage addition for profits and overheads				
	Carried to Collection			Kshs	
	Section No. 7 SCHEDULE OF RATES & DAYWORKS Bill No. 2 Day Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



Item No	Description	Unit	Quantity	Rate	Amount Kes
	<u>General Notes on Rates for Materials</u> Materials used on Daywork shall be as specified elsewhere for the Works. The rates are to be the net invoice price including delivery to the Site. Should materials be required for use on Dayworks which are not included in the Schedule, the lowest current net market prices shall apply, plus a reasonable allowance for collecting, loading, off-loading and transporting to the Site. <u>General Notes on Rates for Plant</u> Plant hire rates shall include the cost of maintaining in proper working order, repairs, maintenance, insurance, attendance in starting up and shutting down, fuel, re-fueling, power, oils, grease, cleaning materials, replacement and / or sharpening of tools, provision of tools and all other ancillary items, including consumables. Idle time while waiting or maintenance or traveling to the Site will not be considered. Drivers and Attendants shall be charged for at the rates set out in the Schedule of Rates for Labour. The reasonable cost of hiring plant and equipment shall be paid for any items not listed in the Schedule. These costs shall be based upon the Contractors Invoices. Competitive Quotations must be obtained for all Plant hire. In the case of plant and equipment owned by the Contractor, a fair value, based upon market hire rates applicable at the time, will be used. <u>General Notes on Percentage Addition</u> The percentage inserted at the end of each section shall, in addition to any items referred previously, shall cover the following ; profit and overheads, supervisory and administrative staff, establishment, all costs related to the employment of labour, costs related to the storage of materials (including handling and waste in storage), costs associated with the Contractor's administrative arrangements, constructional plant (except plant employed exclusively on Dayworks), Contractor's facilities, equipment, temporary works and all other sundry items				
	Carried to Collection			Kshs	
	Section No. 7 SCHEDULE OF RATES & DAYWORKS Bill No. 2 Day Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



September 2026

Item No	Description	Unit	Quantity	Rate	Amount Kes
A	Coarse aggregate (dry)	t			Rate Only
B	Fine aggregate (dry)	t			Rate Only
C	Imported soil, suitable for <u>rammed earth construction</u>	m3			Rate Only
D	Reinforcement bars (high yield, deformed)	kg			Rate Only
E	Shuttering : "wrought"	m2			Rate Only
F	Shuttering : "sawn"	m2			Rate Only
G	Specialised formwork: "steel": suitable for rammed earth construction	m2			Rate Only
H	200mm thick hollow concrete blocks	No			Rate Only
J	200mm thick machine cut masonry block	No			Rate Only
K	Structural steelwork	kg			Rate Only
L	Plasterboard (12.7mm thick)	m2			Rate Only
M	Emulsion Paint	l			Rate Only
	<u>Percentage Addition</u>				
N	Allow for all other costs and charges			%	
	<u>Schedule of Rates for Plants</u>				
	Note: Day rates are for 8-hour working day				
	<u>Generally</u>				
P	Concrete mixer, 0.5m³	Day			Rate Only
Q	Concrete vibrator	Day			Rate Only
R	Dump truck (minimum 10 tonnes)	Day			Rate Only
S	Dump truck (minimum 20 tonnes)	Day			Rate Only
T	Truck (minimum 18 tonnes)	Day			Rate Only
U	Truck : 15 tonnes	Day			Rate Only
V	Truck : 7 tonnes	Day			Rate Only
	Carried to Collection			Kshs	
	Section No. 7 SCHEDULE OF RATES & DAYWORKS Bill No. 2 Day Works Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				



September 2026

Section No. 7

Bill No. 2

Day Works

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

7/2/1

7/2/2

7/2/3

7/2/4

7/2/5

7/2/6

7/2/7

Carried Forward to Summary of Section No. 7

Kshs

Section No. 7
SCHEDULE OF RATES & DAYWORKS
Bill No. 2
Day Works
Electrical & Power Infrastructure Upgrade
Tender Bill of Quantities



September 2026

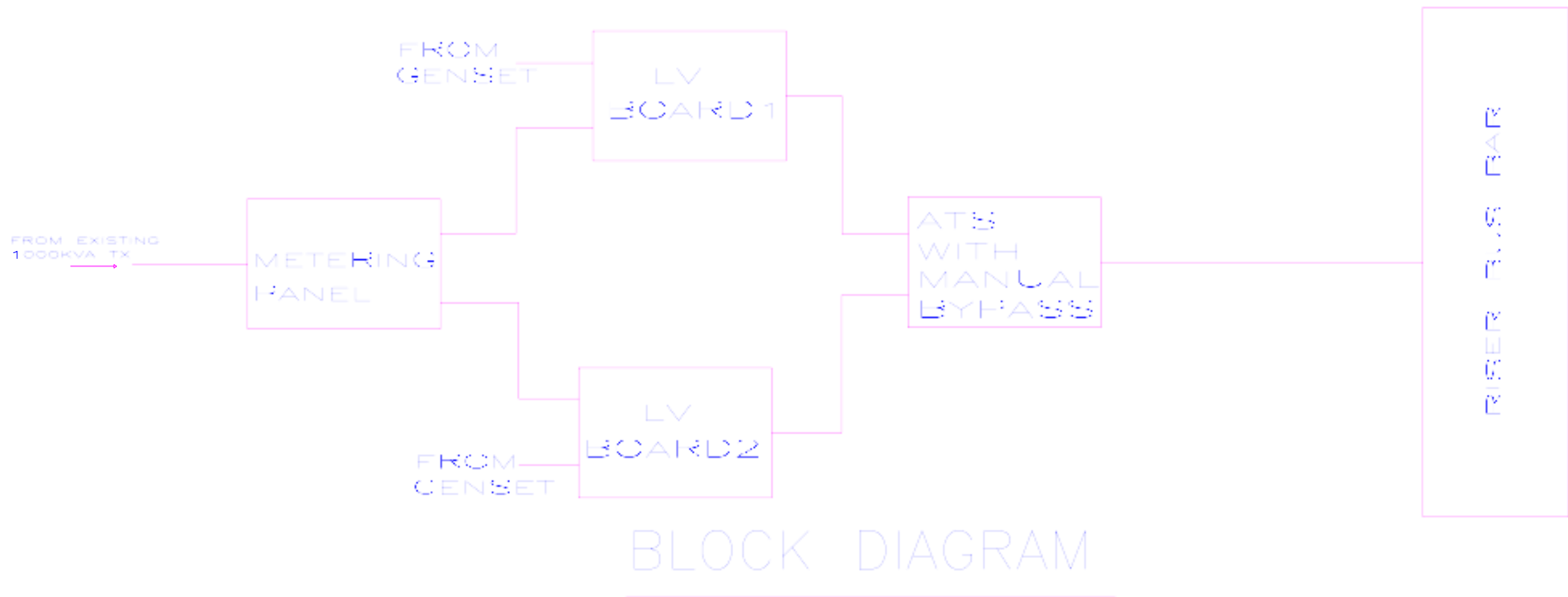
SECTION SUMMARY - SCHEDULE OF RATES & DAYWORKS

Bill No		Page No		Amount
1	Schedule of Rates	7/1/4		
2	Day Works	7/2/8		
Carried to Final Summary				Kshs
Section No. 7 SCHEDULE OF RATES & DAYWORKS Electrical & Power Infrastructure Upgrade Tender Bill of Quantities				

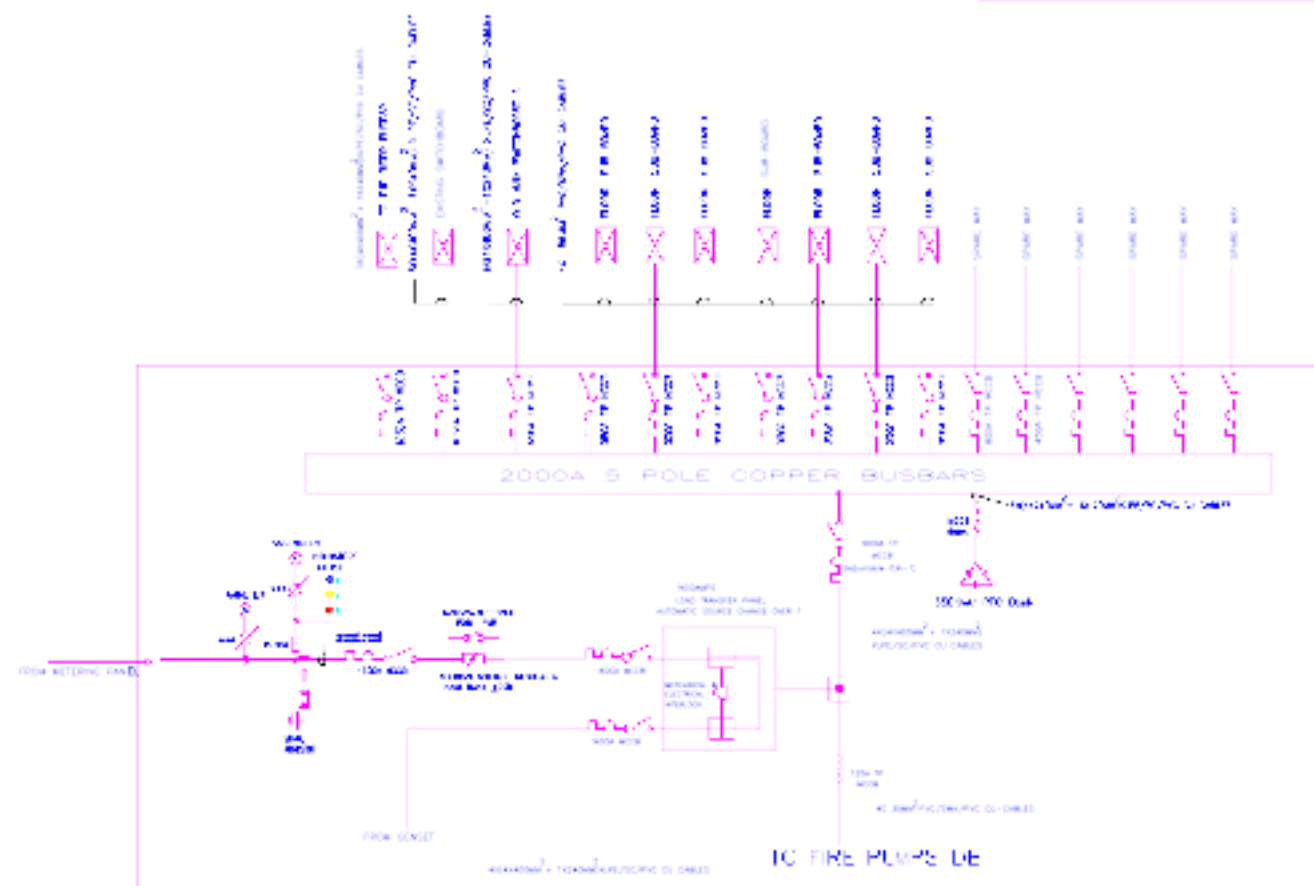


September 2026

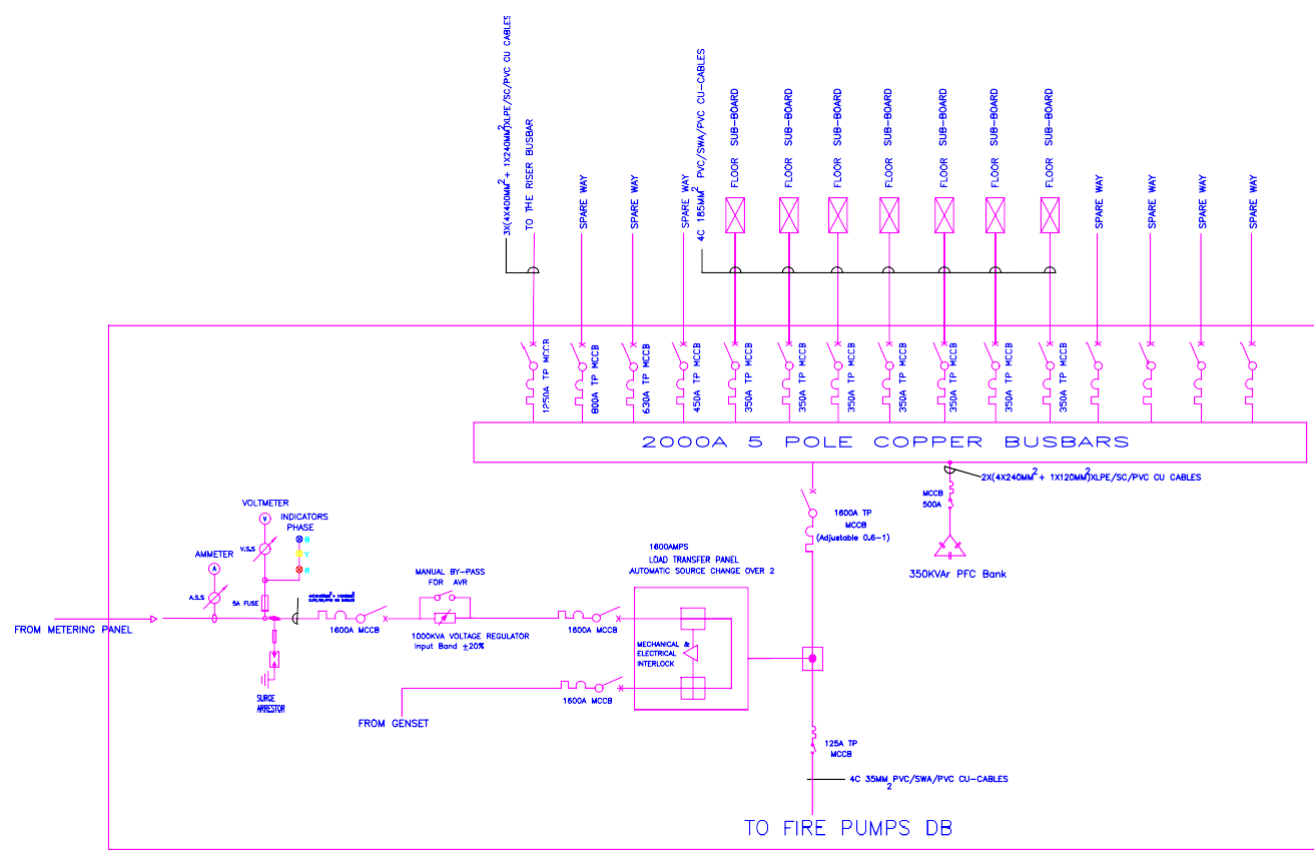
Section No	FINAL SUMMARY	Page No	Amount
1	PRELIMINARIES & CONDITIONS OF CONTRACT	3/5/1	
2	ELECTRICAL POWER INSTALLATIONS	4/7/1	
3	GENERATOR INSTALLATIONS	5/5/1	
4	PROVISIONAL SUMS	6/1/1	
5	SCHEDULE OF RATES & DAYWORKS	7/4/1	
Tenderer's Name:..... Address:..... . Signature:..... Date:..... Stamp: Witnessed by:..... Designation:..... . Signature:..... Date:.....			
Carried to Form of Tender			Kshs



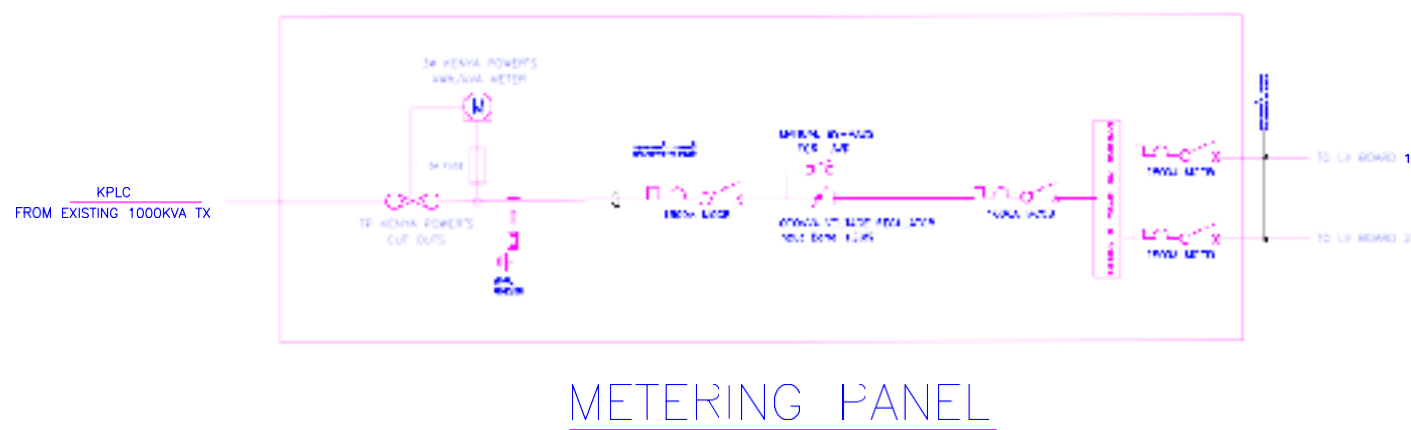
BLOCK DIAGRAM



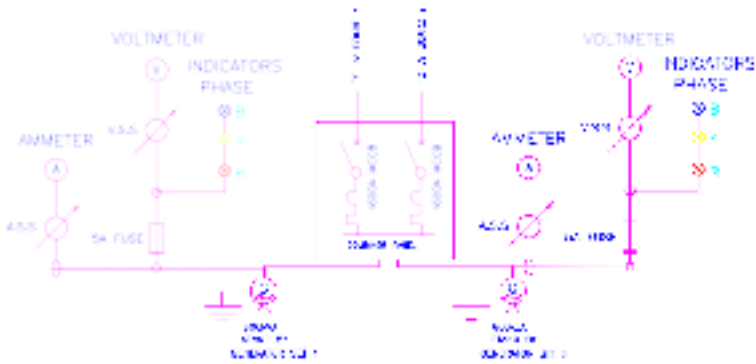
FREE-STANDING 2000A TPN MAIN SWITCHBOARD NO.1
WITH PERSPEX METER VIEWING WINDOWS



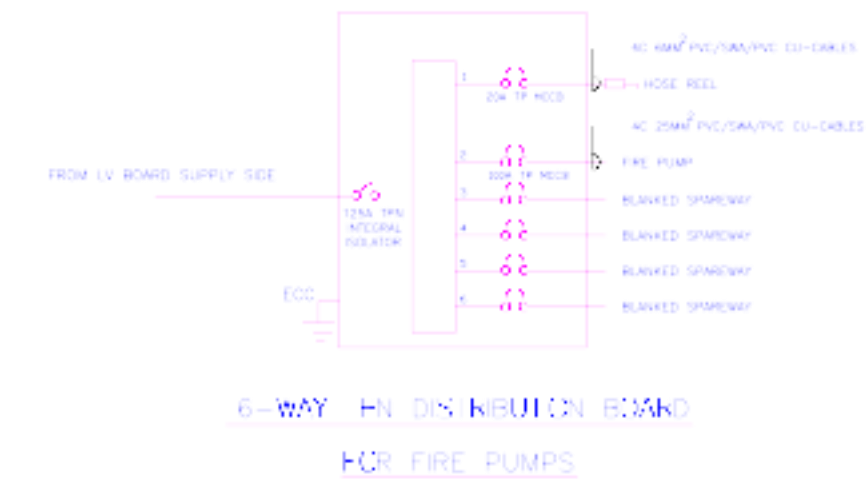
FREE-STANDING 2000A TPN MAIN SWITCHBOARD NO.2
WITH PERSPEX METER VIEWING WINDOWS



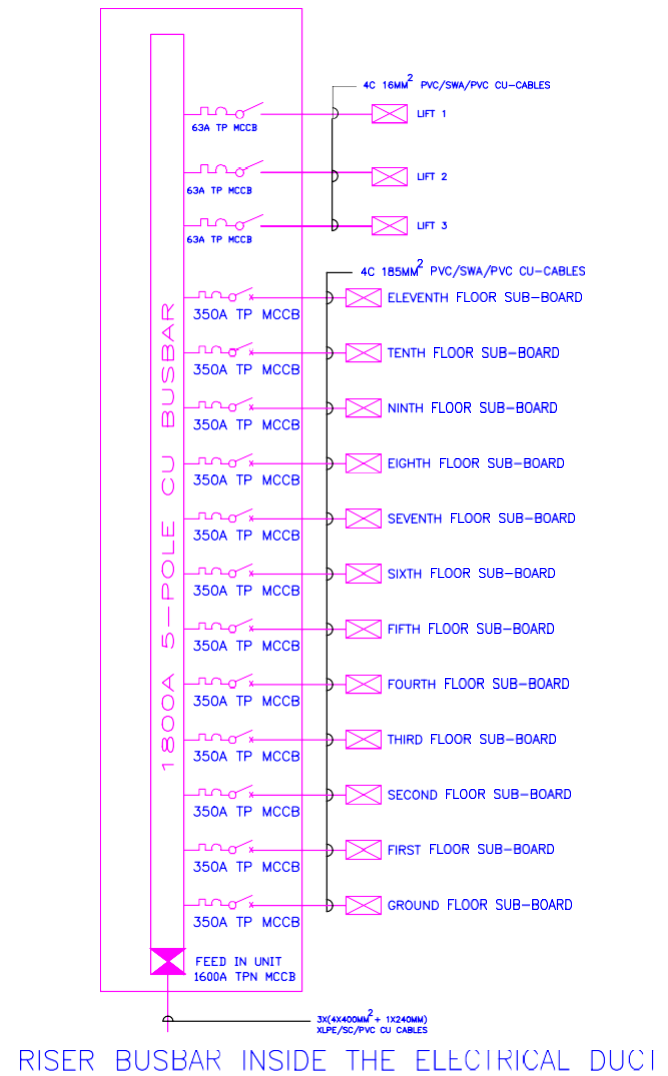
METERING PANEL



GENSET



6-WAY FFI DISTRIBUTION BOARD
FOR FIRE PUMPS



RISER BUSBAR INSIDE THE ELECTRICAL DUCT

REV	DATE	DESCRIPTIONS	BY
1	01/01/2024	1. DO NOT SCALE FROM THIS DRAWING USE FIGURED DIMENSIONS ONLY	
2	01/01/2024	2. UNLESS STATED OTHERWISE ALL DIMENSIONS TO BE IN MM	
3	01/01/2024	3. THIS DRAWING IS TO BE READ ALONG WITH OTHER DRAWINGS AS PER DRAWING LIST	
4	01/01/2024	4. STRUCTURAL ENGINEER'S APPROVAL TO BE OBTAINED BEFORE CUTTING ANY FLOORS AND FOR WALLS	

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4	01/01/2024	4. STRUCTURAL ENGINEER'S APPROVAL TO BE OBTAINED BEFORE CUTTING ANY FLOORS AND FOR WALLS	

Client	CRITICAL BANK OF KENYA P.O. BOX 60000-00100, Nairobi
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Architect	EDON CONSULTANTS INTERNATIONAL ARCHITECTS & PROJECT MANAGERS Bimau Plaza, 3rd Fl, Argwings Kodhek Rd, P.O. Box 19684-00100, Nairobi, Kenya Telephone: (254-20) 3874901, 3878345 Fax: (254-20) 3861925 Email: info@edoninternational.com
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Project	PROPOSED POWER UPGRADE AT EXTELCOMS HOUSE
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Eng Title	MAIN SCHEMATIC LAYOUT
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Services Engineers	FERADON ASSOCIATES CONSULTING ENGINEERS P.O. BOX 7528-00100 TEL: 020 269117/020 269149 AGE: 020 269114 VARCEL Email: consult@feradon.com
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Scale	N.T.S.	Approved	eng. R.T.
Date	March 2024	Revision	
Des	eng. G.W.	Drawn	W.C.
Job No	24C1-02	Eng. No	24C1-02 - 01