KENYA BUREAU OF STANDARDS

RE-TENDER FOR PROPOSED POWER UPGRADE AND INSTALLATIONS FOR REGIONAL OFFICES AND LABORATORIES – KISUMU

RE-TENDER NO: KEBS/T016/2018/2019

ELECTRICAL INSTALLATION WORKS

KENYA BUREAU OF STANDARDS
P.O. BOX 54974-00200
NAIROBI
TEL: 020 6948000/605490/605550
E-MAIL: info@kebs.org, procurement@kebs.org
Website: www.kebs.org
FAX: 020 609660/ 604031

November, 2018

KENYA BUREAU OF STANDARDS

Tel: (020) 6948000/ 605490
Fax: (020) 609660/ 604031

Email: info@kebs.org,
procurement@kebs.org
Website: www.kebs.org

INVITATION TO TENDER

TENDER NO. KEBS/T016/2018/2019: ELECTRICAL INSTALLATION WORKS

Kenya Bureau of Standards (KEBS) invites tenders ELECTRICAL INSTALLATION WORKS

A complete set of tender documents with detailed information may be obtained from the procurement office, during normal working hours (9.00 am and 4.00 pm) upon payment of non-refundable tender fee of Kshs.1000.00 or be viewed and downloaded from the KEBS website: www.kebs.org and IFMIS tender portal free of charge. All payments shall be made to the KENYA BUREAU OF STANDARDS Nairobi

Completed tender documents in plain sealed envelopes clearly marked **"KEBS/T016/2018/2019: ELECTRICAL INSTALLATION WORKS** should be addressed and delivered to:

THE MANAGING DIRECTOR,
KENYA BUREAU OF STANDARDS,
POPO ROAD OFF MOMBASA ROAD
P.O. BOX 54974 - 00200
NAIROBI.
Or be deposited in the Tender Box at **KEBS Centre Main Reception** marked "**TENDER BOX**" so as to be received on or before **10.00 am on Friday 7th December, 2018**.

Tender opening will be carried out immediately thereafter at the **KEBS Centre Conference Room.**

Tenderers or their representatives are free to attend the tender opening.

Tenders must be accompanied by Bid Bond of 2% of the Tender sum in the format specified in the tender document.

Managing Director

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DEFINITIONS

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

The Employer	KENYA BUREAU OF STANDARDS Represented by: THE MANAGING DIRECTOR P.O. Box 54974 -00200 NAIROBI
Site location	**The Site is Located at the KEBS Regional Offices and Laboratories - Kibos Road, Kisumu County.**

FORM OF TENDER

To: THE MANAGING DIRECTOR
KENYA BUREAU OF STANDARDS
P.O. Box 54974 - 00200
NAIROBI

PROPOSED POWER SUPPLY UPGRADE FOR REGIONAL OFFICES AND LABORATORIES - KISUMU

In accordance with the Instructions to Tenderers, Conditions of Contract, Specifications and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct, install and complete such Works and remedy any defects therein for the sum of:

Kshs……..….. ***[Amount in figures]***

……

……

……..……

[Amount in words]

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

1. We agree to abide by this tender **for a period of 120 days from the date of tender opening,** and shall remain binding upon us and may be accepted at any time before the expiry of that period.

2. 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.

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

Dated this …… day of ……20…..

Signature ……in the capacity of …….

duly authorized to sign tenders for and on behalf of:

…….. ***[Name of Tenderer [***

of……..***[Address of Tenderer]***

PIN No. ……..

VAT CERTIFICATE No. ……

Witness: Name …….

Address …….

Signature ……

FORM OF TENDER SECURITY: BANK

To: THE MANAGING DIRECTOR
KENYA BUREAU OF STANDARDS
P.O. Box 54974 - 00200
NAIROBI

WHEREAS..... (hereinafter called "the Tenderer") has submitted his tender dated.....for the installation of.....
..... (Name of Contract)

KNOW ALL PEOPLE by these presents that WE.....having our registered office at .....(hereinafter called "the Bank" are bound unto .....(hereinafter called "the Employer" in the sum of Kshs.....for which payment well and truly to be made to the said Employer, the Bank bind itself, its successors and assigns by these presents sealed with the Common Seal of the said Bank this .....Day of .....20.....

THE CONDITIONS of this obligation are:

1. If after tender opening the tenderer withdraws his tender during the period of tender Validity specified in the instructions to tenderers
   Or
2. If the tenderer, having been notified of the acceptance of this tender by the Employer during the period of tender validity:

   a) Fails or refuses to execute the form of Agreement in accordance with the Instructions to Tenderers, if required; or

   b) Fails or refuses to furnish the Performance Security, in accordance with the Instructions to Tenderers;

We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force for 30 days beyond validity of the tender.
.

_____ _____
[Date] [Signature of the Bank]

_____ _____
[Witness] [Seal]

FORM OF TENDER SECURITY

To: THE MANAGING DIRECTOR
KENYA BUREAU OF STANDARDS
P.O. Box 54974 - 00200
NAIROBI

WHEREAS..... (hereinafter called "the Tenderer") has submitted his tender dated.....for the installation of.....
..... (Name of Contract)

KNOW ALL PEOPLE by these presents that WE.....having our registered office at .....(hereinafter called "Insurance company"), are bound unto .....(hereinafter called "the Employer" in the sum of Kshs.....for which payment well and truly to be made to the said Employer, the Insurance company bind itself, its successors and assigns by these presents sealed with the Common Seal of the said Insurance company this .....Day of .....20.....

THE CONDITIONS of this obligation are:

1. If after tender opening the tenderer withdraws his tender during the period of tender Validity specified in the instructions to tenderers
   Or
2. If the tenderer, having been notified of the acceptance of this tender by the Employer during the period of tender validity:

   a) Fails or refuses to execute the form of Agreement in accordance with the Instructions to Tenderers, if required; or

   b) Fails or refuses to furnish the Performance Security, in accordance with the Instructions to Tenderers;

We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

The tender security shall be denominated in Kenya Shillings and shall be in the form of Cash, bank guarantee issued by a reputable bank, or insurance guarantee approved by the Authority and valid for 30 days beyond validity of the tender.

_____ _____
[Date] [Signature of the guarantor.]

_____ _____
[Witness] [Seal]

SECTION A

INSTRUCTIONS TO TENDERERS

INSTRUCTIONS TO TENDERERS

CONTENTS

INSTRUCTION TO TENDERERS

Note: The tenderer must comply with the following conditions and instructions and failure to do so is liable to result in rejection of the tender.

GENERAL

1. Definitions

(a) "**Tenderer"** means any person or persons partnership firm or company submitting a sum or sums in the Bills of Quantities in accordance with the Instructions to Tenderers, Conditions of Contract Parts I and II, Specifications, Drawings and Bills of Quantities for the work contemplated, acting directly or through a legally appointed representative.

(b) **"Approved tenderer**," means the tenderer who is approved by the Employer.

(c) Any noun or adjective derived from the word **"tender"** shall be read and construed to mean the corresponding form of the noun or adjective **"bid".** Any conjugation of the verb "tender" shall be read and construed to mean the corresponding form of the verb "bid."

(d) **"Employer"** means a Central Government Ministry, Local Authority, State Corporation or any other Public Institution.

2. Eligibility and Qualification Requirements

2.1 This invitation to tender is open to all tenderers who meet the qualifications specified in the advertisement for the works.

2.2 To be eligible for award of Contract, the tenderer shall provide evidence satisfactory to the Employer of their eligibility under Sub clause 2.1 above and of their capability and adequacy of resources to effectively carry out the subject Contract. To this end, the tenderer shall be required to submit the following information.

(a) Details of experience and past performance of the tenderer on the works of a similar nature within the past five years and details of current work on hand and other contractual commitments.

(b) The qualifications and experience of key personnel proposed for administration and execution of the contract, both on and off site.

(c) Major Items of construction plant and equipment proposed for use in carrying out the Contract. Only reliable plant in good working order and suitable for the work required of it shall be shown on this schedule. The tenderer will also indicate on this schedule when each Item will be available on the Works. Included also should be a schedule of plant, equipment and material to be imported for the purpose of the Contract, giving details of make, type, origin and CIF value as appropriate.

(d) Details of subcontractors to whom it is proposed to sublet any portion of the Contract and for whom authority will be requested for such subletting in accordance with clause 4 of the Conditions of Contract.

(e) A draft Program of Works in the form of a bar chart and Schedule of Payment which shall form part of the Contract if the tender is accepted. Any change in the Program or Schedule shall be subjected to the approval of the Engineer.

(f) Details of any current litigation or arbitration proceedings in which the Tenderer is involved as one of the parties.

Joint Ventures

Tenders submitted by a joint venture of two or more firms as partners shall comply with the following requirements:-

(a) The tender, and in case of a successful tender, the Form of Agreement, shall be signed so as to be legally binding on all partners.

(b) One of the partners shall be nominated as being in charge; and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners.

(c) The partner in charge shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture and the entire execution of the Contract including payment shall be done exclusively with the partner in charge.

(d) All partners of the joint venture shall be liable jointly and severally for the execution of the Contract in accordance with the Contract terms, and a relevant statement to this effect shall be included in the authorization mentioned under (b) above as well as in the Form of Tender and the Form of Agreement (in case of a successful tender).

(e) A copy of the agreement entered into by the joint venture partners shall be submitted with the tender.

3. Cost of Tendering

The tenderer shall bear all costs associated with the preparation and submission of his tender and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

4. Site Visit

4.1 The tenderer is advised to visit and examine the Site and its surroundings and obtain for himself on his own responsibility, all information that may be necessary for preparing the tender and entering into a contract. The costs of visiting the Site shall be the tenderer's own responsibility.

4.2 The tenderer and any of his personnel or agents will be granted permission by the Employer to enter upon premises and lands for the purpose of such inspection, but only upon the express condition that the tenderer, his personnel or agents, will release and idemnify the Employer from and against all liability in respect of, and will be 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 but for the exercise of such permission, would not have arisen.

4.3 The Employer shall organize a site visit at a date to be notified. A representative of the Employer will be available to meet the intending tenderers at the Site.

Tenderers must provide their own transport. The representative will not be available at any other time for site inspection visits.

Each tenderer shall complete the Certificate of Tenderer's Visit to the Site, whether he in fact visits the Site at the time of the organized site visit or by himself at some other time.

TENDER DOCUMENTS

5. Tender Documents

5.1 The Tender documents comprise the documents listed here below and should be read together with any Addenda issued in accordance with Clause 7 of these instructions to tenderers.

a. Form of Invitation for Tenders
b. Instructions to Tenderers
c. Form of Tender
d. Appendix to Form of Tender
e. Form of Tender Surety
f. Statement of Foreign Currency Requirements
g. Form of Performance Security
h. Form of Agreement
i. Form of Advance payment Bank Guarantee
j. Schedules of Supplementary Information
k. General Conditions of Contract – Part I
l. Conditions of Particular Application – Part II
m. Specifications
n. Bills of Quantities
o. Drawings

5.2 The tenderer is expected to examine carefully all instructions, conditions, forms, terms, specifications and drawings in the tender documents. Failure to comply with the requirements for tender submission will be at the tenderer's own risk. Pursuant to clause 22 of Instructions to Tenderers, tenders which are not substantially responsive to the requirements of the tender documents will be rejected.

5.3 All recipients of the documents for the proposed Contract for the purpose of submitting a tender (whether they submit a tender or not) shall treat the details of the documents as "private and confidential".

6. Clarification of Tender Documents

6.1 A prospective tenderer requiring any clarification of the tender documents may notify the Employer in writing or by telex, cable or facsimile at the Employer's mailing address indicated in the Invitation to Tender. The Employer will respond in writing to any request for clarification which he receives earlier than 7 days prior to the expiry of 30 days deadline for the submission of tenders. Written copies of the Employer's response (including the query but without identifying the source of the inquiry) will be sent to all prospective tenderers who have purchased the tender documents.

7. Amendment of Tender Documents

7.1 At any time prior to the deadline for submission of tenders the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective tenderer, modify the tender documents by issuing Addenda

7.2 Any Addendum will be notified in writing or by cable, telex or facsimile to all prospective tenderers who have purchased the tender documents and will be binding upon them.

7.3 If during the period of tendering, any circular letters (tender notices) shall be issued to tenderers by, or on behalf of, the Employer setting forth the interpretation to be paced on a part of the tender documents or to make any change in them, such circular letters will form part of the tender documents and it will be assumed that the tenderer has taken account of them in preparing his tender. The tenderer must promptly acknowledge any circular letters h may receive.

7.4 In order to allow prospective tenderers reasonable time in which to take the Addendum into account in preparing their tenders, the Employer may, at his discretion, extend the deadline for the submission of tenders.

PREPARATION OF TENDERS

8. Language of Tender

8.1 The tender and all correspondence and documents relating to the tender exchanged between the tenderer and the Employer shall be written in the English language. Supporting documents and printed literature furnished by the tenderer with the tender may be in another language provided they are accompanied by an appropriate translation of pertinent passages in the above stated language. For the purpose of interpretation of the tender, the English language shall prevail.

9. Documents Comprising the Tender

9.1 The tender to be prepared by the tenderer shall comprise: the Form of Tender and Appendix thereto, a Tender Surety, the Priced Bills of Quantities and Schedules, the information on eligibility and qualification, and any other materials required to be completed and submitted in accordance with the Instructions to Tenderers embodied in these tender documents. The Forms, Bills of Quantities and Schedules provided in the tender documents shall be used without exception (subject to extensions of the schedules in the same format and to the provisions of clause 13.2 regarding the alternative forms of Tender Surety].

10. Tender Prices

10.1 All the insertions made by the tenderer shall be made in INK and the tenderer shall clearly form the figures. The relevant space in the Form of Tender and Bills of Quantities shall be completed accordingly without interlineations or erasures except those necessary to correct errors made by the tenderer in which case the erasures and interlineations shall be initialed by the person or persons signing the tender.

10.2 A price or rate shall be inserted by the tenderer for every Item in the Bills of Quantities whether the quantities are stated or not Items against which no rate or price is entered by the tenderer will not be paid for by the Employer when executed and shall be deemed covered by the rates for other Items and prices in the Bills of Quantities.

The prices and unit rates in the Bills of Quantities are to be the full [all-inclusive] value of the work described under the Items, including all costs and expenses which may be necessary and all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based. All duties and 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 the submission of tenders, shall be included in the rates and prices and the total tender prices submitted by the Tenderer.

Each price or unit rate inserted in the Bills of Quantities should be a realistic estimate for completing the activity or activities described under that particular Item and the tenderer is advised against inserting a price or rate against any Item contrary to this instruction. Every rate entered in the Bills of Quantities, whether or not such rate be associated with a quantity, shall form part of the Contract.

The Employer shall have the right to call for any Item of work contained in the Bills of Quantities, and such Items of work to be paid for at the rate entered by the tenderer and it is the intention of the Employer to take full advantage of unbalanced low rates.

10.3 Unless otherwise specified the tenderer must enter the amounts representing 10% of the sub-total of the summary of the Bills of Quantities for Contingencies and Variation of Prices [V.O.P.] payments in the summary sheet and add them to the sub-total to arrive at the tender amount.

10.4 The tenderer shall furnish with his tender written confirmation from his suppliers or manufacturers of unit rates for the supply of Items listed in the Conditions of Contract clause 47 where appropriate.

10.5 The rates and prices quoted by the tenderer are subject to adjustment during the performance of the Contract only in accordance with the provisions of the Conditions of Contract. The tenderer shall complete the schedule of basic rates and shall submit with his tender such other supporting information as required under clause 47 of the Conditions of Contract Part II.

11. Currencies of Tender and Payment

11.1 Tenders shall be priced in Kenya Shillings and the tender sum shall be in Kenya Shillings.

11.2 Tenderers are required to indicate in the Statement of Foreign Currency Requirements, which forms part of the tender, the foreign currency required by them. Such currency should generally be the currency of the country of the tenderer's main office. However, if a substantial portion of the tenderer's expenditure under the Contract is expected to be in countries other than his country of origin, then he may state a corresponding portion of the contract price in the currency of those other countries. However, the foreign currency element is to be limited to two (2) different currencies and a maximum of 30% (thirty percent) of the Contract Price.

11.3 The rate of rates of exchange used for pricing the tender shall be selling rate or rates of the Central Bank ruling on the date thirty (30) days before the final date for the submission of tenders.

11.4 Tenderers must enclose with their tenders, a brief justification of the foreign currency requirements stated in their tenders.

12 Tender Validity

12.2 The tender shall remain valid and open for acceptance for a period of one hundred and twenty (120) days from the specified date of tender opening or from the extended date of tender opening (in accordance with clause 7.4 here above) whichever is the later.

12.3 In exceptional circumstances prior to expiry of the original tender validity period, the Employer may request the tenderer for a specified extension of the period of validity. The request and the responses thereto shall be made in writing or by cable, telex or facsimile. A tenderer may refuse the request without forfeiting his Tender Surety. A tenderer agreeing to the request will not be required nor permitted to modify his tender, but will be required to extend the validity of his Tender Surety correspondingly.

13 Tender Surety

13.2 The tenderer shall furnish as part of his tender, a Tender Surety in the amount stated in the Appendix to Instructions to Tenderers.

13.3 The unconditional Tender Surety shall be in Kenya Shillings and be in form of a certified cheque, a bank draft, an irrevocable letter of credit or a guarantee from a reputable Bank approved by the Employer located in the Republic of Kenya.
The format of the Surety shall be in accordance with the sample form of Tender Surety included in these tender documents; other formats may be permitted subject to the prior approval of the Employer. The Tender Surety shall be valid for (30) days beyond the tender validity period.

13.4 Any tender not accompanied by an acceptable Tender Surety will be rejected by the Employer as non-responsive.

13.5 The Tender Sureties of unsuccessful tenderers will be returned as promptly as possible but not later than (30) days after concluding the Contract execution and after a Performance Security has been furnished by the successful tenderer. The Tender Surety of the successful tenderer will be returned upon the tenderer executing the Contract and furnishing the required Performance Security.

13.6 The Tender Surety may be forfeited:

(a) if a tenderer withdraws his tender during the period of tender validity: or

(b) in the case of a successful tenderer, if he fails

(i) to sign the Agreement, or
(ii) to furnish the necessary Performance Security

(c) if a tenderer does not accept the correction of his tender price pursuant to clause 23.

14 No Alternative Offers

14.2 The tenderer shall submit an offer which complies fully with the requirements of the tender documents.

Only one tender may be submitted by each tenderer either by himself or as partner in a joint venture.

14.3 The tenderer shall not attach any conditions of his own to his tender. The tender price must be based on the tender documents. The tenderer is not required to present alternative construction options and he shall use without exception, the Bills of Quantities as provided, with the amendments as notified in tender notices, if any, for the calculation of his tender price.
Any tenderer who fails to comply with this clause will be disqualified.

15 Pre-Tender Meeting

15.2 The tenderer's designated representative is invited to attend a pre-tender meeting, which if convened, will take place at the venue and time stated in the Invitation to Tender. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

15.3 The tenderer is requested as far as possible to submit any questions in writing or by cable, to reach the Employer not later than seven days before the meeting. It may not be practicable at the meeting to answer questions received late, but questions and responses will be transmitted in accordance with the following:

(a) Minutes of the meeting, including the text of the questions raised and the responses given together with any responses prepared after the meeting, will be transmitted without delay to all purchasers of the tender documents. Any modification of the tender documents listed in -–Clause 9 which may become necessary as a result of the pre-tender meeting shall be made by the Employer exclusively through the issue of a tender notice pursuant to Clause 7 and not through the minutes of the pre-tender meeting.

(b) Non-attendance at the pre-tender meeting will not be cause for disqualification of a bidder.

16 Format and Signing of Tenders

16.2 The tenderer shall prepare his tender as outlined in clause 9 above and mark appropriately one set "ORIGINAL" and the other "COPY".

16.3 The copy of the tender and Bills of Quantities shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the tenderer. Proof of authorization shall be furnished in the form of the written power of attorney which shall accompany the tender. All pages of the tender where amendments have been made shall be initialed by the person or persons signing the tender.

16.4 The complete tender shall be without alterations, interlineations or erasures, except as necessary to correct errors made by the tenderer, in which case such corrections shall be initialed by the person of persons signing the tender.

SUBMISSION OF TENDERS

17 Sealing and Marking of Tenders

17.2 The tenderer shall seal the original and copy of the tender in separated envelopes, duly marking the envelopes as "ORIGINAL" and "COPY". The envelopes shall then be sealed in an outer envelope.

17.2 The inner and outer envelopes shall be addressed to the Employer at the address stated in the Appendix to Instructions to Tenderers and bear the name and identification of the Contract stated in the said Appendix with a warning not to open before the date and time for opening of tenders stated in the said Appendix.

17.3 The inner envelopes shall each indicated the name and address of the tenderer to enable the tender to be returned unopened in case it is declared "late", while the outer envelope shall bear no mark indicating the identity of the tenderer.

17.4 If the outer envelope is not sealed and marked as instructed above, the Employer will assume no responsibility for the misplacement or premature opening of the tender. A tender opened prematurely for this cause will be rejected by the Employer and returned to the tenderer.

18 Deadline for Submission of Tenders

18.1 Tenders must be received by the Employer at the address specified in clause 17.2 and on the date and time specified in the Letter of Invitation, subject to the provisions of clause 7.4, 18.2 and 18.3.

Tenders delivered by hand must be placed in the "tender box" provided in the office of the Employer.

Proof of posting will not be accepted as proof of delivery and any tender delivered after the above stipulated time, from whatever cause arising will not be considered.

18.2 The Employer may, at his discretion, extend the deadline for the submission of tenders through the issue of an Addendum in accordance with clause 7, in which case all rights and obligations of the Employer and the tenderers previously subject to the original deadline shall thereafter be subject to the new deadline as extended.

18.3 Any tender received by the Employer after the prescribed deadline for submission of tender will be returned unopened to the tenderer.

19 Modification and Withdrawal of Tenders

19.1 The tenderer may modify or withdraw his tender after tender submission, provided that written notice of the modification or withdrawal is received by the Employer prior to prescribe deadline for submission of tenders.

The tenderer's modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions for the submission of tenders, with the inner and outer envelopes additionally marked "MODIFICATION" or "WITHDRAWAL" as appropriate.

19.2 No tender may be modified subsequent to the deadline for submission of tenders.

19.3 No tender may be withdrawn in the interval between the deadline for submission of tenders and the period of tender validity specified on the tender form. Withdrawal of a tender during this interval will result in the forfeiture of the Tender Surety.

19.4 Subsequent to the expiration of the period of tender validity prescribed by the Employer, and the tenderer having not been notified by the Employer of the award of the Contract or the tenderer does not intend to conform with the request of the Employer to extend the prior of tender validity, the tenderer may withdraw his tender without risk of forfeiture of the Tender Surety.

TENDER OPENING AND EVALUATION

20 Tender Opening

20.1 The Employer will open the tenders in the presence of the tenderers' representatives who choose to attend at the time and location indicated in the Letter of Invitation to Tender. The tenderers' representatives who are present shall sign a register evidencing their attendance.

20.2 Tenders for which an acceptable notice of withdrawal has been submitted, pursuant to clause 19, will not be opened. The Employer will examine the tenders to determine whether they are complete, whether the requisite Tender Sureties have been furnished, whether the documents have been properly signed and whether the tenders are generally in order.

20.3 At the tender opening, the Employer will announce the tenderer's names, total tender price, tender price modifications and tender withdrawals, if any, the presence of the requisite Tender Surety and such other details as the Employer, at his discretion, may consider appropriate. No tender shall be rejected at the tender opening except for late tenders.

20.4 The Employer shall prepare minutes of the tender opening including the information disclosed to those present.

20.5 Tenders not opened and read out a tender opening shall not be considered further for evaluation, irrespective of the circumstances.

21 Process to be Confidential

21.1 After the public opening of tenders, information relating to the examination, clarification, evaluation and comparisons of tenders and recommendations concerning the award of Contract shall not be disclosed to tenderers or other persons not officially concerned with such process until the award of Contract is announced.

21.2 Any effort by a tenderer to influence the Employer in the process of examination, evaluation and comparison of tenders and decisions concerning award of Contract may result in the rejection of the tenderer's tender.

22 Clarification of Tenders

22.1 To assist in the examination, evaluation and comparison of tenders, the Employer may ask tenderers individually for clarification of their tenders, including breakdown of unit prices. The request for clarification and the response shall be in writing or by cable, facsimile or telex, but no change in the price or substance of the tender shall be sought, offered or permitted except as required to confirm the correction of arithmetical errors discovered by the employer during the evaluation of the tenders in accordance with clause 24.

22.2 No Tenderer shall contact the Employer on any matter relating to his tender from the time of the tender opening to the time the Contract is awarded. If the tenderer wishes to bring additional information to the notice of the Employer, he shall do so in writing.

23 Determination of Responsiveness

23.1 Prior to the detailed evaluation of tenders, the Employer will determine whether each tender is substantially responsive to the requirements of the tender documents.

23.2 For the purpose of this clause, a substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tender documents without material deviation or reservation and has a valid bank guarantee. A material deviation or reservation is one which affects in any substantial way the scope, quality, completion timing or administration of the Works to be undertaken by the tenderer under the Contract, or which limits in any substantial way, inconsistent with the tender documents, the Employer's rights or the tenderers obligations under the Contract and the rectification of which would affect unfairly the competitive position of other tenderers who have presented substantially responsive tenders.

23.3 Each price or unit rate inserted in the Bills of Quantities shall be a realistic estimate of the cost of completing the works described under the particular Item including allowance for overheads, profits and the like. Should a tender be seriously unbalanced in relation to the Employer's estimate of the works to be performed under any Item or groups of Items, the tender shall be deemed not responsive.

23.4 A tender determined to be not substantially responsive will be rejected by the Employer and may not subsequently be made responsive by the tenderer by correction of the non-conforming deviation or reservation.

24 Correction of Errors

Tenders determined to be substantially responsive shall be checked by the Employer for any arithmetic errors in the computations and summations. Errors will be corrected by the

Employer as follows:

(a) Where there is a discrepancy between the amount in figures and the amount in words, the amount in words will govern.

(b) Where there is a discrepancy between the unit rate and the line Item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will prevail, unless in the opinion of the Employer, there is an obvious typographical error, in which case adjustment will be made to the entry containing that error.

(c) The amount stated in the tender will be adjusted in accordance with the above procedure for the correction of errors and, with concurrence of the tenderer, shall be considered as binding upon the tenderer. If the tenderer does not accept the corrected amount, the tender may be rejected and the Tender Security may be forfeited in accordance with clause 13.

25 Conversion to Single Currency

25.1 For compensation of tenders, the tender price shall first be broken down into the respective amounts payable in various currencies by using the selling rate or rates of the Central Bank of Kenya ruling on the date twenty eight (28) days before the final date for the submission of tenders.

25.2 The Employer will convert the amounts in various currencies in which the tender is payable (excluding provisional sums but including Day works where priced competitively) to Kenya Shillings at the selling rates stated in clause 25.1.

26 Evaluation and Comparison of Tenders

26.1 The Employer will evaluate only tenders determined to be substantially responsive to the requirements of the tender documents in accordance with clause 23.

26.2 In evaluating tenders, the Employer will determine for each tender the evaluated tender price by adjusting the tender price as follows:

(a) Making any correction for errors pursuant to clause 24.

(b) Excluding Provisional Sums and provision, if any, for Contingencies in the Bills of Quantities, but including Day works where priced competitively.

26.3 The Employer reserves the right to accept any variation, deviation or alternative offer. Variations, deviations, alternative offers and other factors which are in excess of the requirements of the tender documents or otherwise result in the accrual of unsolicited benefits to the Employer, shall not be taken into account in tender evaluation.

26.4 Price adjustment provisions in the Conditions of Contract applied over the period of execution of the Contract shall not be taken into account in tender evaluation.

26.5 If the lowest evaluated tender is seriously unbalanced or front loaded in relation to the Employer's estimate of the Items of work to be performed under the Contract, the Employer may require the tenderer to produce detailed price analyses for any or all Items of the Bills of Quantities, to demonstrate the relationship between those prices, proposed construction methods and schedules. After evaluation of the price analyses, the Employer may require that the amount of the Performance Security set forth in clause 29 be increased at the expense of the successful tenderer to a level sufficient to protect the Employer against financial loss in the event of subsequent default of the successful tenderer under the Contract.

26.6 Firms incorporated in Kenya where indigenous Kenyans own 51% or more of the share capital shall be allowed a 10% preferential bias provided that they do not Contract work valued at more than 50% of the Contract Price excluding Provisional Sums to a non-indigenous Contractor.

AWARD OF CONTRACT

27 Award

27.1 Subject to clause 27.2, the Employer will award the Contract to the tenderer whose tender is determined to be substantially responsive to the tender documents and who has offered the lowest evaluated tender price subject to possessing the capability and resources to effectively carry out the Contract Works.

27.2 The Employer reserves the right to accept or reject any tender, and to annual the tendering process and reject all tenders, at any time prior to award of Contract, without thereby incurring any liability to the affected tenderers or any obligation to inform the affected tenderers of the grounds for the Employer's action

28 Notification of Award

28.1 Prior to the expiration of the period of tender validity prescribed by the Employer, the Employer will notify the successful tenderer by cable, telefax or telex and confirmed in writing by registered letter that his tender has been accepted. This letter (hereinafter and in all Contract documents called "Letter of Acceptance") shall name the sum (hereinafter and in all Contract documents called "the Contract Price") which the Employer will pay to the Contractor in consideration of the execution and completion of the Works as prescribed by the Contract.

28.2 Notification of award will constitute the formation of the Contract.

28.3 Upon the furnishing of a Performance Security by the successful tenderer, the unsuccessful tenderers will promptly be notified that their tenders have been unsuccessful.

28.4 Within [30] days of receipt of the form of Contract Agreement from the Employer, the successful tenderer shall sign the form and return it to the Employer together with the required Performance Security.

29 Performance Guarantee

29.1 Within [30] days of receipt of the notification of award from the Employer, the successful tenderer shall furnish the Employer with a
Performance Security in an amount stated in the Appendix to Instructions to Tenderers.

29.2 The Performance Security to be provided by the successful tenderer shall be an unconditional Bank Guarantee issued at the tenderer's option by an established and a reputable Bank approved by the Employer and located in the Republic of Kenya and shall be divided into two elements namely, a performance security payable in foreign currencies (based upon the exchange rates determined in accordance with clause 35.4 of the Conditions of Contract) and a performance security payable in Kenya Shillings. The value of the two securities shall be in the same proportions of foreign and local currencies as requested in the form of foreign currency requirements.

29.3 Failure of the successful tenderer to lodge the required Performance Security shall constitute a breach of Contract and sufficient grounds for the annulment of the award and forfeiture of the Tender Security and any other remedy under the Contract the Employer may award the Contract to the next ranked tenderer.

30 Advance Payment

An advance payment, if approved by the Employer, shall be made under the Contract, if requested by the Contractor, in accordance with clause 33.1 of the Conditions of Contract. The Advance Payment Guarantee shall be denominated in the proportion and currencies named in the form of foreign currency requirements. For each currency, a separate guarantee shall be issued. The guarantee shall be issued by a bank located in the Republic of Kenya, or a foreign bank through a correspondent bank located in the Republic of Kenya, in either case subject to the approval of the Employer.

APPENDIX TO INSTRUCTIONS TO TENDERERS

1.CLAUSE 2.1

Change to read, "This invitation to tender is open to all tenderers in the categories specified".

2.ADD TO CLAUSE 4.1

The site is **the Site is Located in Kibos Road, Kisumu County.**

3. OMIT

Clauses 4.3, 5.1 (a), (d), (f), (i), (j), (o), 10.3, 10.4, 11.2, 11.3, 11.4,15, 25, 26.6, 30

4. MODIFY CLAUSE 5.1(h)

Form of agreement shall be as the Kenya Association of Building and Civil Engineering Contractors (KABCEC)

5.ADD TO CLAUSE 13.1

Amount of tender security is **NIL**

6. ADD TO CLAUSE 13.2

The tender surety can also be an insurance bond from a reputable insurance company in the current list of authorized insurance companies issued by the Public Procurement Oversight Authority (PPOA). Tender security shall be valid for 150 days from the date of tender opening, the tender surety expiry date and tender opening date being inclusive.

7. MODIFY CLAUSE 16.1 AND 17.1

Only original tender document shall be submitted.

8. ADD TO CLAUSE 17.2

The name and address of employer's representative for the purposes of submission of tender is **as per tender invitation notice.**

9. ADD TO CLAUSE 20

The tender opening date and time is **as stated in the tender advertisement notice.**

10. ADD TO CLAUSE 24

(i) In the event of a discrepancy between the tender amount as stated in the form of Tender and the corrected tender figure in the Main summary of the Bills of Quantities, the amount as stated in the Form of Tender shall prevail

(ii) The Error correction factor shall be computed by expressing the difference between the amount and the corrected tender sum as a percentage of the corrected Contract works (i.e corrected tender sum less P.C; and Provisional Sums)

(iii) The Error correction factor shall be applied to all Contract works (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuation of variations.

11.MODIFY CLAUSE 28.4

Replace "twenty eight (28)" with "thirty days (30)

12. MODIFY CLAUSE 29.1

Replace "twenty eight (28)" with "thirty days (30)". Amount of performance security shall be ten per cent (10%)

13. ADD TO CLAUSE 29.2

Performance security shall not be divided in two elements and shall be payable in Kenya Shillings Only.

14. ADD TO CLAUSE 26.

The evaluation criteria in pages A-14 to A-21 shall form part of the evaluation.

TENDER EVALUATION CRITERIA

After tender opening, the tenders will be evaluated in **4 stages**, namely:

1. Preliminary Evaluation;
2. Technical Evaluation;
3. Financial Evaluation; and
4. Recommendation for Award.

STAGE 1: PRELIMINARY EVALUATION

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

These conditions shall include the following:

i) Company Certificate of incorporation/registration;
ii) Current category of Registration with National Construction Authority (NCA category 1 Electrical) in the relevant trade;
iii) Current Class of Licenses with the relevant statutory bodies e.g. Energy Regulatory Commission, Communication Authority of Kenya, County Governments, Water Management Boards etc where applicable;
iv) Proof of payment for tender document if required;
v) The bid has been submitted in the format required by the procuring entity;
vi) Duly filled Form of Tender;
vii) Valid Tax Compliance Certificate;
viii) Duly filled Confidential Business Questionnaire;
ix) Duly signed Statement of Compliance;
x) The required number of copies of the Bid has been submitted and all required documents, information and samples have been submitted if stipulated in the tender, advertisement/Invitation letter;
xi) Signed Pre-tender site visit form if pre-tender site visit is required;
xii) Proof of authorization shall be furnished in the form of a written power of attorney which shall accompany the tender if the signatory to the tender is not a director of the company (provide name and attach proof of citizenship of the signatory to the Tender). Provide also Form CR12 from the Registrar of Companies.

- **Clause 23.2** of Instruction to Tenderers: "For the purposes of this clause, a substantially responsive tender is one which conforms to all terms and condition and specifications of the tender document without material deviation or reservation and has a valid Bank/Insurance guarantee".

a) The employer/procuring entity may seek further clarification/confirmation if necessary to confirm authenticity/compliance of any condition of the tender. Further, in case of a discrepancy between the amounts stated in the appendix to Instructions to Tenderers in Section A of this tender document and the one stated in the tender advertisement or invitation letter, the bid security shall be taken as the amount in the tender advertisement/ letter of invitation.

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

STAGE 2: TECHNICAL EVALUATION

The tender document shall be examined based on clause 2.2 of the Instruction to Tenderers which states as follows:

In accordance with clause 2.2 of Instruction to Tenderers, the tenderers will be required to provide evidence for eligibility of the award of the tender by satisfying the employer of their eligibility under sub clause 2.1 of Instructions to Tenderers and their capability and adequacy of resources to effectively carry out the subject contract.
In order to comply with provisions of clause 2.2 of Instruction to Tenderers, the tenderers shall be required;

a) ***To fill the Standard Forms*** provided in the bid document for the purposes of providing the required information. The tenderers may also attach the required information if they so desire;
b) ***To supply equipments/Items which comply with the technical specifications set out in the bid document.*** In this regard, the bidders shall be required to submit relevant technical brochures/catalogues with the tender document, highlighting the Catalogue Numbers of the proposed Items. Such brochures/catalogues should indicate comprehensive relevant data of the proposed equipment/Items which should include but not limited to the following:
   (i) Standards of manufacture;
   (ii) Performance ratings/characteristics;
   (iii) Material of manufacture;
   (iv) Electrical power ratings; and
   (v) Any other necessary requirements (Specify).

Note: If a bid document does not provide technical information as listed above, it will be considered NON RESPONSIVE to the TECHNICAL EVALUTAION CRITERIA and will is SCORED ZERO.

The bid will then be analyzed, using the information in the technical brochures, to determine compliance with General and Particular technical specifications for the works as indicated in the tender document. The tenderer shall also fill in the Technical Schedule as specified in the tender document for Equipment and Items indicating the Country of Origin, Model/Make/Manufacturer and catalogue numbers of the Items/Equipments they propose to supply.

The award of points considered in this section shall be as shown below:

PARAMETER	**MAXIMUM POINTS**
(i) Compliance with Technical Specifications…….	40
(ii) Tender Questionnaire ----------	2
(iii) Key personnel ----------	15
(iv) Contract Completed in the last Five (5) years ----------	9
(v) Schedules of on-going projects ----------	4
(vi) Schedules of contractors equipment ----------	12
(vii) Audited Financial Report for the last 3 years ----------	6
(viii) Evidence of Financial Resources ----------	9
(ix) Name, Address and Telephone of Banks (Contractor to provide)….	3
(x) Litigation History ----------	2
TOTAL	**100**

The pass-mark under the Technical Evaluation is 75 percent. (Only bidders who score over 75% shall be recommended for further evaluation

The detailed scoring plan shall be as shown in table 1.

TABLE 1: Technical Evaluation

Item	Description	Points Scored	Max. Point	
1	**Compliance with Technical Specifications** For this particular evaluation it is required of the bidder to supply catalogues of products indicating the standards of manufacture as mandatory. The standards should be highlighted within the brochure/product information • Compliant ----------40 • Non-compliant---------- 0 ***(Note: Tender Evaluation Committee to carryout analysis showing how decision on this requirement has been arrived at. Attach analysis on this as an Appendix)*** ***All bids must fulfill the Requirements in Section D and Section F of the document***		**40**	
2	**Tender Questionnaire Form** • Completely filled ---------- 2 • Not filled ---------- 0		**2**	
3	**Key Personnel (Attach evidence)**			
	Director of the firm • Holder of degree in relevant Engineering field ---------- 4 • Holder of diploma in relevant Engineering field ---------- 3 • Holder of certificate in relevant Engineering field----------2 • Holder of trade test certificate in relevant Engineering field------1 • No relevant certificate ---------- 0		**4**	
	At least 1No. degree/diploma holder of key personnel in relevant field • With over 10 years relevant experience ---------- 4 • With over 5 years relevant experience---------- 2 • With under 5 years relevant experience ---------- 1		**4**	**12**
	At least 1No certificate holder of key personnel in relevant field • With over 10 years relevant experience---------- 2 • With over 5 years relevant experience ---------- 1 • With under 5 years relevant experience ----------0.5		**2**	
	At least 1No Technician Certified by ERC (Category B1) for Electrical Installations • Artisan with over 5 years relevant experience ---------- 5 • Artisan with under 5 years relevant experience ---------- 1 • Non skilled worker with over 10 years relevant experience --- 0		**5**	
4	**Contracts completed in the last five (5) years (Max of 3No. Projects)**- **<u>Provide Evidence</u>** • Project of similar nature, complexity or magnitude ---------- 3 • Project of similar nature but of lower value than the one in consideration ---------- 2		**9**	

Item	Description	Points Scored	Max. Point
1	**Compliance with Technical Specifications** For this particular evaluation it is required of the bidder to supply catalogues of products indicating the standards of manufacture as mandatory. The standards should be highlighted within the brochure/product information • Compliant ----------40 • Non-compliant---------- 0 ***(Note: Tender Evaluation Committee to carryout analysis showing how decision on this requirement has been arrived at. Attach analysis on this as an Appendix)*** ***All bids must fulfill the Requirements in Section D and Section F of the document***		**40**
	• No completed project of similar nature ----------0		

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Item	Description	Points Scored	Max. Point	
5	**On-going projects – <u>Provide Evidence</u>** • No Project of similar nature, complexity and magnitude ---------- 4 • Three and below Projects of similar, nature complexity and magnitude ----------3 • Four and above Projects of similar nature, complexity and magnitude ---------- 2		**4**	
6	**Schedule of contractors equipment and transport (proof or evidence of ownership/Lease)**			
	a)Relevant Transport • Means of transport (Vehicle) ---------- 6 • No means of transport ---------- 0		6	**12**
	b)Relevant Equipment • Has relevant equipment for work being tendered ------6 • No relevant equipment for work being tendered ------ 0		6	
7	**Financial report**			
	a)Audited financial report (last three (3) years) • Average Annual Turn-over equal to or greater than the cost of the project ----------6 • Average Annual Turn-over above 50% but below 100% of the cost of the project ----------3 • Average Annual Turn-over below 50% of the cost of the project ----------1		**6**	
	b)Evidence of Financial Resources (cash in hand, lines of credit, over draft facility etc) • Has financial resources to finance the projected **monthly cash flow*** for three months ----------9 • Has financial resources equal to the projected **monthly cash flow***----------		**9**	

Item	Description	Points Scored	Max. Point
	--6 • Has financial resources less the projected **monthly cash flow***--- ----------3 • Has not indicated sources of financial resources ---------- 0		
8	**Name, Address and Telephone of Banks (Contractor to provide)** • Information Provided---------- 3 • No Information Provided---------- 0		**3**
9	**Litigation History** • Duly Filled ---------- 2 • Not filled ---------- 0		**2**
	TOTAL		**100**

Any bidder who scores 75 points and above shall be considered for further evaluation.

****Monthly Cash Flow =Tender Sum/Contract Period***

STAGE 3 - FINANCIAL EVALUATION

Upon completion of the technical evaluation a detailed financial evaluation shall follow.

The evaluation shall be in **three stages**

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

A) Determination of Arithmetic Errors

Arithmetic Errors will be corrected by the Procuring Entity as follows:

i) In the event of a discrepancy between the tender amount as stated in the form of Tender and the corrected tender figure in the Main summary of the Bills of Quantities, the amount as stated in the Form of Tender shall prevail. Pursuant to Section 82 of the Public Procurement and Asset Disposal Act 2015, 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;

ii) Error correction factor shall be computed by expressing the difference between the amount and the corrected tender sum as a percentage of the corrected contract works (i.e. corrected tender sum less P.C; and Provisional Sums);

iii) The Error correction factor shall be applied to all contract works (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuation of variations.

B) Comparison of rates

Items that are under priced or overpriced may indicate potential for non-delivery and front loading respectively. The committee shall promptly write to the tenderer asking for detailed breakdown of costs for any of the quoted Items, relationship between those prices, proposed construction/installation methods and schedules.

The evaluation committee shall evaluate the responses and make an appropriate recommendation to the procuring entity giving necessary evidence. Such recommendations may include but not limited to:

a) Recommend no adverse action to the tenderer after a convincing response;
b) Employer requiring that the amount of the performance bond be raised at the expense of the successful tenderer to a level sufficient to protect the employer against potential financial losses;

c) Recommend non-award based on the response provided and the available demonstratable evidence that the scope, quality, completion timing, administration of works to be undertaken by the tenderer, would adversely be affected or the rights of the employer or the tenderers obligations would be limited in a substantial way.

C) **Consistency of the Rates**

The evaluation committee will compare the consistency of rates for similar Items and note all inconsistencies of the rates for similar Items.

STAGE 4 - RECOMMENDATION FOR AWARD

The successful bidder shall be the tenderer with the lowest evaluated tender price.

SECTION B

CONDITIONS OF CONTRACT
(MAIN CONTRACT)

PART I

CONDITIONS OF CONTRACT

CONDITIONS OF CONTRACT
CONTENTS

CONDITIONS OF CONTRACT (MAIN WORKS)

1. Definitions

1.1 In this Contract, except where context otherwise requires, the following terms shall be interpreted as indicated;

"Bills of Quantities" means the priced and completed Bill of Quantities forming part of the tender [where applicable].

"Schedule of Rates" means the priced Schedule of Rates forming part of the tender [where applicable].

"The Completion Date" means the date of completion of the Works as certified by the Employer's Representative.

"The Contract" means the agreement entered into by the Employer and the Contractor as recorded in the Agreement Form and signed by the parties.

"The Contractor" refers to the person or corporate body whose tender to carry out the Works has been accepted by the Employer.

"The Contractor's Tender" is the completed tendering document submitted by the Contractor to the Employer.

"The Contract Price" is the price stated in the Letter of Acceptance.

"Days" are calendar days; **"Months"** are calendar months.

"A Defect" is any part of the Works not completed in accordance with the Contract.
"The Defects Liability Certificate" is the certificate issued by Employer's Representative upon correction of defects by the Contractor.

"The Defects Liability Period" is the period named in the Appendix to Conditions of Contract and calculated from the Completion Date.
"Drawings" include calculations and other information provided or approved by the Employer's Representative for the execution of the Contract.

"Employer" includes Central or Local Government administration, Universities, Public Institutions and Corporations and is the party who employs the Contractor to carry out the Works.
"Equipment" is the Contractor's machinery and vehicles brought temporarily to the Site for the execution of the Works.

"Site" means the place or places where the permanent Works are to be carried out including workshops where the same is being prepared.
"Materials" are all supplies, including consumables, used by the Contractor for incorporation in the Works.

"Employer's Representative" is the person appointed by the Employer and notified to the Contractor for the purpose of supervision of the Works.

"Specification" means the Specification of the Works included in the Contract.

"Start Date" is the date when the Contractor shall commence execution of the Works.

" A Contractor" 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.

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

" A Variation" is an instruction given by the Employer's Representative which varies the Works.

"The Works" are what the Contract requires the Contractor to construct, install, and turnover to the Employer.

2. Contract Documents

2.1 The following documents shall constitute the Contract documents and shall be interpreted in the following order of priority;

(1) Agreement,
(2) Letter of Acceptance,
(3) Contractor's Tender,
(4) Conditions of Contract,
(5) Specifications,
(6) Drawings,
(7) Bills of Quantities or Schedule of Rates [whichever is applicable)

3. Employer's Representative's Decisions

3.1 Except where otherwise specifically stated, the Employer's Representative will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

4. Works, Language and Law of Contract

4.1 The Contractor shall construct and install the Works in accordance with the Contract documents. The Works may commence on the Start Date and shall be carried out in accordance with the Programme submitted by the Contractor, as updated with the approval of the Employer's Representative, and complete them by the Intended Completion Date.

4.2 The ruling language of the Contract shall be English language and the law governing the Contract shall be the law of the Republic of Kenya.

5. Safety, Temporary works and Discoveries

5.1 The Contractor shall be responsible for design of temporary works and shall obtain approval of third parties to the design of the temporary works where required.

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

5.3 Anything of historical or other interest or significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Employer's Representative of such discoveries and carry out the Employer's Representative's instructions for dealing with them.

6. Work Programme and Contracting

6.1 Within seven days after Site possession date, the Contractor shall submit to the Employer's Representative for approval a programme showing the general methods, arrangements, order and timing for all the activities in the Works.

6.2 The Contractor may Contract the Works (but only to a maximum of 25 percent of the Contract Price) with the approval of the Employer's Representative. However, he shall not assign the Contract without the approval of the Employer in writing. Contracting shall not alter the Contractor's obligations.

7. The site

7.1 The Employer shall give possession of all parts of the Site to the Contractor.

7.2 The Contractor shall allow the Employer's Representative and any other person authorized by the Employer's Representative 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.

8. Instructions

8.1 The Contractor shall carry out all instructions of the Employer's Representative which are in accordance with the Contract.

9. Extension of Completion Date

9.1 The Employer's Representative shall extend the Completion Date if an occurrence arises which makes it impossible for completion to be achieved by the Intended Completion Date. The Employer's Representative shall decide whether and by how much to extend the Completion Date.

9.2 For the purposes of this Clause, the following occurrences shall be valid for consideration; Delay by: -

(a) force majeure, or
(b) reason of any exceptionally adverse weather conditions, or
(c) reason of civil commotion, strike or lockout affecting any of the trades employed upon the Works or any of the trades engaged in the preparation, manufacture or transportation of any of the goods or materials required for the Works, or
(d) reason of the Employer's Representative's instructions issued under these Conditions, or
(e) reason of the contractor not having received in due time necessary instructions, drawings, details or levels from the Employer's Representative for which he specifically applied in writing on a date which having regard to the date for Completion stated in the appendix to these Conditions or to any extension of time then fixed under this Clause was neither unreasonably distant from nor unreasonably close to the date on which it was necessary for him to receive the same, or

(f) delay on the part of artists, tradesmen or others engaged by the Employer in executing work not forming part of this Contract, or
(g) reason of delay by statutory or other services providers or similar bodies engaged directly by the Employer, or
(h) reason of opening up for inspection of any Work covered up or of the testing or any of the Work, materials or goods in accordance with these conditions unless the inspection or test showed that the Work, materials or goods were not in accordance with this Contract, or
(i) reason of delay in appointing a replacement Employer's Representative, or

(j) reason of delay caused by the late supply of goods or materials or in executing Work for which the Employer or his agents are contractually obliged to supply or to execute as the case may be, or

(k) delay in receiving possession of or access to the Site.

10. Management Meetings

10.1 A Contract management meeting shall be held regularly and attended by the Employer's Representative and the Contractor. Its business shall be to review the plans for the remaining Work. The Employer's
Representative shall record the business of management meetings and provide copies of the record to those attending the meeting and the Employer. The responsibility of the parties for actions to be taken shall be decided by the Employer's Representative either at the management meeting or after the management meeting and stated in writing to all who attend the meeting.

10.2 Communication between parties shall be effective only when in writing.

11. Defects

11.1 The Employer's Representative shall inspect the Contractor's work and notify the Contractor of any defects that are found. Such inspection shall not affect the Contractor's responsibilities. The Employer's Representative may instruct the Contractor to search for a defect and to uncover and test any Work that the Employer's Representative considers may have a defect. Should the defect be found, the cost of uncovering and making good shall be borne by the Contractor. However, if there is no defect found, the cost of uncovering and making good shall be treated as a variation and added to the Contract Price.

11.2 The Employer's Representative 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 Appendix to Conditions of Contract.

11.3 Every time notice of a defect is given, the Contractor shall correct the notified defect within the length of time specified by the Employer's Representative's notice. If the Contractor has not corrected a defect within the time specified in the Employer's Representative's notice, the Employer's Representative will assess the cost of having the defect corrected by other parties and such cost shall be treated as a variation and be deducted from the Contract Price.

12. Bills of Quantities/Schedule of Rates

12.1 The Bills of Quantities/Schedule of Rates shall contain Items for the construction, installation, testing and commissioning of the Work to be done by the Contractor. The Contractor will be paid for the quantity of the Work done at the rates in the Bills of Quantities/Schedule of Rates for each Item. Items against which no rate is entered by the Tenderer will not be paid for when executed and shall be deemed covered by the rates for other Items in the Bills of Quantities/Schedule of Rates.

12.2 Where Bills of Quantities do not form part of the Contract, the Contract Price shall be a lump sum (which shall be deemed to have been based on the rates in the Schedule of Rates forming part of the tender) and shall be subject to re-measurement after each stage.

13. Variations

13.1 The Contractor shall provide the Employer's Representative with a quotation for carrying out the variations when requested to do so. The Employer's Representative shall assess the quotation and shall obtain the necessary authority from the Employer before the variation is ordered.

13.2 If the Work in the variation corresponds with an Item description in the Bill of Quantities/Schedule of Rates, the rate in the Bill of Quantities/Schedule of Rates shall be used to calculate the value of the variation. If the nature of the Work in the variation does not correspond with Items in the Bill of Quantities/Schedule of Rates, the quotation by the Contractor shall be in the form of new rates for the relevant Items of Work.

13.3 If the Contractor's quotation is unreasonable, the Employer's Representative may order the variation and make a change to the Contract Price, which shall be based on the Employer's Representative's own forecast of the effects of the variation on the Contractor's costs.

14. Payment Certificates and Final Account

14.1 The Contractor shall be paid after each of the following stages of Work listed herebelow (subject to re-measurement by the Employer's
Representative of the Work done in each stage before payment is made). In case of lump-sum Contracts, the valuation for each stage shall be based on the quantities so obtained in the re-measurement and the rates in the Schedule of Rates.

(i) Advance payment **NIL** (*percent of Contract Price,*
[after Contract execution] *to be inserted by the Employer).*

(ii) First stage (*define stage)* ***AS PER PROGRESS***
(iii) Second stage *(define stage*) ***AS PER PROGRESS***
(iv) Third stage (*define stage)* ***AS PER PROGRESS***
(v) After defects liability period .

14.2 Upon deciding that Works included in a particular stage are complete, the Contractor shall submit to the Employer's Representative his application for payment. The Employer's Representative shall check, adjust if necessary and certify the amount to be paid to the Contractor within 21 days of receipt of the Contractor's application .The Employer shall pay the Contractor the amounts so certified within 30 days of the date of issue of each Interim Certificate.

14.3 The Contractor shall supply the Employer's Representative with a detailed final account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Employer's Representative shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 30 days of receiving the Contractor's account if it is correct and complete. If it is not, the Employer's Representative shall issue within 21 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 Employer's Representative shall decide on the amount payable to the Contractor and issue a Final Payment Certificate. The Employer shall pay the Contractor the amount so certified within 60 days of the issue of the Final Payment Certificate.

14.4 If the period laid down for payment to the Contractor upon each of the Employer's Representative's Certificate by the Employer has been exceeded, the Contractor shall be entitled to claim simple interest calculated pro-rata on the basis of the number of days delayed at the Central Bank of Kenya's average base lending rate prevailing on the first day the payment becomes overdue. The Contractor will be required to notify the Employer within 15 days of receipt of delayed payments of his intentions to claim interest.

15. Insurance

15.1 The Contractor shall be responsible for and shall take out appropriate cover against, among other risks, personal injury; loss of or damage to the Works, materials and plant; and loss of or damage to property.

16. Liquidated Damages

16.1 The Contractor shall pay liquidated damages to the Employer at the rate 0.001 per cent of the Contract price per day for each day that the actual Completion Date is later than the Intended Completion Date except in the case of any of the occurrences listed under Clause 9.2. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

17. Completion and Taking Over

17.1 Upon deciding that the Work is complete the Contractor shall request the Employer's Representative to issue a Certificate of Completion of the Works, upon deciding that the Work is completed.

The Employer shall take over the Site and the Works within seven days of the Employer's Representative issuing a Certificate of Completion.

18. Termination

18.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract. These fundamental breaches of Contract shall include, but shall not be limited to, the following;

(a) the Contractor stops Work for 30 days continuously without reasonable cause or authority from the Employer's Representative;

(b) the Contractor is declared bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(c) a payment certified by the Employer's Representative is not paid by the Employer to the Contractor within 30 days after the expiry of the payment periods stated in Sub-Clauses 14.2 and 14.3 hereabove.

(d) the Employer's Representative 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.

18.2 If the Contract is terminated, the Contractor shall stop Work immediately, and leave the Site as soon as reasonably possible. The Employer's Representative shall immediately thereafter arrange for a meeting for the purpose of taking record of the Works executed and materials, goods, equipment and temporary buildings on Site.

19. Payment Upon Termination

19.1 The Employer may employ and pay other persons to carry out and complete the Works and to rectify any defects and may enter upon the Works and use all materials on Site, plant, equipment and temporary works.

19.2 The Contractor shall, during the execution or after the completion of the Works under this Clause, remove from the Site as and when required within such reasonable time as the Employer's Representative may in writing specify, any temporary buildings, plant, machinery, appliances, goods or materials belonging to him, and in default thereof , the Employer may (without being responsible for any loss or damage) remove and sell any such property of the Contractor, holding the proceeds less all costs incurred to the credit of the Contractor.

19.3 Until after completion of the Works under this Clause, the Employer shall not be bound by any other provision of this Contract to make any payment to the Contractor, but upon such completion as aforesaid and the verification within a reasonable time of the accounts therefor the Employer's Representative shall certify the amount of expenses properly incurred by the Employer and, if such amount added to the money paid to the Contractor before such determination exceeds the total amount which would have been payable on due completion in accordance with this Contract, the difference shall be a debt payable to the Employer by the Contractor; and if the said amount added to the said money be less than the said total amount, the difference shall be a debt payable by the Employer to the Contractor.

20. Corrupt Gifts and Payments of Commission

20.1 The Contractor shall not:

(a) Offer or give or agree to give to any person in the service of the Employer any gifts or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract with the Employer or for showing or forbearing to show favour or disfavor to any person in relation to this or any other contract with the Employer.

(b) Any breach of this Condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the Laws of Kenya.

21. Settlement of Disputes

21.1 Any dispute arising out of the Contract which cannot be amicably settled between the parties shall be referred by either party 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 by the chairman of the Chartered Institute of Arbitrators, Kenya branch, on the request of the applying party.

APPENDIX TO CONDITIONS OF CONTRACT- APPLICABLE TO CONTRACT

THE EMPLOYER IS

Name: **KENYA BUREAU OF STANDARDS**
Represented By:
THE MANAGING DIRECTOR

Address**:** **P.O. Box, 54974 - 00200**
NAIROBI.

Name of Employer's Representative: **COUNTY ELECTRICAL & MECHANICAL – (BS) ENGINEER – State Department for Public Works**

Address: **P.O. Box 821 - 40100, KISUMU**

The name (and identification number) of the Contract is **PROPOSED POWER UPGRADE AND INSTALLATIONS FOR REGIONAL OFFICES AND LABORATORIES - KISUMU.**

The Works consist of **Supply, Installation, Testing and Commissioning of Electrical Services**
The Start Date shall be **as per the Contract Agreement**

The Intended Completion Date for the whole of the Works shall be **as per the Contract Agreement**

CLAUSE 2

The following documents also form part of the Contract:

1. **Letter of Acceptance-** Letter addressed to the Main Contractor by the Project Manager instructing the Main Contractor to enter into Contract Agreement with the nominated Contractor
2. **Contractors Tender-** The completed tendering document submitted by the Contractor to the employer
3. **Conditions of Contract-** Refers to the Conditions of Contract in the main works and conditions of Contract as described in the Contract Agreement (KABCEC**)**
4. **Specifications-** Specifications of Contract works as described in this document
5. **Drawings-** Drawings as described in this document
6. **Bills of quantities/Schedule of Unit Rates-** As described in this document

The Site Possession Date shall be **as per the Contract Agreement**

CLAUSE 7.1
The Site is located **at Kibos Road, Kisumu County.**
CLAUSE 1 & 11
The Defects Liability Period is **6 Months from practical completion date.**

CLAUSE 32.1 (MAIN CONTRACTROR'S CONDITIONS)
Period Of Final Measurement **: 3 months from practical completion.**

CLAUSE 16
Liquidated and Ascertained damages**: at the rate Kshs 5,000/= per week or part thereof.**

CLAUSE 14.1
Period of interim certificates **:** **Monthly**

CLAUSE 14.2

Period of honouring certificate : **30 days**

CLAUSE 26.1 (MAIN CONTRACTROR'S CONDITIONS)

Percentage of certified value retained: **10%**

CLAUSE 32.1 (MAIN CONTRACTROR'S CONDITIONS)

Limit of certified value retained : **5%**

NOTE: - Clause 26.1 and 32.1 mentioned above are in the main contractor's document.

SECTION C

CONTRACT PRELIMINARIES

AND

GENERAL CONDITIONS

CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

SECTION C
CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

1.01 Examination of Tender Documents

The tenderer is required to check the number of pages of this document and should he find any missing or indistinct, he must inform the Engineer at once and have the same rectified.

All tenderers shall be deemed to have carefully examined the following:

a) Work detailed in the Specification and in the Contract Drawings.
b) The Republic of Kenya Document "General Conditions of Contract for Electrical and Mechanical Works".
c) Other documents to which reference is made.

He shall also be deemed to have included for any expenditure which may be incurred in conforming with the above Items (a), (b), (c) and observe this expense as being attached to the contract placed for the whole or any part of the work.

The tenderer shall ensure that all ambiguities, doubts or obscure points of detail, are clarified with the Engineer before submission of his tender, as no claims for alleged deficiencies in the information given shall be considered after this date.

1.02 Discrepancies

The Contractor shall include all work either shown on the Contract Drawings or detailed in the specification. No claim or extra cost shall be considered for works which has been shown on the drawings or in the specification alone.

Should the drawing and the specification appear to conflict, the Contractor shall query the points at the time of tendering and satisfy himself that he has included for the work intended, as no claim for extra payment on this account shall be considered after the contract is awarded.

1.03 Conditions of Contract Agreement

The Contractor shall be required to enter into a Contract with the Main Contractor.

The Conditions of the Contract between the Main Contractor and the Contractor as hereinafter defined shall be the latest edition of the Agreement and Schedule of Conditions of Kenya Association of Building and Civil Engineering Contractors as particularly modified and amended hereinafter.

For the purpose of this contract the Agreement and Schedule of Conditions and any such modifications and amendments shall read and construed together. In any event of discrepancy the modifications and amendments shall prevail.

1.04 Payment

Payment will be made through certificates to the Main Contractor, unless he specifically agrees to forego this right, in which case direct payment can be made to the Contractor. All payments will be less retention as specified in the Main Contract. No payment will become due until materials are delivered to site.

1.05 Definition of Terms

Throughout these contract documents units of measurements, terms and expressions are abbreviated and wherever used hereinafter and in all other documents they shall be interpreted as follows:

i) **Employer:** The term **"Employer"** shall mean **THE MANAGING DIRECTOR, Kenya Bureau of Standards**

ii) **Works:** The term **"Works"** shall mean all or any portion of the work, materials and articles, whether the same are being manufactured or prepared, which are to be used in the execution of this contract and whether the same may be on site or not.

iii) **Contract Drawings:** The term **"Contract Drawings"** shall mean those drawings required or referred to herein and forming part of the Bills of Quantities.

iv) **Working Drawings:** The term **"Working Drawings"** shall mean those drawings required to be prepared by the Contractor as hereinafter described.

v) **Record Drawings:** The term **"Record Drawings"** shall mean those drawings required to be prepared by the Contractor showing "as installed" and other records for the Contract Works.

vi) Abbreviations:

CM shall mean **Cubic Metre**

SM shall mean **Square Metre**

LM shall mean **Linear Metre**

M shall mean **Metre**

LS shall mean **Lump Sum**

mm shall mean **Millimetres**

No. shall mean **Number**

Kg. shall mean **Kilogramme**

KEBS shall mean **Kenya Bureau of Standards**

BS shall mean. **Current standard British Standard Specification published**

by the British Standard Institution, 2 Park Street, London W1, England

"Ditto" shall mean the whole of the preceding description in which it occurs. Where it occurs in description of succeeding Item it shall mean the same as in the first description of the series in which it occurs except as qualified in the description concerned. Where it occurs in brackets it shall mean the whole of the preceding description which is contained within the appropriate brackets.

1.06 **Site Location**

The site of the Contract Works is situated in **Kibos Road, Kisumu County.**

The tenderer is recommended to visit the site and shall be deemed to have satisfied himself with regard to access, possible conditions, the risk of injury or damage to property on/or adjacent to the site, and the conditions under which the Contract Works shall have to be carried out and no claims for extras will be considered on account of lack of knowledge in this respect.

1.07 **Duration of Contract**

The Contractor shall be required to phase his work in accordance with the Main contractor's programme (or its revision). The programme is to be agreed with the Main contractor.

1.08 **Scope of Contract Works**

The Contractor shall supply, deliver, unload, hoist, fix, test, commission and hand-over in satisfactory working order the complete installations specified hereinafter and/or as shown on the Contract Drawings attached hereto, including the provision of labour, transport and plant for unloading material and storage, and handling into position and fixing, also the supply of ladders, scaffolding the other mechanical devices to plant, installation, painting, testing, setting to work, the removal from site from time to time of all superfluous material and rubbish caused by the works.

The Contractor shall supply all accessories, whether of Items or equipment supplied by the Main Contractor but to be fixed and commissioned under this Contract.

1.09 **Extent of the Contractor's Duties**

At the commencement of the works, the Contractor shall investigate and report to the Engineer if all materials and equipment to be used in the work and not specified as supplied by the others are available locally. If these materials and equipment are not available locally, the Contractor shall at this stage place orders for the materials in question and copy the orders to the Engineer. Failure to do so shall in no way relieve the Contractor from supplying the specified materials and equipment in time.

Materials supplied by others for installation and/or connection by the Subcontractor shall be carefully examined in the presence of the supplier before installation and connection. Any defects noted shall immediately be reported to the Engineer.

The Contractor shall be responsible for verifying all dimensions relative to his work by actual measurements taken on site.

The Contractor shall mark accurately on one set of drawings and indicate all alterations and/or modifications carried out to the designed system during the construction period. This information must be made available on site for inspection by the Engineer.

1.10 **Execution of the Works**

The works shall be carried out strictly in accordance with:

a) All relevant Kenya Bureau of Standards Specifications.
b) All relevant British Standard Specifications and Codes of Practice (hereinafter referred to as B.S. and C.P. respectively).
c) This Specification.
d) The Contract Drawings.
e) The Bye-laws of the Local Authority.
f) The Architect's and/or Engineer's Instructions.

The Contract Drawings and Specifications to be read and construed together.

1.11 **Validity of Tender**

The tender shall remain valid for acceptance within 120 days from the final date of submission of the tender, and this has to be confirmed by signing the Tender Bond. The tenderer shall be exempted from this Bond if the tender was previously withdrawn in writing to the Employer before the official opening.

1.12 **Firm – Price Contract**

Unless specifically stated in the documents or the invitation to tender, this is a firm-price Contract and the Contractor must allow in his tender for the increase in the cost of labour and/or materials during the duration of the contract. No claims will be allowed for increased costs arising from the fluctuations in duties and/or day to day currency fluctuations. The Contractor will be deemed to have allowed in his tender for any increase in the cost of materials which may arise as a result of currency fluctuation during the contract period.

1.13 **Variation**

No alteration to the Contract Works shall be carried out until receipt by the Contractor of written instructions from the Project Manager.

Any variation from the contract price in respect of any extra work, alteration or omission requested or sanctioned by the Architect or Engineer shall be agreed and confirmed in writing at the same time such variations are decided and shall not affect the validity of the Contract. Schedule of Unit Rates shall be used to assess the value of such variations. No allowance shall be made for loss of profit on omitted works.

Where the Architect requires additional work to be performed, the Contractor, if he considers it necessary, will give notice within seven (7) days to the Main Contractor of the length of time he (the Contractor) requires over and above that allotted for completion of the Contract.

If the Contractor fails to give such notice he will be deemed responsible for the claims arising from the delay occasioned by reason of such extension of time.

1.14 **Prime Cost and Provisional Sums**

A specialist Contractor may be nominated by the Architect to supply and/or install any equipment covered by the Prime Cost or Provisional Sums contained within the Contract documents.

The work covered by Prime Cost and Provisional Sums may or may not be carried out at the discretion of the Architect.

The whole or any part of these sums utilized by the Contractor shall be deducted from the value of the Contract price when calculating the final account.

1.15 **Bond**

The tenderer must submit with his tender the name of one Surety who must be an established Bank only who will be willing to be bound to the Main Contractor for an amount equal to 7½ % of the Contract amount as Clause 31 of the Main Contract.

1.16 **Government Legislation and Regulations**

The Contractor's attention is called to the provision of the Factory Act 1972 and subsequent amendments and revisions, and allowance must be made in his tender for compliance therewith, in so far as they are applicable.

The Contractor must also make himself acquainted with current legislation and any Government regulations regarding the movement, housing, security and control of labour, labour camps, passes for transport, etc.

The Contractor shall allow for providing holidays and transport for work people, and for complying with Legislation, Regulations and Union Agreements.

1.17 **Import Duty and Value Added Tax**

The Contractor will be required to pay full Import Duty and Value Added Tax on all Items of equipment, fittings and plant, whether imported or locally manufactured. The tenderer shall make full allowance in his tender for all such taxes

1.18 **Insurance Company Fees**

Attention is drawn to the tenderers to allow for all necessary fees, where known, that may be payable in respect of any fees imposed by Insurance Companies or statutory authorities for testing or inspection.

No allowance shall be made to the Contractor with respect to fees should these have been omitted by the tenderer due to his negligence in this respect.

1.19 **Provision of Services by the Main Contractor**

In accordance with Clause 1.08 of this Specification the Main Contractor shall make the following facilities available to the Contractor:

a) Attendance on the Contractor and the carrying out of all work affecting the structure of the building which may be necessary, including all chasing, cutting away and making good brickwork, etc., except that all plugging for fixing, fittings, machinery, fan ducting, etc., and all drilling and tapping of steel work shall be the responsibility of the Contractor. Any purpose made fixing brackets shall not constitute Builder's Work and shall be provided and installed by the Contractor unless stated hereinafter otherwise.

b) The provision of temporary water, lighting and power: All these services utilised shall be paid for by the Main Contractor. The Contractor shall, however, allow for additional connections/extensions required for his purposes.

c) Fixing of anchorage and pipe supports in the shuttering, except that all anchorage shall be Supplied by the Contractor who shall also supply the Main Contractor with fully dimensioned drawings detailing the exact locations.

d) i) Provision of scaffolding, cranes, etc. but only in so far as it is required for the Main Contract Works. It shall be the Contractor's responsibility to liaise with the Main Contractor to ensure that there is maximum co-operation with other Contractors in the use of scaffolding, cranes, etc.

ii) Any specialist scaffolding, cranes, etc. by the Contractor for his own exclusive use shall be paid for by the Contractor.

1.20 **Suppliers**

The Contractor shall submit names of any supplier for the materials to be incorporated, to the Engineer for approval. The information regarding the names of the suppliers may be submitted at different times, as may be convenient, but no sources of supply will be changed without prior approval.

Each supplier must be willing to admit the Engineer or his representative to his premises during working hours for the purpose of examining or obtaining samples of the materials in question.

1.21 **Samples and Materials Generally**

The Contractor shall, when required, provide for approval at no extra cost, samples of all materials to be incorporated in the works. Such samples, when approved, shall be retained by the Engineer and shall form the standard for all such materials incorporated.

1.22 **Administrative Procedure and Contractual Responsibility**

Wherever within the Specification it is mentioned or implied that the Contractor shall deal direct with the Employer or Engineer, it shall mean "through the Contractor" who is responsible to the Employer for the whole of the works including the Contract Works.

1.23 **Bills of Quantities**

The Bills of Quantities have been prepared in accordance with the standard method of measurement of Building Works for East Africa, first Edition, Metric, 1970. All the Quantities are based on the Contract Drawings and are provisional and they shall not be held to gauge or to limit the amount or description of the work to be executed by the Contractor but the value thereof shall be deducted from the Contract Sum and the value of the work ordered by the Engineer and executed there under shall be measured and valued by the Engineer in accordance with the conditions of the Contract.

All work liable to adjustment under this Contract shall be left uncovered for a reasonable time to allow measurements needed for such adjustment to be taken by the Quantity Surveyor or Engineer. Immediately the work is ready for measuring the Contractor shall give notice to the Quantity Surveyor or Engineer to carry out measurements before covering up. If the Contractor shall make default in these respects he shall, if the Architect so directs, uncover the work to enable the necessary measurements to be taken and afterwards reinstate at his own expense.

1.24 **Contractor's Office in Kenya**

The Contractor shall maintain (after first establishing if necessary) in Kenya an office staffed with competent Engineer Manager and such supporting technical and clerical staff as necessary to control and coordinate the execution and completion of the Contract Works.

The Engineer Manager and his staff shall be empowered by the Contractor to represent him at meetings and in discussions with the Main Contractor, the Engineer and other parties who may be concerned and any liaison with the Contractor's Head Office on matters relating to the design, execution and completion of the Contract Works shall be effected through his office in Kenya.

It shall be the Contractor's responsibility to procure work permits, entry permits, licences, registration, etc., in respect of all expatriate staff.

The Contractor shall prepare a substantial proportion of his Working Drawings at his office in Kenya. No reasons for delays in the preparation or submission for approval or otherwise of such drawings or proposals will be accepted on the grounds that the Contractor's Head Office is remote from his office in Nairobi or the site of the Contract Works or otherwise.

1.25 **Builder's Work**

All chasing, cutting away and making good will be done by the Main Contractor but the Contractor shall mark out in advance and shall be responsible for accuracy of the size and position of all holes and chases required.

The Contractor shall drill and plug holes in floors, walls, ceiling and roof for securing services and equipment requiring screw or bolt fixings.

Any purpose made fixing brackets shall not constitute builder's work and shall be provided and installed by the Contractor unless stated hereinafter to the contrary.

1.26 **Structural Provision for the Works**

Preliminary major structural provision has been made for the Contract Works based on outline information ascertained during the preparation of the Specification.

The preliminary major structural provision made will be deemed as adequate unless the Contractor stated otherwise when submitting his tender.

Any major structural provision or alteration to major structural provisions required by the Contractor shall be shown on Working Drawings to be submitted to the Engineer within 30 days of being appointed.

No requests for alterations to preliminary major structural provisions will be approved except where they are considered unavoidable by the Engineer. In no case will they be approved if building work is so far advanced as to cause additional costs or delays in the work of the Main Contractor.

1.27 Position of Services, Plant, Equipment, Fittings and Apparatus

The Contract Drawings give a general indication of the intended layout. The position of the equipment and apparatus, and also the exact routes of the ducts, main and distribution pipework shall be confirmed before installation is commenced. The exact siting of appliances, pipework, etc., may vary from that indicated.

The routes of services and positions of apparatus shall be determined by the approved dimensions detailed in the Working Drawings or on site by the Engineer in consultation with the Contractor or the Main Contractor.

Services throughout the ducts shall be arranged to allow maximum access along the ducts and the services shall be readily accessible for maintenance. Any work which has to be re-done due to negligence in this respect shall be the Contractor's responsibility.

The Contractor shall be deemed to have allowed in his Contract Sum for locating terminal points of services (e.g. lighting, switches, socket outlets, lighting points, control switches, thermostats and other initiating devices, taps, stop cocks) in positions plus or minus 1.2m horizontally and vertically from the locations shown on Contract Drawings. Within these limits no variations in the Contract Sum will be made unless the work has already been executed in accordance with previously approved Working Drawings and with the approval of the Engineer.

1.28 **Checking of Work**

The Contractor shall satisfy himself to the correctness of the connections he makes to all Items of equipment supplied under the Contract agreement and equipment supplied under other contracts before it is put into operation. Details of operation, working pressures, temperatures, voltages, phases, power rating, etc., shall be confirmed to others and confirmation received before the system is first operated.

1.29 **Setting to Work and Regulating System**

The Contractor shall carry out such tests of the Contract Works as required by British Standard Specifications, or equal and approved codes as specified hereinafter and as customary.

No testing or commissioning shall be undertaken except in the presence of and to the satisfaction of the Engineer unless otherwise stated by him (Contractor's own preliminary and proving tests excepted).

It will be deemed that the Contractor has included in the Contract Sum for the costs of all fuel, power, water and the like, for testing and commissioning as required as part of the Contract Works. He shall submit for approval to the Engineer a suitable programme for testing and commissioning. The Engineer and Employer shall be given ample warning in writing, as to the date on which testing and commissioning will take place.

The Contractor shall commission the Contract Works and provide attendance during the commissioning of all services, plant and apparatus connected under the Contract Agreement or other Contract Agreements, related to the project.

Each system shall be properly balanced, graded and regulated to ensure that correct distribution is achieved and where existing installations are affected, the Contractor shall also regulate these systems to ensure that their performance is maintained.

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

1.30 **Identification of Plant Components**

The Contractor shall supply and fix identification labels to all plant, starters, switches and Items of control equipment including valves, with white traffolyte or equal labels engraved in red lettering denoting its name, function and section controlled. The labels shall be mounted on equipment and in the most convenient positions. Care shall be taken to ensure the labels can be read without difficulty. This requirement shall apply also to major components of Items of control equipment.

Details of the lettering of the labels and the method of mounting or supporting shall be forwarded to the Engineer for approval prior to manufacture.

1.31 **Contract Drawings**

The Contract Drawings when read in conjunction with the text of the Specification, have been completed in such detail as was considered necessary to enable competitive tenders to be obtained for the execution and completion of the Contract works.

The Contract Drawings are not intended to be Working Drawings and shall not be used unless exceptionally they are released for this purpose.

1.32 **Working Drawings**

The Contractor shall prepare such Working Drawings as may be necessary. The Working Drawings shall be complete in such detail not only that the Contract Works can be executed on site but also that the Engineer can approve the Contractor's proposals, detailed designs and intentions in the execution of the Contract Works.

If the Contractor requires any further instructions, details, Contract Drawings or information drawings to enable him to prepare his Working Drawings or proposals, the Contractor shall accept at his own cost, the risk that any work, commenced or which he intends to commence at site may be rejected.

The Engineer, in giving his approval to the Working Drawings, will presume that any necessary action has been, or shall be taken by the Contractor to ensure that the installations shown on the Working Drawings have been cleared with the Main Contractor and any other Contractors whose installations and works might be affected.

If the Contractor submits his Working Drawings to the Engineer without first liaising and obtaining clearance for his installations from the Main Contractor and other Contractors whose installations and works might be affected, then he shall be liable to pay for any alterations or modification to his own, the Main Contractor's or other Contractor's installations and works, which are incurred, notwithstanding any technical or other approval received from the Engineer.

Working Drawings to be prepared by the Contractor shall include but not be restricted to the following:

a) Any drawings required by the Main Contractor, or Engineer to enable structural provisions to be made including Builder's Working Drawings or Schedules and those for the detailing of holes, fixings, foundations, cables and paperwork ducting below or above ground or in or outside or below buildings.

b) General Arrangement Drawings of all plant, control boards, fittings and apparatus or any part thereof and of installation layout arrangement of such plant and apparatus.

c) Schematic Layout Drawings of services and of control equipment.
d) Layout Drawings of all embedded and non-embedded paperwork, ducts and electrical conduits.
e) Complete circuit drawings of the equipment, together with associated circuit description.
f) Such other drawings as are called for in the text of the Specification or Schedules or as the Engineer may reasonably require.

Three copies of all Working Drawings shall be submitted to the Engineer for approval. One copy of the Working Drawings submitted to the Engineer for approval shall be returned to the Contractor indicating approval or amendment therein.

Six copies of the approved Working Drawings shall be given to the Main Contractor by the Contractor for information and distribution to other Contractors carrying out work associated with or in close proximity to or which might be affected by the Contract Works.

Approved Working Drawings shall not be departed from except as may be approved or directed by the Engineer.

Approval by the Engineer of Working Drawings shall neither relieve the Contractor of any of his obligations under the Contract nor relieve him from correcting any errors found subsequently in the Approved Working Drawings or other Working Drawings and in the Contract Works on site or elsewhere associated therewith.

The Contractor shall ensure that the Working Drawings are submitted to the Architect for approval at a time not unreasonably close to the date when such approval is required. Late submission of his Working Drawings will not relieve the Contractor of his obligation to complete the Contract Works within the agreed Contract Period and in a manner that would receive the approval of the Architect.

1.33 **Record Drawings (As Installed) and Instructions**

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

Record Drawings, may, subject to the approval of the Engineer, include approved Working Drawings adjusted as necessary and certified by the Contractor as a correct record of the installation of the Contract Works.

They shall include but not restricted to the following drawings or information:

a) Working Drawings amended as necessary but titled “Record Drawings” and certified as a true record of the “As Installed” Contract Works. Subject to the approval of the Engineer such Working Drawings as may be inappropriate may be omitted.
b) Fully dimensioned drawings of all plant and apparatus.
c) General arrangement drawings of equipment, other areas containing plant forming part of the Contract Works and the like, indicating the accurate size and location of the plant and apparatus suitability cross-referenced to the drawings mentioned in (b) above and hereinafter.
d) Routes, types, sizes and arrangement of all pipework and ductwork including dates of installation of underground pipework.
e) Relay adjustment charts and manuals.
f) Routes, types, sizes and arrangement of all electric cables, conduits, ducts and wiring including the dates of installation of buried works.
g) System schematic and trunking diagrams showing all salient information relating to control and instrumentation.
h) Grading Charts.
i) Valve schedules and locations suitability cross-referenced.

j) Wiring and piping diagrams of plant and apparatus.
k) Schematic diagrams of individual plant, apparatus and switch and control boards. These diagrams to include those peculiar to individual plant or apparatus and also those applicable to system operation as a whole.
l) Operating Instruction

Schematic and wiring diagrams shall not be manufacturer's multipurpose general issue drawings. They shall be prepared specially for the Contract Works and shall contain no spurious or irrelevant information.

Marked-up drawings of the installation of the Contract Works shall be kept to date and completed by the date of practical or section completion. Two copies of the Record Drawings of Contract Works and two sets of the relay adjustment and grading charts and schematic diagrams on stiff backing shall be provided not later than one month later.

The Contractor shall supply for fixing in sub-stations, switch-rooms, boiler houses, plant rooms, pump houses, the office of the Maintenance Engineer and other places, suitable valve and instructions charts, schematic diagrams of instrumentation and of the electrical reticulation as may be requested by the Engineer providing that the charts, diagrams, etc., relate to installations forming part of the Contract Works. All such charts and diagrams shall be of suitable plastic material on a stiff backing and must be approved by the Engineer before final printing.

Notwithstanding the Contractor's obligations referred to above, if the Contractor fails to produce to the Engineer's approval, either:-

a) The Marked-up Drawings during the execution of the Contract Works or
b) The Record Drawings, etc., within one month of the Section or Practical Completion

The Engineer shall have these drawings produced by others. The cost of obtaining the necessary information and preparing such drawings, etc., will be recovered from the Contractor.

1.34 **Maintenance Manual**

Upon Practical Completion of the Contract Works, the Contractor shall furnish the Engineer four copies of a Maintenance Manual relating to the installation forming part of all of the Contract Works.

The manual shall be loose-leaf type, International A4 size with stiff covers and cloth bound. It may be in several volumes and shall be sub-divided into sections, each section covering one Engineering service system. It shall have a ready means of reference and a detailed index.

There shall be a separate volume dealing with Air Conditioning and Mechanical Ventilation installation where such installations are included in the Contract Works.

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 Contract Works the following and any other Items listed in the text of the Specifications:

a) System Description.
b) Plant
c) Valve Operation
d) Switch Operation
e) Procedure of Fault Finding
f) Emergency Procedures
g) Lubrication Requirements
h) Maintenance and Servicing Periods and Procedures
i) Colour Coding Legend for all Services

j) Schematic and Writing Diagrams of Plant and Apparatus
k) Record Drawings, true to scale, folded to International A4 size
l) Lists of Primary and Secondary Spares.

The manual is to be specially prepared for the Contract Works and manufacturer's standard descriptive literature and plant operating instruction cards will not be accepted for inclusion unless exceptionally approved by the Engineer. The 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.

1.35 Hand-over

The Contract Works shall be considered complete and the Maintenance and Defects Liability Period shall commence only when the Contract Works and supporting services have been tested, commissioned and operated to the satisfaction of the Engineer and officially approved and accepted by the Employer, provided always that the handing over of the Contract Works shall be coincident with the handing over of the Main Contract Works.

The procedure to be followed will be as follows:

a) On the completion of the Contract Works to the satisfaction of the Engineer and the Employer, the Contractor shall request the Engineer, at site to arrange for handing over.
b) The Engineer shall arrange a Hand-over Meeting or a series thereof, at site.
c) The Contractor shall arrange with the Engineer and Employer for a complete demonstration of each and every service to be carried out and for instruction to be given to the relevant operation staff and other representatives of the Employer.
d) In the presence of the Employer and the Engineer, Hand-over will take place, subject to Agreement of the Hand-over Certificates and associated check lists.

1.36 Painting

It will be deemed that the Contractor allowed for all protective and finish painting in the Contract Sum for the Contract Works, including colour coding of service pipework to the approval of the Engineer. Any special requirements are described in the text of the Specifications.

1.37 Spares

The Contractor shall supply and deliver such spares suitably protected and boxed to the Engineer's approval as are called for in the Specifications or in the Price Schedules.

1.38 Testing and Inspection – Manufactured Plant

The Engineer reserves the right to inspect and test or witness of all manufactured plant equipment and materials.

The right of the Engineer relating to the inspection, examination and testing of plant during manufacture shall be applicable to Insurance companies and inspection authorities so nominated by the Engineer.

The Contractor shall give two week's notice to the Engineer of his intention to carry out any inspection or tests and the Engineer or his representative shall be entitled to witness such tests and inspections

Six copies of all test certificates and performance curves shall be submitted as soon as possible after the completion of such tests, to the Engineer for his approval.

Plant or equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Contractor's own risk and should the test certificate not be approved new tests may be ordered by the Engineer at the Contractor's expense.

The foregoing provisions relate to tests at manufacturer's works and as appropriate to those carried out at site.

1.39 **Testing and Inspection -Installation**

Allow for testing each section of the Contract Works installation as described hereinafter to the satisfaction of the Engineer.

1.40 **Labour Camps**

The Contractor shall provide the necessary temporary workshop and mess-room in position to be approved by the Architect.

The work people employed by the Contractor shall occupy or be about only that part of the site necessary for the performance of the work and the Contractor shall instruct his employees accordingly.

If practicable, W.C. accommodation shall be allocated for the sole use of the Contractor's workmen and the Contractor will be required to keep the same clean and disinfected, to make good any damage thereto and leave in good condition.

1.41 **Storage of Materials**

Space for storage will be provided by the Main contractor but the Contractor will be responsible for provision of any lock-up sheds or stores required.

Nominated Contractors are to be made liable for the cost of any storage accommodation provided specially for their use. No materials shall be stored or stacked on suspended slabs without the prior approval of the Project manager.

1.42 **Initial Maintenance**

The Contractor shall make routine maintenance once a month during the liability for the Defects Period and shall carry out all necessary adjustments and repairs, cleaning and oiling of moving parts. A monthly report of the inspection and any works done upon the installation shall be supplied to the Engineer.

The Contractor shall also provide a 24 -hour break-down service to attend to faults on or malfunctioning of the installation between the routine visits of inspection.

The Contractor shall allow in the Contract Sum of the initial maintenance, inspection and break-down service and shall provide for all tools, instruments, plant and scaffolding and the transportation thereof, as required for the correct and full execution of these obligations and the provision, use or installation of all materials as oils, greases, sandpaper, etc., or parts which are periodically renewed such as brake linings etc., or parts which are faulty for any reason whatsoever excepting always Acts of God such as storm, tempest, flood, earthquake and civil revolt, acts of war and vandalism.

1.43 **Maintenance and Servicing After Completion of the Initial Maintenance**

The Contractor shall, if required, enter into a maintenance and service agreement with the employer for the installation for a period of up to five years from the day following the last day of the liability for Defects Period which offers the same facilities as specified in Clause 1.42 (Initial Maintenance).

The terms of any such agreement shall not be less beneficial to the employer than the terms of Agreements for either similar installation.

The Contractor shall submit with his tender for the works, where called upon a firm quotation for the maintenance and service of the installation as specified herein, which shall be based upon the present day costs and may be varied only to take into account increases in material and labour unit rate costs between the time of tendering and the signing of the formal maintenance and service agreement and which shall remain valid and open for acceptance by the Employer to and including the last day of the fifth complete calendar month following the end of the liability for Defects Period.

1.44 **Trade Names**

Where trade names of manufacturer's catalogue numbers are mentioned in the Specification or the Bills of Quantities, the reference is intended as a guide to the type of article or quality of material required. Alternate brands of equal and approved quality will be acceptable.

1.45 **Water and Electricity for the Works**

These will be made available by the Main Contractor. The Contractor shall be liable for the cost of any water or electric current used and for any installation provided especially for their own use by the Main Contractor.

1.46 **Protection**

The Contractor shall adequately cover up and protect his own work to prevent injury and also to cover up and protect from damage all parts of the building or premises where work is performed by him under the Contract.

1.47 **Defects After Completion**

The defects liability period will be 6 months from the date of completion of the Main Contract as certified by the Engineer.

1.48 **Damages for Delay**

Liquidated and Ascertained damages as stated in the Main Contract Agreement will be claimed against the Main Contract for any unauthorised delay in completion. The Contractor shall be held liable for the whole or a portion of these damages should he cause delay in completion.

1.49 **Clear Away on Completion**

The Contractor shall, upon completion of the works, at his own expense, remove and clear away all plant, equipment, rubbish and unused materials, and shall leave the whole of the works in a clean and tidy state, to the satisfaction of the Engineer. On completion, the whole of the works shall be delivered up clean, complete and perfect in every respect to the satisfaction of the Engineer.

1.50 **Final Account**

On completion of the works the Contractor shall agree with the Engineer the value of any variations outstanding and as soon as possible thereafter submit to the Engineer his final statement of account showing the total sum claimed sub-divided as follows:

Statement A - detailing the tender amounts less the Prime Cost and Provisional Sums, included therein.

Statement B - detailing all the variation orders issued on the contract.

Statement C - Summarising statement A and B giving the net grand total due to the Contractor for the execution of the Contract.

1.51 **Fair Wages**

The Contractor shall in respect of all persons employed anywhere by him in the execution of the Contract, in every factory, workshop or place occupied or used by him for execution of the Contract, observe and fulfil the following conditions:

a) The Contractor shall pay rates of the wages and observe hours and conditions of labour not less favourable than those established for the trade or industry in the district where work is carried out.

b) In the absence of any rates of wages, hours or conditions of labour so established the Contractor shall pay rates and observe hours and conditions of labour are not less favourable than the general level of wages, hours and conditions observed by other employers whose general circumstances in the trade or industry in which the Contractor is engaged are similar.

1.52 Supervision

During the progress of the works, the Contractor shall provide and keep constantly available for consultation on site an experienced English - speaking Supervisor and shall provide reasonable office facilities, attendance, etc., for the Supervisor.

In addition, during the whole of the time the works are under construction, the Contractor shall maintain on site one experienced foreman or charge-hand and an adequate number of fitters, etc., for the work covered by the Specification. The number of this staff shall not be reduced without the prior written approval of the Project manager or Engineer.

Any instructions given to the Supervisor on site shall be deemed to have been given to the Contractor.

One copy of this Specification and one copy of each of the Contract Drawings (latest issue) must be retained on site at all times, and available for reference by the Engineer or Contractor.

1.53 Test Certificates

The Contractor shall provide the Engineer with three copies of all test reports or certificates that are or may be required by this Specification.

1.54 Labour

The Contractor shall provide skilled and unskilled labour as may be necessary for completion of the contract.

1.55 Discount to the Main Contractor

No discount to the Main Contractor will be included in the tender for this installation.

1.56 Guarantee

The whole of the work will be guaranteed for a period of six months from the date of the Engineer's certification of completion and under such guarantee the Contractor shall remedy at his expense all defects in materials and apparatus due to faulty design, construction or workmanship which may develop in that period.

1.57 Direct Contracts

Notwithstanding the foregoing conditions, the Government reserves the right to place a "Direct Contract" for any goods or services required in the works which are covered by a P.C Sum in the Bills of Quantities and to pay for the same direct. In any such instance, profit relative to the P.C Sum in the priced Bills of Quantities will be adjusted as deserved for P.C Sum allowed.

1.58 Attendance Upon the Tradesmen etc

The Contractor shall allow for the attendance of trade upon trade and shall afford any tradesmen or other persons employed for the execution of any work not included in this contract every facility for carrying out their work and also for the use of ordinary scaffolding. The contractor however, shall not be required to erect any special scaffolding for them.

1.59 Trade Unions

The contractor shall recognize the freedom of his work people to be members of trade unions.

1.60 Local and other Authorities notices and fees

The contractor shall comply with and give all notices required by any Regulations, Act or by Law of any Local Authority or of any Public Service, Company or Authority who have any jurisdiction with regard to the works or with those systems the same are or will be connected and he shall pay and indemnify the Government against any fees or charges legally demandable under any regulation or by-law in respect of the works; provided that the said fees and charges if not expressly included in the contract sum or stated by way of provisional sum shall be added to the contract sum.

The contractor before making any variation from the contract drawings or specification necessitated by such compliance shall give the Project Manager written notice specifying and giving the reason for such variation and applying for instructions in reference thereto.

If the contractor within seven days of having applied for the same does not receive such instructions, he shall proceed with the works in conforming to the provision regulation or by-law in question and any variation thereby necessitated shall be deemed to be a variation in accordance to the conditions of contract.

1.61 Assignment or subletting

The contractor shall not without the written consent of the Project Manager assign this contract or sublet any portion of the works, provided that such consent shall not be unreasonably withheld to the prejudice of the contractor.

1.62 Partial Completion

If the Government shall take over any part or parts works, apparatus, equipment etc. then within seven days from the date on which the Government shall have taken possession of the relevant part, the Project Manager shall issue a Certificate stating his estimate of the approximate total value of the works which shall be the total value of that part and practical completion of the relevant part shall be deemed to have occurred, and the Defects Liability Period in respect of the relevant part be deemed to have commenced on the date Government shall have taken possession thereof.

The contractor shall make good any defects or other faults in the relevant part that had been deemed complete.

The contractor shall reduce the value of insurance by the full value of the relevant part

The contractor shall be paid for the part of works taken possession by the Government

1.63 Temporary Works

Where temporal works shall be deemed necessary, such as Temporary lighting, the contractor shall take precaution to prevent damage to such works.

The contractor shall include for the cost of and make necessary arrangements with the Project Manager for such temporary works. For temporary lighting, electricity shall be metered and paid for by the contract

1.64 Patent Rights

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

1.65 Mobilization and Demobilization

The contractor shall mobilize labour plant and equipment to site according to his programme and schedule of work. He shall ensure optimum presence and utilization of labour, plant and equipment. He should not pay and maintain unnecessary labour force or maintain and service idle plant and equipment. Where necessary he shall demobilize and mobilize the labour, plant and equipment, as he deems fit to ensure optimum progress of the works and this shall be considered to be a continuous process as works progress. He shall make provision for this Item in his tender. No claim will be entertained where the contractor has not made any provision for mobilization and demobilization of labour, plant and equipment in the preliminary bills of quantities or elsewhere in this tender.

1.66 Extended Preliminaries

Where it shall be necessary to extend the contract period by the Project manager the contractor shall still ensure availability on site, optimum labour, materials, plant and equipment. The contractor shall make provision for extended preliminaries, should the contract period be extended and this shall be in a form of a percentage of the total Contractor works. Where called upon in the Appendix to these Preliminaries the Contractor shall insert his percentage per month for extended preliminaries that shall form basis for compensation.

Lack of inserting the percentage shall mean that the Contractor has provided for this requirement elsewhere in the Bills of Quantities.

1.67 Supervision by Engineer and Site Meetings

A competent Project Engineer appointed by the Engineer as his representative shall supervise the Contract works. The Project Engineer shall be responsible for issuing all the site instructions in any variations to the works and these shall be delivered through the Contractor with the authority of the Project Manager. Any instructions given verbal shall be confirmed in writing.

The project engineer and (or) the Engineer shall attend management meetings arranged by the Project Manager and for which the Contractor or his representative shall also attend. For the purpose of supervising the project, provisional sums are provided to cover for transport and allowances. The Contractor shall in his tender allow for the provision of management meetings and site inspections, as instructed by the Engineer, and also profit and attendance on these funds. The funds shall be expended according to Project Manager's instructions to the contractor.

1.68 Amendment to Scope of Contract Works

No amendment to scope of Contract works is expected and in case of amendment or modification to scope of work, these shall be communicated to all tenderers in sufficient time before the deadline of the tender submission. However during the contract period and as the works progress the Project Manager may vary the works as per conditions of contract by issuing site instructions.
No claims shall be entertained on account of variation to scope of works either to increase the works (pre-financing) or reduction of works (loss of profit-see clause 1.70)

1.69 Contractor Obligation and Employers Obligation

The Contractor will finance all activities as part of his obligation to this contract. The employer shall pay interim payment for materials and work completed on site as his obligation in this contract, as the works progresses. No claims will be entertained for pre-financing of the project by the Contractor, or for loss of profit (expectation loss) in case of premature termination, reduction or increase of works as the Contractor shall be deemed to have taken adequate measures in programming his works and expenditure and taken necessary financial precaution while executing the works. No interest shall be payable to the Contractor, except as relates to late payment as in the conditions of contract clause 23.3. The contractor shall where called upon, insert his price to compensate for any of the occurrence stated here (premature termination, reduction or increase of works), as a percentage of the contract sum in the Appendix to this section.

1.70 **APPENDIX TO CONTRACT PRELIMINARIES AND GENERAL CONDITIONS**

1. **OMIT CLAUSE 1.12**

2. **ADD TO CLAUSE 1.17**

   Prices quoted shall include **16% VAT**

   In accordance with Government policy **3% Withholding Tax** shall be deducted from all payments made to the Contractor, and the same shall subsequently be forwarded to the Kenya Revenue Authority (KRA).

3. **ADD TO CLAUSE 1.40**
   There is no labour camp

4. **CLAUSE 1.66**
   Extended Preliminaries shall be equal to or less than liquidated and ascertained damages and are subject to mutual agreement.

5. **MODIFY CLAUSE 1.15**
   Replace “7.5%” with “5%”

SECTION D

PARTICULAR SPECIFICATION

OF

MATERIALS AND WORKS

GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

2.1 General

2.2 Standard of Materials

2.3 Workmanship

2.4 Procurement of Materials

2.5 Shop Drawings

2.6 Record Drawings

2.7 Regulations and Standards

2.8 Setting out Works

2.9 Position of Electrical Plant and Apparatus

2.10 M.C.B Distribution Panels and Consumer Units

2.11 Fused Switchgear and Isolators

2.12 Conduits and Conduit Runs

2.13 Conduit Boxes and Accessories

2.14 Labels

2.15 Earthing

2.16 Cables and Flexible Cords

2.17 Armoured PVC Insulated and Sheathed Cables

2.18 Cable Supports; Markers and Tiles

2.19 PVC Insulated Cables

2.20 Heat Resisting Cables

2.21 Flexible Cords

2.22 Cable Ends and phase Colours

2.23 Cable Insulation Colours

2.24 Sub-circuit Wiring

2.25 Space Factor

2.26 Insulation

2.27 Lighting Switches

2.28 Sockets and Switched sockets

2.29 Fused Spur Boxes

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2.31 Connectors

2.32 Lampholders

2.33 Lamps

2.34 Lighting Fittings Street Lighting Lanterns

2.35 Position of Points and Switches

2.36 Street/Security Lighting Columns

2.37 Timing Control Switch

2.38 Wiring System for Street Lighting

2.39 Metal control Pillar

2.40 Current Operated Earth leakage circuit breaker

2.41 MV Switchboard

2.42 Steel Conduits and Steel Trunking

2.43 Testing on Site

2.1 SHOP DRAWINGS

Before manufacture or Fabrication is commenced the Contractor shall submit Two copies of detailed drawings of all control pillars, meter cubicles, medium voltage switchboards including their components showing all pertinent information including sizes, capacities, construction details, etc, as may be required to determine the suitability of the equipment for the approval of the Engineer. Approval of the detailed drawings shall not relieve the Contractor of the full responsibility of errors or the necessity of checking the drawings himself or of furnishing the materials and equipment and performing the work required by the plans and specifications.

2.2 RECORD DRAWINGS

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

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

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

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

2.3 REGULATIONS AND STANDARDS

All work executed by the Contractor shall comply with the current edition of the "Regulations" for the Electrical Equipment of Buildings, issued by the Institution of Electrical Engineers, and with the Regulations of the ERC.

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

2.4 SETTING OUT WORK

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

2.5 POSITIONS OF ELECTRICAL PLANT AND APPARATUS

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

2.6 MCB DISTRIBUTION PANELS AND CONSUMER UNITS

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

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

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

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

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

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

2.7 FUSED SWITCHGEAR AND ISOLATORS

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

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

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

Isolators shall be load breaking/fault making isolators.

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

2.8 CONDUITS AND CONDUIT RUNS

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

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

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

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

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

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

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

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

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

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

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

2.13 CONDUIT BOXES AND ACCESSORIES

All conduit outlets and junction boxes are to be either malleable iron and of standard circular pattern of the appropriate type to suit saddles being used or super high impact PVC manufactured to KS 04 – 179 : 1983. Small circular pattern boxes are to be used with conduits up to and including 25mm outside diameter. Rectangular pattern adaptable boxes are to be used for conduits of 32mm outside diameter and larger. For drawing in of cables in exposed runs of conduit, standard pattern through boxes are to be used:

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

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

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

2.14 LABELS

Labels fitted to switches and fuseboards;-

(i) Shall be Ivorine engraved black on white.

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

(iii) Shall be indicated on switches:-
a) Reference number of switch

b) Special current rating

c) Item of equipment controlled

(iv) Shall indicate on MCB panels
a) Reference number
b) Type of board, i.e;, lighting, sockets, etc,.
c) Size of cable supplying panel
d) where to isolate feeder cable
(v) Shall be generally not less than 75mm x 50mm.

2.15 EARTHING

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

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

(ii) At all main distribution panels and main service positions a 25mm x 3mm minimum cross sectional area Copper tape shall be provided and all equipment including the lead sheath and armouring of cables, distribution boards and metal frames shall be bonded thereto.

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

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

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

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

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

(viii) Earth plates will not be permitted

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

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

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

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

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

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

2.16 CABLES AND FLEXIBLE CORDS

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

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

The successful Contractor will, at the Engineers discretion be required to submit samples of cables for the Engineers approval; the Engineer reserves the right to call for the cables of an alternative manufacture without any extra cost being incurred.
P.V.C. insulated cables shall be 500/1000 volt grade. No cables smaller than 1.5mm² shall be used unless otherwise specified. The installation and the finish of cables shall be as detailed in later clauses. The colour of cables shall conform with the details stated in the "Cable Braid and insulation Colours" Clause.

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

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

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

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

Where cables rise from floor level to switchgear etc., they shall be protected by P.V.C. conduit, to a height of 600mm from finished floor level, whether the cable is run on the surface or recessed into the wall.

2.18 CABLE SUPPORTS, MARKERS AND TILES

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

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

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

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

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

Cables are to be kept clear of all pipe work and the Contractor shall work in close liaison with other services Contractors.

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

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

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

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

2.19 PVC INSULATED CABLES

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

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

2.20 HEAT RESISTING CABLES

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

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

2.21 FLEXIBLE CORDS

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

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

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

2.22 CABLE ENDS AND PHASE COLOURS

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

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

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

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

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

2.24 SUB-CIRCUIT WIRING

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

Lighting circuits P. V.C. cable 1.5mm² for all lighting circuits indicated on the drawing.
Power circuits P.V.C cable (minimum sizes).

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

(ii) 2.5mm² for one 15Amp socket.

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

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

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

2.25 SPACE FACTOR

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

2.26 INSULATION

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

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

2.27 LIGHTING SWITCHES

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

2.28 SOCKETS AND SWITCHED SOCKETS

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

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

2.29 FUSED SPUR BOXES

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

2.30 COOKER OUTLETS

These shall be flush mounted with 13-A switched socket outlet and neon indicator Lamps.
The cooker control units shall be as manufactured by “M.K. Electrical Company Ltd”, or other approved equal KS 04 – 247: 1988

2.31 CONNECTORS

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

2.32 LAMPHOLDERS

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

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

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

2.33 LAMPS

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

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

Pearl lamps shall be used in all fittings unless otherwise specified.

2.34 LIGHTING FITTINGS AND STREET LIGHTING LANTERNS

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

All fittings and pendants shall be fixed to the conduit boxes with brass R/H screws. These to be in line with metal finish of fittings. The lighting fittings are detailed for the purpose of establishing a high standard of finish and under no circumstances will substitute fittings be permitted.
In case of rectangular shaped ceiling fittings, the extreme ends of the fittings shall be secured to suitable support in addition to the central conduit box fittings. Supports shall be provided and fixed by the Contractor.
The whole of the metal work of each lighting fittings shall be effectively bonded to earth. In the case of ball and/or knuckle joints short lengths of flexible cable shall be provided, bonded to the metal work on either side of the joints. If the above provisions are not made by the manufacturers -, the Contractor shall include cost of additional work necessary in his tender. See “Flexible Cords” clause for details of internal wiring of lighting fittings. Minimum size of internal wiring shall be 20/0.20mm (23/0067).
Each lighting fitting shall be provided with number type and size of lamps as detailed on the drawings.
It is to be noted that some fittings are suspended as shown on the drawings.

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

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

2.35 POSITIONS OF POINTS AND SWITCHES

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

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

2.36 STREET/SECURITY OUTDOOR LIGHTING COLUMNS:

The column shall be at a minimum of 225mm in the ground on 75mm thick concrete foundations and the pole upto 150mm shall be surrounded with concrete. The top bracket and plain section of the columns shall be common to and interchangeable with all brackets with maximum mismatching tolerance of 3mm between any pole and bracket. After manufacture and before erection the columns shall be treated with an approved mordant solution which shall be washed off and the whole allowed to dry. Thereafter, the columns shall be painted with one undercoat and two coats of gloss paint to an approved colour. All columns shall be complete with fused cut-outs.

2.37 TIMING CONTROL SWITCH

These shall be installed where shown on the drawings. Photocell timing control circuits which will operate 'on' with a specified level of darkness and 'off' with a given level of light. The initial adjustment will be done with approval of the Electrical Engineer.

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2.38 WIRING SYSTEM FOR STREETLIGHTING

Cables shall be as indicated on the drawings, and shall be laid in a cable trench 450mm deep along the road sides and 600mm deep across the roads and 900mm away from the road kerb or 1500mm away from the edges of the road. 'Loop-in' and 'Loop-out' arrangement shall be used at every pole. Wiring to the lanterns on each pole shall be with 1.5mm² PVC twin insulated and sheathed cable with earth wire shall be laid at least 600mm below the finished road level on a compact bed of murram at least 50mm thick and covered with a concrete surrounded 150mm thick.

2.39 METAL CONTROL PILLAR

These shall be metal clad and fabricated as per contract drawings and specification. The Contractor shall supply, install, test and commission control pillars including supplying, fixing connecting switchgears as detailed on the appropriate drawings.

2.40 CURRENT OPERATED EARTH LEAKAGE CIRCUIT BREAKER

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

The breaker shall be provided with test switch and fitted in weather proof enclosure for surface mounting. The rated load current and earth fault operating current shall be as specified in the drawings. These shall be as manufactured by Crabtree, Siemens or other equal and approved.

2.41 M.V. SWITCHBOARD AND SWITCHGEAR

The switchboard shall be manufactured in accordance with KS04-226 which co-ordinates the requirements for electrical power switchgear and associated apparatus. It is not intended that this K.S. should cover the requirements for specified apparatus for which separate Kenyan Standard exist. All equipment and material used in the switchboard shall be in accordance with the appropriate Kenya Standard.

The switchboard shall comprise the equipment shown on the drawings together with all current transformers, auxiliary fuses, labels, small wiring and interconnections necessary for the satisfactory operation of the switchboard

Switchboard shall be of the flush fronted, enclosed, metal clad type with full front or rear access as called for in the particular specifications, suitable for indoor use, sectionalized as necessary to facilitate transport and erection. The maximum height of the switchboard is to be approximately 2.0 meters. A suitable connection chamber containing all field terminals shall be provided at the top or bottom of the switchboard as appropriate.

Before manufacture, the Contractor shall submit to the consulting Engineer for approval of detailed drawings showing the layout, construction and connection of the switchboard.

All bus-bars and bus-bar connections shall consist of high conductivity copper and be provided in accordance with KS 04-226: 1985. The bus-bars shall be clearly marked with the appropriate phase and neutral colours which should be red, yellow, blue for the phases and black for neutral. The bus-bars shall be so arranged in the switchboard that the extensions to the left and right may be made in the future with ease should the need arise.

Small wiring, which will be neatly arranged and cleated, shall be executed in accordance with B.S. 158 and the insulation of the wiring shall be colored according to the phase or neutral connection.

Switches and fuse switches, shall be in strict accordance with KS04-183:1978 Class 2 switches. Means of locking the switch in the "OFF" position shall be provided.

All fuse switches shall comply with KS04-183:1978, PARTS 2 and 3 a fault rating at least equal to the fault rating of the switchboard in which they are installed. Cartridge fuse links to KS 04-183:1978 category A.C. 46, class Q1 and fusing factor not exceeding 1.5 shall be supplied with each fused switch.

Mounting arrangements shall be such that individual complete fuse switches may be disconnected and withdrawn when necessary without extensive dismantling work. When switches are arranged in their formation all necessary horizontal and vertical barriers shall be provided to ensure segregation from adjacent units. Means of locking the switch in the "OFF" position shall be provided.

2.42 STEEL CONDUITS AND STEEL TRUNKING

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

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

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

All trunking fittings (i.e. Bends, tees, etc) shall leave the main through completely clear of obstructions and continuously open except through walls and floors at which points suitable fire resisting barriers shall be provided as may be necessary. The inner edge of bends and tees shall be chamfered where cables larger than 35mm^2 are employed.

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

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

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

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

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

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

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

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

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

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

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

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

All adaptable boxes and lids of the same size shall be interchangeable.
Boxes used on surface work are to be tapped or drilled to line up with the conduit fixed in distance type saddles allowing clearance between the conduit and wall without the need for setting the conduit.
Where used in conjunction with mineral insulated copper sheathed cable, galvanised boxes shall be used and painted after erection.

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

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

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

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

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

2.43 TESTING ON SITE

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

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

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

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

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

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

The Contractor shall generally attend on other contractors employed on the project and carry out such electrical tests as may be necessary.

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

Where such equipment, etc., forms part of or is connected to a system whether primarily or of an electrical nature or otherwise (e.g. air conditioning system) the Contractor shall attend on and assist in balancing, regulating testing and commissioning, or if primarily an electrical or other system forming part of works, shall balance, regulate, test and commission the system to the service engineer's approval.

APPENDIX TO GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

The electrical Contractor shall comply with the following:-

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

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

SECTION E

SCHEDULE OF CONTRACT DRAWINGS

SCHEDULE OF CONTRACT DRAWINGS

1.0 Tenderers may inspect the electrical drawings at the office of the Chief Electrical Engineer, Directorate of Public Works, Hill Plaza, along Ngong Road, Nairobi, during normal working hours.

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

SECTION F

PARTICULAR SPECIFICATIONS

OF

MATERIALS AND WORKS

PARTICULAR SPECIFICATIONS

1.0 SITE LOCATION

The site of the proposed works is **in Kibos Road, Kisumu County.**

2.0 SCOPE OF WORKS

The works to be carried out under this Contract comprises of but not limited to the supply, installation, testing and commissioning of:

i. Upgrading of Power supply lines to Main building
ii. Installation of power distribution cables and Meter boards
iii. Upgrade of Laboratory wiring to sockets both industrial and light sockets
iv. Provision of changeover kit and associated accessories

3.0 MATERIALS FOR THE WORKS

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

All materials submitted (but not manufactured in Kenya) for this tender MUST conform to EN or BS standards and must be of reputable brands. Any deviation or lack of clarity in this parameter will be considered TECHNICALLY NON COMPLIANT. The installations proposed should have a seamless blend with the existing installations on site.

SECTION G

SCHEDULE OF UNIT RATES

SCHEDULE OF UNIT RATES

1. The tenderer shall insert unit rates against the Items in the following schedules and may add such other Items as he considers appropriate.

2. The unit rates shall include for supply, transport, insurance, delivery to site, storage as necessary, assembling, cleaning, installing, connecting, profit and maintenance in defects liability and any other obligation under this contract.

3. The unit rates will be used to assess the value of additions or omissions arising from authorized variations to the contract works.

4. Where trade names or manufacturer's catalogue numbers are mentioned in the specification, the reference is intended as a guide to the type of article or quality of material required. Alternative brands of **equal** and **approved** quality will be accepted.

5. The prices quoted shall be deemed to include for all obligations under the Contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including **16% V.A.T and 3 % Withholding tax**).

   In accordance with Government policy, 3% withholding Tax **shall be deducted** from all payments made to the tenderer, and the same shall be forwarded to the **Kenya Revenue Authority (KRA).**

SCHEDULE OF UNIT RATES

NO	DESCRIPTION	QTY	UNIT	UNIT RATE	
				KSHS	CTS
	1) **Cables**				
	(i) PVC SWA PVC Cables:-				
	a) 4core 100mm^2	1	M		
	b) 2 core 100mm^2	1	M		
	2) 6 Way Distribution board				
	3) 250W Solar photovoltaic panel				
	4) Splitter Unit				
	5) Earth rod (copper)	1			
	6) 240V- 24 hour Time- switch				

SECTION H

BILLS OF QUANTITIES

BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against Item of preliminaries in the Contractor's Bills of Quantities and specification. These Bills are designated as Bill No.1 in this Section. Where the Contractor fails to insert his price in any Item he shall be deemed to have made adequate provision for this on various Items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

The Bills of Quantities are divided generally into three sections:-

a) Preliminaries – Bill 1

Contractors preliminaries are as per those described in section C – Contractor preliminaries and conditions of contract. The Contractor shall study the conditions and make provision to cover their cost in this Bill. The number of preliminary Items to be priced by the Tenderer has been limited to tangible Items such as site office, temporary works and others. However the Tenderer is free to include and price any other Items he deems necessary taking into consideration conditions he is likely to encounter on site.

b) Installation Items and Other Bills - Bill 2
The brief description of the Items in these Bills of Quantities should in no way modify or supersede the detailed descriptions in the contract Drawings, conditions of contract and specifications.
The unit of measurements and observations are as per those described in clause 1.05 of the section C.

c) Summary

The summary contains tabulation of the separate parts of the Bills of Quantities carried forward with provisional sum, contingencies and any prime cost sums included. The Contractor shall insert his totals and enter his grand total tender sum in the space provided below the summary.
This grand total tender sum shall be entered in the Form of Tender provided elsewhere in this document

B) NOTES FOR BILLS OF QUANTITIES

1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.

2. The prices quoted shall be deemed to include for all obligations under the Contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including **16% V.A.T and 3 % Withholding tax**).

   In accordance with Government policy, 3% withholding Tax **shall be deducted** from all payments made to the tenderer, and the same shall be forwarded to the **Kenya Revenue Authority (KRA).**

3 All prices omitted from any Item, section or part of the Bills of Quantities shall be deemed to have been included to another Item, section or part.

4. The brief description of the Items given in the Bills of Quantities are for the purpose of establishing a standard to which the Contractor shall adhere to. Otherwise alternative brands of **equal** and **approved** quality will be accepted.

Should the Contractor install any material not specified here in before receiving **approva**l from the Project Manager, the Contractor shall remove the material in question and, **at his own cost**, install the proper material.

5. The grand total of prices in the price summary page must be carried forward to the **Form of Tender**.

6. Tenderers must enclose, together with their submitted tenders, **detailed manufacturer's Brochure**s detailing Technical Literature and specifications on the following Items they intend to offer.
   a) Computer and printer
   b) Light duty UPS
   c) Flash Disc

   This shall be used in the tender evaluation to determine the first line aesthetics and quality of fittings offered.

Statement of Compliance

a) I confirm compliance of all clauses of the General Conditions, General Specifications and Particular Specifications in this tender.

b) I confirm I have not made and will not make any payment to any person, who can be perceived as an inducement to win this tender.

Signed: ……*for and on behalf of the Tenderer*

Date: ……..

Official Rubber Stamp: ……

SCHEDULE 1 – SUB-CONTRACT PRELIMINARIES

Item	DESCRIPTION	UNIT	Qty	RATE (KES)	Amount (KES)	Cts
1	Discrepancies clause 1.02					
2	Conditions of sub-contract Agreement clause 1.03					
3	Payments clause1.04					
4	Site location clause 1.06					
5	Scope of Contract Works clause 1.08					
6	Extent of the Contractor's Duties clause 1.09					
7	Firm price contract clause 1.12					
8	Variation clause 1.13					
9	Prime cost and provisional sum clause 1.14 (insert profit and attendance which is a percentage of expended PC or provisional sum.)					
10	Bond clause 1.15					
11	Government Legislation and Regulations clause 1.16					
12	Import Duty and Value Added Tax clause 1.17(Note this clause applies for materials supplied only. VAT will also be paid by the sub-contractor as allowed in the summary page)					
13	Insurance company Fees clause 1.18					
14	Provision of services by the Main contractor clause 1.19					
15	Samples and Materials Generally clause 1.21					
	SUB-TOTAL CARRIED TO PAGE ----- H-5					

Item	DESCRIPTION	Unit	Qty	RATE (KES.)	Amount (KES.)	Cts
16	Supplies clause 1.20					
17	Bills of Quantities clause 1.23					
18	Contractor's Office in Kenya clause 1.24					
19	Builder's Work clause 1.25					
20	Setting to work and Regulating system clause 1.29					
21	Identification of plant components clause 1.30					
22	Working Drawings clause 1.32 **(Must be priced and Availed)**					
23	Record Drawings (As Installed) and Instructions clause 1.33 **(Must be availed at completion of contract)**					
24	Maintenance Manual clause 1.34					
25	Hand over clause 1.35					
26	Painting clause 1.36					
27	Testing and Inspection – manufactured plant clause 1.38					
28	Testing and Inspection – Installation clause 1.39					
29	Storage of Materials clause 1.41					
30	Initial Maintenance clause 1.42					
	SUB-TOTAL CARRIED TO PAGE ----- H-5					

Item	DESCRIPTION	UNIT	QTY	RATE (Kshs.)	AMOUNT (Kshs.)	Cts
31	Attendance Upon Tradesmen, etc. (Insert percentage only) clause 1.58					
32	Local and other Authorities notices and fees clause 1.60					
33	Temporary Works clause 1.63					
34	Patent Rights clause 1.64					
35	Mobilization and Demobilization Clause 1.65					
36	Extended Preliminaries Clause 1.66 (see appendix on page C –24)					
37	Supervision by Engineer and Site Meetings Clause 1.67					
38	Allow for profit and Attendance for the above					
39	Amendment to Scope of Sub-contract Works Clause 1.68					
40	Contractor Obligation and Employers Obligation clause 1.69(see appendix on page C –24))					
41	Any other preliminaries;					
	Subtotal above Sub total brought forward from page H-3 Sub total brought forward from page H-4					
	TOTAL FOR SCHEDULE NO. 1- PRELIMINARIES CARRIED FORWARD TO PRICE MAIN SUMMARY PAGE -- H-**12**					

NO.	DESCRIPTION	QTY	UNIT	RATE (KES)	AMOUNT (KES)
	Supply, install, test and commission the following.				
A.	**POWER HOUSE**				
0.01	**Provide appropriately sized and adequately powder coated/enamel painted housing for installations and appliances as below to Engineer's approval**	SUM			
0.02	Improve on earthing and to KPLC specifications and standards by using copper tape matt, red soil, charcoals,and salt to engineer's approval	SUM			
0.03	1000A TP MCCB as "Schneider Electric" or approved equivalent.	6	NO.		
0.04	Wire the 1000A TP MCCB using 4 x 70mm^2 PVC cable + 1 x 50mm^2 PVC cable .	1	NO.		
0.05	Supply and install a free standing electric control panel c/w 630A pole contactor unit for automatic changeover operation with phase failure , Delay timers , Electrical and Mechanical Interlock and complete with all other control accessories as "Schneider Electric" or approved equivalent	1	No		
0.06	630A rated manual bypass switch with clearly labeled NORMAL-OFF BY PASS position and shall such be wired that when the switch is on either OFF or BY PASS position , the generator shall receive no signal to start both the contactor and manual by pass which to be in one enclosure fabricated by "Schneider Electric" or approved equivalent	1	No		
	Grand Total…….c/f to Grand Summary Page H-12				

NO.	DESCRIPTION	QTY	UNIT	RATE (KES)	AMOUNT (KES)
	Supply, install, test and commission the following				
B.	**UNDER – GROUND CABLE**				
0.07	4x 70mm^2 PVC/SWA/PVC copper cable	96	M		
a.	from main switch board to the Sub board in the new block .				
b.	Excavate trench for above cable average depth of 700mm, lay the cable, cover with HATARI tiles, back fill with soil and compact to neutral ground level	25	M		
c.	Route cable ,markers	10	No		
d.	Cable glad for above cable	2	No		
e.	Cable lugs	1	No		
0.08	Carefully remove the 125 Watts top entry Gamma six lantern destroyed by tree and hand the same to client	1	No		
0.09	Supply and install 125 Watts Mercury aluminium bodied conical circular lantern for post top mounting corrosion resistant electro coat black finish, fibre glass reinforced composite housing for excellent durability and strength , UV protected high efficiency , high power factor complete with all accessories as "THORN – PHILIPS" or approved equivalent	1	No		
0.10	Allow for Project Management of Kenya Shillings Five Hundred Thousand (KES. 150,000.00)to be drawn for facilitation for inspection during fabrication of the custom panels	SUM	ITEM		
	Grand Total……c/f to Grand Summary Page H-12				----------

NO.	DESCRIPTION	QTY	UNIT	RATE (KES)	AMOUNT (KES)
	Supply, install, test and commission the following				
0.11	A free standing front and rear access metal clad modular 800A Bus bar LV switch board with all accessories but excluding power factor correction Bank, installed with surge arrestor fuse ESP 415 equipped with digital multimeter , the board an incomer breaker 630A motorized adjustable TPN MCCB with a short breaking capacity of 65KA to be fabricated from mild steel sheet gauge 14SWG with powder coating finish and should be fabricated by "Schneider Electric" or approved equivalent . Entire switchboard assembly to be from 4 TYPE 2)				
	Complete with the following				
a.	Provision for KPLC 3 Phase meter cut out and CTS	1	No.		
b.	Digital Multimeter cable for measuring voltage in the range of 0-1600A				
c.	3 phase presence indicator				
d.	2Nos 630A TPN MCCB (main incoming and generator) adjustable & motorized				
e.	5Nos x800A insulating and adjustable and motorized				
f.	3Nos x250A TPN MCCB adjustable and motorized				
g.	2Nos x200A TPN MCCB adjustable and motorized				
h.	2Nos x100A TPN MCCB adjustable and motorized				
i.	2Nos x63A TPN MCCB adjustable and motorized				
j.	2Nos x100A TPN MCCB adjustable and motorized spares				
k.	Sealable stubs for all cover plates and screws				
l.	415V 3 phase surge diverter				
m.	Comprehensive labeling for all the MCCB and chambers	1	No		
0.12	Power factor correction unit Supply and install 150KVAR rated capacitor bank to be installed in the main LV board c/w 250A TPN MCCB and to be connected to the main bus bar. The unit to have an Electronic Programable Controller				
0.13	*Carefully disconnect the Electric submain cables from the Existing DBs to free standing sub board in the ground, remove the cables and make good the system as below*	SUM	Item		
	Grand Total……c/f to Grand Summary Page H-12				----------

NO.	DESCRIPTION	QTY	UNIT	RATE (KES)	AMOUNT (KES)
	Supply, install, test and commission:-				
0.14	4 x 25.00mm^2 and 1 x 16.00mm^2 ECC from from the sub board to 12 ways DB on ground floor and 1st floor.	106	LM		
0.15	Upgrade 100A integral switch to 250A TP	SUM	Item		
0.16	4 x 16.00mm^2 and 1 x 10.00mm^2 ECC from the sub board to 6 ways DB on ground floor and First Floor	84	LM		
0.17	Upgrade 100A TPN 6 ways DB integral switch to 200A TPN 6 ways DB .	1	No.		
0.18	16 ways TP and N DB c/w all accessories but excluding MCCB as "Schneider Electric" or approved equivalent	2	No.		
0.19	10 ways TP&N DB c/w all accessories but excluding MCCB as "Schneider Electric" or approved equivalent	2	No.		
0.20	Make good builders works affected including appropriate and corresponding paint works	SUM	Item		
	Total C/f to Grand Summary Page H-12				

NO.	DESCRIPTION	QTY	UNIT	RATE (KES)	AMOUNT (KES)
	LABORATORY MODIFICATIONS				
0.21	Provide 32A TP & N isolator in each Laboratory for 3Ph industrial power sockets	4	No.		
0.22	4 x 10.00mm^2 and 1 x 16.00mm^2 ECC from from DB to industrial socket outlets .	36	LM		
0.23	Upgrade 32A TP to 63A TP (MCBS) for each 32A TP&N isolators	4	No.		
0.24	**POWER INDUSTRIAL SOCKETS** **NB:** All power industrial sockets (415V) wired using 5 x 4.00mm^2 PVC insulated cables topped from 32A TP & N isolator per Laboratory for:- i) 3Ph / 4 pin industrial sockets ii) 3Ph / 5 pin industrial sockets Re-distribution of Power Sockets per Laboratory **a) Microbiology** Incubation room				
0.25	- Extension of power sockets using 3 x 2.5mm^2 PVC cables drawn in trunking 6' (3 compartments) for: -	16	LM		
0.26	i) Double power sockets 13A (bidder incubator).	1	No		
0.27	ii) Single (LSM Incubator) and plates	1	No		
0.28	- Store room – extension of power sockets using 3 x 2.5mm^2 PVC cables drawn in trunking 6" (3 compartments) for:-	12	LM		
0.29	i) Double socket (refrigerator) and plates	1	No		
0.30	- Decontaminator room – extension of power socket using 5 x 4.00mm^3 drawn in metallic trunking 6" (3 compartments) for:-	16	LM		
0.31	**i)** Industrial (415V – 5pins) socket (Autoclaves) and plates.	2	No		
	Total C/f to Grand Summary Page H-12				

NO.	DESCRIPTION	QTY	UNIT	RATE (KES)	AMOUNT (KES)
0.32	**MAIN ROOM** – extension of power sockets using 3 x 2.5mm^2 PVC cables drawn in new trunking 6" (3 compartments) for:-	14	LM		
0.33	i) 13A twin sockets (safety cabinets) and plates	3	No.		
0.34	ii) Single socket drawn in existing trunking 13A twin and plates	1	No.		
0.35	- Balance room – extension of power sockets using 3 x 2.5mm^2 drawn in 6" trunking (3 compartments) for:	24	LM		
0.36	i) Twin sockets 13A and plates	2	No.		
0.38	b) **Food and Agriculture Lab**. Balance room – extension of power sockets using 3 x 2.5mm^2 PVC cables drawn in 6" metallic trunking (3 compartments) for:	18	LM		
0.39	i) 13A twin sockets c/w plates Main room – extension of power sockets using 5 x 4.00mm^2 PVC drawn in metallic trunking c/w plate cover for.	4	No.		
0.40	i) Backup power unit – industrial 3Ph	1	No		
0.41	ii) Ups digester – 15A c/w plate	1	No		
0.42	- Extention of power socket using 3 x 4.00mm^2 PVC cable drawn in metallic trunking 6" (3 compartments for:-	24	LM		
0.43	i) Furnace 15A c/w plate	1	No.		
0.44	ii) over 15A c/w plate	1	No.		
0.45	c) **Chemistry Laboratory**:- - Store room – extension of power socket using 3 x 2.5mm^2 drawn in 6" trunking (3 compartments) for refrigeration.	6	LM		
0.46	i) Double socket c/w plate	1	No		
0.47	Main room – power extension wired using 3 x 2.5mm2 PVC cable drawn in 6" trunking (3 compartments) for	8	LM		
0.48	i) 15A c/w plate – distillation	1	No		
0.49	ii) 13A c/w plate – BOD – Incubator	1	No		
0.50	- Fixing back all removed metallic trunkings, re-wire and termination of electrical accessories affected.	SUM	Item		
	Total C/f to Grand Summary Page H-12				

GRAND SUMMARY PAGE H-12

Sr No	Description	Amount (KES)
1.	Sub Total b/f from Preliminaries Page H-5	
2.	Sub-total brought forward from Page H -6	
3	Sub-total brought forward from Page H -7	
4	Sub-total brought forward from Page H -8	
5	Sub-total brought forward from Page H -9	
6	Sub-total brought forward from Page H -10	
7	Sub-total brought forward from Page H -11	
8	CONTINGENCY SUMS TO BE USED AT DISCRETION OF ENGINEER	**150,000.00**
	TOTAL CARRIED FORWARD TO FORM OF TENDER	

Amount in Words: ……..……...……..

……...……

…… …….

Tenderer's Name and Stamp: ……

Sub contract period. …….. Weeks

Signature: …… Date: ....……

PIN NO. …… VAT CERTIFICATE No. ..…….

(Provide copy) (Provide copy)

Witness: …… Address: ……...……

Signature: ……..…… Date: …….

TECHNICAL SCHEDULE

OF

ITEMS TO BE SUPPLIED

TECHNICAL SCHEDULE

The technical schedule shall be submitted by tenderers to facilitate and enable the Project Manager to evaluate the tenders, especially where the tenderer intends to supply or has based his tender sum on equipment which differs in manufacture, type or performance from the specifications indicated by the Project Manager.

Any tender without this shall be disqualified.

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED
(To be completed by Tenderer)

ITEM	DESCRIPTION	TYPE/MAKE	COUNTRY OF ORIGIN
1.	Distribution Boards/ Consumer Units		
2.	Lighting switches		
3.	Socket outlets		
4	Power/Industrial sockets		
5	Metal Trunking		
6	Free standing cabinets		
7	Electrical cables		
8	MCCBs		
9	MCBs		
10	Automatic changeover switch		
11	$100mm^2$ cables		
. 12	Ditto but $4mm^2$ insulated PVC cables		

SECTION J

STANDARD FORMS

CONTENTS OF SECTION J

NOTE:

Tenderers must duly fill these Standard Forms as a mandatory requirement as they will form part the evaluation criteria.

PERFORMANCE BANK GUARANTEE

To: THE MANAGING DIRECTOR,
Ministry of Transport, Infrastructure, Housing and Urban Development,
State Department of Housing & Urban Development,
P.O. Box 30450- 00100,
NAIROBI

Dear Sir,

WHEREAS …… (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. …… dated …… to execute …… (hereinafter called "the Works");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognised bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of:
Kshs. …… (*amount of Guarantee in figures*)
Kenya Shillings …… ……(*amount of Guarantee in words*),
and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of Kenya Shillings …….. …….. (*amount of Guarantee in words*) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change, addition or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any change, addition, or modification.

This guarantee shall be valid until the date of issue of the Certificate of Completion.

SIGNATURE AND SEAL OF THE GUARANTOR ……

Name of Bank ……

Address ……..

Date ……

FORM OF AGREEMENT

THIS AGREEMENT, Made the……day of……between ……of ……(or whose registered office is situated at) (herein after called "the Employer") of the one part AND …… of ……(or whose registered office is situated at) (herein after called "the Contractor") of the other part.

WHEREAS THE Employer is desirous that the Contractor executes ……
……(Name and identification number of contract) (herein after called "the Works") located at ……
…….. (place/location of the Works) and the Employer has appointed ……
Of …… (or whose registered office is situated at)
as the……for the purposes thereof and has accepted the tender submitted by the Contractor for the execution and completion of the said works and the remedying of any defects therein in the sum of
Kshs……..(amount in figures) Kenya Shillings…….
…….. (Amount in words) (herein after called "the Contract price").

NOW THAT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as respectively assigned to them in the conditions of Contract herein after referred to.

2. The following documents shall be deemed to form and shall be read and construed as part of this Agreement i.e.

    (i) Letter of acceptance
    (ii) Form of Tender
    (iii) Conditions of Contract
    (iv) Specifications
    (v) Priced Bills of Quantities
    (vi) Drawings

3. In consideration of the payments to be made by the Employer to the Contractor as herein mentioned, the contractor hereby covenants with the Employer to execute and complete the Works and any defects therein in conformity in all respects with the provision of the contract.

4. The Employer 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 thereto have caused this Agreement to be executed the day and year first written.

The common Seal of_____

Was hereunto affixed in the presence of_____

Signed, Sealed and Delivered by the said_____

Binding Signature of Employer._____

Date_____

Binding Signature of Contractor_____

Date_____

Witnessed by: 1) Name:_____

Address:_____

Signature:_____

Date: _____

2) Name_____

Address_____

Signature_____

Date_____

TENDER QUESTIONNAIRE

Please fill in block letters.

1. Full names of Tenderer:

   .....

2. Full address of Tenderer to which tender correspondence is to be sent (unless an agent has been appointed below):

   .....

3. Telephone number (s) of Tenderer:

   .....

4. Telex/Fax Address of Tenderer:
   .....

5. Name of Tenderer's representative to be contacted on matters of the tender during the tender period:
   .....

6. Details of Tenderer's nominated agent (if any) to receive tender notices. This is essential if the Tenderer does not have his registered address in Kenya (name, address, telephone, telex):

   .....

   .....

_____
Signature of Tenderer

Make copy and deliver to:

The Works Secretary,
State Department of Public Works,
P.O. Box 30743 - 00100,
NAIROBI

CONFIDENTIAL BUSINESS QUESTIONNAIRE

You are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2 (b) or 2(c) and (2d) whichever applies to your type of business.

You are advised that it is a serious offence to give false information on this Form.

Part 1 – General

Business Name ……
Location of business premises: Country/Town……

Plot No…… Street/Road ……
Postal Address…… Tel No……..
Nature of Business……..
Current Trade Licence No…… Expiring date……

Maximum value of business which you can handle at any time:
Kenya Shillings……

Name of your bankers……

Branch……

Address……Telephone……..

Part 2 (a) – Sole Proprietor

Your name in full…… Age……
Nationality…… Country of Origin……
Citizenship details ……

Part 2 (b) – Partnership

Give details of partners as follows:

	Name in full	*Nationality*	*Citizenship Details*	*Shares*
1.	……	……..	……..	……..
2.	……	……..	……	……
3.	……	……	……..	……
4.	……	……	……..	……

Part 2(c) – Registered Company

Private or Public ……

State the nominal and issued capita of the company:

Nominal KShs. ……..

Issued KShs. ……..

Give details of all directors as follows:

	Name in full	*Nationality*	*Citizenship Details*	*Shares*
1.	……	……..	……..	…..……..
2.	……	……..	……	…….
3.	……	……	……..	……
4.	……	……	……..	……

Part 2(d) – Interest in the Firm:

Is there any person/persons in the employment of the Government of Kenya WHO has interest in this firm? Yes/No ……. (Delete as necessary)

I certify that the above information is correct.

……..	……	……
Title	Signature	Date

* *Attach proof of citizenship*

KEY PERSONNEL

Qualifications and experience of key personnel proposed for administration and execution of the Contract.

POSITION	NAME	HIGHEST QUALIFICATION *(Attach proof)*	YEARS OF EXPERIENCE (GENERAL)	YEARS OF EXPERIENCE IN PROPOSED POSITION
1.				
2.				
3.				
4.				
5.				
6.				
7.				

I certify that the above information is correct.

…….. …… ……

Title Signature Date

CONTRACTS COMPLETED IN THE LAST FIVE (5) YEARS

Work performed on works of a similar nature, complexity and volume over the last 5 years.

PROJECT NAME	*NAME OF CLIENT*	TYPE OF WORK AND YEAR OF COMPLETION	VALUE OF CONTRACT (Kshs.)

I certify that the above works were successfully carried out and completed by ourselves.

…… …… ……

Title Signature Date

SCHEDULE OF ON-GOING PROJECTS

Details of on-going or committed projects, including expected completion date.

PROJECT NAME	*NAME OF CLIENT*	CONTRACT SUM	% COMPLETE	COMPLETION DATE

I certify that the above works are currently being carried out by ourselves.

…… …… ……

Title Signature Date

SCHEDULE OF MAJOR ITEMS OF CONTRACTOR'S EQUIPMENT PROPOSED FOR CARRYING OUT THE WORKS

ITEM OF EQUIPMENT	DESCRIPTION, MAKE AND AGE (Years)	CONDITION (New, good, poor) and number available	OWNED, LEASED (From whom?), or to be purchased (From whom?)

FINANCIAL REPORTS FOR THE LAST FIVE YEARS

(Balance sheets, Profits and Loss Statements, Auditor's reports, etc.
List below and attach copies)

1. ._____

2. ._____.

3. ._____.

4. ._____.

5. ._____.

6. ._____.

7. ._____.

8. ._____.

9. ._____.

10 ._____.

EVIDENCE OF FINANCIAL RESOURCES TO MEET QUALIFICATION REQUIREMENTS

(Cash in hand, Lines of credit, e.t.c. List below and attach copies of supportive documents)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

BIDDER'S BANK INFORMATION

(This information is mandatory and should be for banks to provide reference if contacted by employer)

NAME OF BANK	BANK BRANCH	ACCOUNT NAME	ADDRESS	TELEPHONE

DETAILS OF LITIGATION OR ARBITRATION PROCEEDINGS IN WHICH THE TENDERER HAS BEEN INVOLVED AS ONE OF THE PARTIES IN THE LAST 5 YEARS

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Code: E/CG/01

REPUBLIC OF KENYA

STATE DEPARTMENT OF PUBLIC WORKS

ELECTRICAL DEPARTMENT

TESTING & COMMISSIONING GUIDE

FOR

ELECTRICAL INSTALLATION WORKS ON SITE

Issued by:

The Chief Engineer (Electrical),
State Department of Public Works,
P. O.BOX 41191 – 00100 GPO,
NAIROBI.

J/15

STATE DEPARTMENT OF PUBLIC WORKS

ELECTRICAL DEPARTMENT

TESTING AND COMMISSIONING OF ELECTRICAL INSTALLATION WORKS ON SITE.

PROJECT NAME.....

W.P ITEM No.....JOB No.....

The sub contractor shall test in accordance with the relevant section of IEE regulations, Rule 3 of the Electrical Power Act for additional tests not covered by the regulations, Government Electrical specifications I & II and the Kenya Power & Lighting Co. Ltd by-laws.

A PRELIMINARY CHECKS

The Engineer shall check to establish the following data:-

ITEM	DESCRIPTION			REMARKS
(i)	Type of installation (New/Renovation/Addition/ to existing installation)			
(ii)	a) Power supply 240V/415V/11KV b) Frequency of the mains supply c) Installation power factor			....
(iii)	Method of Metering (New /Monitoring/Existing meter)			
(iv)	Are Testing/Measuring instruments available			
(v)	Are there maintenance/operational manuals for specialized systems (if any)			
(vi)	List of 'as installed drawings'	Drg No.	Description	

B TESTS

ITEM	TEST DESCRPTION	OBSERVATIONS/ RESULTS	REMARKS
1	**Tests shall be carried out to ensure:**		
	a) All fuses and single pole switches are installed in live conductor		
	b) All outlets and switched socket outlets are connected to 'LIVE' conductor in the Terminal marked so and each earth pin effectively bonded to earth continuity system		
	c) Verify continuity of all final conductors of each 'Ring' circuit. **(0.05 to 0.8Ω)**	.....Ohms	
	d) All radial circuits emanate from respective distribution boards/consumer units and that they do not supply any other Equipment		
	e) The correct phase sequence is maintained throughout the installation		
	f) Effective 'Discrimination' in the arrangement of protective devices. i.e. a fault in the furthest power point/Lighting point should not blow or trip Fuses/MCBs respective in the Meter board.		
2	**Inspect to ensure:**		
	a) No terminal in the Ceiling Rose is 'LIVE' when the corresponding switch is in the off position.		
	b) All conduit termination conduit boxes, Consumer unit, DB's and Adaptable boxes have smooth edges and are properly bushed.		
	c) All fixed metal works close to Electrical installation are bonded to earth continuity conductor.		
	d) All Fuse ways and Circuit breakers for final sub circuits are properly labeled		

B TESTS CONT'D

ITEM	TEST DESCRPTION	OBSERVATIONS/ RESULTS	REMARKS
3	**Carry out the following tests:**		
	a) Insulation Resistance tests i) Between phases a) R -Y b) R -B c) B-Y ii) Phase to Neutral a) R - N b) R - N c) B - N iii) Phase to Earth a) R - E b) R -E c) B -E **Minimum thresholds for above and for:** i) ELV circuits (SELV & PELV) = 0.25 MΩ ii) LV Circuits up to 500V = 0.5 MΩ iii) LV Circuits above 500V = 1 MΩ	……. ……MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ	
	b) Earth continuity conductor impedance **(0.005 to 2Ω)**	……..Ohms	
	c) Earth fault Loop impedance **(0 - 2000 Ω)**	……..Ohms	
	d) Earth Electrode resistance **(Less than 4Ω)**	……....Ohms	
	e) Earth Lead resistance **(Less than 4Ω)**	……..Ohms	
	f) The operation of protection MCCBS & MCBS (Tripping under faulty conditions)		
	g) Check the mechanical toggling (make & break) of all the switches to installed accessories.		
4	**Underground cabling, Check for:**		
	i) Continuity of the phases		
	ii) Factory tests done (avail certification)		
	iii) Proper termination		
	iv) Route markers		

B TESTS CONT'D

ITEM	TEST DESCRPTION			OBSERVATIONS/ RESULTS	REMARKS
5	Installed load i) Lighting points (No.) ii) Socket outlets (No.) iii) Motors (Give rating) iv) Other machines (Attach list if more)				
	Item	Description	Rating		
6	Type of Earthing: TN-C/TN-S/ TN-C-S/TT/IT.				
7	LV switchboard: The board shall be checked to ascertain the following				
	i) Rating of the switchboard				
	ii) Rating of main incomer MCCB				
	iii) Form of construction (1/2B/3B/4)				
	iv) Degree of protection (IP rating)				
	v) Nameplates for identification of all circuits entering/leaving switchgear				
	vi) Proper Electrical & Mechanical operation of functional parts i.e MCCBs, Indicating meters, CTs & VTs .				
	vii) Check cable terminations, type & terminals				
	viii) General comments on the appearance of the finished mechanical assembly including welding, full nuts & tightness of bolted parts.				
8	Fireman's switch.				
	i) Make and manufacturer				
	ii) The rating of the switch				
	iii) Test for the Electrical and Mechanical operation of the switch				
	iv) State the types of loads supported by the maintained board on the switch.				
	** see foot note				

General comments on the Electrical installation:-

Testing and Commissioning witnessed by:

M.O. P.W REPRESENTATIVE/ PROJECT ENGINEER:-

Name ……Designation……

Sign…… Date……

CONTRACTOR'S REPRESENTATIVE:-

Name ……Designation……

Sign…… Date……

**If there are other defects noted, list them on a separate sheet and attach.