



PROPOSED CONSTRUCTION OF 1NO. 30 METER
HIGH MAST FLOOD LIGHT
AT

MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

BILL OF QUANTITIES AND SPECIFICATIONS

TENDER NO: MUST/062/2016-2017

MAY 2017

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INTRODUCTION

- 1.1 This standard tender document for procurement of works has been prepared for use by procuring entities in Kenya in the procurement of works (i.e. Buildings and associated Civil Engineering Works).
- 1.2 The following guidelines should be observed when using the document:-
- (a) Specific details should be furnished in the Invitation to tender and in the special conditions of contract (where applicable). The tender document issued to tenderers should not have blank spaces or options.
 - (b) The instructions to tenderers and the General Conditions of Contract should remain unchanged. Any necessary amendments to these parts should be made through Appendix to instructions to tenderers and special conditions of contract respectively.
- 1.3
- (b) Information contained in the invitation to tender shall conform to the data and information in the tender documents to enable prospective tenderers to decide whether or not to participate in the tender and shall indicate any important tender requirements
 - (c) The invitation to tender shall be as an advertisement in accordance with the regulations or a letter of invitation addressed to tenderers who have been prequalified following a request for prequalification.
- 1.4 The cover of the document shall be modified to include:-
- I. Tender number.
 - II. Tender name.
 - III. Name of procuring entity.

SECTION I: INVITATION FOR TENDERS (IFT)

Tender No MUST/062/2016-2017

Proposed Construction of 1 No. 30 Meter high mast flood light

Date: May 2017

1. Meru University Of Science And Technology now invites sealed Tenders from eligible contractors registered with National Construction Authority under Electrical works in NCA 6 and above and licensed by Energy Regulatory Authority class C1 and above for carrying out construction of the proposed 1 No. 30 meter high mast flood light.
2. The Procuring Entity has funds for use during the financial year(s) 2016 - 2017. It is intended that part of the proceeds of the fund will be used to cover eligible payments under the contract for construction of the proposed Foundry workshop.
3. Tendering will be conducted through the open tendering procedures specified in the Public Procurement and Asset Disposal Act, 2015 and the Public Procurement and Disposal Regulations, 2006 and is open to all Tenderers as defined in the Regulations.
4. Interested eligible bidders may obtain tender documents from the Procurement Office, Meru University of Science and Technology Main campus situated along Meru - Maua Rd, during the office working hours; Monday through Friday, upon payment of a non-refundable fee of Kshs. 1,000 per set of document in cash or in banker's Cheque payable to Meru University of Science and Technology and may also be downloaded from the university website (www.must.ac.ke) or Treasury IFMIS portal (<https://supplier.treasury.go.ke>) for free
5. A complete set of Tendering Document(s) can be obtained/purchased by interested Tenderers at the address given under paragraph 4 above [and upon payment of a non-refundable fee of Kshs. 1000. Payment should either be by Cash, Banker's Draft, or Banker's Cheque, payable to the Cashier at the Accounts Department. Kindly note that downloaded documents will not be charged.
6. The following will be the requirements that bidders will be required to have at the time of tender submission:
7. There will be a mandatory site survey on Tuesday 30th May 2017 at 10.30AM

Mandatory Requirements

- a. Submission of a copy of certificate of incorporation/Registration
- b. Submission of a copy Valid and up to date tax compliance

ISSUED BY MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

Certificate

- c. 1% bid bond of tender sum from reputable banks or Insurance companies approved by the Public Procurement Oversight (PPOA) and valid for 60 days or a duly signed security declaration form (inside this tender document) for firms under Youth, Women and People with Disability (YWPD). Firms under YWPD Must attach evidence of valid registration with National Treasury or County Treasury.
 - d. Must be registered with NCA class 6 and above and licensed by Energy Regulatory Authority class C1 and above.
 - e. Submit audited accounts for two latest financial years (Preferably 2015 and 2016)
8. All Tenders in one original plus one (1) copy, properly filled in, and enclosed in plain envelopes must be delivered to the address below

To The Vice Chancellor,
Meru University of Science and Technology,
P.O.Box 972 – 60200,
Meru.

at or before **Wednesday 7th June 2017 at 10.30 am** Tenders will be opened promptly thereafter in the presence of Tenderers' representatives who choose to attend the opening at the University Academic Boardroom.

9. Late or incomplete Tenders shall not be accepted.

Vice Chancellor

SECTION II

INSTRUCTIONS TO TENDERERS

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INSTRUCTIONS TO TENDERERS.

1. 1. General/Eligibility/Qualifications/Joint venture/Cost of tendering
 - 1.1 The Employer as defined in the Appendix to Conditions of Contract invites tenders for Works Contract as described in the tender documents. The successful tenderer will be expected to complete the Works by the Intended Completion Date specified in the tender documents.
 - 1.2 All tenderers shall provide the Qualification Information, a statement that the tenderer (including all members of a joint venture and subcontractors) is not associated, or has not been associated in the past, directly or indirectly, with the Consultant or any other entity that has prepared the design, specifications, and other documents for the project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation or supervision of the Works, and any of its affiliates, shall not be eligible to tender.
 - 1.3 All tenderers shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
 - 1.4 In the event that pre-qualification of potential tenderers has been undertaken, only tenders from pre-qualified tenderers will be considered for award of Contract. These qualified tenderers should submit with their tenders any information updating their original pre-qualification applications or, alternatively, confirm in their tenders that the originally submitted pre-qualification information remains essentially correct as of the date of tender submission.
 - 1.5 Where no pre-qualification of potential tenderers has been done, all tenderers shall include the following information and documents with their tenders , unless otherwise stated:
 - (a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the tender to commit the tenderer:
 - (b) total monetary value of construction work performed for each of the last five years:
 - (c) experience in works of a similar nature and size for each of the last five years, and details of work under way or contractually committed; and names and addresses of clients who may be contacted for further information on these contracts;

- (d) major items of construction equipment proposed to carry out the Contract and an undertaking that they will be available for the Contract.
 - (e) qualifications and experience of key site management and technical personnel proposed for the Contract and an undertaking that they shall be available for the Contract.
 - (f) reports on the financial standing of the tenderer, such as profit and loss statements and auditor's reports for the past five years;
 - (g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);
 - (h) authority to seek references from the tenderer's bankers;
 - (i) information regarding any litigation, current or during the last five years, in which the tenderer is involved, the parties concerned and disputed amount; and
 - (j) proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price.
- 1.6 Tenders submitted by a joint venture of two or more firms as partners shall comply with the following requirements, unless otherwise stated:
- (a) the tender shall include all the information listed in clause 1.5 above for each joint venture partner;
 - (b) the tender shall be signed so as to be legally binding on all partners;
 - (c) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
 - (d) one of the partners will be nominated as being in charge, authorised to incur liabilities, and receive instructions for and on behalf of all partners of the joint venture; and
 - (e) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.
- 1.7 To qualify for award of the Contract, tenderers shall meet the following minimum qualifying criteria;
- (a) annual volume of construction work of at least 2.5 times the estimated annual cashflow for the Contract;

- (b) experience as main contractor in the construction of at least
 - (c) two works of a nature and complexity equivalent to the Works over the last 10 years (to comply with this requirement, works cited should be at least 70 percent complete);
 - (d) proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment listed as required for the Works;
 - (e) a Contract manager with at least five years' experience in works of an equivalent nature and volume, including no less than three years as Manager; and
 - (f) liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than 4 months of the estimated payment flow under this Contract.
- 1.8 The figures for each of the partners of a joint venture shall be added together to determine the tenderer's compliance with the minimum qualifying criteria of clause 1.7 (a) and (e); however, for a joint venture to qualify, each of its partners must meet at least 25 percent of minimum criteria 1.7 (a), (b) and (e) for an individual tenderer, and the partner in charge at least 40 percent of those minimum criteria. Failure to comply with this requirement will result in rejection of the joint venture's tender. Subcontractors' experience and resources will not be taken into account in determining the tenderer's compliance with the qualifying criteria, unless otherwise stated.
- 1.9 Each tenderer shall submit only one tender, either individually or as a partner in a joint venture. A tenderer who submits or participates in more than one tender (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the tenderer's participation to be disqualified.
- 1.10 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.
- 1.11 The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine the Site of the Works and its surroundings, and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the tenderer's own expense.

- 1.12 The procuring entity's employees, committee members, board members and their relative (spouse and children) are not eligible to participate in the tender.
- 1.13 The price to be charged for the tender document shall not exceed Kshs.1,000/=
- 1.14 The procuring entity shall allow the tenderer to review the tender document free of charge before purchase.

2. Tender Documents

- 2.1 The complete set of tender documents comprises the documents listed below and any addenda issued in accordance with Clause 2.4.
 - (a) These Instructions to Tenderers
 - (b) Form of Tender and Qualification Information
 - (c) Conditions of Contract
 - (d) Appendix to Conditions of Contract
 - (e) Specifications
 - (f) Drawings
 - (g) Bills of Quantities
 - (h) Forms of Securities
- 2.2 The tenderer shall examine all Instructions, Forms to be filled and Specifications in the tender documents. Failure to furnish all information required by the tender documents, or submission of a tender not substantially responsive to the tendering documents in every respect will be at the tenderer's risk and may result in rejection of his tender.
- 2.3 A prospective tenderer making an inquiry relating to the tender documents may notify the Employer in writing or by cable, telex or facsimile at the address indicated in the letter of invitation to tender. The Employer will only respond to requests for clarification received earlier than seven days prior to the deadline for submission of tenders. Copies of the Employer's response will be forwarded to all persons issued with tendering documents, including a description of the inquiry, but without identifying its source.
- 2.4 Before the deadline for submission of tenders, the Employer may modify the tendering documents by issuing addenda. Any addendum thus issued shall be part of the tendering documents and shall be communicated in writing or by cable, telex or facsimile to all tenderers. Prospective tenderers shall acknowledge receipt of each addendum in writing to the Employer.

- 2.5 To give prospective tenderers reasonable time in which to take an addendum into account in preparing their tenders, the Employer shall extend, as necessary, the deadline for submission of tenders, in accordance with Clause 4.2 here below.
3. Preparation of Tenders
- 3.1 All documents relating to the tender and any correspondence shall be in English language.
- 3.2 The tender submitted by the tenderer shall comprise the following:
- (a) These Instructions to Tenderers, Form of Tender, Conditions of Contract, Appendix to Conditions of Contract and Specifications;
 - (b) Tender Security;
 - (c) Priced Bill of Quantities ;
 - (d) Qualification Information Form and documents;
 - (e) Alternative offers where invited; and
 - (f) Any other materials required to be completed and submitted by the tenderers.
- 3.3 The tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items for which no rate or price is entered by the tenderer will not be paid for when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause relevant to the Contract, as of 30 days prior to the deadline for submission of tenders, shall be included in the tender price submitted by the tenderer.
- 3.4 The rates and prices quoted by the tenderer shall only be subject to adjustment during the performance of the Contract if provided for in the Appendix to Conditions of Contract and provisions made in the Conditions of Contract.
- 3.5 The unit rates and prices shall be in Kenya Shillings.
- 3.6 Tenders shall remain valid for a period of sixty (60) days from the date of submission. However in exceptional circumstances, the Employer may request that the tenderers extend the period of validity for a specified additional period. The request and the tenderers' responses shall be made in writing. A tenderer may refuse the request without forfeiting the Tender Security. A tenderer agreeing to the request will not be required or permitted to otherwise modify the tender, but will be required to extend the validity of Tender Security for the period of the extension, and in compliance with Clause 3.7 - 3.11 in all respects.
- 3.7 The tenderer shall furnish, as part of the tender, a Tender Security in the amount and form specified in the appendix to invitation to

tenderers. This shall be in the amount not exceeding 2 percent of the tender price

- 3.8 The format of the Tender Security should be in accordance with the form of Tender Security included in Section G - Standard forms or any other form acceptable to the Employer . Tender Security shall be valid for 30 days beyond the validity of the tender.
- 3.9 Any tender not accompanied by an acceptable Tender Security shall be rejected. The Tender Security of a joint venture must define as “Tenderer” all joint venture partners and list them in the following manner: a joint venture consisting of”.....”,”.....”,and “.....”.
- 3.10 The Tender Securities of unsuccessful tenderers will be returned within 28 days of the end of the tender validity period specified in Clause 3.6.
- 3.11 The Tender Security of the successful tenderer will be discharged when the tenderer has signed the Contract Agreement and furnished the required Performance Security.
- 3.12 The Tender Security may be forfeited
 - (a) if the tenderer withdraws the tender after tender opening during the period of tender validity;
 - b) if the tenderer does not accept the correction of the tender price, pursuant to Clause 5.7;
 - (c) in the case of a successful tenderer, if the tenderer fails within the specified time limit to
 - (i) sign the Agreement, or
 - (ii) furnish the required Performance Security.
- 3.13 Tenderers shall submit offers that comply with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. Alternatives will not be considered, unless specifically allowed in the invitation to tender. If so allowed, tenderers wishing to offer technical alternatives to the requirements of the tendering documents must also submit a tender that complies with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. In addition to submitting the basic tender, the tenderer shall provide all information necessary for a complete evaluation of the alternative, including design calculations, technical specifications, breakdown of prices, proposed construction methods and other relevant details. Only the technical alternatives, if any, of the lowest evaluated tender conforming to the basic technical requirements shall be considered.
- 3.14 The tenderer shall prepare one original of the documents comprising the tender documents as described in Clause 3.2 of these Instructions to Tenderers, bound with the volume containing the Form of Tender, and clearly marked “ORIGINAL”. In addition, the tenderer shall submit copies of the tender, in the number specified in the invitation to tender, and clearly marked as “COPIES”. In the event of discrepancy between them, the original shall prevail.
- 3.15 The original and all copies of the tender shall be typed or written in

- indelible ink and shall be signed by a person or persons duly authorised to sign on behalf of the tenderer, pursuant to Clause 1.5 (a) or 1.6 (b), as the case may be. All pages of the tender where alterations or additions have been made shall be initialed by the person or persons signing the tender.
- 3.16 Clarification of tenders shall be requested by the tenderer to be received by the procuring entity not later than 7 days prior to the deadline for submission of tenders.
- 3.17 The procuring entity shall reply to any clarifications sought by the tenderer within 3 days of receiving the request to enable the tenderer to make timely submission of its tender.
- 3.18 The tender security shall be in the amount of 2 per cent of the tender price.
4. Submission of Tenders
- 4.1 The tenderer shall seal the original and all copies of the tender in two inner envelopes and one outer envelope, duly marking the inner envelopes as “ORIGINAL” and “COPIES” as appropriate. The inner and outer envelopes shall:
- (a) be addressed to the Employer at the address provided in the invitation to tender;
 - (b) bear the name and identification number of the Contract as defined in the invitation to tender; and
 - (c) provide a warning not to open before the specified time and date for tender opening.
- 4.2 Tenders shall be delivered to the Employer at the address specified above not later than the time and date specified in the invitation to tender. However, the Employer may extend the deadline for submission of tenders by issuing an amendment in accordance with Sub-Clause 2.5 in which case all rights and obligations of the Employer and the tenderers previously subject to the original deadline will then be subject to the new deadline.
- 4.3 Any tender received after the deadline prescribed in clause 4.2 will be returned to the tenderer un-opened.
- 4.4 Tenderers may modify or withdraw their tenders by giving notice in writing before the deadline prescribed in clause 4.2. Each tenderer’s modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with clause 3.13 and 4.1, with the outer and inner envelopes additionally marked “**MODIFICATION**” and “**WITHDRAWAL**”, as appropriate. No tender may be modified after the deadline for submission of tenders.
- 4.5 Withdrawal of a tender between the deadline for submission of tenders and the expiration of the period of tender validity specified in the invitation to tender or as extended pursuant to Clause 3.6 may result in the forfeiture of the Tender Security pursuant to Clause 3.11.

4.6 Tenderers may only offer discounts to, or otherwise modify the prices of their tenders by submitting tender modifications in accordance with Clause 4.4 or be included in the original tender submission.

5. Tender Opening and Evaluation

- 5.1 The tenders will be opened by the Employer, including modifications made pursuant to Clause 4.4, in the presence of the tenderers' representatives who choose to attend at the time and in the place specified in the invitation to tender. Envelopes marked "WITHDRAWAL" shall be opened and read out first. Tenderers' and Employer's representatives who are present during the opening shall sign a register evidencing their attendance.
- 5.2 The tenderers' names, the tender prices, the total amount of each tender and of any alternative tender (if alternatives have been requested or permitted), any discounts, tender modifications and withdrawals, the presence or absence of Tender Security, and such other details as may be considered appropriate, will be announced by the Employer at the opening. Minutes of the tender opening, including the information disclosed to those present will be prepared by the Employer.
- 5.3 Information relating to the examination, clarification, evaluation, and comparison of tenders and recommendations for the award of Contract shall not be disclosed to tenderers or any other persons not officially concerned with such process until the award to the successful tenderer has been announced. Any effort by a tenderer to influence the Employer's officials, processing of tenders or award decisions may result in the rejection of his tender.
- 5.4 To assist in the examination, evaluation, and comparison of tenders, the Employer at his discretion, may ask any tenderer for clarification of the tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, telex or facsimile 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 arithmetic errors discovered in the evaluation of the tenders in accordance with Clause 5.7.
- 5.5 Prior to the detailed evaluation of tenders, the Employer will determine whether each tender (a) meets the eligibility criteria defined in Clause 1.7;(b) has been properly signed; (c) is accompanied by the required securities; and (d) is substantially responsive to the requirements of the tendering documents. A substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tendering documents, without material deviation or reservation. A material deviation or reservation is one (a) which

affects in any substantial way the scope, quality, or performance of the works; (b) which limits in any substantial way, inconsistent with the tendering documents, the Employer's rights or the tenderer's

obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other tenderers presenting substantially responsive tenders.

- 5.6 If a tender is not substantially responsive, it will be rejected, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.
- 5.7 Tenders determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows:
- (a) where there is a discrepancy between the amount in figures and the amount in words, the amount in words will prevail; and
 - (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 the adjustment will be made to the entry containing that error.
 - (c) 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 Bill of Quantities, the amount as stated in the Form of Tender shall prevail.
 - (d) No Error Correction Factor shall be computed by expressing the difference between the tender amount and the corrected tender sum as a percentage of the corrected Builder's Work (i.e. Corrected tender sum less P.C. and Provisional Sums)
 - (e) No Error Correction Factor shall be applied to all Builder's Work (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuation of variations.
 - (f) the amount stated in the tender will not 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.
- 5.8 The Employer will evaluate and compare only the tenders determined to be substantially responsive in accordance with Clause 5.5.
- 5.9 In evaluating the tenders, the Employer will determine for each tender the evaluated tender price
- (a) No making of any correction for errors pursuant to clause 5.7;
 - (b) excluding provisional sums and the provision, if any, for contingencies in the Bill of Quantities, but including Day works where priced competitively.

- (c) No making an appropriate adjustment for any other acceptable variations, deviations, or alternative offers submitted in accordance with clause 3.12; and
- (d) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with clause 4.6

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

5.11 The tenderer shall not influence the Employer on any matter relating to his tender from the time of the tender opening to the time the Contract is awarded. Any effort by the Tenderer to influence the Employer or his employees in his decision on tender evaluation, tender comparison or Contract award may result in the rejection of the tender.

5.12 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 sub-contract work valued at more than 50% of the Contract Price excluding Provisional Sums to a non-indigenous sub-contractor.

6. Award of Contract

6.1 Subject to Clause 6.2, the award of the Contract will be made to the tenderer whose tender has been determined to be substantially responsive to the tendering documents and who has offered the lowest evaluated tender price, provided that such tenderer has been determined to be (a) eligible in accordance with the provision of Clauses 1.2, and (b) qualified in accordance with the provisions of clause 1.7 and 1.8.

6.2 Notwithstanding clause 6.1 above, the Employer reserves the right to accept or reject any tender, and to cancel the tendering process and reject all tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected tenderer or tenderers or any obligation to inform the affected tenderer or tenderers of the grounds for the action.

6.3 The tenderer whose tender has been accepted will be notified of the award prior to expiration of the tender validity period in writing or by cable, telex or facsimile. This notification (hereinafter and in all

Contract documents called the “Letter of Acceptance”) will state the sum (hereinafter and in all Contract documents called the “Contract Price”) that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract. At the same time the other tenderers shall be informed that their tenders have not been successful.

The contract shall be formed on the parties signing the contract.

- 6.4 The Agreement will incorporate all agreements between the Employer and the successful tenderer. Within 14 days of receipt the successful tenderer will sign the Agreement and return it to the Employer.
- 6.5 Within 21 days after receipt of the Letter of Acceptance, the successful tenderer shall deliver to the Employer a Performance Security in the amount stipulated in the Appendix to Conditions of Contract and in the form stipulated in the Tender documents. The Performance Security shall be in the amount and specified form
- 6.6 Failure of the successful tenderer to comply with the requirements of clause 6.5 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Tender Security.
- 6.7 Upon the furnishing by the successful tenderer of the Performance Security, the Employer will promptly notify the other tenderers that their tenders have been unsuccessful.
- 6.8 Preference where allowed in the evaluation of tenders shall not be allowed for contracts not exceeding one year (12 months)
- 6.9 The tender evaluation committee shall evaluate the tender within 30 days of the validity period from the date of opening the tender.
- 6.10 The parties to the contract shall have it signed within 30 days from the date of notification of contract award unless there is an administrative review request.
- 6.11 Contract price variations shall not be allowed for contracts not exceeding one year (12 months)

- 6.12 Where contract price variation is allowed, the valuation shall not exceed 15% of the original contract price.
- 6.13 Price variation request shall be processed by the procuring entity within 30 days of receiving the request.
- 6.14 The procuring entity may at any time terminate procurement proceedings before contract award and shall not be liable to any person for the termination.
- 6.15 The procuring entity shall give prompt notice of the termination to the tenderers and on request give its reasons for termination within 14 days of receiving the request from any tenderer.
- 6.16 A tenderer who gives false information in the tender document about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future public procurement.

7. Corrupt and Fraudulent practices

- 7.1 The procuring entity requires that tenderers observe the highest standards of ethics during procurement process and execution of contracts. A tenderer shall sign a declaration that he has not and will not be involved in corrupt and fraudulent practices.

SECTION III CONDITIONS OF CONTRACT

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CONDITIONS OF CONTRACT

1. Definitions

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

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

“Compensation Events” are those defined in Clause 24 hereunder.

“The Completion Date” means the date of completion of the Works as certified by the Project Manager, in accordance with Clause 31.

“The Contract” means the agreement entered into between the Employer and the Contractor as recorded in the Agreement Form and signed by the parties including all attachments and appendices thereto and all documents incorporated by reference therein to execute, complete, and maintain the Works,

“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 and thereafter as adjusted in accordance with the provisions of the Contract.

“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 Project Manager upon correction of defects by the Contractor.

“The Defects Liability Period” is the period named in the Contract Data and calculated from the Completion Date.

“Drawings” include calculations and other information provided or approved by the Project Manager for the execution of the Contract.

“Dayworks” are Work inputs subject to payment on a time basis for labour and the associated materials and plant.

“Employer”, or the **“Procuring entity”** as defined in the Public Procurement Regulations (i.e. Central or Local Government administration, Universities, Public Institutions and Corporations, etc) 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.

“The Intended Completion Date” is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

“Materials” are all supplies, including consumables, used by the Contractor for incorporation in the Works.

“Plant” is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

“Project Manager” is the person named in the Appendix to Conditions of Contract (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract and shall be an “Architect” or a “Quantity Surveyor” registered under the Architects and Quantity Surveyors Act Cap 525 or an “Engineer” registered under Engineers Registration Act Cap 530.

“Site” is the area defined as such in the Appendix to Condition of Contract.

“Site Investigation Reports” are those reports that may be included in the tendering documents which are factual and interpretative about the surface and subsurface conditions at the Site.

“Specifications” means the Specifications of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

“Start Date” is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with the Site possession date(s).

“A Subcontractor” is a person or corporate body who has a Contract with the Contractor to carry out a part of the Work in the Contract, which includes Work on the Site.

“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 Project Manager which varies the Works.

“The Works” are what the Contract requires the Contractor to construct, install, and turnover to the Employer, as defined in the Appendix to Conditions of Contract.

2. Interpretation

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning in English Language unless specifically defined. The Project Manager will provide instructions clarifying queries about these Conditions of Contract.

2.2 If sectional completion is specified in the Appendix to Conditions of Contract, reference in the Conditions of Contract to the Works, the Completion Date and the Intended Completion Date apply to any section of the Works (other than references to the Intended Completion Date for the whole of the Works).

2.3 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) Appendix to Conditions of Contract,
- (5) Conditions of Contract,
- (6) Specifications,
- (7) Drawings,
- (8) Bill of Quantities,
- (9) Any other documents listed in the Appendix to Conditions of Contract as forming part of the Contract.

Immediately after the execution of the Contract, the Project Manager shall furnish both the Employer and the Contractor with two copies each of all the Contract documents. Further, as and when necessary the Project Manager shall furnish the Contractor [always with a copy to the Employer] with three [3] copies of such further drawings or details or descriptive schedules as are reasonably necessary either to explain or amplify the Contract drawings or to enable the

Contractor to carry out and complete the Works in accordance with these Conditions.

3. Language and Law

3.1 Language of the Contract and the law governing the Contract shall be English language and the Laws of Kenya respectively unless otherwise stated.

4 **Project Manager's Decisions**

4.1 Except where otherwise specifically stated, the Project Manager will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5 Delegation

5.1 The Project Manager may delegate any of his duties and responsibilities to others after notifying the Contractor.

6 Communications

6.1 Communication between parties shall be effective only when in writing. A notice shall be effective only when it is delivered.

7 Subcontracting

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

8 Other Contractors

8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities etc. as listed in the Appendix to Conditions of Contract and also with the Employer, as per the directions of the Project Manager. The Contractor shall also provide facilities and services for them. The Employer may modify the said List of Other Contractors etc., and shall notify the Contractor of any such modification.

9 Personnel

9.1 The Contractor shall employ the key personnel named in the Qualification Information, to carry out the functions stated in the said Information or other personnel approved by the Project Manager. The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the Qualification Information. If the Project Manager asks the

Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the Work in the Contract.

10 Works

10.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings. The Works may commence on the Start Date and shall be carried out in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

11 Safety and Temporary Works

11.1 The Contractor shall be responsible for the design of temporary works. However before erecting the same, he shall submit his designs including specifications and drawings to the Project Manager and to any other relevant third parties for their approval. No erection of temporary works shall be done until such approvals are obtained.

11.2 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary works and all drawings prepared by the Contractor for the execution of the temporary or permanent Works, shall be subject to prior approval by the Project Manager before they can be used.

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

12. Discoveries

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

13. Work Program

13.1 Within the time stated in the Appendix to Conditions of Contract, the Contractor shall submit to the Project Manager for approval a program showing the general methods, arrangements, order, and timing for all the activities in the Works. An update of the program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining Work, including any changes to the sequence of the activities.

The Contractor shall submit to the Project Manager for approval an updated program at intervals no longer than the period stated in the Appendix to Conditions of Contract. If the Contractor does not submit an updated program within this period, the Project Manager may withhold the amount stated in the said Appendix from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue program has been submitted. The Project Manager's approval of the program shall not alter the Contractor's obligations. The Contractor may revise the program and submit it to the Project Manager again at any time. A revised program shall show the effect of Variations and Compensation Events.

14. Possession of Site

14.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Appendix to Conditions of Contract, the Employer will be deemed to have delayed the start of the relevant activities, and this will be a Compensation Event.

15. Access to Site

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

16. Instructions

16.1 The Contractor shall carry out all instructions of the Project Manager which are in accordance with the Contract.

17. Extension or Acceleration of Completion Date

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

17.2 No bonus for early completion of the Works shall be paid to the Contractor by the Employer.

18. Management Meetings

18.1 A Contract management meeting shall be held monthly and attended by the Project Manager and the Contractor and MUST Contract Implementation Committee. Its business shall be to review the plans for the remaining Work and to deal with matters raised in accordance with the early warning procedure. The Project Manager shall record the minutes of management meetings and provide copies of the same to those attending the meeting and the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

19. Early Warning

19.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the Work, increase the Contract Price or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

19.2 The Contractor shall cooperate with the Project Manager in making and considering proposals on how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the Work and in carrying out any resulting instructions of the Project Manager.

20. Defects

20.1 The Project Manager 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 Project Manager may instruct the Contractor to search for a defect and to uncover and test any Work that the Project Manager considers may have a defect. 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.

20.2 The Project Manager shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Appendix to Conditions of Contract. The Defects Liability Period shall be extended for as long as defects remain to be corrected.

20.3 Every time notice of a defect is given, the Contractor shall correct the notified defect within the length of time specified by the Project Manager's notice. If the Contractor has not corrected a defect within the time specified in the Project Manager's notice, the Project Manager 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.

21. Bills Of Quantities

21.1 The Bills of Quantities 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 rate in the Bills of Quantities for each item.

21.2 If the final quantity of the Work done differs from the quantity in the Bills of Quantities for the particular item by more than 25 percent and provided the change exceeds 1 percent of the Initial Contract price, the Project Manager shall adjust the rate to allow for the change.

21.3 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bills of Quantities.

22. Variations

22.1 All variations shall be included in updated programs produced by the Contractor.

22.2 The Contractor shall provide the Project Manager with a quotation for carrying out the variations when requested to do so. The Project Manager shall assess the quotation, which shall be given within seven days of the request or within any longer period as may be stated by the Project Manager and before the Variation is ordered.

22.3 If the work in the variation corresponds with an item description in the Bills of Quantities and if in the opinion of the Project Manager, the quantity of work is not above the limit stated in Clause 21.2 or the timing of its execution does not cause the cost per unit of quantity to change, the rate in the Bills of Quantities shall be used to calculate the value of the variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the variation does not correspond with items in the Bills of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of Work.

- 22.4 If the Contractor's quotation is unreasonable, the Project Manager may order the variation and make a change to the Contract price, which shall be based on the Project Manager's own forecast of the effects of the variation on the Contractor's costs.
- 22.5 If the Project Manager decides that the urgency of varying the Work would prevent a quotation being given and considered without delaying the Work, no quotation shall be given and the variation shall be treated as a Compensation Event.
- 22.6 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.
- 22.7 When the Program is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast.
23. Payment Certificates, Currency of Payments and Advance Payments
- 23.1 The Contractor shall submit to the Project Manager monthly applications for payment giving sufficient details of the Work done and materials on Site and the amounts which the Contractor considers himself to be entitled to. The Project Manager shall check the monthly application and certify the amount to be paid to the Contractor within 14 days. The value of Work executed and payable shall be determined by the Project Manager.
- 23.2 The value of Work executed shall comprise the value of the quantities of the items in the Bills of Quantities completed, materials delivered on Site, variations and compensation events. Such materials shall become the property of the Employer once the Employer has paid the Contractor for their value. Thereafter, they shall not be removed from Site without the Project Manager's instructions except for use upon the Works.
- 23.3 Payments shall be adjusted for deductions for retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of issue of each certificate. If the Employer makes a late payment, the Contractor shall be paid simple interest on the late payment in the next payment. Interest shall be calculated on the basis of number of days delayed at a rate three percentage points above the Central Bank of Kenya's average rate for base lending prevailing as of the first day the payment becomes overdue.

- 23.4 If an amount certified is increased in a later certificate or as a result of an award by an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 23.5 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.
- 23.6 The Contract Price shall be stated in Kenya Shillings. All payments to the Contractor shall be made in Kenya Shillings and foreign currency in the proportion indicated in the tender, or agreed prior to the execution of the Contract Agreement and indicated therein. The rate of exchange for the calculation of the amount of foreign currency payment shall be the rate of exchange indicated in the Appendix to Conditions of Contract. If the Contractor indicated foreign currencies for payment other than the currencies of the countries of origin of related goods and services the Employer reserves the right to pay the equivalent at the time of payment in the currencies of the countries of such goods and services. The Employer and the Project Manager shall be notified promptly by the Contractor of an changes in the expected foreign currency requirements of the Contractor during the execution of the Works as indicated in the Schedule of Foreign Currency Requirements and the foreign and local currency portions of the balance of the Contract Price shall then be amended by agreement between Employer and the Contractor in order to reflect appropriately such changes.
- 23.7 In the event that an advance payment is granted, the following shall apply:-
- a) On signature of the Contract, the Contractor shall at his request, and without furnishing proof of expenditure, be entitled to an advance of 10% (ten percent) of the original amount of the Contract. The advance shall not be subject to retention money.
 - b) No advance payment may be made before the Contractor has submitted proof of the establishment of deposit or a directly liable guarantee satisfactory to the Employer in the amount of the advance payment. The guarantee shall be in the same currency as the advance.
 - c) Reimbursement of the lump sum advance shall be made by deductions from the Interim payments and where applicable from the balance owing to the Contractor. Reimbursement shall begin when the amount of the sums due under the Contract reaches 20% of the original amount of the Contract. It

shall have been completed by the time 80% of this amount is reached.

The amount to be repaid by way of successive deductions shall be calculated by means of the formula:

$$R = \frac{A(x^1 - x^{11})}{80 - 20}$$

Where:

R = the amount to be reimbursed

A = the amount of the advance which has been granted

X¹ = the amount of proposed cumulative payments as a percentage of the original amount of the Contract. This figure will exceed 20% but not exceed 80%.

X¹¹ = the amount of the previous cumulative payments as a percentage of the original amount of the Contract. This figure will be below 80% but not less than 20%.

- d) With each reimbursement the counterpart of the directly liable guarantee may be reduced accordingly.

24. Compensation Events

24.1 The following issues shall constitute Compensation Events:

- (a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Appendix to Conditions of Contract.
- (b) The Employer modifies the List of Other Contractors, etc., in a way that affects the Work of the Contractor under the Contract.
- (c) The Project Manager orders a delay or does not issue drawings, specifications or instructions required for execution of the Works on time.
- (d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon the Work, which is then found to have no defects.
- (e) The Project Manager unreasonably does not approve a subcontract to be let.
- (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to tenderers (including

the Site investigation reports), from information available publicly and from a visual inspection of the Site.

- (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer or additional work required for safety or other reasons.
- (h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- (i) The effects on the Contractor of any of the Employer's risks.
- (j) The Project Manager unreasonably delays issuing a Certificate of Completion.
- (k) Other compensation events described in the Contract or determined by the Project Manager shall apply.

24.2 If a compensation event would cause additional cost or would prevent the Work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

24.3 As soon as information demonstrating the effect of each compensation event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager will assume that the Contractor will react competently and promptly to the event.

24.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having co-operated with the Project Manager.

24.5 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the Appendix to Conditions of Contract.

24.6 The Contractor shall give written notice to the Project Manager of his intention to make a claim within thirty days after the event giving rise to the claim has first arisen. The claim shall be submitted within thirty days thereafter.

Provided always that should the event giving rise to the claim of continuing effect, the Contractor shall submit an interim claim within

the said thirty days and a final claim within thirty days of the end of the event giving rise to the claim.

25. Price Adjustment

- 25.1 The Project Manager shall adjust the Contract Price if taxes, duties and other levies are changed between the date 30 days before the submission of tenders for the Contract and the date of Completion. The adjustment shall be the change in the amount of tax payable by the Contractor.
- 25.2 The Contract Price shall be deemed to be based on exchange rates current at the date of tender submission in calculating the cost to the Contractor of materials to be specifically imported (by express provisions in the Contract Bills of Quantities or Specifications) for permanent incorporation in the Works. Unless otherwise stated in the Contract, if at any time during the period of the Contract exchange rates shall be varied and this shall affect the cost to the Contractor of such materials, then the Project Manager shall assess the net difference in the cost of such materials. Any amount from time to time so assessed shall be added to or deducted from the Contract Price, as the case may be.
- 25.3 Unless otherwise stated in the Contract, the Contract Price shall be deemed to have been calculated in the manner set out below and in sub-clauses 25.4 and 25.5 and shall be subject to adjustment in the events specified thereunder;
- (i) The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the rates of wages and other emoluments and expenses as determined by the Joint Building Council of Kenya (J.B.C.) and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.
 - (ii) Upon J.B.C. determining that any of the said rates of wages or other emoluments and expenses are increased or decreased, then the Contract Price shall be increased or decreased by the amount assessed by the Project Manager based upon the difference, expressed as a percentage, between the rate set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of labour incorporated within the amount of Work remaining to be executed at the date of publication of such increase or decrease.
 - (iii) No adjustment shall be made in respect of changes in the rates of wages and other emoluments and expenses which occur after the date of Completion except during such other period as may

be granted as an extension of time under clause 17.0 of these Conditions.

- 25.4 The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the basic prices of materials to be permanently incorporated in the Works as determined by the J.B.C. and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.
- 25.5 Upon the J.B.C. determining that any of the said basic prices are increased or decreased then the Contract Price shall be increased or decreased by the amount to be assessed by the Project Manager based upon the difference between the price set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of the relevant materials which have not been taken into account in arriving at the amount of any interim certificate under clause 23 of these Conditions issued before the date of publication of such increase or decrease.
- 25.6 No adjustment shall be made in respect of changes in basic prices of materials which occur after the date for Completion except during such other period as may be granted as an extension of time under clause 17.0 of these Conditions.
- 25.7 The provisions of sub-clause 25.1 to 25.2 herein shall not apply in respect of any materials included in the schedule of basic rates.

26. Retention

- 26.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the Appendix to Conditions of Contract until Completion of the whole of the Works. On Completion of the whole of the Works, half the total amount retained shall be repaid to the Contractor and the remaining half when the Defects Liability Period has passed and the Project Manager has certified that all defects notified to the Contractor before the end of this period have been corrected.

27. Liquidated Damages

- 27.1 The Contractor shall pay liquidated damages to the Employer at the rate stated in the Appendix to Conditions of Contract for each day that the actual Completion Date is later than the Intended Completion Date. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not alter the Contractor's liabilities.

27.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rate specified in Clause 23.30

28. Securities

28.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a reputable bank acceptable to the Employer, and denominated in Kenya Shillings. The Performance Security shall be valid until a date 30 days beyond the date of issue of the Certificate of Completion.

29. Dayworks

29.1 If applicable, the Day works rates in the Contractor's tender shall be used for small additional amounts of Work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

29.2 All work to be paid for as Day works shall be recorded by the Contractor on Forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the Work being done.

29.3 The Contractor shall be paid for Day works subject to obtaining signed Day works forms.

30. Liability and Insurance

30.1 From the Start Date until the Defects Correction Certificate has been issued, the following are the Employer's risks:

(a) The risk of personal injury, death or loss of or damage to property (excluding the Works, Plant, Materials and Equipment), which are due to;

(i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works, or

(ii) negligence, breach of statutory duty or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.

(b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer

or in Employer's design, or due to war or radioactive contamination directly affecting the place where the Works are being executed.

30.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is the Employer's risk except loss or damage due to;

- (a) a defect which existed on or before the Completion Date.
- (b) an event occurring before the Completion Date, which was not itself the Employer's risk
- (c) the activities of the Contractor on the Site after the Completion Date.

30.3 From the Start Date until the Defects Correction Certificate has been issued, the risks of personal injury, death and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer's risk are Contractor's risks.

The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts stated in the Appendix to Conditions of Contract for the following events;

- (a) loss of or damage to the Works, Plant, and Materials;
- (b) loss of or damage to Equipment;
- (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract, and
- (d) personal injury or death.

30.4 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation required to rectify the loss or damage incurred.

30.5 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

30.6 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager. Both parties shall comply with any conditions of insurance policies.

31. Completion and taking over

31.1 Upon deciding that the Works are complete, the Contractor shall issue a written request to the Project Manager to issue a Certificate of Completion of the Works. The Employer shall take over the Site and

the Works within seven [7] days of the Project Manager's issuing a Certificate of Completion.

32. Final Account

32.1 The Contractor shall issue the Project Manager with a detailed account of the total amount that the Contractor considers payable to him by the Employer under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 30 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 30 days a schedule that states the scope of the corrections or additions that are necessary. If the final account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a Payment Certificate. The Employer shall pay the Contractor the amount due in the Final Certificate within 60 days.

33. Termination

33.1 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 when no stoppage of work is shown on the current program and the stoppage has not been authorised by the Project Manager;
- (b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;
- (c) the Contractor is declared bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (d) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 30 days (for Interim Certificate) or 60 days (for Final Certificate) of issue.
- (e) the Project Manager gives notice that failure to correct a particular defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;
- (f) the Contractor does not maintain a security, which is required.

33.2 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under

Clause 33.1 above, the Project Manager shall decide whether the breach is fundamental or not.

33.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

33.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible. The Project Manager 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.

34. Payment Upon Termination

34.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the Work done and materials ordered and delivered to Site up to the date of the issue of the certificate. Additional liquidated damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable by the Contractor.

34.2 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the Work done, materials ordered, the reasonable cost of removal of equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works.

34.3 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 the Site, plant, equipment and temporary works.

34.4 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 Project Manager may in writing specify, any temporary buildings, plant, machinery, appliances, goods or materials belonging to or hired by him, and in default 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.

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 therefore the Project Manager 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.

35. Release from Performance

35.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop Work as quickly as possible after receiving this certificate and shall be paid for all Work carried out before receiving it.

36. Corrupt gifts and payments of commission

The Contractor shall not;

(a) Offer or give or agree to give to any person in the service of the

Employer any gift 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 for the Employer or for showing or forbearing to show favour or disfavour to any person in relation to this or any other contract for the Employer.

(b) Enter into this or any other contract with the Employer in connection with which commission has been paid or agreed to be paid by him or on his behalf or to his knowledge, unless before the Contract is made particulars of any such commission and of the terms and conditions of any agreement for the payment thereof have been disclosed in writing to the Employer.

Any breach of this Condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the provisions of the Public Procurement Regulations issued under The Exchequer and Audit Act Cap 412 of the Laws of Kenya.

37. Settlement Of Disputes

37.1 In case any dispute or difference shall arise between the Employer or the Project Manager on his behalf and the Contractor, either during the progress or after the completion or termination of the Works, such dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur

in the appointment of an Arbitrator, the Arbitrator shall be appointed by the Chairman or Vice Chairman of any of the following professional institutions;

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

On the request of the applying party. The institution written to first by the aggrieved party shall take precedence over all other institutions.

37.2 The arbitration may be on the construction of this Contract or on any matter or thing of whatsoever nature arising thereunder or in connection therewith, including any matter or thing left by this Contract to the discretion of the Project Manager, or the withholding by the Project Manager of any certificate to which the Contractor may claim to be entitled to or the measurement and valuation referred to in clause 23.0 of these conditions, or the rights and liabilities of the parties subsequent to the termination of Contract.

37.3 Provided that no arbitration proceedings shall be commenced on any dispute or difference where notice of a dispute or difference has not been given by the applying party within ninety days of the occurrence or discovery of the matter or issue giving rise to the dispute.

37.4 Notwithstanding the issue of a notice as stated above, the arbitration of such a dispute or difference shall not commence unless an attempt has in the first instance been made by the parties to settle such dispute or difference amicably with or without the assistance of third parties. Proof of such attempt shall be required.

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

37.5.1 The appointment of a replacement Project Manager upon the said person ceasing to act.

37.5.2 Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.

37.5.3 Whether or not a certificate has been improperly withheld

or is not in accordance with these Conditions.

37.5.4 Any dispute or difference arising in respect of war risks or war damage.

37.6 All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless the Employer and the Contractor agree otherwise in writing.

37.7 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.

37.8 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.

37.9 The award of such Arbitrator shall be final and binding upon the parties.

SECTION IV – APPENDIX TO CONDITIONS OF CONTRACT

THE EMPLOYER IS

Name: **MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

Address: P.O. Box 972-60200 MERU

Facsimile:

The name (and identification number) of the Contract is **PROPOSED CONSTRUCTION OF 1 No. 30 meter high mast flood lights AT MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY IN MERU COUNTY.**

The Start Date shall be **AGREED WITH THE PROJECT MANAGER.**

The Intended Completion Date for the whole of the Works shall be **8 WEEKS** from the start date.

The following documents also form part of the Contract: **“AS LISTED IN CLAUSE 2.3 OF THE CONDITIONS OF CONTRACT”**

The Contractor shall submit a revised program for the Works within 14 days of delivery of the Letter of Acceptance.

The Site Possession Date shall be **AGREED WITH THE PROJECT MANAGER.**

The Site is located at **TIGANIA WEST SUB-COUNTY** defined in drawings nos. **TO BE PROVIDED**

The Defects Liability period is **180 DAYS**

Other Contractors, utilities etc., to be engaged by the Employer on the Site Include those for the execution of ;

- 1.
- 2.

The minimum insurance covers shall be;

1. The minimum cover for insurance of the Works and of Plant and Materials in respect of the Contractor's faulty design is NIL
2. The minimum cover for loss or damage to Equipment is NIL
3. The minimum for insurance of other property is **five hundred thousand kenya shillings**
4. The minimum cover for personal injury or death insurance
 - For the Contractor's employees is **AS PER THE LAWS APPLICABLE**
 - And for other people is **ONE MILLION FIVE HUNDRED THOUSAND KENYA SHILLINGS ONLY**

The following events shall also be Compensation Events:

1. **NONE (ONLY THOSE DEFINED IN CLAUSE 24 OF THE CONDITIONS OF CONTRACT)**
2. _____
3. _____
4. _____

The period between Program updates is _____ 7 _____ days.

The amount to be withheld for late submission of an updated Program is **FULL CERTIFICATE**

The proportion of payments retained is _____ 10 _____ percent.

The Price Adjustment Clause _____ shall _____ (shall/shall not) apply

The liquidated damages for the whole of the Works is Kshs. 100,000 .00 (per week)

The Performance Security shall be for the following minimum amounts equivalent as a percentage of the Contract Price 5 percent (%)

The Completion Period for the Works is **8** [Weeks].

The rate of exchange for calculation of foreign currency payments is **AS PER THE PREVAILING EXCHANGE RATE**

The schedule of basic rates used in pricing by the Contractor is as attached
[Contractor to attach].

Advance Payment _____ shall not be granted.

ADD CLAUSE 38.0

38.0 Alternative Dispute Resolution

- 38.1 In pursuant to clause 37 of these Conditions of Contract, it shall be a condition that no dispute shall be referred to arbitration unless and until the matter has been dealt with through Alternative Dispute Resolution (ADR) mechanism.
- 38.2 The person or persons to conduct the Alternative Resolution shall be agreed upon between the parties.
- 38.3 The Alternative Dispute Resolution shall involve Reconciliation, Mediation or Adjudication.

PARTICULARS OF INSERTIONS TO THE CONTRACT AGREEMENT

The following are the insertions to be made in the appendix to the Contract Agreement: -

Period of Final Measurement	3 Months from Practical completion
Defects Liability Period	6 Months from practical completion Date
for Possession	To be agreed with the Project Manager Date
for Completion	8 Weeks from date of Possession
Liquidated and Ascertained	At the rate of KShs 100,000.00 per week or part thereof
Prime cost sums for which the Contractor desires to tender
Period of Interim Certificates	Monthly
Period of Honoring Certificates	30 days
Percentage of Certified Value Retained	10% Limit
of Retention Fund	10%

SECTION V - SPECIFICATIONS

Notes for preparing Specifications

- 1.0 Specifications must be drafted to present a clear and precise statement of the required standards of materials, and workmanship for tenderers to respond realistically and competitively to the requirements of the Employer and ensure responsiveness of tenders. The Specifications should require that all materials, plant, and other supplies to be permanently incorporated in the Works be new, unused, of the most recent or current models, and incorporating all recent improvements in design and materials unless provided otherwise in the Contract. Where the Contractor is responsible for the design of any part of the permanent Works, the extent of his obligations must be stated.
- 2.0 Specifications from previous similar projects are useful and may not be necessary to re-write specifications for every Works Contract.
- 3.0 There are considerable advantages in standardizing General Specifications for repetitive Works in recognized public sectors, such as highways, urban housing, irrigation and water supply. The General Specifications should cover all classes of workmanship, materials and equipment commonly involved in constructions, although not necessarily to be used in a particular works contract. Deletions or addenda should then adapt the General Specifications to the particular Works.
- 4.0 Care must be taken in drafting Specifications to ensure they are not restrictive. In the Specifications of standards for materials, plant and workmanship, existing Kenya Standards should be used as much as possible, otherwise recognized international standards may also be used.
- 5.0 The Employer should decide whether technical solutions to specified parts of the Works are to be permitted. Alternatives are appropriate in cases where obvious (and potentially less costly) alternatives are possible to the technical solutions indicated in tender documents for certain elements of the Works, taking into consideration the comparative specialized advantage of potential tenderers.

The Employer should provide a description of the selected parts of the Works with appropriate reference to Drawings, Specifications, Bills of Quantities, and Design or Performance criteria, stating that the alternative solutions shall be at least structurally and functionally equivalent to the basic design parameters and Specifications.

Such alternative solutions shall be accompanied by all information necessary for a complete evaluation by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, proposed construction methodology, and other relevant details. Technical alternatives permitted in this manner shall be considered by the Employer each on its own merits and independently of whether the tenderer has priced the item as described in the Employer's design included with the tender documents.

GENERAL SPECIFICATION FOR MATERIALS

AND INSTALLATION

GENERAL SPECIFICATION FOR MATERIALS AND INSTALLATION

1. PREAMBLE

.00 NOTE: All reference to sub-contract/sub-contractor in this document should be read as contract/contractor.

01. General

.011 This section outlines recommended practice for selection and installation of all electrical equipment and must be followed unless specific clearance to deviate from it has been obtained from the Engineer.

02. Codes

.021 Design codes are specified wherever applicable. All design, materials, equipment and workmanship shall comply with the latest issue of the appropriate British Standard, with the relevant Edition of I.E.E Regulations and with Statutory Standards and Regulations in Kenya.

.022 The sub-contractor shall ensure that starting currents for motors and other electrical equipment do not exceed the limits stipulated by the Power Company.

03. Scope of Work

.031 The sub-contractor shall allow for all items as described in the drawings or specifications or as implied by the Contract documents for the proper, efficient and safe completion of the works.

.032 The sub-contractor shall quote a lump sum price and complete all the Schedules attached to the Specification; the unit rates in the Schedule will form a basis for costing of variations, if any.

04. Drawings

.041 The sub-contractor must produce his own working drawings showing proposed circuitry, cable and conduit layout for the approval of the Engineer prior to installation.

.042 Shop drawings for proposed items of equipment, e.g. switch-boards, trunking, trays, etc. must be submitted to the Engineer for approval. In preparing these, cognizance must be taken of space and access available for these items. Approval of shop drawings by the Engineer does not absolve the sub-contractor from his responsibility should variations be necessary due to in-adequate consideration of site factors.

.043 On completion of works, the sub-contractor shall prepare “as installed” drawings and submit (3) three prints and one transparency to the Engineer. One print of the drawing showing schematic wiring and distribution shall be placed in a glass frame and displayed in the switch room.

.044 All sub-boards and distribution boards shall show clearly details of circuits to enable maintenance, operation or additional works to be carried out without risk or ambiguity.

05. Notices

.051 The sub-contractor shall give all notices to local authorities as necessary and shall comply with all local regulations.

.052 The sub-contractor shall liaise with The Kenya Power and L. Co. Ltd. as well as with Telecom Kenya Ltd as required on the installation of power supply and telephone service lines respectively and shall allow for attendance as necessary.

06. Supervision

.061 The sub-contractor shall ensure that at all times during site works there is present a fully competent foreman; any instructions given to this foreman shall be deemed given to the sub-contractor.

.062 The sub-contractor shall allow for the services of any specialist Engineer or technician as may be necessary or called for by the Engineer for the installation of any plant or equipment.

07. Safety

.071 The sub-contractor and his staff shall at all times be safety conscious and ensure that statutory regulations are always followed.

.072 Sub-contractor’s personnel should use safety appliances as applicable, for example:-

- Safety helmets
- Safety belts when working on poles or overhead structures
- Rubber gloves if there is danger of contact with live equipment.
- Protective clothing if necessary.

.073 Excavations, lifting tackle, working areas and other hazards should be clearly marked off at all times and if considered necessary they should be roped off.

.074 The sub-contractor must maintain good house keeping on site at all times. He is cautioned against littering the site with material debris, and spillage of any kind.

.08 Labeling

.081 All switchgear, cables, equipments, distribution boards and similar items shall be labeled in a manner acceptable to the Engineer. The labeling should identify the item concerned and cross-reference it with the drawing if necessary, in order to outline its function or control characteristic.

2. SWITHGEAR

.01 Medium Voltage Board

.011 The board shall be suitable for 415 volt, 3 phase, 50Hz, 4-wire supply. It shall be self-supporting and suitable for floor mounting and constructed in steel or other approved material. The design, materials and workmanship shall be of the highest quality taking into account safety, ease of inspection and maintenance as well as proper access for installation of cables.

.012 Construction shall be modular capable of further extension if necessary. Boards constructed in steel shall have the framework of adequate structural strength whilst the cladding and doors shall not be less than 16 SWG in thickness. Doors must be fitted with good quality hinges and sealed with proper gaskets to render the enclosure dustproof. Adequate locking devices should be provided to prevent unauthorized tampering.

.013 All steelwork shall be free from rust, defects, burns or other imperfections. Rust must be removed by initial chemical or blasting treatment followed by priming. Finish treatment shall consist of undercoats followed by good quality stove enameling or similar to the approval of the Engineer and in accordance with a process stipulated by a reputable paint manufacturer.

.014 The maximum degree of safety shall be incorporated in the construction of the board or as specified in relevant drawing/specification. Construction must be such that the risk of start or spread of fire is minimal. Switch fuses should be capable of being locked in either position. All bus bars and wiring must be completely enclosed and doors provided with mechanical interlocks rendering isolating the power supply. The board

shall comply in every way with safety characteristics outlined in the relevant British Standard and in statutory regulations.

.015 Bus bars shall be mechanically and electrically sound and of high conductivity copper of adequate cross-section. The short circuit rating for the board shall be as specified. The incoming isolators shall be capable of withstanding electromagnetic and thermal stresses arising under short circuit conditions during the time taken for the fuses or back-up protection on the outgoing circuit to clear the fault.

.02 Bus-bars

.021 Bus-bars shall be made of hard or medium hard drawn high conductivity copper.

.022 Provisions must be made for expansion and contraction due to thermal stresses. Bus bars and supports should be capable of withstanding effects of fault currents within the short circuit rating of the switchgear. Under such conditions the clearances between phases, neutral and earth should be maintained.

.023 Bus –bars should be colour coded to an acceptable standard for identification of phases. Wiring from the bus-bars should also be similarly coloured.

.03 Switches

.031 Switch-fuses shall normally be of the metal clad type with an interlocking arrangement so that the enclosure cannot be opened when the switch is in “ON” position.

.032 Switch-fuses shall have a rating equal at least to the short-circuit rating of the Medium Voltage board on which they are installed.

.033 Fuses shall be of the cartridge type graded to suit the load in the particular circuit.

.034 Switch-fuses should be capable of being locked in “OFF” or “ON” positions.

.04 Circuit Breakers

.041 Circuit breakers shall be of adequate capacity to suit the rating and system specified.

.042 Circuit breakers shall have a breaking capacity in accordance with the appropriate B.S rating and to suit the system in which they are installed.

.043 Circuit breakers shall be provided with interlocks to comply with British Standards and statutory requirements.

.044 Circuit breakers shall be provided with a means for locking if so specified.

.045 Over –current protection of proper type and capacity shall be provided on each circuit breaker.

.046 Earth leakage protections shall be provided where specified.

.05 Earth Bar

.051 A copper earth bar of high conductivity copper shall be provided along the full section of this conductor shall be such that it is capable of handling the anticipated fault current for the system but should in any case not be less than 300mm².

.06 Neutral Bar

.061 A neutral bar consisting of high conductivity copper and rated for anticipated fault conditions shall be provided. This bar shall be mounted on suitable insulators and installed within the switchboard.

.07 Instruments

.071 Instruments shall be provided as stipulated on the drawing and specification. Ammeters and voltmeters shall be of the non-projecting square-pattern type, with rotary selection switches to indicate reading between phases and from phase to neutral.

.072 Ammeters in motor starter circuits should show full load currents at between $\frac{1}{2}$ and $\frac{3}{4}$ of full scale reading and this position should be indicated in red on the scale. These ammeters should, wherever possible have “compressed scale” to indicate the starting current.

.073 Instrument current transformers shall be of approved type, C.T. ratios shall be agreed with the Engineer by the sub-contractor.

08. Wiring

.081 All wiring within the board shall be properly colour coded, have a proper conductor size and be suitably fixed or cleared.

.082 Wiring passing through holes in steelwork should be suitably protected by use of neoprene grommets or other similar and approved material.

09. Labeling

.091 All components of the switchgear shall be suitably labeled. Labels shall be fixed both inside and outside each item on the board as required for identifying.

.092 The markings on the switchgear components should be cross-referenced with those on the drawings.

.093 Inscription letters should be minimum 5 mm high white on black background and fixed to the respective enclosures with screws or similar.

.094. Danger or caution labels shall have inscription letters minimum 10 mm high white on red background.

3. DISTRIBUTION BOARDS

.01 General requirements

.011 Where an installation comprises more than one final sub-circuit, each shall be connected to a separate way in a distribution board.

.012 To facilitate disconnection of each final sub-circuit for testing, the neutral conductors shall be connected at the distribution board in the same order as that in the fuses or circuit breakers.

02. Construction

.021 Distribution boards shall be constructed in steel with hinged covers fitted with suitable gaskets. The rating, number of ways and number of phases should be as stipulated in the drawings.

.022 Where boards are fitted with fuses, adequate fuse carriers and shields shall be provided for protection.

.023 Where boards are fitted with miniature circuit breakers, these shall have ratings thermal overload and short circuit tripping characteristics as per B.S 3871.

03. Labeling

.031 All circuits fed from the distribution board shall be clearly indicated on a plate fixed inside the board. Each outlet must be identified with fuse or MCB rating and all details should correspond with those indicated on circuit drawings.

.032 On the outside labels should be fixed identifying the distribution board with respect to outgoing circuits. These labels on red background.

4. POWER CABLES

.01 PVC Insulated/armored (B.S.6346)

.011 These cables may be for indoor or underground use, PVC insulated, PVC sheathed, steel wire (or tape) armored and PVC serve.

.012 Cables shall be of 660/1100 volt grade manufactured according to the appropriate B.S requirements, in two-three-or four-core construction.

.013 Cable sizing shall comply with I.E.E. Regulations and with details indicated in drawings and specifications. Wherever interpretation of regulations and specifications leads to different sizes, the larger shall always be used.

.014 Cable terminations must have approved type compression glands. For installation in hazardous areas, the threaded length of gland entering the relevant enclosure shall conform to appropriate regulations. Glands must receive all the strands of the wire armoring which must be permanently clamped in an acceptable manner. All cable glands must be covered with a PVC shroud for protection. Glands shall comply with B.S. 6121 as appropriate.

.02. PVC Insulated/non-armoured

.021 These shall be of the single core type, with PVC insulation, with or without an earth continuity conductor. Such cables shall generally be wired in metal conduits (concealed or surface mounted) or trunkings or alternatively in non-metallic concealed or surface mounted conduits.

.022 Cables may also be of twin or three-core construction, PVC insulated and sheathed. Such cables shall generally be fixed to surfaces of walls, ceilings, and roof members or similar. Wherever drops to switches or distribution boards have to be made, cables shall be enclosed in metallic or non-metallic conduits.

.023 No jointing is permitted in such cables, connection of wires being by looping in suitable joint boxes or connections of an approved type.

.024 Non-armoured PVC insulated cables shall generally comply with B.S. 6004, B.S. 6231 or B.S. 6346.

.03. Paper Insulated (B.S . 6480, Part 1)

.031 These cables may be for indoor or underground use, paper insulated, and lead covered, steel wire (or tape) armoured and PVC served.

.032 Cables shall be of 1100 volt grade, with two, three of four cores and comply with cables where migration of impregnating compound is liable to occur.

.033 Cables shall be sized to I.E.E. Regulations and as stipulated in relevant drawings and Specifications.

.034 Cutting, jointing, sealing, terminations and connecting of PLIC cables shall be in accordance with good approved engineering practice complying with statutory regulations and shall be carried out only by suitably qualified personnel.

04. Rubber Insulated/non armoured (B.S. 6007)

.041 For indoor use these shall be rubber insulated and sheathed with tough rubber, PVC or lead.

.042 Cables shall be of 240/660 volt grade and of two-, three – or four-core construction.

05. Rubber Insulated /armoured

.051 These cables, mainly for underground use, shall be rubber insulated, lead covered, steel wire armoured and PVC served.

.052 Cables shall be of 660 volt grade and have two, three or four cores.

06. Mineral Insulated Copper Wire

.061 These cables shall consist of a highly conductive, seamless copper sheath enclosing one or more copper conductors which are insulated with tightly compressed mineral.

.062 Cables shall be rated at 660 volts.

.063 Approved type seals shall be used for the ends and terminations made by qualified personnel to comply with manufacturer's specifications and local regulations. After sealing, tests should be made with a Megger insulation tester to ensure that no moisture has been absorbed into the cable. Terminations shall comply with B.S 6081.

.064 MICS cables shall generally comply with B.S. 6207 Part 1.

07. Aluminum Conductors (B.S., 6346)

.071 These cables are PVC insulated and sheathed and aluminum strip armoured.

.072 Cables shall be of 660/1100 volt grade and shall be sized in accordance with I.E.E. Regulations and the relevant drawings.

.073 An approved method of cable terminations shall be used as recommended by the manufacturer.

08. Installation

.081 Cables shall be installed to comply with relevant Clauses of I.E.E. Regulations, with good engineering practice, with safety requirements and Factories Act and any other statutory regulations. The points listed in this Specification are not meant to be exhaustive and it is necessary that the Electrical Contractor is familiar in all respects with requirements of various laws and bye-laws.

.082 Cable routes shall be as shown on the drawings. For underground cables, markers should be placed at 8meter intervals along straight runs and at points where changes in direction take place. Markers shall be in concrete and to Engineer's approval.

.083 Cables shall be handled with care during loading and un-loading of drums and during handling and laying. Cables should not be dragged over rough surfaces and at all times the sub-contractor shall ensure that no damage occurs either to the cables or to other services along the routes.

.084 When laid in trenches, there shall be a bed of 100mm clean sand. After laying, there shall be a cover of 100mm clean sand over which interlocking cable tiles must be placed. A further 75mm of clean sand must be placed over the tiles after which the original material may be backfilled and consolidated by hand. Total cover must be 750mm minimum. Trenching and backfilling will be carried out by the main contractor but sub-contractor must liaise and attend as necessary. Disposition of cables in enclosed trenches shall be generally as in Table 32 M of I.E.E. Regulations.

.085 When buried in structural concrete or under roadways, cables should be laid in suitable pipe ducts to Engineer's approval. Where this is not possible, cables must be wrapped with asbestos or other suitable material and grouted in. The final agreed details of the duct or surround to the cable must also be approved by the Employer or Engineer.

.086 All cables shall be clearly marked at each end with permanent type markers for identification. A drawing with such markings related to circuits described in the drawings and showing "as installed" details and routes shall be prepared by the sub-contractor on completion of the work. Three prints and one transparency of this drawing shall be handed over to the Engineer.

.087 When cables are laid in trays these shall be done neatly and with adequate spacing and fixing. Trays should be capable of accommodating additional 25% on future.

.088 The internal radius of every bend in a cable shall not be less than the appropriate value stated in Table B.1M. of I.E.E. Regulations.

.089 All cables shall be supported in such a manner that there is no mechanical strain on the cable termination. Cables shall be supported in hangers or fixed to walls of structures with saddles or cleats of approved manufactures. Spacing of supports shall be according to Table B. 2M of I.E.E. Regulations.

.0810 Every cable shall be so selected and installed as to be suitable for operation under ambient temperatures of its surroundings as are likely to occur. These temperatures shall not exceed the appropriate value stated in Table B.3M of I.E.E. Regulations.

09. Cable Ducts

.091 Cable ducts where required under roadways or concrete access ways shall consist of pitch fiber, concrete or steel pipes laid at a suitable depth and to an acceptable specification. This will also apply where ducts are required under floors or through footings of buildings. Normally this work will be carried out by another Contractor but the electrical sub-contractor must provide accurate location details to and liaise as necessary with the contractor for this purpose.

.092 Where cables and other electrical services pass through floors, walls, partitions or ceilings, the surrounding hole shall be made good with suitable fire-resisting material to the full thickness of the floor or wall as applicable. In addition, suitable internal barriers shall be provided in ducts passing through floors or walls to prevent the spread of fire. Where such barriers or making good involve concrete work, the sub-contractor shall arrange for such works to be carried out.

.093 The number of cables to be installed in duct shall be such as will permit easy drawing-in without damage to the cables; a space factor of 35% shall not exceed.

.10 Jointing

.101 Where joints in cables are necessary, they shall be mechanically and electrically sound. Joints in non-flexible cables shall be made by smoldering; brazing, welding or mechanical clamps or be of compression type. Mechanical clamps shall not be used for inaccessible or buried joints.

.102 Cable joints shall be provided with insulation not less effective than that of the cable cores and shall be protected against moisture and mechanical damage.

.103 For joints in paper-insulated metal-sheathed cables, a wiped metal sleeve or joint box filled with insulating compound shall be used.

.104 Where aluminum and copper conductors are joined together, precautions against electrolytic corrosion shall be taken.

.105 Any joint in a flexible cable or flexible cord shall be affected by means of a cable coupler of approved quality.

5. CONDUITS/ TRUNKING

.01 Steel Conduits

.011 Steel conduits shall be Class B, seam-welded, heavy gauge screwed type of a minimum diameter of 19mm. Finish shall be of black enamel for internal use and hot galvanizes for outdoor use where the conduit will be subjected to dampness.

.012 Solid drawn conduit of heavy gauge shall be used where flame- or explosion-proof installations are to be carried out.

.013 Bends, elbows, test and boxes shall be suitable for use with screwed conduits. Wherever necessary, inspection type fittings shall be used.

.014 Conduits and accessories shall be fixed using proper saddles, clips and crampets.

.02 Flexible Conduits

.021 Flexible conduits shall be used for final connections to machinery.

The flexible conduit shall be watertight and have an earth continuity conductor of adequate size from the special brass adaptor which must be

used to join to the flexible section. Flexible conduit shall be adequately supported where necessary.

.03 Special requirement for metal conduit systems

.031 Metal conduits and fittings shall comply with B.S. 4568, Part 1 and Part 2, or B.S. 31 (for rigid steel conduits and fittings), B.S. 731 Part 1 (for flexible steel conduits and adaptors).

.032 Metal conduits systems shall be adequately earthed to comply with I.E.E. Regulations. All joints shall be mechanically and electrically continuous.

.033 Cables of a.c. circuit installed in steel conduit shall always be so bunched that the cables of all phases and neutral conductor (if any) are contained in the same conduit.

04. Non-metallic Conduits

.041 Rigid non-metallic conduits and conduit fittings shall comply with B.S. 4607, Part 1 or Part 2 as appropriate, minimum dia. 19mm.

.042 Non-metallic conduits, when used, must be suitable for the extremes of ambient temperature to which they are likely to be subjected in service.

.043 P.V.C conduits shall be supported so that allowance is made for longitudinal expansion and contraction due to temperature variation during normal operation.

.044 Heavy-gauge P.V.C. conduit of the high-impact grade shall be used. The conduits must be highly resistant to corrosive effects of water, acids, alkalis or oxidizing agents in proportions likely to occur under normal service conditions.

.045 Bending, coupling, jointing and general installation work shall comply with good practice and all regulations.

.046 Trunking shall be constructed of metal or non-combustible insulating material.

.047 Metal trunking shall be fabricated from not less than 18 SWG mild steel which is later galvanized or painted as specified. System fittings such as bends, tees, elbows, couplers, blank ends and fire-resisting barriers shall be supported as necessary.

.048 Lengths should be joined by couplers secured by screws. Electrical continuity must be ensured by means of earth straps of adequate size between each section.

.049 The number of cables installed in trunkings shall be such that a space factor of 45% is not exceeded.

.0410 Trunking shall be made electrically continuous by the provision and fixing of 25 x 3 mm copper links across joints.

05. Installation

.051 After complete installation and before drawing in cables, conduits shall be freed from dirt and moisture by using an approved method.

.052 Conduits buried in slabs, walls and columns shall have a minimum cover of 10mm. Conduits and boxes shall be adequately secured to reinforcement or otherwise to ensure no damage or movement occurs during placing or vibration of concrete.

.053 Metallic conduits buried in concrete or in the ground shall be painted with two coats of a suitable corrosion resisting material.

.054 Conduit systems not intended to be airtight shall be self-ventilating and be provided with drainage outlets where condensate can collect.

.055 Conduits shall not be installed less than 200mm from gas or water pipes at a temperature of 60°C or more.

.056 Where a non-metallic outlet box is used to suspend a luminaire or is in contact with it, it must be ensured that the temperature of the box does not exceed 60°C. Moreover the mass suspended from the box shall not exceed 3 kg. Where a twin flexible cord supports a luminaire, Para. B. 132 of I.E.E. Regulations shall be used to determine limiting mass that can be suspended.

.057 The number of single core cables-PVC insulated, rubber-insulated or braided shall be such as to permit easy drawing-in. In any case they shall not be more than the appropriate number indicated in TABLE B. 5M and B.6M of I.E.E. Regulations, 14th Edition.

.058 When bending conduit the internal radius shall not be less than specified in Table B. 1M of I.E.E. Regulations.

.059 Substantial boxes complying with appropriate B.S. of ample capacity shall be provided at every junction involving a cable connection in a conduit system. Draw-in through boxes shall be provided as necessary. All unused conduit entries shall be blanked off and all removable covers firmly secured.

.0510 Where conduits are laid across expansion joints in buildings, suitable expansion couplers shall be used to accommodate movement.

06. Rising main bus-bars

.061 The rising mains bus –bar system shall consist of copper (or Aluminium by

agreement with the Engineer) bus-bars enclosed in a sheet metal trunking rising through the building and supplying mains to each floor.

.062 The trunking shall have electrical continuity maintained by copper strap of minimum 25mm x 3 mm section fixed with bolts, washers and locknuts between lengths.

.063 Fire barriers must be installed inside the trunking where it passes through floors and the holes must be made good with concrete after the trunking has been installed. Sleeving shall be provided round bus-bars where they pass through fire barriers.

.064 Bus-bars must be rigidly fixed using clamp type supports or similar, approved by the Engineer. Phase colours shall be clearly indicated at supports.

.065 Allowances should be made for taking up expansion or contraction during normal operation. Fixtures should be designed to withstand stresses likely to be set up during fault conditions.

.066 The sheet metal of the trunking should not be less than 16 gauge. The section through the floor shall have a fixed lid whilst the remaining sections shall have removable covers of suitable lengths. Substantial fixing brackets shall be provided at suitable intervals for securing the trunking to the wall. All trunking should be marked “DANGER” and the voltage stated.

62. Bus-bars shall consist of high-grade, hard-drawn, high conductivity copper. They shall be four-pole including neutral. Tap-off points shall be of correct rating and connections to bus-bars must be by approved means to ensure maximum conductivity.

6. LIGHTING/SOCKET OUTLETS

6.1 Light fittings

6.1.1.1 Light fittings shall be of the type and detail given in the specification. Equivalents may be considered but only after approval of sample by the Engineer.

6.1.2. Where lights have to fit in suspended ceilings in buildings, the sub-contractor shall ensure that sizes and modules are in harmony with general layout and with other services or fittings (for example, air-conditioning diffusers, smoke detector units, etc.)

6.1.3 Light fittings shall be properly secured, correctly aligned during installation and safely fitted to minimize all fire risk and to comply with all statutory regulations.

6.1.4. Light fittings shall be adequately earthed through earth continuity conductors in accordance with all relevant bye-laws.

6.1.5. Full liaison shall be maintained by the sub-contractor with the Employer and Engineer over installation of light fittings. Care shall be taken to ensure no damage to ceilings or other finishes takes place.

6.2 Switches

6.2.1. Where there is a predominance of fluorescent lamps, quick-make, slow-break switches shall be installed.

6.2.2. All light switches shall be of 5 Amps rating with ivory/white cover plate.

6.3 Socket outlets

- 6.3.1. Unless otherwise stated, all socket outlets shall be of the 13 amp shuttered type and switched with a fused plug complying with B.S 196.
- 6.3.2. Installation of radial or ring final sub circuits shall comply with Table A.3M of the I.E.E. Regulations and other local bye-laws.
- 6.3.3. Minimum height of socket outlets above floor level shall comply with I.E.E. and local regulations, but in any case shall not be less than 150mm.
- 6.3.4. The sub-contractor shall comply with special requirements for non-domestic ring circuits as listed under A. 49 to A55 of I.E.E. Regulations.
- 6.3.5. The number and rating of socket outlets shall be such that in normal use the loading of the final sub-circuit does not exceed the rating of the fuse or circuit breaker protecting the final sub-circuit. Notwithstanding this, the total number of outlets shall not exceed ten (10) and shall comply with the limit set by the Government Electrical Engineer.

7. EARTHING/LIGHTING PROTECTION

7.1 General

7.1.1. Earthing shall be provided to minimize danger arising from faults between live conductors and non-current-carrying metal-work.

7.1.2. The earthing system shall be such that a sufficiently high fault current will flow to cause protective devices to operate within prescribed times.

7.2 Bonding

7.2.1. All non-current carrying metal work associated with the electrical equipment shall be bonded together and this should include enclosures at switchboards and distribution boards, conduits, trunkings, cable armouring, etc. Which shall then be connected to appropriate earth continuity conductors.

7.2.2. The earthing terminal of every socket outlet shall be connected to the earth continuity terminal of the final sub-circuit.

7.2.3. At every lighting point, an earthing terminal shall be provided and connected to the earth continuity conductor of the final sub-circuit.

7.2.4 An earthing terminal, connected to the earth continuity conductor of the final sub-circuit, shall be provided at every lighting switch position.

7.3 Protection against earth Leakage

7.3.1 The contractor shall ensure that adequate protection against earth-leakage currents is provided. For this purpose section D of IEE regulations shall be followed in all respects methods of protection, general provisions, etc.

7.3.2 Where isolation of metal is adopted for prevention of dangerous earth-leakage currents, paragraph D.9 of I.E.E. Regulations shall be followed.

7.4 Earthing for M.V. supply

7.4.1. Where a supply is taken at M.V., the main switchboard shall have an earth bar as specified under 2.05. Earth tapes from all bonded metal work as under 7.2.1. shall be connected to the earth bar by an approved method; size of earth tape shall not be less than 32mm x 5mm.

7.4.2. The system shall be earthed using a series of earth electrodes. The size of copper earth conductors shall be such as to withstand a short circuit current duration of approximately 3 seconds and shall be determined as below:-

Short Circuit Current	conductor Size
Max. KA	mm
9	25 x 3 (min.)
14	25 x 6
22	32 x 5
30	38 x 5
44	50 x 6

7.4.3 The depth of electrode must depend on soil conductivity which in turn is a function of soil composition, moisture content and other factors. The Sub-con-tractor shall determine and agree with the Engineer the effective depth which in any case shall not be less than 4.5 meter.

- 7.4.4 Earth electrodes shall be 20mm dia. Min. fitted with a steel driving head and tip and be of the extensible type such as “copper weld” or similar. Generally, the rod, threaded at each end, will be 1.5m in length, consecutive sections being joined together by external coupling.
- 7.4.5 Connections to earth electrodes of earthing conductors shall be by means of suitable clamps “copper weld” or similar. The head of the electrode shall terminate in a concrete inspection chamber and be finished approximately 150 mm below ground level.

7.5 Protective Multiple earthing

- 7.5.1 Where protective multiple earthing is provided by the Power Company, they should be consulted regarding particular requirements for consumers’ installations to be connected to the system.
- 7.5.2 The earthing of the installation shall comply with requirements of Appendix 5 of I.E.E. Regulations and the sub-Contractor shall make arrangements for the neutral distribution line to be earthed at intervals as required to obtain a low earth loop impedance.

7.6 Lightning Protection

- 7.6.1 Lightning protection systems shall be efficient and robust enough to withstand the intense heat and considerable mechanical forces involved. Recommendations as contained in British Standard 6651:1985 should be followed.
- 7.6.2 Care shall be taken by the sub-contractor to ensure that the whole of the structure of the building falls within the protective zone of the conductor. All metallic vents pipes, guttering, etc. should be bonded to form part of the air –termination network.
- 7.6.3 Down conductors shall be sufficient in number and cross section to provide necessary protection. All down conductors shall be cross bonded.
- 7.6.4 Conductor joints should be mechanically and electrically sound and should be as few as possible. Where joints are necessary, the copper tape should be tinned, soldered and welded or double riveted.
- 7.6.5 Each down conductor should be provided with a testing point of approved design where resistance tests can be conveniently made. Down conductors shall be secured to the face of the structure by ‘holdfasts’ made from gunmetal.
- 7.6.6 Air terminations, roof conductors, down-conductors, test points, bends and earthings shall all conform to acceptable standards and comply with all regulations.
- 7.6.7 Resistance to earth shall comply with regulations but in any case shall not be less than seven (7) ohms. Earthing shall be by means of earth electrodes as specified for earthing M.V. supply. Where poor earth conditions may be expected due to soil composition, drainage or otherwise, special type of earthing such as the ‘Hedges’ patent tubular earth with watering arrangements at ground level should be considered and installed after approval by the Engineer.

8. TESTING

Test during installations

- 8.1.1 Some tests shall be carried out before the installation is completed, for example, tests on cables in trenches before back-filling or on other items which may not be easily accessible for repair or checking after installation. In such instances, instructions from the Engineer shall be followed.
- 8.2 Tests after installation
- 8.2.1 Testing and inspection shall be carried out in the following sequence:-
Verification of polarity
- a) Effectiveness of earthing
 - b) Insulation resistance
 - c) Ring-circuit continuity
- 8.2.2 Written test reports shall be prepared and submitted to the Engineer. A completion certificate in the form set out in I.E.E, Regulations and complying with all statutory requirements shall be made out by the sub-contractor and submitted to the power company.
- 8.2.3 A verification of polarity shall be made and it shall be ensured that all fuses and single pole switches are connected to the live conductor. It shall also be ensured that centre-contact bayonet and Edison-type screw lamp holders in circuits having an earthed neutral conductor have their outer or screwed contacts connected to that conductor.
- 8.2.4 The sub-contractor shall ensure that all socket outlets have been correctly wired.
- 8.2.5 A separate test of every earth-continuity conductor shall be made by the sub-contractor in accordance with the Item (1) of Appendix 6 of I.E.E. Regulations. The impedance between the consumers's earthing terminal and the remote end of every earth continuity conductor shall not exceed the appropriate value prescribed in the same Appendix.
- 8.2.6 The sub-contractor shall test the effectiveness of the earthing of each completed installation by means of an earth – loop-impedance test in accordance with Item (2) of Appendix 6 of I.E.E. Regulations. Where earth-leakage protection relies on the operation of an earth-leakage circuit breaker, Item (3) of the same Appendix shall be used as a basis for testing.
- 8.2.7 Insulation resistance tests shall be made as prescribed in I.E.E. Regulations E7-9 and readings of insulation resistance to earth shall not be less than those prescribed.
- 8.2.8 A test shall be carried out to verify the continuity of all conductors, including the earth continuity conductor, of every ring-circuit.
- 8.2.9 Earth electrode resistance tests shall be carried out in accordance with item (4) Appendix 6 of I.E.E. Regulations. Readings obtained should comply with relevant regulations but in any case should not exceed the following:-
- a) For protection of electrical equipment - 1 ohm.
 - b) For protection against lightning or static build-up -7

ohms

See also Section 7.6.7 which deals with methods for obtaining acceptable earthing.

BILLS OF QUANTITIES

A) PRICING

1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings, general specifications of materials and works and Particular Technical Specification.
2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (**including 16% VAT and withholding tax**).
- 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 there of.
4. The brief description of the items given in the Bills of Quantities are for the purpose of establishing a standard to which the sub-contractor shall adhere. Otherwise alternative brands of **equal** and **approved** quality will be accepted.

Should the sub-contractor install any material not specified here before receiving **written approval** from the Electrical Engineer, the sub-contractor shall remove the material in question and, **at his own cost**, and install the proper material.
5. The grand total of prices in the price summary page must be carried forward to the **Form of Tender of the Main Contractor for the tender to be deemed valid**.

BILLS OF QUANTITIES

SCHEDULE NO. 1 – SUB-CONTRACT PRELIMINARIES (Refer to Section "A" of this document)					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT RATE	TOTAL
				SHS	SHS
1	Discrepancies clause 1.02				
2	Conditions of contract Agreement clause 1.03				
3	Payments clause1.04				

4	Site location clause 1.06				
5	Scope of Contract Works clause 1.08				
6	Extent of the Contractor's Duties clause 1.09				
7	Firm price contract clause 1.12				
8	Variation clause 1.13				
9	Prime cost and provisional sum clause 3.14 (insert profit and attendance which is a percentage of expended PC or provisional sum.)				
10	Bond clause 1.15				
11	Government Legislation and Regulations clause 1.16				
12	Import Duty and Value Added Tax clause 1.17 (Note this clause applies for materials supplied only)				
13	Insurance company Fees clause 1.18				
14	Provision of services by the Main contractor clause 1.19				
15	Supplies clause 1.20				
16	Samples and Materials Generally clause 1.21				
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				
23	Record Drawings(As Installed) and Instructions clause 1.33				
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	Total brought forward from page 1				
31	Initial Maintenance clause 1.42				
	Total carried forward to page H-2				

SCHEDULE NO. 1 – SUB-CONTRACT PRELIMINARIES

ITEM	DESCRIPTION	QTY	UNIT	RATE	SHS.
	<u>PROPOSED HIGH MAST FLOOD LIGHTS FOR MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY</u>	-	-		
	<u>THE FOLLOWING IN 1 NO. SPOTLIGHT MASTS</u>	-	-		
	-	-	-		
	<u>SUBSTRUCTURE (ALL PROVISIONAL) :-</u>	-	-		
A	Excavate to for column bases[m/s] to an average depth not exceeding 1500mm deep; cart away and dispose the arising to a location authorised by the supervising engineer.	16	CM		
B	Excavate pits in normal soil for for column bases commencing from 1500mm up to a depth not exceeding 3000mm deep from the ground level.	19	CM		
C	Extra over for excavating in rock .	1	CM		
D	Load, cart away and spread extra excavation material on sited as directed by the Architect.	9	CM		
E	Return, fill and ram selected excavated materials to sides of foundation wall.	26	CM		
	<u>Plain concrete (1:4:8) as described in :-</u>				
F	Ditto but to column bases	6	SM		
	<u>Reinforced concrete 1:2:4 as described in :-</u>				
G	Column bases	5	CM		

H	Columns	1	CM	
	<u>Sawn formwork as described to :-</u>			
I	Edges of column bases	3	SM	
J	Sides of columns	4	SM	
	<u>High Tensile Reinforcement Bars to B. S. 4461 including cutting, bending and all necessary spacer blocks : (Provisional) [100 Kg/Cm] :-</u>			
K	16 mm diameter	120	KG	
L	12 mm diameter	270	KG	
	<u>STRUCTURAL STEEL MAST</u>			
M	Supply and fix 30m high 8-sided [octagonal] mild steel street lighting column with an average radius of 100mm; fixed on to concrete columns with steel gussets and rawl bolts and complete with portable mechanical winch for lowering and raising the flood lights for servicing purposes all to engineer's approval.	1	NO	
	Total carried to collection			
	<u>ELEMENT NO. 2</u>			
A	4 ways consumer unit from crabtree or equal and approved manufacturer	1	No	
B	Earthing of the mast comprising of 6.0mm ² earth lead and 1800mm long by 15mm diameter copper earth electrode in accordance with the Kenya Power and Lighting Authority requirements, the Government Electrical Engineers Regulations and other statutory requirements as detailed in the specification.	1	Sum	
C	400 x 400 x 450mm deep masonry manhole with a removable cover for item B above.	1	No	
D	40 Amp Double Pole contactor	1	No	

E	20 MCB as per crabtree, M.K or equivalent	1	No	
F	40 amp current operated earth leakage circuit with rated leakage current of 0.5 A	1	No	
H	6mm ² x 2 core + 6 mm ² ECC PVC copper cable to connect power from control pillar to the light mast.	60	M	
I	400watts floodlight led fitting complete with control gear and tubular lamp	9	No	
J	Timber control switch	1	No	
K	30 inches stand bolts and nuts	12	No	
L	Metalclcad meterboard (18 SWG), water tight construction with hinged lockable metal cover to take 1 no three phase meter. Meterboard shall be wall mounted type, painted one coat primer after sandblasting followed by two coats of approved finishing paint. Meter viewing window shall be provided with perspex glass and locks & padlock	1	No	
M	For the installation, connection, testing and commissioning of meterbox	1	Sum	
N	Earthing of the L.V Meterbox in accordance with the Kenya Power and Lighting Authority requirements, the Government Electrical Engineers Regulations and other statutory requirements as detailed in the specification and on the drawings	1	Sum	
H	Supply and fix armoured cable overall size SWA 10mm ² x 2 core + 6 mm ² ECC PVC copper cable to connect power from control pillar to the light masts.	100	M	
Total carried to collection				

<p><u>SUMMARY</u></p> <p>Brought forward from page F-1</p> <p>Brought forward from page MUST/1</p> <p>Brought forward from page MUST/2</p> <p style="text-align: center;">TOTAL FOR ELECTRICAL WORKS CARRIED TO SUMMARY</p>					

ITEM	DESCRIPTION	QTY	UNIT	RATE	SHS.	CTS.
	<p><u>PROPOSED HIGH MAST FLOOD LIGHTS FOR MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY</u></p> <p><u>P.C. AND PROVISIONAL SUMS</u></p> <p><u>Project Management</u></p>					
A.	Provide the provisional Sum of Kenya Shillings Fifty Thousands (Kshs. 50,000.00) only for project management.	1	SUM		50,000	00
B.	Allow for Attendance		%			
C.	Allow for Profits and Overheads	1	SUM			
	<u>Contingency</u>					
D.	Allow for Contingency Sum of Kenya Shillings One Hundred Thousand (Kshs.100,000.00) only.		SUM		100,000	00

	TOTAL FOR P.C. AND PROVISIONAL SUMS CARRIED TO GRAND SUMMARY					
	PCPS/1					
BILL NO.	DESCRIPTION	PAGE	CONTRACTOR SHS. CTS.	OFFICIAL SHS. CTS.	CTS.	
	<u>PROPOSED HIGH MAST FLOOD LIGHTS FOR MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY</u>	-	-			
	<u>GRAND SUMMARY</u>					
1	Particular Preliminaries	F-2				
2	Main Works	MUST/3				
3	P. C. and Provisional Sums	PCPS/1				
4	ADD 16% VAT					

	GRAND SUMMARY CARRIED TO THE FORM OF TENDER				
	GS/1				

SECTION VIII – STANDARD FORM

- (i) Form of Invitation for Tenders
- (ii) Form of Tender
- (iii) Letter of Acceptance
- (iv) Form of Agreement
- (v) Form of Tender Security
- (vi) Performance Bank Guarantee
- (vii) Bank Guarantee for Advance Payment
- (viii) Qualification Information
- (ix) Tender Questionnaire
- (xi) Confidential Business Questionnaire
- (x) Statement of Foreign Currency Requirement
- (xi) Details of Sub-Contractors

FORM OF INVITATION FOR TENDERS

_____ *[date]*

To: _____ *[name of Contractor]*

_____ *[address]*

Dear Sirs:

Reference: _____ *[Contract Name]*

You have been prequalified to tender for the above project.

We hereby invite you and other prequalified tenderers to submit a tender for the execution and completion of the above Contract.

A complete set of tender documents may be purchased by you from _____

_____ *[mailing address, cable/telex/facsimile numbers].*

Upon payment of a non-refundable fee of Kshs _____

All tenders must be accompanied by _____ number of copies of the same and a security in the form and amount specified in the tendering documents, and must be delivered to

_____ *[address and location]*

at or before _____ *(time and date)*. Tenders will be opened immediately thereafter, in the presence of tenderers' representatives who choose to attend.

Please confirm receipt of this letter immediately in writing by cable/facsimile or telex.

Yours faithfully,

_____ Authorised Signature

_____ *Name and Title*

FORM OF TENDER

TO: _____ [Name of Employer] _____ [Date]
_____ [Name of Contract]

Dear Sir,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct, install and complete such Works and remedy any defects therein for the sum of Kshs. _____ [Amount in figures] Kenya Shillings _____ [Amount in words]
2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Project Manager'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.
3. We agree to abide by this tender until _____ [Insert date], and it shall remain binding upon us and may be accepted at any time before that date.
4. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us.
5. 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 Employer]
of _____ [Address of Employer]

Witness; Name _____

Address _____

Signature _____

Date _____

LETTER OF ACCEPTANCE

[letterhead paper of the Employer]

_____ [date]

To: _____
[name of the Contractor]

[address of the Contractor]

Dear Sir,

This is to notify you that your Tender dated _____
for the execution of _____
[name of the Contract and identification number, as given in the Tender documents]
for the Contract Price of Kshs. _____ *[amount in*
figures] Kenya Shillings _____ *(amount in words)*] in
accordance with the Instructions to Tenderers is hereby accepted.

You are hereby instructed to proceed with the execution of the said Works in
accordance with the Contract documents.

Authorized Signature

Name and Title of Signatory

Attachment : Agreement

FORM OF AGREEMENT

THIS AGREEMENT, made the _____ day of _____ 20 _____
between _____ of [or whose registered
office is situated at] _____
(hereinafter called “the Employer”) of the one part AND
_____ of [or whose registered
office is situated at] _____
(hereinafter called “the Contractor”) of the other part.

WHEREAS THE Employer is desirous that the Contractor executes

_____ *(name and identification number of Contract)* (hereinafter called “the Works”) located at _____ *[Place/location of the Works]* and the Employer has accepted the tender submitted by the Contractor for the execution and completion of such Works and the remedying of any defects therein for the Contract Price of Kshs _____ *[Amount in figures]*, Kenya Shillings _____ *[Amount in words]*.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter 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 Part I
 - (iv) Conditions of Contract Part II and Appendix to Conditions of Contract
 - (v) Specifications
 - (vi) Drawings
 - (vii) Priced Bills of Quantities
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions 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 before written.

The common Seal of _____

Was hereunto affixed in the presence of _____

Signed Sealed, and Delivered by the said _____

Binding Signature of Employer _____

Binding Signature of Contractor _____

In the presence of (i) Name _____

Address _____

Signature _____

[ii] Name _____

Address _____

Signature _____

FORM OF TENDER SECURITY

WHEREAS(hereinafter called “the Tenderer”) has submitted his tender dated for the construction 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 binds itself, its successors and assigns by these presents sealed with the Common Seal of the said Bank this Day of20.....

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 his 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 up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the said date.

[date]

[signature of the Bank]

[witness]

[seal]

PERFORMANCE BANK GUARANTEE

To: _____(Name of Employer) _____(Date)
_____ (Address of Employer)

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

aforsaid 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 _____

QUALIFICATION INFORMATION

1. Individual Tenderers or Individual Members of Joint Ventures

1.1 Preliminary Evaluation Stage (Mandatory Requirements)

- a. Submission of a copy of certificate of incorporation/Registration
- b. Submission of a copy Valid and up to date tax compliance certificate
- c. 1% bid bond of tender sum from reputable banks or Insurance Companies approved by the Public Procurement Oversight (PPOA) and valid for 30 days or a duly signed security declaration form (inside this tender document) for firms under Youth, Women and People with Disability (YWPD). Firms under YWPD Must attach evidence of valid registration with National Treasury
- d. Must be registered with NCA class 6 and above and above and licensed by Energy Regulatory Authority class C1 and above.
- e. Submit audited accounts for two latest financial years (preferably 2015 and 2016)

Failure to avail any of the above documents will lead to automatic disqualification.

1.2 Technical Evaluation Stage

	REQUIREMENTS	MARKS	SCORE	REMARKS
1	Registration as a contractor with NCA (Electrical works)	6		
2	Licensing by Energy Regulatory Authority a) Class A b) Class B c) Class C	8 6 4		
3	Experience of the contractor 1. Years of practice a. 20 and above b. 15-19 c. 10-14 d. 5-9 e. Below 5	10 8 6 4 2		

4	<p>The value of your biggest project undertaken</p> <p>a) Kshs 1 – 3 million</p> <p>b) Kshs. 4 – 6 million</p> <p>c) Kshs. 7-10 million</p> <p>d) Kshs. 11-15 million</p> <p>e) Over Kshs. 16 million NB:</p> <p><i>(Attach proof i.e copies of completion certificate, LPO or award letters.</i></p>	6		
		8		
5	Provide audited financial records for last two years (4mks for each of the two years)	8		
6	<p>Company turnover for the last two years</p> <p>a) Less than Kshs. 5 million</p> <p>b) Kshs. 6 – 10 million</p> <p>c) Kshs. 11- 20 million</p>	3	6	9
		12		
7	<p>Profitability of the company for the last two years</p> <p>a) Less than Kshs. 1 million profit</p> <p>b) Kshs. 1-5 million profit</p> <p>c) Kshs. 5-10 million profit</p> <p>d) Above 10 million</p>	3	6	9
		12		
8	<p>Have you been involved in any litigation [Yes/No]- (4Mks)</p> <p><i>(Attach an affidavit)- (2Mks)</i></p>	6		

9	Details of company directors and their addresses. a) b) c)	6		
10	CVs of key personnel (atleast 3 key personnel) Degree in the relevant field (4Mks for each) Diploma in the relevant field(2Mks for each)	12 6		
	Craft certificate in the relevant field(1Mk for each)	3		
10	<u>Certification</u> I/we certify that the information provided herein is correct and legally binding. Name..... Signature..... Date..... Official stamp.....	6		
	TOTAL SCORE	100		

The minimum technical score to proceed to Price Comparison stage is 60%. Firms that do not achieve this target will be eliminated at this level.

1.3 Price Comparison stage

The bidders will be ranked from the lowest evaluated to the highest. The lowest bidder will be recommended for award.

2. Joint Ventures

The information listed in above shall be provided for each partner of the joint venture.

- a) The information required in 1.1 – 1.3 above shall be provided for the joint venture.

- b) Attach the power of attorney of the signatory(ies) of the tender authorizing signature of the tender on behalf of the joint venture
- c) Attach the Agreement among all partners of the joint venture (and which is legally binding on all partners), which shows that:
 - a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
 - b) one of the partners will be nominated as being in charge, authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture; and
 - c) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

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 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: _____ (*Name of Employer*)

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 2 (d) 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: K.
pound.....

Name of your bankers.....

Branch.....

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:

	<i>Name in full</i>	<i>Nationality</i>	<i>Citizenship Details</i>	<i>Shares</i>
1.....				
2.....				
3.....				

Part 2(c) – Registered Company:

Private or public.....

State the nominal and issued capital 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(Name of Employer)
who
has interest in this firm? Yes/No.....(Delete as
necessary)

I certify that the information given above is
correct.

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

- Attach proof of citizenship