

**CHUKA**



**UNIVERSITY**

**PROPOSED ELECTRIC FENCE  
AT KAIRINI FARM**

**TENDER NUMBER: CU / OPNT /04 /2019-2020**

**Prepared by  
Chuka University Quantity Surveyor**

**May 2019**

## CONTRACT BILLS OF QUANTITIES

The contract for the proposed **Electric Fence at Kairini Farm** – Tharaka Nithi County entered into on ..... day of ..... 20 ..... by the under signed parties refers to these Bills of Quantities consisting of all the pages listed in the contents page of these Bills of Quantities and General Specifications dated 1976 all of which shall be read and construed as part of this contract.

### SPECIAL NOTES

The contractor is required to check the number of pages of these Bills of Quantities together with all summaries and should he find any missing or indistinct, he must inform the Quantity Surveyor, Chuka University at once and have the same rectified.

Should the contractor be in any doubt of the precise meaning of any item or figure for any reason whatsoever, he must inform the Quantity Surveyor, Chuka University so that the correct meaning may be decided before the date of submission of tenders.

The contractor shall check the printed hard copy and compare it with the soft copy posted in the website of the Chuka University ([www.chuka.ac.ke](http://www.chuka.ac.ke)). Where there is a difference between the soft copy as posted in the website and the printed copy, the soft copy shall prevail. The contractor shall inform the Quantity Surveyor, Chuka University at once so that corrections are made, before submission of the tenders, in order to ensure that the hard copy is a replica of the posted soft copy.

Neither liability will be admitted nor claim allowed in respect of errors in the contractor's tender due to mistakes in the Bills of Quantities that could have been rectified in the manner described above.

SIGNATURE PAGE AND SPECIAL NOTES

# FORM OF TENDER

Tender for the -----  
-----

In accordance with the special specifications and the following drawings: -  
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To:

THE VICE CHANCELLOR,  
CHUKA UNIVERSITY  
P.O. BOX 109  
CHUKA.

I/we -----  
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(contractors name), under and subject to the conditions of tendering annexed hereto, hereby tender and offer to execute and perform the works, provisions and supply all labour and materials and everything of every kind respectively named, shown, described and / or included to ,in or to be in inferred from the general conditions of contract, specifications and the drawings governing the contract between Chuka University and the main contractor, and in conformity with the said specifications conditions and drawings for the lump sum named herein below.

The undersigned agrees to be bound by and submit to the said general conditions of contract, specifications and priced Bills of Quantities which shall form a basis for the valuation of interim certificates and any extra or omitted work which may from time to time be ordered by the Project Manager (P.M.)

The total sum of this tender in accordance with the specifications and/or Bills of Quantities is the lump sum of Kenya shillings

.....  
.....

Whereas it is understood that you reserve to yourself the right to agree or refuse this tender whether it is lower or higher than any other tender or of the same amount, the undersigned agrees that the tender shall remain valid and shall not be withdrawn within **one hundred and fifty (150) days** from the final date of submission of the tenders stipulated in the advertisement or letter of invitation to tender.

And further the undersigned agrees, in the event of your acceptance of this tender, to enter into a contract as herein before described within fifteen days of posting, or delivery if by hand, of Notification of Award.

Name and address of company.....

.....

Name of person signing on behalf of company.....

Date .....

Binding Signature .....

# **INSTRUCTION TO BIDDERS / TENDERERS**

## Section 1: INSTRUCTION TO BIDDERS / TENDERERS:

### 1.0 Scope of Bid

- 1.1 The Chuka University wishes to receive the bids for The Proposed Electric Fence Contract no..... as defined in these bidding documents, hereinafter referred to as “the works”
- 1.2 Throughout these bidding documents, the terms “bid” and “tender” and their derivatives (bidder/tenderer, bidding/tendering etc. are synonymous, and day means calendar day.

### 2.0 Eligible bidders

- 2.1 This invitation to bid is open to any bidder who meets both the following requirements: -
- i) bidder (including all members of a joint venture and all sub-contractors of a bidder) shall be registered with the Ministry of Works in the categories advertised. A copy of the registration certificate must be submitted with the tender.
  - ii) A bidder (including all members of a joint venture and all sub-contractors of a bidder) shall not be affiliated with a firm or entity: -
    - a) which has provided consulting services during the preparatory stages of the works or of the project of which the works form a part, or
    - b) which has been hired (or is proposed to be hired) as a consultant for the contract.
- 2.2 Bidders shall provide such evidence of their eligibility satisfactory to the Chuka University, as the Chuka University shall reasonably request.

### 3.0 Eligible Materials, Equipment and Services

- 3.1 The materials, equipment and services to be supplied under the contract shall have their origin and quality approved by Chuka University. At the Chuka University’s request, the bidder having offered the lowest evaluated bid may be required to provide evidence of the origin of materials, equipment and services satisfactory to the Chuka University.
- 3.2 For purposes of clause 3 .1 above “origin” means the place where the materials and equipment are mined, grown, produced or manufactured and from which the services are provided.

### 4.0 Qualification of Bidders

- 4.1 To be qualified for award of contract , the bidders shall: -
- i) Submit a written power of attorney authorizing the signatory of the bid to commit the bidder.
  - ii) Update information submitted earlier with their applications for registration, by completing the post qualification forms on pages included in the Bills of Quantities and continue to meet the minimum threshold criteria set out in the forms given under clause 8.1 in regard to financial strength, contract work in hand, future commitments and current litigation and other relevant details pertaining to the capacity and capability of the bidder.
- 4.2 Bids submitted by joint venture of two or more firms as partners shall comply with the following requirements: -
- (a) The bids shall include all the following information: -
    - 1. Copies of original documents defining the constitution of legal status, place of registration and principal places of business

2. Total annual turnover expressed as total volume of construction work performed in each of the last five years.
3. Performance of work of a similar nature and volume over the last five years, and details of other work in hand and contractual commitment
4. Major items of construction equipment proposed for carrying out the contract
5. The qualifications and experience of essential personnel proposed for the administration and execution of the contract, both on and off site.
6. Reports on the financial standing of the bidders including profit and loss statements, balance sheets and auditor's reports for the past five years, and an estimated financial projection for the next two years.
7. Evidence of access to lines of credit, and availability of other financial resources
8. Authority to seek references from the bidder's bankers.
9. Information regarding any current litigation in which the bidder is involved, the parties' concerned, and disputed amount for each joint venture partner. Also, include proposal of works methods and schedules in sufficient details to demonstrate the adequacy of the bidder's proposal to meet the technical specifications and the completion time as specified in these conditions for the joint venture.

- (b) The bid, and in any case of a successful bid, the form of agreement, shall be signed to be legally bidding upon all partners.
- (c) One of the partners shall be nominated, as being in-charge and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners.
- (d) The partner in-charge shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture and the entire execution of the Contract including payment shall be done exclusively with partner in charge.

4.3 All partners of the joint venture shall be liable jointly and severally for execution of the contract in accordance with the Contract terms and a statement to this effect shall be included in the authorization mentioned under (c) above as in the Form of Bid and in the Form of Agreement (in case of successful bid), and a copy of the agreement entered into by the joint venture partners shall be submitted with the Bid.

4.4 Bidders shall also submit proposal of work methods and schedule, in sufficient detail to demonstrate the adequacy of the bidders' proposals to meet the technical specifications and completion time.

**5. One Bid per Bidder.**

5.1 Each bidder shall submit only one bid either by himself, or as a partner in a joint venture. A bidder who submits or participates in more than one bid (other than alternatives pursuant to Clause 17) will be disqualified.

**6. Cost of Bidding.**

6.1 The Bidder shall bear all costs associated with the preparation and submission of his bid and the - Chuka University will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

**7.0 Site visit.**

7.1 The bidder is advised to visit and examine the site of works and its surroundings and obtain for himself on his own responsibility all information necessary for construction of works. The costs of visiting the site shall be at the bidder's own expense.

7.2 The bidder and any of his personnel or agents will be granted permission by the Chuka University to enter upon his premises and lands for the purpose of such inspection, but only upon the express condition that the bidder, his personnel and agents, will release and indemnify the Chuka University and his personnel and agents from and against all liability in

respect thereof and will be responsible for death or personal injury, loss of or damage of property and any other loss, damage, cost and expenses incurred as a result of the inspection.

## **8.0 Content of Bidding Documents**

8.1 The bidding documents are those stated below and should be read in conjunction with any Addenda issued in accordance with Clause 10:

- 1 Instructions to Bidders.
2. Post qualification forms.
3. Form of Tender.
4. Form of Bid Security
5. Form of Employment of Apprentices.
6. Conditions of Contract
7. Technical Specifications.
8. Bills of Quantities.

8.2 The bidder is expected to examine carefully the contents of all the above documents. Failure to comply with the requirements of bid submission will be at the bidder's own risk. Pursuant to Clause 26, bids which are not substantially responsive to the requirements of the bidding documents will be rejected. Additional copies of items 3-7 are attached to the letter of invitation.

## **9.0 Clarification of Bidding Documents.**

9.1 A prospective bidder requiring any clarification of the bidding documents may notify Chuka University in writing or by cable (hereinafter, the term "cable" is deemed to include telex, E-mail and facsimile) at the Chuka University's address indicated in the invitation of Bids. Chuka University will respond to any request for clarification, which he receives earlier than 7 days prior to the deadline for submission of bids. Copies of the Chuka University's response will be forwarded to all purchasers of the bidding documents, including a description of the enquiry but without identifying its source.

## **10. Amendment of Bidding Documents.**

10.1 At any time prior to the deadline for submission of bids, Chuka University may for any reason whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by issuing addenda.

10.2 Any addendum thus issued shall be part of bidding documents pursuant to sub-clause 8.1 and shall be communicated in writing or by cable to all purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum by cable to the Chuka University.

10.3 To afford prospective bidder reasonable time in which to take an addendum into account in preparing their bids, Chuka University shall extend as necessary the deadline for submission of bids, in accordance with Clause 20.

## **11.0 Language of Bid.**

11.1 The bid, and all correspondence and document related to the bid exchanged by the bidder and Chuka University shall be written in the English language. Supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the above stated language, in which case for purposes of interpretation of the bid, the English translation shall prevail.

## **12.0 Documents Comprising the Bid**

12.1 The bids submitted by the bidder shall comprise the documents listed under sub-clause 8.1 which shall be filled-in without exception.

## **13. Bid Prices.**

- 13.1 Unless stated otherwise in the bidding documents, the Contract shall be for the whole works as described in sub-clause 1.1, based on the schedule of unit rates and prices submitted by the bidder.
- 13.2 The bidder shall fill in rates and prices for all items of the works described in the Bills of Quantities. Items against which no rate or price is entered by the bidder will not be paid for by the Chuka University when executed and shall be deemed covered by the other rates and prices in the Bills of Quantities.
- 13.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and total bid price submitted by the bidder and the evaluation and comparison of bids by Chuka University shall be made accordingly.

#### 14. Currencies of Bid and Payment.

- 14.1 The currency of bid and payment shall be in Kenya Shilling.

#### 15. Bid Validity.

- 5.1 Bids shall remain valid for a period of 90 days after the date of bid opening specified in Clause 23
- 15.2 In exceptional circumstances, prior to expire of the original bid validity period, Chuka University may request that the bidders extend the period of validity for a specified additional period. The request and responses thereto shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for the period of the extension and in compliance with clause 16 in all respects.

#### 16. Bid Security

- 16.1 The bidder shall furnish, as part of his bid, a bid security in the sum and form stated in the invitation to tender advertisement. Failure to comply with this shall lead to automatic disqualification at the tender opening stage.
- 16.2 The bid security shall, at the bidder's option, be in the form of a **Banker's Cheque, bank draft, standby letter of credit or guarantee from a bank** or approved insurance company **located in Kenya or a foreign bank which has been determined by the bidder to be acceptable to the** Chuka University. The format of the bank guarantee shall be in accordance with one of the sample forms of bid security included in the post qualification forms, other formats may be permitted, subject to the prior approval of the Chuka University. Letters of credit, bank guaranteed issued as surety for the bid shall be valid for 28 days beyond the validity of the bid.
- 16.3 Any bid not accompanied by an acceptable bid security shall be rejected by Chuka University as non-responsive. Bid Security Guarantees issued by institutions other than those mentioned in clause 16.2 will not be accepted.
- 16.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but not later than 28 days after the expiration of the period of bid validity
- 16.5 The bid security of the successful bidder will be returned when the bidder has signed the Agreement and furnished the required performance security.
- 16.6 The bid security may be forfeited.
- (a) If the bidder withdraws his bid during the period of bid validity.
- (b) In the case of a successful bidder, if he fails within the specified time limit to
- (i) Sign the Agreement.



(ii) Furnish the required performance Bond.

**17. Alternative Proposals by Bidders.**

17.1 Bidders shall submit offers, which comply with the requirements of the bidding documents, including the basic technical design as indicated in the drawings and specifications. Alternatives will not be considered. The attention of bidders is drawn to the provisions of Clause 26 regarding the rejection of bids, which are not substantially responsive to the requirements of the bidding documents.

**18.0 Format and signing of Bid.**

18.1 The bidder shall prepare one **ORIGINAL DOCUMENT (HARD COPY)** comprising the bid as described in Clause 12 of these Instructions to Bidders

18.2 The original bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the bidder, pursuant to sub-clauses 4.1 (a) or 4.2 (c), as the case may be. All pages of the bid where entries or amendments have been made shall be signed by the persons signing the bid.

18.3 The bid shall contain no alterations, omissions or additions, except those to comply with instructions issued by the Chuka University, or as necessary to correct errors made by the bidder, in which case such corrections shall be signed by the person or persons signing the bid.

18.4 Failure to enclose the soft copy of the Bid Documents will render the bid non-responsive

**19. Sealing and Marking of Bids.**

19.1 The bidder shall seal together the hard and soft copy of the original bid in an inner and outer envelope, duly marking the envelopes as hard copy and soft copy respectively.

19.2 The inner and out envelopes shall: -

(a) Be addressed to

**THE VICE CHANCELLOR  
CHUKA UNIVERSITY  
P.O BOX 109  
CHUKA**

(b) Bear the following identification

Bid for: **Proposed Electric Fence at Kairini Farm Chuka University**

Bid reference number .....

DO NOT OPEN BEFORE **12.00 Noon** on .....

19.3 In addition to the identification required in sub-clause 19.2, the inner envelope shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared "late" pursuant to Clause 21.

19.4 If the outer envelope is not sealed and marked as above, Chuka University will assume no responsibility for the misplacement or premature opening of the bid.

**20. Deadline for submission of bids.**

20.1 Bids must be received by the Chuka University at the address specified above not later than the date and time stated in letter of invitation / or advertisement.

20.2 Chuka University may, at his discretion, extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the Chuka University and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

## **21 Late Bids.**

21.1 Any bid received by Chuka University after the deadline for submission of bids prescribed in Clause 20 will be returned unopened to the bidder.

## **22. Modification and Withdrawal of Bids.**

22.1 The bidder may modify or withdraw his bid after bid submission, provided that written notice of the modification or withdrawal is received by Chuka University prior to the deadline for submission of bids.

22.2 The bidder's modification or withdrawal notice shall be prepared, sealed, marked and delivered in accordance with provisions of Clause 18, with the outer and inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL", as appropriate.

22.3 No bid may be modified by the bidder after the deadline for submission of bids.

22.4 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in the forfeiture of the bid security pursuant to Clause 16.

## **23 Bid Opening.**

3.1 Chuka University will open the bids, including modifications made pursuant to Clause 22, in the presence of bidders' representatives who choose to attend at the venue, date and time stated in the letter of invitation or advertisement. The bidders' representatives who are present shall sign a register evidencing their attendance.

23.2 Envelopes marked "WITHDRAWAL" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause 22 shall not be opened.

23.3 The bidders' names, the Bid Prices, the total amount of each Bid, any discounts, bid modifications and withdrawals, the presence or absence of bid security and the issuer of the Bid Security, and such other details as Chuka University may consider appropriate, will be announced by the Chuka University at the opening. Any bid price or discount which is not read out and recorded at bid opening will not be taken into account in bid evaluation,

23.4 Chuka University shall record the information disclosed to those present in accordance with sub-clause 23.3 to be signed by both the Chuka University's and bidder's representatives.

## **24. Process to be Confidential**

24.1 Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process

until the award to the successful bidder had been announced. Any effort by a bidder to influence the Chuka University's processing of bids or award decisions may result in the rejection of the bidder's bid.

**25. Clarification of bids.**

25.1 To assist in the examination, evaluation and comparison of bids, Chuka University may, at his discretion, ask any bidder for clarification of his bid, including breakdowns of unit rates, the request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the bid shall be permitted.

**26. Examination of bids and determination of responsiveness.**

26.1 Prior to the detailed evaluation of bids, the Chuka University will determine whether each bid: -

- (i) Has been properly signed.
- (ii) Is accompanied by the required securities.
- (iii) Is substantially responsive to the requirements of the bidding documents; and
- (iv) Provides any clarification and/or substantiation that Chuka University may require pursuant to sub-clause 25.

26.2 A substantially responsive bid is one which, conforms to all the terms, conditions and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one: -

- (i) Which affects in any substantial way the scope, quality or performance of the works
- (ii) Which limits in any substantial way, inconsistent with the bidding documents, Chuka University's rights or the bidder's obligations under the contract or
- (iii) Whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive Bids.

26.3 If a bid is not substantially responsive, it will be rejected by Chuka University and may not subsequently be made responsive by correction or withdrawal of the non-conforming.

**27. Correction Errors**

27.1 Bids determined to be substantially responsive will be checked by Chuka University for any arithmetic errors. Errors will be corrected by the Chuka University as follows: -

- (a) Where there is a discrepancy between the unit in figure and in words, the amount in works will govern 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 govern, unless in the opinion of Chuka University there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern and the unit rate will be corrected.
- (c) If it is found on examination of a tender that there is any discrepancy between the total amount of the bid and the amount arrived at by valuing the quantities set out in the Bills of Quantities at the rates or prices set against them by the bidder, then the figure shall be corrected arithmetically and the difference between the bid and the corrected total shall be applied as a percentage adjustment of addition or omission on all rates so that the Original Bid amount remains unaltered. When calculating the percentage adjustment the total cost of provisional sums, contingencies and any other items of a similar nature shall be excluded.

- (d) If it is found on examination that any rates for the works appear to be unreasonable then the attention of the bidder shall be drawn to any such items; if as a result of this the Bidder asks for any rates to be changed then the arithmetical effect of any change will be adjusted in accordance with C above.

## **28 Evaluation and Comparison of bids.**

- 28.1 Chuka University will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 26.
- 28.2 In evaluating the bids, Chuka University will determine for each bid the evaluated bid price by adjusting the Bid Price as follows: -
  - (a) Making any correction for errors pursuant to Clause 27
  - (b) Excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including Day works, where priced competitively.
- 28.3 Chuka University reserves the right to accept or reject any unsolicited variation, deviation or alternative offer. Variations, deviations, alternative offers and other factors which are in excess of the requirements of the bidding documents or otherwise result in the accrual of unsolicited benefits to Chuka University shall not be taken into account in bid evaluation.
- 28.4 If the bid of the successful bidder is seriously unbalanced in relation to the Chuka University's estimate of the cost of work to be performed under the Contract, Chuka University may require the bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, Chuka University may require that the amount of the performance security set forth in Clause 34 be increased at the expense of the successful bidder to a level sufficient to protect the Chuka University against financial loss in the event of default of the successful bidder under the Contract.

## **29 Preference for Local Bidder.**

- 29.1 Local bidders shall provide all evidence necessary to prove that they meet the following criteria to be eligible for a 10 percent margin of preference in the comparison of their bids with those of bidders who do not qualify for the preference. They should: -
  - (a) Be registered within Kenya.
  - (b) Have majority ownership by indigenous Kenyans.
  - (c) Not subcontract more than 50 percent of the works measured in terms of value to foreign contractors.
- 29.2 Joint ventures between domestic and foreign firms shall be eligible for the margin of preference provided the domestic partner or partners.
  - (a) Individually satisfy the above criteria of eligibility for the preference.
  - (b) Demonstrate a beneficiary interest of not less than 50 percent in the joint venture, as demonstrated by the profit and loss sharing provisions, if any, of the joint agreement.

- (c) Will, under the arrangement proposed, carry out at least 50 percent of the works measured in terms of value (always provided that the domestic partner or partners are qualified to carry out that amount of work, in accordance with the criteria of sub-clause 4.3), including any services provided by the partners and fees and expenses paid to the partners.

### **30.0 Award**

30.1 Subject to Clause 3.1, Chuka University will award the contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the 'Lowest evaluated Bid Price', provided that such bidder has been determined to be: -

- (i) Eligible in accordance with the provisions of sub-Clause 2. 1; and
- (ii) Qualified in accordance with the provision of Clause 4.

### **31.0 Chuka University's right to accept any bid and to reject any or all bids.**

31.1 Notwithstanding Clause 30, Chuka University reserves the right to accept or reject any bid and to annul the bidding process and reject all bids, at any time prior to award of contract without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Chuka University's action

### **32.0 Notification of Award.**

32.1 Prior to expiration of the period of bid validity prescribed by the Chuka University, Chuka University will notify the successful bidder by letter that his bid has been accepted. This letter (hereinafter referred to as the "Notification of Award") shall name the sum which the Chuka University will pay the Contractor in consideration of the execution, completion and maintenance of the works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called "the Contract Sum").

32.2 The Notification of Award will constitute an intention to enter into a formal Contract.

32.3 Upon the furnishing by the successful bidder of preference security (and domestic preference security where required), Chuka University will promptly notify the other bidders that their bids have been unsuccessful.

### **33.0 Signing of Agreement**

33.1 At the same time that he notifies the successful bidder that his bid has been accepted, Chuka University shall prepare the Contract Agreement documents for signature. The Contract Agreement must then be signed by the Contractor.

### **34 Performance Security**

34.1 After 14 days of receipt of the Notification of Award from the Chuka University, the successful bidder shall furnish to Chuka University a Performance Guarantee in the form of a **Banker's Cheque, bank draft, standby letter of credit or guarantee from a bank or insurance company approved by the commissioner of Insurance located in Kenya or a foreign bank which has been determined by the bidder to be acceptable to Chuka University** in an amount of 5 percent of the Contract Price in accordance with the conditions of Contract. The forms of performance bond provided with these instructions may be used or some other forms acceptable to Chuka University.

34.2 If the performance Guarantee is to be provided by the successful bidder in the form of a bank guarantee, it shall be issued either: -

- (a) At the bidder's option, by a bank located in Kenya or a foreign bank through a correspondent bank located in Kenya, or

(b) With the agreement of Chuka University directly by a foreign bank acceptable to Chuka University.

34.3 Failure of the successful bidder to comply with the requirements of Clauses 33 or 34 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

<b>Clause</b>	<b>Description</b>	<b>KES</b>
Clause 1	Scope of Bid	
Clause 2	Eligible bidders	
Clause 3	Eligible materials, Equipment and Services	
Clause 4	Qualification of Bidders	
Clause 5	One bid per Bidder	
Clause 6	Cost of bidding	
Clause 7	Site visit	
Clause 8	Content of Bidding documents	
Clause 9	Clarification of Bidding Documents	
Clause 10	Amendment of Bidding Documents	
Clause 11	Language of Bids	
Clause 12	Documents comprising the Bid	
Clause 13	Bid prices	
Clause 14	currency of Bid prices	
Clause 15	Bid validity	
Clause 16	Bid Security	
Clause 17	Alternative proposal by Bidders	
Clause 18	Format and signing of Bid	
	<b>Total to collection</b>	

Clause	Description	KES
Clause 19	Sealing and marking of bids	
Clause 20	Deadline for submission of bids	
Clause 21	Late Bids	
Clause 22	Modification and withdrawal of bids	
Clause 23	Bid opening	
Clause 24	Process to be confidential	
Clause 25	Clarification of bids	
Clause 26	Determination of responsiveness	
Clause 27	Error correction	
Clause 28	Evaluation and comparison of bids	
Clause 29	Preference for local bidders	
Clause 30	Award	
Clause 31	Right to accept or reject any bid	
Clause 32	Notification of award	
Clause 33	Signing of agreement	
Clause 34	Performance security	
	<b>Total to collection</b>	

**COLLECTION PAGE FOR INSTRUCTIONS TO BIDDERS**

Total from page 13 .....

Total from above .....

**Total for Instruction to bidders carried to Preliminary Summary** \_\_\_\_\_

## **Appendix to the General Instructions to Tenderers**

The following information regarding the particulars of the tender shall complement/ supplement or amend the provisions of the instructions to tenderers. Wherever there is a conflict between the provision of the instructions to tenderers and the provisions of the appendix, the provisions of the appendix herein shall prevail over those of the instructions to tenderers.

### **EVALUATION CRITERIA**

#### **STAGE 1: (Technical Responsiveness)**

For a bid to be technically In accordance with the requirements of the Conditions of Tendering under Clauses 26 only substantially responsive tenders will be subjected to detailed evaluation. For purposes of Clauses 26, a responsive tender is one which conforms to all the terms, conditions and specifications of the tendering documents, without material deviation or reservation. The mandatory conditions to be complied with are –

- a) Form of tender (properly filled and signed)
  - b) Bid security (from approved institutions, proper validity period, as per the sample form)
  - c) Class of registration with National Construction Authority as stated in the advertisement
  - d) Current tax compliance certificate
  - e) All documents shall be serialized in the format 1, 2, 3.....including g pages provided by Chuka University and the total number of pages clearly stated.
  - f) Must have completed a similar electric fencing work of at least 10 million tender sum.
  - g) Must have an annual turnover of at least 30 million (read from 2017 or 2018 audited annual accounts)
  - h) Must attach certificate of attendance of pre-tender site visit.
  - i) Must not have had a building project with Chuka University that has been terminated or current one that is behind schedule without approved extension of time.
- ii) A company shall fulfil all the conditions above in order to proceed to technical evaluation.
  - iii) Any company that does not fulfil any of the above conditions shall be disqualified from further evaluation at this stage.

#### **Stage 2: Technical Evaluation**

The bids will be evaluated according to the criterial set out in table A below

**Table A.**



item	Criterion		Marks allocation	Total Score	
1	Similar Works (KES)		10 - < 20 Million	3	14
			20 - < 25 Million	5	
			25 - < 30 Million	8	
			30 - < 35 Million	11	
			35 million and over	14	
2	Qualified personnel (Proposed staff in-charge for the project qualification in relevant trade)		Diploma	1	3
			Degree	2	
			Post graduate certificate and above	3	
3	Brochures proving that the proposed item meets the minimum specifications.		For chemical impregnation standards for the fencing posts	8	22
			For Type of fence energiser	2	
			For Solar panels	2	
			For Lead Acid Solar Battery	2	
			For fence wires and accessories	8	
4	Financial status KES	For limited companies	Accounts of 2017	1	3
			Accounts of 2018	3	
		Current Asset base (KES)	0 - < 300,000	1	8
	300,000 - < 600,000		2		
	600,000- < 900,000		4		
	900,000- < 1,200,000		6		
	Over 1,200,000		8		
	For business names	Attach bank statement for last three months showing three months (gross deposits as follows: KES )	0 - < 150,000	1	
			150,000- < 300,000	2	
			300,000 - < 450,000	4	
			450,000 - < 600,000	6	
Over 600,000			8		
<b>Total score</b>				<b>50</b>	

- iii) All companies that score 24 marks and below (out of 50) will be disqualified from further evaluation and will not proceed to financial analysis.
- iv) All companies that score 25 and above (out of 50) will proceed to financial analysis

**Stage 3: FINANCIAL ANALYSIS**

- i) The tenders will be ranked from the lowest to the highest
- ii) The three lowest ranked bid will be checked for arithmetic errors
- iii) Due diligence may be done on the three lowest bidders

**RECOMMENDATION FOR AWARD**

The bidder with the lowest evaluated tender will be recommended for award if the tender figure is within the current market price.

**GENERAL CONDITIONS OF CONTRACT 1**

## **Section C: General Conditions of Contract 1.**

### **Definitions**

1.1 In this Contract, the following terms shall be interpreted as indicated:

- (a) "The Contract" means the agreement entered into between CHUKA UNIVERSITY and the tenderer, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- (b) "The Contract Price" means the price payable to the tenderer under the Contract for the full and proper performance of its contractual obligations.
- (c) "The Goods" means all of the equipment, machinery, and/or other materials, which the tenderer is required to supply to CHUKA UNIVERSITY under the Contract.
- (d) "Employer" means, Chuka University, the organization to which the contract will be rendered.
- (e) "The tenderer" means the individual or firm supplying the works under this Contract. 2. Application.

2.1 These General Conditions shall apply in all Contracts made by CHUKA UNIVERSITY for the procurement of works .

### **3. Country of Origin**

3.1 For purposes of this Clause, "origin" means the place where the Goods were mined, grown, or produced.

3.2 The origin of Goods and Services is distinct from the nationality of the tenderer.

### **4. Standards**

4.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications.

### **5. Use of Contract Documents and Information**

5.1 The Candidate shall not, without CHUKA UNIVERSITY's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of CHUKA UNIVERSITY in connection therewith, to any person other than a person employed by the tenderer in the performance of the Contract.

5.2 The tenderer shall not, without CHUKA UNIVERSITY prior written consent, make use of any document or information enumerated in paragraph 5.1 above.

5.3 Any document, other than the Contract itself, enumerated in paragraph 5.1 shall remain property of CHUKA UNIVERSITY and shall be returned (all copies) to CHUKA UNIVERSITY on completion of the Tenderer's performance under the Contract if so required by CHUKA UNIVERSITY.

### **6. Patent Rights**

6.1 The tenderer shall indemnify CHUKA UNIVERSITY against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in Kenya.

### **7. Performance bond**

- 7.1 Within fourteen (14) days of receipt of the notification of Contract award, the successful tenderer shall furnish to CHUKA UNIVERSITY the performance bond in the amount specified in Special Conditions of Contract.
- 7.2 The proceeds of the performance bond shall be payable to CHUKA UNIVERSITY as compensation for any loss resulting from the Tenderer's failure to complete its obligations under the Contract.
- 7.3 The performance bond shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to CHUKA UNIVERSITY and shall be in the form of a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in Kenya or abroad, acceptable to CHUKA UNIVERSITY, in the form provided in the tender documents.
- 7.4 The performance bond will be discharged by CHUKA UNIVERSITY and returned to the Candidate not later than thirty (30) days following the date of completion of the Tenderer's performance obligations under the Contract, including any warranty obligations, under the Contract.

## **8. Inspection and Tests**

- 8.1 CHUKA UNIVERSITY or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications. CHUKA UNIVERSITY shall notify the tenderer in writing, in a timely manner, of the identity of any representatives retained for these purposes.
- 8.2 The inspections and tests may be conducted on the premises of the tenderer or its subcontractor(s), at point of delivery, and/or at the Goods' final destination. If conducted on the premises of the tenderer or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to CHUKA UNIVERSITY.
- 8.3 Should any inspected or tested Goods fail to conform to the Specifications, CHUKA UNIVERSITY may reject the Goods, and the tenderer shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to CHUKA UNIVERSITY.
- 8.4 CHUKA UNIVERSITY's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival shall in no way be limited or waived by reason of the Goods having previously been inspected, tested, and passed by CHUKA UNIVERSITY or its representative prior to the Goods' delivery.
- 8.5 Nothing in paragraph 8 shall in any way release the tenderer from any warranty or other obligations under this Contract.

## **9. Packing**

- 9.1 The tenderer shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract.
- 9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract.

## **10. Delivery and Documents**

- 10.1 Delivery of the Goods shall be made by the tenderer in accordance with the terms specified by CHUKA UNIVERSITY in its Schedule of Requirements and the Special Conditions of Contract.

## **11. Insurance**

- 11.1 The Goods supplied under the Contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery in the manner specified in the Special conditions of contract

## **12. Payment**

- 12.1 The method and conditions of payment to be made to the tenderer under this Contract shall be specified in Special Conditions of Contract.
- 12.2 Payments shall be made promptly by CHUKA UNIVERSITY as specified in the contract.

## **13. Prices**

- 13.1 Prices charged by the tenderer for Goods delivered and Services performed under the Contract shall not, with the exception of any price adjustments authorized in Special Conditions of Contract, vary from the prices by the tenderer in its tender.

## **14. Assignment.**

- 14.1 The tenderer shall not assign, in whole or in part, its obligations to perform under this Contract, except with CHUKA UNIVERSITY's prior written consent.

## **15. Sub-contracts**

- 15.1 The tenderer shall notify CHUKA UNIVERSITY in writing of all subcontracts awarded under this Contract if not already specified in the tender. Such notification, in the original tender or later, shall not relieve the tenderer from any liability or obligation under the Contract.

## **16. Termination for Default**

- 16.1 CHUKA UNIVERSITY may, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the tenderer, terminate this Contract in whole or in part:
- (a) if the tenderer fails to deliver any or all of the Goods and services within the period(s) specified in the Contract, or within any extension thereof granted by CHUKA UNIVERSITY.
  - (b) if the tenderer fails to perform any other obligation(s) under the Contract.
  - (c) if the tenderer, in the judgment of CHUKA UNIVERSITY has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- 16.2 In the event CHUKA UNIVERSITY terminates the Contract in whole or in part, it may procure, upon such terms and in such manner as it deems appropriate, works similar to those undelivered, and the tenderer shall be liable to CHUKA UNIVERSITY for any excess costs for such similar works.

## **17. Liquidated Damages**

- 17.1 If the tenderer fails to deliver the works within the period(s) specified in the contract, CHUKA UNIVERSITY shall, without prejudice to its other remedies under the contract, deduct from the contract prices liquidated damages sum equivalent to 0.5% of the delivered price of the delayed works up to a maximum deduction of 10% of the delayed works. After this the employer may consider termination of the contract.

## **18. Resolution of Disputes**

- 18.1 CHUKA UNIVERSITY and the tenderer shall make every effort to resolve amicably by direct informal Negotiation any disagreement or dispute arising between them under or in connection With the contract.
- 18.2 If, after thirty (30) days from the commencement of such informal negotiations both Parties have been unable to resolve amicably a contract dispute, either party may require adjudication in an agreed national forum using the laws of the Republic of Kenya.

## **19. Language and Law**

- 19.1 The language of the contract and the law governing the contract shall be English language and the Laws of Kenya respectively unless otherwise stated.

## **20. Force Majeure**

- 20.1 The tenderer shall not be liable for forfeiture of its performance, security, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

## **SPECIAL CONDITIONS OF CONTRACT GENERAL**

Special Conditions of Contract supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract.

### **1.0 Definitions (Clause 1.1) The Employer is:**

Chuka University P. O. Box 109 – 060400 CHUKA

### **2.0 Inspection and Tests (Clause 8)**

All documentation catalogues and manufacturers' Authorizations must accompany the bid.

### **3.0 Delivery and Documents (Clause 10)**

The works shall be performed at CHUKA UNIVERSITY Kairini farm, about 23 km from Chuka town in Tharaka Nithi County . The desired contract period is 24 weeks from date of commencement

### **4.0 Payment (Clause 12)**

Payment will be made for works done and materials on site at the time of valuation. Valuations will be done monthly and honoured within one month from date of certification of the payment certificate.

### **5.0 Resolution of Disputes (Clause 18)**

In case any dispute or difference shall arise between the Employer or the Project Manager on its 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 a **competent court of law**.

### **6.0 Notices (Clause 19)**

For the purposes of this Sub-Clause, the respective addresses are:

The Employer:

The Vice Chancellor, Chuka University P. O. Box 109 – 60400 CHUKA.

## **SECTION F. TECHNICAL SPECIFICATIONS**



## **Technical Specifications**

### **GENERAL**

1. These specifications describe the basic requirements for goods. Tenderers are requested to submit with their offers the detailed specifications, drawings, catalogues, etc. for the products they intend to supply.
2. Tenderers must indicate on the specifications sheets whether the equipment offered comply with each specified requirement.
3. All the dimensions and capacities of the equipment to be supplied shall not be less than those required in these specifications. Deviations from the basic requirements, if any shall be explained in detail in writing with the offer, with supporting data such as calculation sheets, etc. CHUKA UNIVERSITY reserves the right to reject the products, if such deviations shall be found critical to the use and operation of the products.
4. The tenderers are requested to present information along with their offers as follows:
  - i) Shortest possible delivery period of each product.
  - ii) Information on proper representative and/or workshop for back-up service/repair and maintenance including their names and addresses.

### **DETAILED TECHNICAL SPECIFICATIONS**

#### **Material Specification for Kairini Farm Fence**

All materials to be used in fence construction must conform to the following specifications.

#### **POSTS**

##### **Wooden Posts-strainers**

- i) All wooden posts shall be of hardwood wattle or eucalyptus saligna
- ii) pressure treated in creosote or celcured in copper chrome arsenate (CCA){tanalith}C to the chemical penetration of at least 1 inch (25mm)
- iii) Size shall be at least 150 – 175mm diameter, length 9 feet
- iv) Knot free and split free
- v) Bound at top and bottom by a HTS wire 2.5mm four times and stapled by 1 inch staple nail.
- vi) Not older than two years Kenya Bureau of Standards Test Certificate is required

##### **Wooden Posts - line posts**

- i) All wooden posts shall be of hardwood wattle or eucalyptus saligna

- ii) pressure treated in creosote or celcured in copper chrome arsenate (CCA){tanalith}C to the chemical penetration of at least 1 inch (25mm)
- iii) Size shall be at least 150 – 175mm diameter, length 9 feet
- iv) Knot free and split free
- v) Bound at top and bottom by a HTS wire 2.5mm four times and stapled by 1 inch staple nail.
- vi) Not older than two years Kenya Bureau of Standards Test Certificate is required

## **Detailed Technical Specifications- Posts**

### **Straightness**

A straight line from the center of the butt to the center of the tip shall be entirely within the body of the post

### **Chemical penetration**

Minimum thickness should be 25mm thickness as observed at each end of the post.

### **Dimensions**

Strainer posts 9 Feet

Line posts 9 Feet

### **Banding**

The top and bottom end of each post shall be tied 4 times with 2.5mm HT wire.

### **Allowed defects**

Posts should be of sound wood free from decay, insect attack, rot and any damages caused by handling and processing.

## **WIRES**

### **a) Plain Wire**

2.5mm HTS Plain wire to be used shall be:-

- (i) High tensile steel wire of steel class BS 1044 or BS 1065
- (ii) Size for live and earth wires shall be 2.5mm diameter with a tolerance of 0.02mm.
- (iii) Shall have a tensile strength of 1200-1400N
- (iv) Shall have a weight of zinc coating of not less than 350gm/m<sup>2</sup>
- (v) Gauge 12.5
- (vi) Not older than two years Kenya Bureau of Standards Test Certificate required.

**b) Soft Wire / Stay wire shall be: -**

- (i) Mild steel wire.
- (ii) Have weight of zinc coating of not less than 350gm/m<sup>2</sup>
- (iii) Size shall be 4.0mm diameter mainly used for stay and cross wire on a Strainer assembly.
- (iv) Shall have tensile strength of not less than 500N
- (vi) Not older than two years Kenya Bureau of Standards Test Certificate required.

**c) Plain Wire 1.6mm HTS**

Plain wire to be used shall be:-

- (i) High tensile steel wire of steel class BS 1044 or BS 1065
- (ii) Size for live and earth wires shall be 1.6mm diameter with a tolerance of 0.02mm.
- (iii) Shall have a tensile strength of 1200-1400N
- (iv) Shall have a weight of zinc coating of not less than 350gm/m<sup>2</sup>
- (vi) Not older than two years Kenya Bureau of Standards Test Certificate required.

**d) Lead wire (Under gate cables)**

- (i) Shall be double insulated in tough polyethylene insulating material
- (ii) Shall have a lead wire of 1.6mm diameter
- (iv) Shall have a lead wire of copper or aluminum.
- (iv) Shall have resistance of less than 350 ohms per km
- (v) Insulator should be greater than 20KV

**NAILS**

**Staples Nails (U-nails)**

Staples (U-nails) shall be:

- (i) Heavily galvanized wire nails
- (ii) Long shank
- (iii) 2 inch long.
- (iv) Hot dipped.

- (v) 4mm wire gauge.

### **Wire Nails (5" Building nails)**

Wire nails shall be:

- (i) Heavily galvanized wire nails
- (ii) Long shank
- (iii) 5 inch long.
- (iv) Hot dipped.

## **INSULATORS**

### **a) Line Insulators**

- (i) W-Insulators
- (ii) Polyethylene material
- (iii) Open-face for good drainage
- (iv) With holes for anchoring staples
- (v) Made of UV protected polythene material
- (Vi) Strong jaws to withstand large horizontal and vertical movements.

### **b) Strain end Insulators**

- (i) Bull nose type
- (ii) Porcelain material
- (iii) Fire resistant
- (iv) Long tracking distance
- (v) High quality white glaze finish
- (v) Size 38mm)

### **c) Corner and Line Insulator**

- (i) Reel round Insulator
- (ii) Porcelain material
- (iii) Fire resistant
- (iv) High quality glaze finish
- (v) 40mm diameter

## **ENERGIZERS**

### **a) Solar Powered energizers**

- (i) Shall be fully modular
- (ii) 16 joules stored energy
- (iii) In built lightening protection
- (iv) Select switch for at least 3 different voltage power settings (High, Medium, Low)
- (v) Input voltage of 12volts, Output --Short pulse > 9 KV (Off load), > 7 KV (500 Ohms load)
- (vi) Self-contained charging facilities.
- (vii) Battery consumption 1.2Amps to 0.3Amps
- (vii) LED light indicator to show when the energizer is OK and flashes Red on Low Battery voltage.

### **b) Main energizer (With remote / 6 No. fence monitor & way splitter.)**

- (i) Shall be fully modular
- (ii) At least 50 joules stored energy
- (iii) In built lightening protection
- (iv) Remote ON/OFF operation capability.
- (vi) Must have a status LED.
- (v) Capable of integration with: -
  - Alarm system
  - Remote and fault finder
  - SMS Energizer controller
  - Fence monitor.

## **OTHERS**

### **a) Lightning Diverter / Arrester**

At all places where energizers are installed there shall be a lightning diverter

- (i) Standard lightening diverter is completed with spiral wire earthing system connection.
- (ii) Adjustable to suit any module.

- (iii) Shall be able to divert multiple lightning strikes to the ground (earth)
- (iv) Size 90x100x60mm

**b) Earth peg**

- (i) 2mx20mm diameter GI pipe class C
- (ii) With a heavily galvanized Joint clamp 200mm below the upper tip.

**SOLAR PANEL**

**Solar Panel**

- i) 140Watts Solar Panels - Qty
- ii) Maximum Power ( $P_{max}$ )  $\geq$  140 Watts
- iii) Voltage at  $P_{max}$  ( $V_{max}$ )  $\geq$  17.5V
- iv) Current at  $P_{max}$  ( $I_{max}$ )  $\geq$  7.43A
- v) Short-circuited current ( $I_{sc}$ )  $\geq$  8.44A
- vi) Open circuit voltage ( $V_{oc}$ )  $\geq$  22.0V
- vii) No of cells  $\geq$  36
- viii) Monocrystalline or Polycrystalline photovoltaic Solar Modules
- ix) Operating temperature - 40°C to 85 °C
- x) Factory installed by-pass /blocking diodes in the solar module
- xi) Warranty Period - Minimum 15 Years

**BATTERY**

**Lead Acid Flooded Solar Battery**

- i) Battery Capacity - 12V / 100Ah Lead Acid Flooded / Gel with catalyst  
Battery at C20 Rating
- ii) Deep Cycle Solar Battery Technology.
- iii) Dry Charged / Maintenance free
- iv) Plate Design - Tubular Plates
- v) Battery Casing shall be Transparent (Clear Glass) with Minimum / Maximum electrolyte level markings for clear Electrolyte Level Inspection and Maintenance.
- vi) Battery acid of the correct specific gravity recommended by the manufacturer shall be supplied separately in plastic containers for ease of transportation and safety.

- vii) warranty shall be 2 years

## **CHARGE CONTROLLER / REGULATOR**

### **Charge Controller / regulator**

- i) 12V /30A Solar Charge Controller with LCD display / Digital Meter that will display charging / Load Current, Battery / Solar Voltage
- ii) System Voltage =>12V / 24V Auto detect
- iii) Maximum Output Current => 30A Continuous Rating
- iv) Electronic Protections => Reverse Current at Night
- v) Charging Regulation => Bulk, Absorption, Float, Equalize
- vi) Technology => Trak Star Maximum Power Point Tracking (MPPT) Charge Controller
- vii) Operating temperature => - 40°C to +60°C
- viii) Warranty Period =>Minimum 5 Years

## **SIGNS**

### **Hatari / Warning / Danger signs**

- (i) Shall be made of UV protected material
- (ii) Size 250mmx150mmx1mm
- (iii) Colour shall be bright yellow
- (iv) Inscription written in black "ELECTRIC FENCE"
- (v) Eligible with lettering not less than 25mm in height
- (vi) A legal requirement for all electric installations

## **GATES**

### **Spring Gates**

- (i) Shall be bright coloured spiral wire (white)
- (ii) Shall have Plastic bright coloured handle
- (iii) Metals spring shall be galvanized and powder coated white
- (iv) Shall have an insulated gate handle
- (v) Shall have a galvanized non turning hook that retracts to hanging position. (550mm)

## **CLAMPS**

### Joint Clamp

- (i) Shall be made of Aluminum or Mild steel
- (ii) With space for wire grip
- (iii) L-shaped
- (iv) Size 30mmx25mmx20mm (WHD)

## **INVERTER**

### Inverter Charger

- (i) Power output should not be less than 1000W
- (ii) Output wave in pure wave sine form
- (iii) Must have both low and high trip.
- (iv) Rating of 230V, 50Hz frequency.
- (v) Must have overload and short circuit protection.
- (v) Normal efficiency of more than 88%.
- (vi) Should by-pass power with battery connection.
- (vi) Alligator clips for connection to battery.

## **VOLTMETER**

### Digital voltmeter

Shall be Electric Fence Digital Voltmeter: -

- (i) Sealed and water proof.
- (ii) Made of Polycarbonate case
- (iii) Capable of displaying voltage increments along the fence line
- (iv) Capable of displaying High Voltage pulse voltage.
- (iv) Shall Auto turn - On
- (v) Capable of displaying low battery condition
- (vi) Able to measure earth voltages
- (vii) Has replaceable lead (1 Meter long) and clips
- (viii) Size 66mm x 125mm x 25mm



## **STRAINER**

Single Strainer.

- i) Smooth grip jaws.
- ii) Effective grip on Zinc aluminum fencing wire.
- iii) 1 inch diameter handle and easy on hand.

## **SCHEDULE OF REQUIREMENTS AND PRICE SCHEDULE**

(Prices given shall be inclusive of all necessary preliminaries, Value Added Tax and any other applicable statutory levy)

**BILL OF QUANTITIES FOR 11 KM OF KAIRINI FARM**

ITEM	DESCRIPTION	QTY	UNIT	RATE	KES
A	Line posts	1250	number		
B	Stainer posts	300	number		
C	2.5mm HTS plain wire (25KG rolls)	220	rolls		
D	4.0mm diameter soft wire	4200	metres		
E	1.6mm HTS plain wire (25kg rolls)	3	rolls		
F	Flood gate controller	4	number		
G	Porcelain reel insulators	240	number		
H	Porcelain strain end insulators	500	number		
J	W - Insulators	8300	number		
K	Joint clamps	500	number		
L	Hatari signs	140	number		
M	Spring gates	4	number		
N	Single strainer	5	number		
P	Energiser 16 joules stored energy	1	number		
Q	Energiser main 50 joules stored energy	1	number		
R	Solar panel 140 watts	1	number		
S	Inverter	1	number		
T	Charge regulator	1	number		
U	Lightning arrester	1	number		
V	Digital voltmeter	2	number		
W	Staples (U-Nails)	550	kg		
X	125mm wire nails	490	kg		
Y	Undergate cables	3	rolls		
Z	Earth peg	70	number		
<b>Total carried to form of tender</b>					