

COUNTY GOVERNMENT OF KITUI



KITUI MUNICIPALITY

**PROPOSED MECHANICAL INSTALLATIONS WORKS AT PROPOSED CONSTRUCTION OF
KITHOMBOANI MODERN MARKET FOR KITUI MUNICIPALITY, COUNTY GOVERNMENT OF
KITUI**

Bills of Quantities and Tender Specifications
For
Mechanical Services Installation Works

November 2019

Client

**Kitui Municipality, County Government of
Kitui
P.O. Box 33-90200
KITUI**

Architects

**Heritage Associates Limited
P.O Box 56293-00200
NAIROBI**

Quantity Surveyors

**Costbill Systems Limited
P.O Box 8593-00100
NAIROBI**

Structural / Civil Engineers

**Grid Consult Limited
P.O. Box 1285-00502
NAIROBI**

Services Engineers

**Rex Consultants Limited
P.O. Box 73878 - 00200
NAIROBI**

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INVITATION FOR TENDERS

TENDER REFERENCE NO: TENDER NO. CGoKTI/KM/75/2019-2020

The **County Government of Kitui** invites sealed tenders for the **proposed mechanical installations works at proposed construction of Kithomboani modern market for kitui municipality, county government of kitui**

Interested eligible candidates may obtain further information and inspect tender documents at **Supply Chain Management Offices** during normal working hours.

- 1.3 A complete set of tender documents may be obtained by interested candidates.
- 1.4 Prices quoted should be net inclusive of all taxes, must be in Kenya shillings and shall remain valid for **120**days from the closing date of tender.
- 1.5 Completed tender documents are to be enclosed in plain sealed envelopes marked with tender reference number and be deposited in the Tender Box Outside **Chief Officers Office- ministry of Lands, Infrastructure, Housing and Urban Development on or before 16th December, 2019 at 12:00 noon** to be addressed to **Municipal Manager, County Government of Kitui, P.O Box 33-90200 Kitui.**
- 1.6 Tenders will be opened immediately thereafter in the presence of the candidates or their representatives who choose to attend.

For (County Secretary)

(iiA)

DEFINITIONS

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

The Employer	Kitui Municipality, County Government of Kitui P.O Box 33-90200 <u>KITUI</u>
Architect	Heritage Associate Ltd P.O. Box 56293 - 00200 <u>NAIROBI</u>
Engineer	Rex Consultants P.O. Box 73878 -00200 <u>NAIROBI</u>
Quantity Surveyor	Costbill System Ltd P.O. Box 8593 - 00100 <u>NAIROBI</u>
Structural Engineer	Grid Consult Ltd P.O. Box 1285-00502 <u>NAIROBI</u>
Employer's representative	This shall mean the project manager and shall be The chief Officer Ministry of Lands, Infrastructure, Housing & Urban Development (LIHUD) P.O Box 33-90200 <u>KITUI</u>
Main contractor	The firm appointed to carry out Builders works
Sub- contractor	The firm appointed to carry out Plumbing, Drainage and Fire Fighting Installation
The Site	Kithomboani Market – Kitui County.

FORM OF TENDER

To: The Municipality Manager
Kitui Municipality
P.O Box 33-90200
KITUI.

**PROJECT NAME: PROPOSED MECHANICAL INSTALLATIONS WORKS AT
PROPOSED CONSTRUCTION OF KITHOMBOANI MODERN
MARKET FOR KITUI MUNICIPALITY, COUNTY GOVERNMENT
OF KITUI.**

TENDER NO: CGOKTI/KM/75/2019/2020

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

Kshs.....**[Amount in figures]**

Kenya Shillings.....
.....
.....**[Amount in words]**

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

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

Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us.

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

Dated this day of20.....

Signaturein the capacity of

duly authorized to sign tenders for and on behalf of:

.....**[Name of Tenderer]**
of.....**[Address of Tenderer]**
PIN No.
VAT CERTIFICATE No.

Witness: Name

Address

Signature

(iii)

FORM OF TENDER SECURITY FROM BANK

WHEREAS.....(hereinafter called “the Tenderer”) has submitted his tender dated.....for **Supply, Delivery, Installation, Testing and Commissioning of Mechanical Services Systems at the Proposed Kitui Fresh Produce Market at Kithomboani Market For Kitui Municipality, County Government of Kitui.**

KNOW ALL PEOPLE by these presents that WE.....having our registered office at(hereinafter called “the Bank”), are bound unto(hereinafter called “the Employer” in the sum of Kshs.....for which payment well and truly to be made to the said Employer, the Bank bind itself, its successors and assigns by these presents sealed with the Common Seal of the said Bank thisDay 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 this tender by the Employer during the period of tender validity:
 - a) fails or refuses to execute the form of Agreement in accordance with the Instructions to Tenderers, if required; or
 - b) fails or refuses to furnish the Performance Security, in accordance with the Instructions to Tenderers;

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

This guarantee will remain in force **for a period of 150 days from the date of tender opening**, and any demand in respect thereof should reach the Bank not later than the said date.

[Date]

[Signature of the Bank]

[Witness]

[Seal]

FORM OF TENDER SECURITY FROM INSURANCE

WHEREAS (hereinafter called “the Tenderer”) has submitted his tender dated For the **Supply, Delivery, Installation, Testing and Commissioning of Mechanical Services Systems at the Proposed Kitui Fresh Produce Market at Kithomboani Market for Kitui Municipality, County Government of Kitui.**

KNOW ALL PEOPLE by these presents that WE Having our registered office at (hereinafter called “the Insurance”), are bound unto (hereinafter called “the Employer”) in the sum of KShs..... for which payment well and duly to be made to the said Employer, the Insurance binds itself, its successors and assigns by these presents sealed with the Common Seal of the said Insurance thisDay 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 his is due to him, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force for 150 days after the date of tender opening, and any demand in respect thereof should reach the Insurance not later than the said date.

.....
(Date)

.....
(Signature of the Insurance)

.....
(Witness)

.....
(Seal)

TENDER EVALUATION CRITERIA

1) Preliminary evaluation (Mandatory requirements)

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

Item	Description	Remarks (X/√)
1.	Form of tender dully filled	
2.	Prescribed tender security (bid bond) as detailed in the tender advert.(KSHS.510,000.00)	
3.	Company registration or Incorporation certificate (Copy)	
4	Copy of IDs of directors	
5	Current NCA registration certificate in NCA 3. (Plumbing, drainage and firefighting installation category) (NB: Provide copy of registration and renewal licence certificate)	
6	Valid Single Business Permit (Copy)	
7	Valid KRA Pin certificate (copy)	
8	Valid tax compliance certificate (Copy)	
9	Attach an affidavit on litigation and arbitration history	
10	Dully filled and signed self-declaration form	
11	Dully filled confidential business Questionarre	
12	Bidders are required to comply with section 74(1)(i) of Public Procurement and Asset Disposal Act 2015. That makes it mandatory “requirement for serialization/pagination of bid documents by the bidder” for each bid submitted	
	RESPONSIVENESS	

Tenders that do not meet any of the above requirements shall be considered not responsive, disqualified and not considered for further evaluation.

(vi)

B) Technical Evaluation

The minimum Technical scores assigned to this project is 70% because of the relatively high expectations of the project completion success which is largely tied to technical and similar past performance levels of the applicant. The technical parameters to be considered are:

Item	Description	SCORE
1.	EXPERIENCE (Attach completion certificates or proof)	Max 30
	Previous similar works successfully completed (equivalent or above the contract price) (each 10 marks) Attach completion certificates.	
	Previous similar works successfully completed (below the contract price) (each 5 marks) Attach completion certificates.	
	Ongoing projects of similar nature and complexity (each 3 marks) Attach proof.	
2.	PLANT AND EQUIPMENT	Max 15
	(Attach log books for vehicles or purchase receipts for equipment or lease agreements) Fabrication yard A list of office equipment (e.g. Computers, Photocopiers/printer) List of site equipment/tools Transport equipment (Tippers, Browsers, pickups (Have necessary equipment- 15 marks, have half or more but not enough as listed- 7marks, not provided- 0 marks)	
3.	KEY PERSONNEL	Max 25
	Qualifications and experience of three (3) key personnel (Attach CVs and certificates) a) Project manager who is a holder of a degree in relevant construction discipline with a minimum of 2 years' relevant work experience (10 marks) b) Site agent who is a holder of a degree or diploma in Mechanical Engineering (Degree 10 marks, Diploma 5 marks) c) Site foremen who is a holder of a diploma in Plumbing and Drainage works (5 marks)	
4.	FINANCIAL CAPACITY	Max 30

	Bank statement for the last 6 months (Account balance should be atleast 25% of the contract sum) - (10 marks)	
	Audited financial reports for the last 2 years (10 marks)	
	Proof of access to credit facility- attach bank opinion letter (10 marks)	
	TOTAL	MAX 100

NB: Only contractors who attain 70% and above scores shall qualify for consideration based on the lowest evaluated total bid price.

C) Financial evaluation

Bidders who have met technical requirements above shall be considered for financial evaluation

The tenderer submitting the lowest evaluated financial bid will be declared the winning bidder.

The employer may negotiate with the successful bidder before award as prescribed for in the Public Procurement and Asset Disposal Act,2015.

SECTION A
INSTRUCTIONS TO TENDERERS

INSTRUCTIONS TO TENDERERS

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INSTRUCTION TO TENDERERS

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

GENERAL

1. Definitions

- (a) **“Tenderer”** means any person or persons partnership firm or company submitting a sum or sums in the Bills of Quantities in accordance with the Instructions to Tenderers, Conditions of Contract Parts I and II, Specifications, Drawings and Bills of Quantities for the work contemplated, acting directly or through a legally appointed representative.
- (b) **“Approved tenderer”** means the tenderer who is approved by the Employer.
- (c) Any noun or adjective derived from the word **“tender”** shall be read and construed to mean the corresponding form of the noun or adjective **“bid”**. Any conjugation of the verb “tender” shall be read and construed to mean the corresponding form of the verb “bid.”
- (d) **“Employer”** means a **Kitui Municipality, County Government of Kitui.**

2. Eligibility and Qualification Requirements

- 2.1 This invitation to tender is open to all tenderers to all eligible tenderers as per the tender advertisement notice.
- 2.2 To be eligible for award of Contract, the tenderer shall provide evidence satisfactory to the Employer of their eligibility under Sub clause 2.1 above and of their capability and adequacy of resources to effectively carry out the subject Contract. To this end, the tenderer shall be required to update the following information already submitted during prequalification:-
 - (a) Details of experience and past performance of the tenderer on the works of a similar nature within the past five years and details of current work on hand and other contractual commitments.
 - (b) The qualifications and experience of key personnel proposed for administration and execution of the contract, both on and off site.

- (c) Major items of construction plant and equipment proposed for use in carrying out the Contract. Only reliable plant in good working order and suitable for the work required of it shall be shown on this schedule. The tenderer will also indicate on this schedule when each item will be available on the Works. Included also should be a schedule of plant, equipment and material to be imported for the purpose of the Contract, giving details of make, type, origin and CIF value as appropriate.
- (d) Details of subcontractors to whom it is proposed to sublet any portion of the Contract and for whom authority will be requested for such subletting in accordance with clause 4 of the Conditions of Contract.
- (e) A draft Program of Works in the form of a bar chart and Schedule of Payment which shall form part of the Contract if the tender is accepted. Any change in the Program or Schedule shall be subjected to the approval of the Engineer.
- (f) Details of any current litigation or arbitration proceedings in which the Tenderer is involved as one of the parties.

2.3 Joint Ventures

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

- (a) The tender, and in case of a successful tender, the Form of Agreement, shall be signed so as to be legally binding on all partners.
- (b) One of the partners shall be nominated as being in charge; and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners.
- (c) The partner in charge shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture and the entire execution of the Contract including payment shall be done exclusively with the partner in charge.
- (d) All partners of the joint venture shall be liable jointly and severally for the execution of the Contract in accordance with the Contract terms, and a relevant statement to this effect shall be included in the authorization mentioned under (b) above as well as in the Form of Tender and the Form of Agreement (in case of a successful tender).
- (e) A copy of the agreement entered into by the joint venture partners shall be submitted with the tender.

3. Cost of Tendering

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

4. Site Visit

- 4.1 The tenderer is advised to visit and examine the Site and its surroundings and obtain for himself on his own responsibility, all information that may be necessary for preparing the tender and entering into a contract. The costs of visiting the Site shall be the tenderer's own responsibility.
- 4.2 The tenderer and any of his personnel or agents will be granted permission by the Employer to enter upon premises and lands for the purpose of such inspection, but only upon the express condition that the tenderer, his personnel or agents, will release and indemnify the Employer from and against all liability in respect of, and will be responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused, which but for the exercise of such permission, would not have arisen.
- 4.3 The Employer shall organize a site visit at a date to be notified. A representative of the Employer will be available to meet the intending tenderers at the Site.

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

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

TENDER DOCUMENTS

5. Tender Documents

- 5.1 The Tender documents comprise the documents listed herebelow and should be read together with any Addenda issued in accordance with Clause 7 of these instructions to tenderers.
- a. Form of Invitation for Tenders
 - b. Instructions to Tenderers

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

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

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

6. Clarification of Tender Documents

6.1 A prospective tenderer requiring any clarification of the tender documents may notify the Employer in writing or by telex, cable or facsimile at the Employer's mailing address indicated in the Invitation to Tender. The Employer will respond in writing to any request for clarification which he receives earlier than 5 days prior to the expiry of 28 days deadline for the submission of tenders. Written copies of the Employer's response (including the query but without identifying the source of the inquiry) will be sent to all prospective tenderers who have purchased the tender documents.

7. Amendment of Tender Documents

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

- 7.2 Any Addendum will be notified in writing or by cable, telex or facsimile to all prospective tenderers who have purchased the tender documents and will be binding upon them.
- 7.3 If during the period of tendering, any circular letters (tender notices) shall be issued to tenderers by, or on behalf of, the Employer setting forth the interpretation to be placed on a part of the tender documents or to make any change in them, such circular letters will form part of the tender documents and it will be assumed that the tenderer has taken account of them in preparing his tender. The tenderer must promptly acknowledge any circular letters he may receive.
- 7.4 In order to allow prospective tenderers reasonable time in which to take the Addendum into account in preparing their tenders, the Employer may, at his discretion, extend the deadline for the submission of tenders.

PREPARATION OF TENDERS

8. Language of Tender

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

9. Documents Comprising the Tender

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

10. Tender Prices

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

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

The prices and unit rates in the Bills of Quantities are to be the full [all-inclusive] value of the work described under the items, including all costs and expenses which may be necessary and all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based. All duties and taxes and other levies payable by the Contractor under the Contract or for any other cause as of the date 28 days prior to the deadline for the submission of tenders, shall be included in the rates and prices and the total tender prices submitted by the Tenderer.

Each price or unit rate inserted in the Bills of Quantities should be a realistic estimate for completing the activity or activities described under that particular item and the tenderer is advised against inserting a price or rate against any item contrary to this instruction.

Every rate entered in the Bills of Quantities, whether or not such rate be associated with a quantity, shall form part of the Contract. The Employer shall have the right to call for any item of work contained in the Bills of Quantities, and such items of work to be paid for at the rate entered by the tenderer and it is the intention of the Employer to take full advantage of unbalanced low rates.

- 10.3 Unless otherwise specified the tenderer must enter the amounts representing 10% of the sub-total of the summary of the Bills of Quantities for Contingencies and Variation of Prices [V.O.P.] payments in the summary sheet and add them to the sub-total to arrive at the tender amount.
- 10.4 The tenderer shall furnish with his tender written confirmation from his suppliers or manufacturers of unit rates for the supply of items listed in the Conditions of Contract clause 47 where appropriate.
- 10.5 The rates and prices quoted by the tenderer are subject to adjustment during the performance of the Contract only in accordance with the provisions of the Conditions of Contract. The tenderer shall complete the schedule of basic rates and shall submit with his tender such other supporting information as required under clause 47 of the Conditions of Contract Part II.

11. Currencies of Tender and Payment

- 11.1 Tenders shall be priced in Kenya Shillings and the tender sum shall be in Kenya Shillings.
- 11.2 Tenderers are required to indicate in the Statement of Foreign Currency Requirements, which forms part of the tender, the foreign currency required by them. Such currency should generally be the currency of the country of the tenderer's main office. However, if a substantial portion of the tenderer's expenditure under the Contract is expected to be in countries other than his country of origin, then he may state a corresponding portion of the contract price in the currency of those other countries. However, the foreign currency element is to be limited to two (2) different currencies and a maximum of 30% (thirty percent) of the Contract Price.
- 11.3 The rate of rates of exchange used for pricing the tender shall be selling rate or rates of the Central Bank ruling on the date thirty (30) days before the final date for the submission of tenders.
- 11.4 Tenderers must enclose with their tenders, a brief justification of the foreign currency requirements stated in their tenders.

12. Tender Validity

- 12.1 The tender shall remain valid and open for acceptance for a period of one hundred and twenty (120) days from the specified date of tender opening or from the extended date of tender opening (in accordance with clause 7.4 here above) whichever is the later.
- 12.2 In exceptional circumstances prior to expiry of the original tender validity period, the Employer may request the tenderer for a specified extension of the period of validity. The request and the responses thereto shall be made in writing or by cable, telex or facsimile. A tenderer may refuse the request without forfeiting his Tender Surety. A tenderer agreeing to the request will not be required nor permitted to modify his tender, but will be required to extend the validity of his Tender Surety correspondingly.

13. Tender Surety

- 13.1 The tenderer shall furnish as part of his tender, a Tender Surety in the amount stated in the Appendix to Instructions to Tenderers.
- 13.2 The unconditional Tender Surety shall be in Kenya Shillings and be in form of a certified cheque, a bank draft, an irrevocable letter of credit or a guarantee from a reputable Bank approved by the Employer located in the Republic of Kenya.

The format of the Surety shall be in accordance with the sample form of Tender Surety included in these tender documents; other formats may be permitted subject to the prior approval of the Employer. The Tender Surety shall be valid for twenty eight (28) days beyond the tender validity period.

- 13.3 Any tender not accompanied by an acceptable Tender Surety will be rejected by the Employer as non-responsive.
- 13.4 The Tender Sureties of unsuccessful tenderers will be returned as promptly as possible but not later than twenty eight (28) days after concluding the Contract execution and after a Performance Security has been furnished by the successful tenderer. The Tender Surety of the successful tenderer will be returned upon the tenderer executing the Contract and furnishing the required Performance Security.
- 13.5 The Tender Surety may be forfeited:
 - (a) if a tenderer withdraws his tender during the period of tender validity: or
 - (b) in the case of a successful tenderer, if he fails
 - (i) to sign the Agreement, or
 - (ii) to furnish the necessary Performance Security
 - (c) if a tenderer does not accept the correction of his tender price pursuant to clause 23.

14. No Alternative Offers

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

Only one tender may be submitted by each tenderer either by himself or as partner in a joint venture.
- 14.2 The tenderer shall not attach any conditions of his own to his tender. The tender price must be based on the tender documents. The tenderer is not required to present alternative construction options and he shall use without exception, the Bills of Quantities as provided, with the amendments as notified in tender notices, if any, for the calculation of his tender price.

Any tenderer who fails to comply with this clause will be disqualified.

15. Pre-Tender Meeting

- 15.1 The tenderer's designated representative is invited to attend a pre-tender meeting, which if convened, will take place at the venue and time stated in the Invitation to Tender. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 15.2 The tenderer is requested as far as possible to submit any questions in writing or by cable, to reach the Employer not later than seven days before the meeting. It may not be practicable at the meeting to answer questions received late, but questions and responses will be transmitted in accordance with the following:
- (a) Minutes of the meeting, including the text of the questions raised and the responses given together with any responses prepared after the meeting, will be transmitted without delay to all purchasers of the tender documents. Any modification of the tender documents listed in --Clause 9 which may become necessary as a result of the pre-tender meeting shall be made by the Employer exclusively through the issue of a tender notice pursuant to Clause 7 and not through the minutes of the pre-tender meeting.
 - (b) Non-attendance at the pre-tender meeting will not be cause for disqualification of a bidder.

16. Format and Signing of Tenders

- 16.1 The tenderer shall prepare his tender as outlined in clause 9 above and mark appropriately one set "ORIGINAL" and the other "COPY".
- 16.2 The copy of the tender and Bills of Quantities shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the tenderer. Proof of authorization shall be furnished in the form of the written power of attorney which shall accompany the tender. All pages of the tender where amendments have been made shall be initialed by the person or persons signing the tender.
- 16.3 The complete tender shall be without alterations, interlineations or erasures, except as necessary to correct errors made by the tenderer, in which case such corrections shall be initialed by the person or persons signing the tender.

SUBMISSION OF TENDERS

17. Sealing and Marking of Tenders

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

- 17.2 The inner and outer envelopes shall be addressed to the Employer at the address stated in the Appendix to Instructions to Tenderers and bear the name and identification of the Contract stated in the said Appendix with a warning not to open before the date and time for opening of tenders stated in the said Appendix.
- 17.3 The inner envelopes shall each indicated the name and address of the tenderer to enable the tender to be returned unopened in case it is declared “late”, while the outer envelope shall bear no mark indicating the identity of the tenderer.
- 17.4 If the outer envelope is not sealed and marked as instructed above, the Employer will assume no responsibility for the misplacement or premature opening of the tender. A tender opened prematurely for this cause will be rejected by the Employer and returned to the tenderer.

18 Deadline for Submission of Tenders

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

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

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

- 18.2 The Employer may, at his discretion, extend the deadline for the submission of tenders through the issue of an Addendum in accordance with clause 7, in which case all rights and obligations of the Employer and the tenderers previously subject to the original deadline shall thereafter be subject to the new deadline as extended.
- 18.3 Any tender received by the Employer after the prescribed deadline for submission of tender will be returned unopened to the tenderer.

19 Modification and Withdrawal of Tenders

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

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

- 19.2 No tender may be modified subsequent to the deadline for submission of tenders.
- 19.3 No tender may be withdrawn in the interval between the deadline for submission of tenders and the period of tender validity specified on the tender form. Withdrawal of a tender during this interval will result in the forfeiture of the Tender Surety.
- 19.4 Subsequent to the expiration of the period of tender validity prescribed by the Employer, and the tenderer having not been notified by the Employer of the award of the Contract or the tenderer does not intend to conform with the request of the Employer to extend the prior of tender validity, the tenderer may withdraw his tender without risk of forfeiture of the Tender Surety.

TENDER OPENING AND EVALUATION

20 Tender Opening

- 20.1 The Employer will open the tenders in the presence of the tenderers' representatives who choose to attend at the time and location indicated in the Letter of Invitation to Tender. The tenderers' representatives who are present shall sign a register evidencing their attendance.
- 20.2 Tenders for which an acceptable notice of withdrawal has been submitted, pursuant to clause 19, will not be opened. The Employer will examine the tenders to determine whether they are complete, whether the requisite Tender Sureties have been furnished, whether the documents have been properly signed and whether the tenders are generally in order.
- 20.3 At the tender opening, the Employer will announce the tenderer's names, total tender price, tender price modifications and tender withdrawals, if any, the presence of the requisite Tender Surety and such other details as the Employer, at his discretion, may consider appropriate. No tender shall be rejected at the tender opening except for late tenders.
- 20.4 The Employer shall prepare minutes of the tender opening including the information disclosed to those present.
- 20.5 Tenders not opened and read out a tender opening shall not be considered further for evaluation, irrespective of the circumstances.

21 Process to be Confidential

- 21.1 After the public opening of tenders, information relating to the examination, clarification, evaluation and comparisons of tenders and recommendations concerning the award of Contract shall not be disclosed to tenderers or other persons not officially concerned with such process until the award of Contract is announced.
- 21.2 Any effort by a tenderer to influence the Employer in the process of examination, evaluation and comparison of tenders and decisions concerning award of Contract may result in the rejection of the tenderer's tender.

22 Clarification of Tenders

- 22.1 To assist in the examination, evaluation and comparison of tenders, the Employer may ask tenderers individually for clarification of their tenders, including breakdown of unit prices. The request for clarification and the response shall be in writing or by cable, facsimile or telex, but no change in the price or substance of the tender shall be sought, offered or permitted except as required to confirm the correction of arithmetical errors discovered by the employer during the evaluation of the tenders in accordance with clause 24.
- 22.2 No Tenderer shall contact the Employer on any matter relating to his tender from the time of the tender opening to the time the Contract is awarded. If the tenderer wishes to bring additional information to the notice of the Employer, he shall do so in writing.

23 Determination of Responsiveness

- 23.1 Prior to the detailed evaluation of tenders, the Employer will determine whether each tender is substantially responsive to the requirements of the tender documents.
- 23.2 For the purpose of this clause, a substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tender documents without material deviation or reservation and has a valid bank guarantee. A material deviation or reservation is one which affects in any substantial way the scope, quality, completion timing or administration of the Works to be undertaken by the tenderer under the Contract, or which limits in any substantial way, inconsistent with the tender documents, the Employer's rights or the tenderers obligations under the Contract and the rectification of which would affect unfairly the competitive position of other tenderers who have presented substantially responsive tenders.
- 23.3 Each price or unit rate inserted in the Bills of Quantities shall be a realistic estimate of the cost of completing the works described under the particular item including allowance for overheads, profits and the like. Should a tender be seriously unbalanced in relation to the Employer's estimate of the works to be performed under any item or groups of items, the tender shall be deemed not responsive.

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

24 Correction of Errors

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

- (a) Where there is a discrepancy between the amount in figures and the amount in words, the amount in words will govern.
- (b) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will prevail, unless in the opinion of the Employer, there is an obvious typographical error, in which case adjustment will be made to the entry containing that error.
- (c) The amount stated in the tender will be adjusted in accordance with the above procedure for the correction of errors and, with concurrence of the tenderer, shall be considered as binding upon the tenderer. If the tenderer does not accept the corrected amount, the tender may be rejected and the Tender Security may be forfeited in accordance with clause 13.

25 Conversion to Single Currency

- 25.1 For compensation of tenders, the tender price shall first be broken down into the respective amounts payable in various currencies by using the selling rate or rates of the Central Bank of Kenya ruling on the date twenty eight (28) days before the final date for the submission of tenders.
- 25.2 The Employer will convert the amounts in various currencies in which the tender is payable (excluding provisional sums but including Dayworks where priced competitively) to Kenya Shillings at the selling rates stated in clause 25.1.

26 Evaluation and Comparison of Tenders

- 26.1 The Employer will evaluate only tenders determined to be substantially responsive to the requirements of the tender documents in accordance with clause 23.
- 26.2 In evaluating tenders, the Employer will determine for each tender the evaluated tender price by adjusting the tender price as follows:

- (a) Making any correction for errors pursuant to clause 24.
 - (b) Excluding Provisional Sums and provision, if any, for Contingencies in the Bills of Quantities, but including Day works where priced competitively.
- 26.3 The Employer reserves the right to accept any variation, deviation or alternative offer. Variations, deviations, alternative offers and other factors which are in excess of the requirements of the tender documents or otherwise result in the accrual of unsolicited benefits to the Employer, shall not be taken into account in tender evaluation.
- 26.4 Price adjustment provisions in the Conditions of Contract applied over the period of execution of the Contract shall not be taken into account in tender evaluation.
- 26.5 If the lowest evaluated tender is seriously unbalanced or front loaded in relation to the Employer's estimate of the items of work to be performed under the Contract, the Employer may require the tenderer to produce detailed price analyses for any or all items of the Bills of Quantities, to demonstrate the relationship between those prices, proposed construction methods and schedules. After evaluation of the price analyses, the Employer may require that the amount of the Performance Security set forth in clause 29 be increased at the expense of the successful tenderer to a level sufficient to protect the Employer against financial loss in the event of subsequent default of the successful tenderer under the Contract.
- 26.6 Firms incorporated in Kenya where indigenous Kenyans own 51% or more of the share capital shall be allowed a 10% preferential bias provided that they do not sub-contract work valued at more than 50% of the Contract Price excluding Provisional Sums to a non-indigenous sub-contractor.

AWARD OF CONTRACT

27 Award

- 27.1 Subject to clause 27.2, the Employer will award the Contract to the tenderer whose tender is determined to be substantially responsive to the tender documents and who has offered the lowest evaluated tender price subject to possessing the capability and resources to effectively carry out the Contract Works.
- 27.2 The Employer reserves the right to accept or reject any tender, and to annul the tendering process and reject all tenders, at any time prior to award of Contract, without thereby incurring any liability to the affected tenderers or any obligation to inform the affected tenderers of the grounds for the Employer's action.

28 Notification of Award

- 28.1 Prior to the expiration of the period of tender validity prescribed by the Employer, the Employer will notify the successful tenderer by cable, telefax or telex and confirmed in writing by registered letter that his tender has been accepted. This letter (hereinafter and in all Contract documents called "Letter of Acceptance") shall name the sum(hereinafter and in all Contract documents called "the Contract Price") which the Employer will pay to the Contractor in consideration of the execution and completion of the Works as prescribed by the Contract.
- 28.2 Notification of award will constitute the formation of the Contract.
- 28.3 Upon the furnishing of a Performance Security by the successful tenderer, the unsuccessful tenderers will promptly be notified that their tenders have been unsuccessful.
- 28.4 Within twenty eight [28] days of receipt of the form of Contract Agreement from the Employer, the successful tenderer shall sign the form and return it to the Employer together with the required Performance Security.

29 Performance Guarantee

- 29.1 Within twenty eight [28] days of receipt of the notification of award from the Employer, the successful tenderer shall furnish the Employer with a Performance Security in an amount stated in the Appendix to Instructions to Tenderers.
- 29.2 The Performance Security to be provided by the successful tenderer shall be an unconditional Bank Guarantee issued at the tenderer's option by an established and a reputable Bank approved by the Employer and located in the Republic of Kenya and shall be divided into two elements namely, a performance security payable in foreign currencies (based upon the exchange rates determined in accordance with clause 35.4 of the Conditions of Contract) and a performance security payable in Kenya Shillings. The value of the two securities shall be in the same proportions of foreign and local currencies as requested in the form of foreign currency requirements.
- 29.3 Failure of the successful tenderer to lodge the required Performance Security shall constitute a breach of Contract and sufficient grounds for the annulment of the award and forfeiture of the Tender Security and any other remedy under the Contract the Employer may award the Contract to the next ranked tenderer.

30 Advance Payment

An advance payment, if approved by the Employer, shall be made under the Contract, if requested by the Contractor, in accordance with clause 23.7 of the Conditions of Contract. The Advance Payment Guarantee shall be denominated in the proportion and currencies named in the form of foreign currency requirements. For each currency, a separate guarantee shall be issued. The guarantee shall be issued by a bank located in the Republic of Kenya, or a foreign bank through a correspondent bank located in the Republic of Kenya, in either case subject to the approval of the Employer.

APPENDIX TO INSTRUCTIONS TO TENDERERS

1. CLAUSE 2.1

Change to read “This invitation to tender is open to all eligible tenderers as per the tender advertisement notice”.

2. OMIT

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

3. MODIFY CLAUSE 5.1(h)

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

4. ADD TO CLAUSE 13.1

Amount of tender surety shall be **as per the tender advertisement notice.**

5. ADD TO CLAUSE 13.2

Tender surety shall be valid for a period of 150 days from the date of tender opening.

6. MODIFY CLAUSE 28.4

Replace “twenty eight (28)” with “seven (7)”.

7. MODIFY CLAUSE 29.1

Replace “twenty eight (28)” with “seven (7)”. Amount of performance security shall be five per cent (5%).

8. ADD TO CLAUSE 29.2

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

9. ADD TO CLAUSE 24

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

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

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

10. MODIFY CLAUSE 10.5

Clause 47 is not part of the Conditions of Contract Part II.

SECTION B

CONDITIONS OF CONTRACT

AND

SUB-CONTRACT AGREEMENT

PART I

CONDITIONS OF CONTRACT

CONDITIONS OF CONTRACT

Definitions

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

“Bills of quantities” means the priced and completed bill of quantities forming part of the tender.

“Compensation Events” are those defined in clause 24 hereunder

“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 Contactor 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 Contactor 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.

“Defects” is any piece of work 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 acceleration in the Works.

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

“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” means the place or places where the permanent Works are to be carried out including workshops where the same is being prepared.

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

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

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

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

“Employer’s Representative” is the person appointed by the Employer and notified to the Contractor for the purpose of supervision of the Works.

“A Variation” is an instruction given by the Employer’s Representative which varies the Works.

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

2. Interpretation

- 2.1 In interpreting the 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) Bills 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 Contract and the law governing the Contract shall be English language and the Laws of Kenya respective 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 Contract 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 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 of Acceleration of Completion Date

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.

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

18. Management Meetings

18.1 A Contractor management meeting shall be held monthly and attended by the Project Manager and the Contractor. 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 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 required 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 instruction 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 defects. 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 Defect 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 Contractor 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 doe 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 cost
- 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 works, 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 cost 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 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 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 more³ 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 works 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 Contract, 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 provision in the Contract Bills of Quantities or Specifications) for permanent incorporation in the Works.

Unless otherwise stated in the Contract, if 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 price 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 price 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 rate.

26. Retention

- 26.1 The Employer shall retain from the 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. Liquidate 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 not 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 Dayworks 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 Dayworks shall be recorded by the Contractor on Forms approved by the Project Manager. Each completed form shall be verified and signed by the Project manager within two days of the work being done.
- 29.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks 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 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

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 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 authorized by the Project Manager.
 - b) The Project Manager instructs the Contractor to delay the progress of the works, and the instruction is not withdrawn within 30 days.
 - c) The 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 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 Contractor 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 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 and 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 o 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 building, 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, hold 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 Contract; 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 Payment 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 his 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) Institute 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 hereunder 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 part:
 - 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 matter 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 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.
- 37.8. The award of such Arbitrator shall be final and binding upon the parties.

APPENDIX TO CONDITIONS OF CONTRACT

CONDITIONS OF CONTRACT CLAUSE 1

The Employer is: **Kitui Municipality, County Government of Kitui.**

Name of Employers Representative:

The Chief Officer
Ministry of Lands, Infrastructure, Housing & Urban
Development (LIHUD)
P.O Box 33-90200
KITUI

CONDITIONS OF CONTRACT CLAUSE 1

The Project Manager is: The Chief Officer
Ministry of Lands, Infrastructure, Housing & Urban
Development (LIHUD)
P.O Box 33-90200
KITUI

CONDITIONS OF CONTRACT CLAUSE 1

The name (and identification number) of the Contract is: **Proposed Kitui Fresh Produce Market for Kitui Municipality, Kitui County Government.**

CONDITIONS OF CONTRACT CLAUSE 1

The Contract Works consist of **Supply, installation, testing and commissioning of Mechanical Services installations works**

CONDITIONS OF CONTRACT CLAUSE 1

The start date shall be **as stated in the letter of acceptance**

CONDITIONS OF CONTRACT CLAUSE 1

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

CONDITIONS OF CONTRACT CLAUSE 2

The following documents also form part of the Contract: **Only as listed in Clause 2 of the conditions of contract.**

CONDITIONS OF CONTRACT CLAUSE 1

The Site is located **at Kithomboani Market –Kitui County**

The Site Possession Date shall be **as per the Sub-Contract Agreement (KABCEC)**

CONDITIONS OF CONTRACT CLAUSE 1

The Defects Liability Period is **6 months from practical completion date**

The following documents also form part of the Contract:

Agreement- Agreement as per the Sub-Contract Agreement (KABCEC) signed between the Main Contractor and Sub-Contractor

Letter of Acceptance- Letter addressed to the Main Contractor by the Project Manager instructing the Main Contractor to enter into Sub-Contract Agreement with the nominated Sub-Contractor

Contractors Tender- The completed tendering document submitted by the Sub-Contractor to the employer

Conditions of Contract- Refers to the Conditions of Contract in the main works and conditions of Sub-Contract as described in the Sub-Contract Agreement (KABCEC)

Specifications- Specifications of Sub-Contract works as described in this document

Drawings- Drawings as described in this document

Bills of quantities/Schedule of Unit Rates- As described in this document

CONDITIONS OF CONTRACT CLAUSE 32

Period of final measurement: **As per the Main Contract.**

INSTRUCTION TO TENDERERS CLAUSE 20

The tender opening date and time is **as stated in the Tender Advertisement Notice.**

INSTRUCTION TO TENDERERS CLAUSE 20

The name and Address of the Employer's representative for the purposes of submission of Tenders is **as stated in the Tender Advertisement Notice.**

INSTRUCTION TO TENDERERS CLAUSE 13

Amount of Tender Security is **as stated in the Tender Advertisement.**

INSTRUCTION TO TENDERERS CLAUSE 29

The amount of performance security is **as stated in the Tender Advertisement.**

CONDITIONS OF CONTRACT CLAUSE 27

Liquidated and Ascertained damages: **As per the Main Contract.**

CONDITIONS OF CONTRACT CLAUSE 23

Period of honouring certificate : **30 days**

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

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

MODIFY CLAUSE 23.7

No advance payment shall be granted

PART II

SUB-CONTRACT AGREEMENT (KABCEC)

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ORIGINAL

COUNTERPART

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1.0 AGREEMENT

1.1 This agreement is made on

between

of (or whose registered office is situated at)

.....

(hereinafter called “the Contractor”) of the one part

and

of (or whole registered office is situated at)

.....

(hereinafter called “the Sub-Contractor”) of the other part:

1.2 SUPPLEMENTAL to an agreement(hereinafter referred to as the “the main contract”)

made on

Between

.....

(hereinafter called “the Employer”) of the one part and the Contractor of the other part based on the Agreement and Conditions of Contract for Building Works, published by the Joint Building Council, Kenya Edition.

1.3 WHEREAS the contractor is desirous of sub-letting to the Sub-Contractor

.....

.....

.....

hereinafter called “the sub-contractor works” at.....
on Land Reference No.....being part of the main contract works.

- 1.4 And whereas the Su-Contractor has supplied the Contractor with a priced copy of the bills of quantities (hereinafter referred to as “the sub-contractor bills”), where applicable, which together with the drawings numbered.....

.....
(hereinafter referred to as “the sub-contract drawings), the specifications and the conditions of sub-contract have been signed by or on behalf of the parties thereto.

And whereas the Sub-Contractor has had reasonable opportunity of inspecting the main contract or a copy thereof except the detailed prices of the Contractor included in the bills of quantities or schedule of rates.

- 1.5 And whereas the Architect, with the approval of the Employer, has nominated the Sub-Contractor to carry out the works described at clause 1.3 herein:

NOW IT IS HEREBY AGREED AS FOLLOWS:

- 1.6 For the consideration herein stated, the Sub-Contractor shall upon and subject to the conditions annexed hereto carry out and complete the sub-contract works shown upon the sub-contract drawings and described by or referred to in the sub-contract bills, specifications and in the said conditions.

- 1.7 The Contractor shall pay the Sub-Contractor the sum of the Kshs (in words).....

.....
.....Kshs.....)
(hereinafter referred to as “the sub-contractor price”) or such sum as shall become payable hereinafter at the times and in manner specified in the said conditions.

- 1.8 The term ‘Architect’, ‘Quantity Surveyor’ and ‘Engineer’, where applicable, shall refer to the persons appointed by the Employer to

- 1.9 administer the sub-contract in accordance with the main contract agreement. Where applicable, reference to the Architect shall be deemed to include reference to the Engineer.
- 1.10 In the even of the need to appoint a replacement Architect, Quantity Surveyor, Engineer or other specialist (whether named in this agreement or not) the Employer shall make such appointment as soon as practicable after the need for such appointment arises and shall communicate the appointment to the Sub-Contractor through the Contract.
- 1.11 Where the sub-contract does not incorporate bills of quantities, the term “sub-contract bills” and “bills of quantities” wherever appearing shall be deemed deleted and replaced with the term “schedule of rates” as applicable.
- 1.12 The terms defined in clause 1.0 of the main contract shall have the same meaning in this sub-contract as that assigned to them therein.
- 1.13 AS WITNESS the hands of the said parties;

Signed by the said

.....(Contractor)

In the presence of

Name

Address

Signed by the said

.....(Sub-Contractor)

In the presence of

Name

Address

CONDITIONS OF SUB-CONTRACT

2.0 GENERAL OBLIGATIONS OF THE CONTRACTOR

The Contractor shall:

- 2.1 Timorously obtain from the Architect on behalf of the Sub-Contractor all drawings, necessary details, instructions and other information required by the Sub-Contractor for the proper carrying out of the sub-contract works.**
- 2.2 Provide all such facilities and attend upon the Sub-Contractor as required and as provided in the specifications, bills of quantities and these conditions to the extent compatible with the provisions of the main contract
- 2.3 Observe, perform and comply with all the provisions of the main contract and of this sub-contract on the part of the Contractor to be observed, performed and complied with to ensure satisfactory completion of the sub-contract works.

3.0 GENERAL OBLIGATIONS OF THE SUB-CONTRACTOR

- 3.1 The Sub-Contractor shall be deemed to have notice of all the provisions of the main contract except the detailed prices of the Contractor included in the bills of quantities or in the schedule of rates.
- 3.2 The Sub-Contractor shall carry out and complete the sub-contract works in accordance with this sub-contract and in all respects to the reasonable satisfaction of the Contractor and of the Architect and in conformity with all reasonable directions and requirements of the Contractor regulating the due carrying out of the contract works.
- 3.3 The Sub-Contractor shall observe, perform and comply with all the provisions of the main contract on the part of the Sub-Contractor to be observed, performed and complied with so far as they relate and apply to the sub-contract works or any portion thereof and are not inconsistent with the expressions of this sub-contract as if all the same were set out herein.
- 3.4 Without prejudice to the generality of the foregoing requirements, the Sub-Contractor shall especially observe perform and comply with the provisions of clauses 9.0, 18.0, 19.0 22.0, 30.0, 31.0, 34.0 and 36.0 of the main contract as they apply to the sub-contract works

4.0 SUB-CONTRACT DOCUMENTS

- 4.1 The sub-contract documents for use in the carrying out of the sub-contract works shall be: -
- 4.1.1 The agreement and these conditions
 - 4.1.2 The sub-contract drawings as listed in the agreement
 - 4.1.3 The sub-contract bill of quantities or schedule of rates as applicable
 - 4.1.4 The specifications as separately supplied or as contained in the sub-contract bills.
- 4.2 Upon the execution of the sub-contract, the Contractor shall register the agreement with the relevant statutory authority and pay all fees, charges, taxes, duties and all costs arising there from.

The manner of supplying contract documents, their custody, display on site and their interpretation in the event of discrepancies shall be as provided in the main contract in respect of the main contract documents with the necessary amendments made to refer to the sub-contract.

5.0 GENERAL LIABILITY OF THE SUB-CONTRACTOR

- 5.1 The Sub-Contractor shall be liable for and shall indemnify the Contractor against and from:
- 5.1.1 Any breach, non-observance or non-performance by the Sub-Contractor, his servants or agents of any of the said provisions of the main contract and of this sub-contract.
 - 5.1.2 Any act or omission of the Sub-Contractor, his servants or agents which involve the Contractor in any liability to the Employer under the main contract
 - 5.1.3 Any claim, damage, loss or expense due to or resulting from any negligence or breach of duty on the part of the Sub-Contractor, his servants or agents.
 - 5.1.4 Any loss or damage resulting from any claim under any statute or common law by an employee of the Sub-Contractor in respect of personal injury or death arising out of or in the course of his employment.

- 5.2 Provided that nothing contained in this sub-contract shall impose any liability on the Sub-Contractor in respect of any negligence or breach of duty on the part of the Employer, the Contractor, other sub-contractors or their respective servants or agents nor create any privity of contract between the Sub-Contractor and the Employer or any other sub-contractor.

6.0 INSURANCE AGAINST INJURY TO PERSONS AND PROPERTY

- 6.1 Without prejudice to his liability to indemnify the Contractor under clause 5.0 above, the Sub-Contractor shall maintain:-
- 6.1.1 Such insurances as are necessary to cover the liability of the Sub-Contractor in respect of injury or damage to property including damage to the works arising out of or in the course of or by reason of the carrying out of the sub-contract works except for liability against the contingencies specified at clause 6.3 herein.
- 6.1.2 The insurances required under sub clause 6.1.1 and 6.1.2 above shall be placed with insurers approved by the Contractor and the Architect.
- 6.2 Notwithstanding the provisions of clause 23.0 of these conditions, the Contractor shall not be obliged to make payments to the Sub-Contractor before the said policies have been provided.
- 6.3 Where clause 13.0 of the main contract applies, the sub-contract works, including materials and goods of the sub-Contractor delivered to the works, shall as regards loss or damage by the contingencies stated at clause 13.0 therein, namely, fire, earthquake, fire following earthquake, lightning, explosion, storm, tempest, flood, bursting or overflowing of water tanks, apparatus or pipes, aircraft and other aerial devices or articles dropped there from, riot and civil commotion, be at the sole risk of the contractor. The Contractor shall cover his liability for the works by procuring insurances as required in the said clause.
- 6.4 Where clause 14.0 or 15.0 of the main contract applies, the sub-contract works, including materials and goods of the Sub-Contractor delivered to the works shall, as regards loss or damage by the contingencies stated therein be at the sole risk of the Employer. The Employer shall cover his liability for the works by procuring insurances as required in the said clause.

6.5 The Sub-Contractor shall observe and comply with the conditions contained in the policy or policies of insurance of the Contractor or of the Employer, as the case may be, as regards loss or damage which may be caused by the stated contingencies. For this purpose, the Contractor or the Employer as the case may be, shall avail the said policies to the Sub-Contractor for his perusal.

6.6 If any loss or damage affecting the sub-contract works or any part thereof or any unfixed goods or materials is occasioned by any one or more of the said contingencies, then,

6.6.1 The occurrence of such loss or damage shall be disregarded in computing any amounts payable to the Sub-Contractor under the sub-contract, and

6.6.2 The Sub-Contractor shall, with due diligence, restore the work damaged, replace or repair any unfixed materials or goods which have been destroyed or damaged, remove and dispose of any debris and proceed with the carrying out and completion of the sub-contract works.

6.6.3 The restoration of work damaged the replacement and repair of unfixed materials and goods and the removal of debris shall be deemed to be a variation required by the Architect. Such work shall be paid for in accordance with clause 30.0 of the main contract.

7.0 PERFORMANCE BOND

Before commencing the works, the Sub-Contractor shall provide one surety who must be an established bank or insurance company to the approval of the Contractor and who will be bound to the Contractor in the sum equivalent to ten per cent (10%) of the sub-contract price for the due performance of the sub-contract until the certified date of practical completion. Notwithstanding the provisions of clause 23.0 of these conditions, no payments shall be made to the Sub-Contractor before the said bond is provided.

8.0 POSSESSION OF SITE AND COMMENCEMENT OF WORKS

8.1 Within the period stated in the appendix to these conditions, the Contractor shall give possession of the site works to the Sub-Contractor and such access as may be necessary to enable the Sub-Contractor to commence and proceed with the sub-contract works in accordance with the sub-contract.

8.2 On or before the date for commencement of works stated in the appendix to these conditions, the Sub-Contractor shall commence the carrying out of the sub-contract works and shall proceed regularly and diligently with the same in accordance with the sub-contract programme, the main contract programme and or with the progress of the main contract works and complete on or before the date stated in the appendix to these conditions as the date for practical completion or within any extended time granted under clause 25.0 of these conditions.

9.0 ARCHITECT'S INSTRUCTIONS

9.1 The Sub-Contractor shall forthwith comply with all the instructions issued to him by the Architect, either directly or through the Contractor, in regard to any matter in respect of which the Architect is expressly empowered by the main contract conditions to issue instructions.

9.2 The manner of complying with or querying the validity of an Architect's instruction shall be as provided in clause 22.0 of the main contract. The Sub-Contractor shall not be obliged to carry out instructions not issued in the manner provided therein.

10.0 VARIATIONS

10.1 The term "variation" shall have the meaning assigned to it at clause 30.0 of the main contract.

10.2 The valuation of variations shall be made by the Quantity Surveyor in accordance with sub-clause 30.6 of the main contract.

10.3 Effect shall be given to the measurement and valuation of variations in interim certificates and by the adjustment of the sub-contract price.

11.0 LIABILITY FOR OWN EQUIPMENT

The construction equipment and other property belonging to or provided by the Sub-Contractor and brought onto the site for carrying out the works shall be at the sole risk of the Sub-Contractor. Any loss or damage to the same or caused by the same shall, except for any loss or damage due to any negligence, omission or default of the Contractor, be at the sole risk of the Sub-Contractor who shall indemnify the Contractor against loss, damage or claims in respect thereof. Insurance against any such loss, damage or claims shall be the sole responsibility of the Sub-Contractor.

12.0 PROVISION OF FACILITIES BY THE CONTRACTOR

12.1 Where provided in the main contract, the Contractor shall supply at his own cost all necessary water, lighting, electric power, telephones and security required for the sub-contract works. Where not so provided, the Sub-Contractor shall provide the said services at his own cost.

- 12.2** Except as otherwise provided in the main contract, the Sub-Contractor shall construct at his own expense all necessary workshops, stores, offices, workers' accommodation and other temporary buildings required for the carrying out of the works at such places on site as the Contractor shall identify. The Contractor undertakes to give the sub-Contractor the required space and all reasonable facilities for such construction. Upon practical completion of the works, the Sub-contractor shall remove the said facilities and reinstate disturbed surface to the satisfaction of the Contractor.
- 12.3 The Contractor shall provide, without charge, general attendance to the Sub-Contractor to facilitate the carrying out of the works which attendance shall include facilities for access to and movement within the site and sections or parts of the building or buildings where the sub-contract works are being carried out, the use of temporary roads, paths and access ways, sanitary and welfare facilities.
- 12.4 The Contractor shall permit the Sub-Contractor to use, without charge, at all reasonable times, any scaffolding and hoisting equipment belonging to or provided by the Contractor while it remains so erected upon the site. The use by the Sub-Contractor of any other equipment, facilities or services provided by the Contractor for the works shall be subject to private arrangements between the parties hereto and shall not be regulated by these conditions.
- 12.5 Provided that such use of the scaffolding and hoisting equipment shall be on the express condition that no warranty or other liability on the part of the Contractor shall be created or implied in regard to fitness, condition or suitability for the intended purpose except that the Sub-Contractor shall be liable for any damage caused thereto or thereby.
- 12.6 Where required, the Contractor shall provide the facilities, equipment and the like and carry out any necessary builder's works within a reasonable time of the request by the Sub-Contractor to enable timely performance of the sub-contract.

13.0 LIABILITY FOR OWN WORK

- 13.1 The Contractor and the Sub-Contractor shall be liable for the due carrying out of their respective works in accordance with their respective contracts without causing damage or injury to the works of the other sub-contractors, and in particular:
- 13.2 Should the carrying out of the sub-contract works cause injury or damage to the main contract works, or to the work of the other sub-contractors, the Sub-contractor shall rectify the damage so caused at his own cost.

- 13.3 Should the carrying out of the main contract works cause damage or injury to the sub-contract works, the Contractor shall rectify the damage at his own cost.
- 13.4 If in the course of carrying out the sub-contract works, the Sub-Contractor is required to carry out work not included in his sub-contract by reason of any materials or workmanship not being in accordance with the main contract or with other sub-contracts, the Contractor shall reimburse the Sub-Contractor the expenses incurred therein.

14.0 CO-OPERATION IN USE OF FACILITIES

- 14.1 The Contractor and the Sub-Contractor undertake to co-operate with each other and co-ordinate work arrangements and procedures required in carrying preventing interference, disruption or disturbance to the progress of the works or to the activities of other sub-contractors.
- 14.2 The Contractor and the Sub-Contractor undertake not to wrongfully use or interfere with equipment, scaffolding, appliances, ways, temporary works, temporary buildings and other property belonging to or provided by the other part or by other sub-contractors.
- 14.3 Provided that nothing contained in this clause shall prejudice or limit the rights of the Contractor or of the sub-Contractor in carrying out their respective statutory and or contractual duties under this sub-contract or under the main contract.

15.0 ASSIGNMENT AND SUBLETTING

- 15.1 Neither the Contractor nor the Sub-Contractor shall, without the written consent of the other and the Employer, assign this sub-contract.
- 15.2 The Sub-Contractor shall not sub-let the whole of the works without the written consent of the Contractor and the Architect.
- 15.3 Provided that any assignment and any sub-contracts as well as this sub-contract shall terminate immediately upon (for whatever reason) of the main contract.

16.0 WORK PRIOR TO APPOINTMENT OF CONTRACTOR

- 16.1 Where the Sub-Contractor is appointed before the Contractor is appointed, any work done by the Sub-Contractor prior to the said appointment shall be treated as a separate contract between the Employer and the Sub-Contractor and shall be valued by the Quantity Surveyor and paid for directly by the Employer without the involvement of the Contractor.

16.2 Where the Sub-Contractor is appointed before the Contractor is appointed, the Sub-Contractor shall be permitted, when the identity of the Contractor is known and within 30 days thereof, to raise objections (on reasonable grounds) against entering into a sub-contract with the Contractor

16.3 Where work which is outside the sub-contract is ordered directly by Employer or the Architect, that work shall be treated as a separate contract between the Sub-Contractor and the Employer and shall be valued and paid for directly to the Sub-Contractor in accordance with sub-clause 16.1 herein without the involvement of the Contractor. The cost of equipment, facilities and the like provided by the Contractor to the Sub-contractor and any builder's work carried out by the Contractor with regard to such work shall be paid directly by the Sub-Contractor to the Contractor.

17.0 SUB-CONTRACTOR DESIGN

Where the sub-contract includes a design component by the Sub-Contractor, the design shall be to the approval of the Architect and the Employer. Notwithstanding and approvals, the Sub-Contractor shall be liable directly to the Employer for any consequences of failure of the design to comply with the requirements of the Employer or to be fit or suitable for the purposes for which the sub-contract works or the relevant part thereof were intended.

18.0 SPECIFICATION OF GOODS, MATERIALS AND WORKMANSHIP

18.1 All materials, goods and workmanship shall, so far as procurable, be of the respective kinds and standards described in the sub-contract bills, specifications and drawings.

18.2 The provisions of clause 23.0 of the main contract regulating the procurement, specification and quality assurance of materials, processes and workmanship and the requirements of clause 24.0 therein dealing with the provision of samples and the carrying out of specified tests shall apply to the sub-contract in the same manner as they apply to the main contract.

19.0 COMPLIANCE WITH STATUTORY AND OTHER REGULATIONS

The Sub-Contract shall comply with all statutory and other regulations of competent authorities regulating the carrying out of the works in accordance with the provisions of clause 17.0 of the main contract, as applicable.

20.0 ROYALTIES AND PATENT RIGHTS

- 20.1 All royalties or other sums payable in respect of the supply and use of any patented articles, processes or inventions in carrying out the works as described by or referred to in the sub-contract bills, specifications or drawings shall be deemed to have been included in the sub-contract price.
- 20.2 The provision of clause 25.0 of the main contract dealing with the same shall apply to the sub-contract in the same manner as they apply to the main contract.

21.0 ANTIQUITIES AND OTHER OBJECTS OF VALUE

All fossils, antiquities and other objects of interest or value which may be found on the site or in excavating the same during the progress of the sub-contract shall be dealt with in accordance with the provisions of clause 44.0 of the main contract.

22.0 SUSPENSION OF WORKS

- 22.1 An instruction by the Architect to postpone or suspend the works under clause 28.0 of the main contract shall have the same effect on the sub-contract works as it has on the main contract works.
- 22.2 If the suspension arises due to default by the contractor and the sub-contract works are adversely affected by the suspension, the sub-contractor shall be entitled to reimbursement by the contractor of all expenses arising there from.
- 22.3 If the suspension arises due to default by the sub-contractor, the sub-contractor shall be liable to the contractor for all expenses arising there from.
- 22.4 A notice by the contractor to suspend the works under clause 29.0 of the main contract shall have the same effect on the sub-contract works as it has on the main contract works.
- 22.5 Should the sub-contract works be adversely affected by suspension under clause 29.0 of the main contract, the sub-contractor shall be entitled to the remedies provided for at clauses 25.0 and 26.0 of this sub-contract.

23.0 PAYMENTS

- 23.1 Procedures for originating and processing applications for payments and payment certificates as regards the sub-contract works shall be the same as those prescribed for the Contractor in the main contract at clause 34.0. All references therein to the contractor shall be deemed to include references to the Sub-contractor.

- 23.2 Before submitting an application for payment to the Quantity Surveyor in accordance with clause 34.1 of the main contract, the Contractor shall give the Sub-Contractor a notice of not less than 7 days to submit the details of the amounts which the Sub-Contractor considers himself entitled to for the relevant period. Such details, when received, shall be annexed to the said Contractor's application.
- 23.3 Where it is necessary to measure the sub-contract works for purpose of interim valuation or for the preparation of the final account, the Quantity Surveyor shall give the Sub-Contractor a reasonable opportunity to be present at the time of the measurements and to take notes and measurements as he may require.
- 23.4 Neither the Quantity Surveyor nor the Architect shall be bound to issue a valuation or a payment certificate in respect of the sub-contract works, as the case may be, whose value is less than the amount stated in the appendix to these conditions as the minimum amount of a payment certificate before the issue of the certificate of practical completion of the main contract or of the sub-contract, as applicable.
- 23.5 Provided that where the minimum amount of a certificate inserted in the appendix to these conditions has been achieved but the corresponding minimum inserted in the appendix to the main contract in respect of the Contractor's work has not been achieved, or the Contractor has not applied for payment within the stated period, the Architect may with the consent of the Contractor, issue a payment certificate directly to the Sub-Contractor for payment by the Employer.
- 23.6 Within 7 days of receipt by the Contractor of payment by the Employer, the Contractor shall notify and pay to the Sub-Contractor the total value certified therein in respect of the sub-contract works less the portion of the retention money attributable to the sub-contract works and less amounts previously paid to the Sub-Contractor.
- 23.7 Where certificates are not paid by the Employer within the prescribed period, the Sub-Contractor shall be entitled to be paid by the Contractor, upon receipt of payment from the Employer, the interest certified for the delay in accordance with sub-clause 34.6 of the main contract in respect of the portion of the sub-contract works included in the certificate.
- 23.8 Where the Contractor has received payment from the Employer but has not released the appropriate amount to the Sub-Contractor within the stated period, the Contractor shall pay to the Sub-Contractor in addition to the amount not paid, simple interest on the unpaid amount for the period it remains unpaid at the commercial bank lending rate in force during the period of default.

- 23.9** If, upon application by the Sub-Contractor and Architect agree, or if the Contractor fails to make payment to the Sub-Contractor in accordance with sub-clause 23.6 herein and continues such default for 14 days thereafter, the Architect may issue a payment certificate directly to the Sub-Contractor for payment by the Employer, where applicable, and deduct the amount from subsequent payment to the Contractor.
- 23.10 Upon the issue of the certificate of practical completion and the release of one half of the total amount of the retention of money to the Contractor, the Contractor shall pay the portion attributable to the sub-contract to the Sub-Contractor within 7 days of receipt of the payment.
- 23.11 Upon the issue of the certificate of rectification of defects and receipt of the balance of the retention money by the Contractor, the Contractor shall pay the balance of the portion of the retention money attributable to the sub-contract to the Sub-Contractor within 7 days of receipt of the payment.
- 23.12 The sub-contract final account shall be agreed between the Sub-Contractor, the Contractor, the Quantity Surveyor and the Architect and shall be annexed to the Contractor's final accounts which shall be agreed as provided for in the main contract. For purpose of finalizing the accounts, the Quantity Surveyor may request the Sub-Contractor to submit further documents as he may deem necessary.
- 23.13 The final certificate issued under sub-clause 34.21 of the main contract shall be final and binding on the Sub-Contractor in the same manner it is binding on the Contractor.
- 23.14 If the Architect desires to secure final payment to the Sub-Contractor before final payment is due to the Contractor, the provisions of sub-clause 31.10 of the main contract shall apply.
- 23.15 The Contractor shall be entitled to deduct from or set off against any money due from him to the Sub-Contractor in interim certificates any sum or sums which the Sub-Contractor is liable to pay to the Contractor arising under or in connection with the sub-contract.

24.0 PRACTICAL COMPLETION AND DEFECTS LIABILITY

- 24.1 The Sub-Contractor shall proceed with the works regularly and diligently and complete the same within the period stated in the appendix to this sub-contract or within such extended period as may be granted under clause 25.0 of this sub-contract.
- 24.2 Where the sub-contract works are to be completed in sections or where the sub-contract works are to be completed in advance of the main contract works, the provisions of clause 42.0 of the main contract shall apply, as appropriate, to the sub-contractor in the same manner as they apply to the main contract.

- 24.3 The procedures for certifying practical completion and for dealing with defects in the sub-contract works as well as the main contract works are as prescribed at clause 41.0 of the main contract. Upon the issue of the certificate of practical completion of the whole of the works or of the sub-contract works, as applicable, the Sub-contractor shall be entitled to release of one half of the retention money attributable to the sub-contract works within 7 days after the Contractor has received payment.
- 24.4 The balance of the retention money shall be released to the Sub-Contractor after the defects appearing in the works have been rectified in accordance with sub-clause 41.6 and 41.7 of the main contract and after the Contractor has received the said payment as provided for in sub-clause 34.16.3 of the main contract.

25.0 EXTENSION OF TIME

- 25.1 Upon it becoming reasonably apparent that the progress of the sub-contract works is or will be delayed, the Sub-Contractor shall forthwith give written notice of the cause of the delay to the Contractor and to the Architect with supporting details showing the extent of delay caused or likely to be caused. Thereafter, the Architect shall evaluate the information supplied by the Sub-Contractor and if in his opinion the completion of the works is likely to be or has been delayed beyond the date for practical completion stated in the appendix to these conditions or beyond any extended time previously fixed under this clause, by any of the reasons entitling the Contractor to extension of time under sub-clause 36.1 of the main contract, then the Architect shall, so soon as he is able estimate the length of the delay beyond the date or time aforesaid, recommend to the Contractor a fair and reasonable extension of time to be granted for the completion of the sub-contract works.
- 25.2 Thereupon, the Contractor shall grant in writing to the Sub-Contractor the recommended time. Provided that the Contractor shall not grant any extension of time to the Sub-Contractor without the written recommendation of the Architect. And provided that the Sub-Contractor shall constantly use his best endeavors to prevent delay and shall do all that may be reasonably required to proceed with the works.
- 25.3 The procedures for dealing with requests for extension of time and the observance of time limits prescribed at clause 36.0 of the main contract shall apply to the sub-contract in the same manner as they apply to the main contract.

26.0 LOSS AND EXPENSE CAUSED BY DISTURBANCE OF REGULAR PROGRESS

- 26.1 If upon written application being made by the Sub-Contractor to the Contractor and to the Architect, the Architect is of the opinion that the Sub-Contractor has been involved in direct loss and or expense, for which he would not be reimbursed by a payment made under any other provision in this sub-contract, by reasons of the regular progress of the sub-contract works or any part thereof having been materially affected by any of the

reasons which would entitle the Contractor to reimbursement under clause 37.0 of the main contract, the Quantity Surveyor shall assess the amount of such loss and or expense.

- 26.2 Any amount so assessed shall be added to the sub-contract price and if an interim certificate is issued after the date of assessment, any such amount shall be added to the amount which would otherwise be stated as due in such certificate as regards the Sub-Contractor's entitlement.
- 26.3 The procedures for dealing with loss and or expense claims prescribed at clause 37.0 of the main contract shall apply to the sub-contract in the same manner as they apply to the main contract, as appropriate.

27.0 DAMAGES FOR DELAY IN COMPLETION

- 27.1 If the Sub-Contractor fails to complete the sub-contract works by the date for practical completion stated in the appendix to these conditions or within any extended time fixed under clause 25.0 herein, and the Architect certifies in writing that in his opinion the same ought reasonably so to have been completed, then the Sub-Contractor shall pay or allow to the Contractor a sum calculated at the rate stated in the said appendix as liquidated damages for the period during which the works shall so remain or have remained incomplete.
- 27.2 The Contractor may deduct such sum from any money due or to become due to the Sub-Contractor under the sub-contract or recover the same from the Sub-Contractor as a debt. Provided that the Contractor shall not be entitled to recover any liquidated damages from the Sub-Contractor without first obtaining the Architect's certificate of delay prescribed herein.

28.0 FLUCTATIONS

- 28.1 Unless otherwise stated in the sub-contract bills or specifications, the sub-contract price shall be deemed to have been calculated to include all duties and taxes imposed by statutory and other competent authorities in the country where the works are being carried out, and
- 28.2 The Sub-Contractor shall observe and comply with the conditions contained in the policy or policies of insurance of the Contractor or of the Employer, as the case may be, as regards loss or damage which may be caused by the stated contingencies. For this purpose, the Contractor or the Employer as the case may be, shall avail the said policies to the Sub-Contractor for his perusal.

- 28.3 If any loss or damage affecting the sub-contract works or any part thereof or any unfixed goods or materials is occasioned by any one or more of the said contingencies, then
- 28.4 The occurrence of such loss or damage shall be disregarded in computing any amounts payable to the Sub-Contractor under the sub-contract, and
- 28.5 The Sub-Contractor shall, with due diligence, restore the work damaged, replace or repair any unfixed materials or goods which have been destroyed or damaged, remove and dispose of any debris and proceed with the carrying out and completion of the sub-contract works.

27.0 DAMAGES FOR DELAY IN COMPLETION

- 27.1 If the Sub-Contractor fails to complete the sub-contract works by the date for practical completion stated in the appendix to these conditions or within any extended time fixed under clause 25.0 herein, and the Architect certifies in writing that in his opinion the same ought reasonably so to have been completed, then the Sub-Contractor shall pay or allow to the Contractor a sum calculated at the rate stated in the said appendix as liquidated damages for the period during which the works shall so remain or have remained incomplete.
- 27.2 The Contractor may deduct such sum from any money due or to become due to the Sub-Contractor under the sub-contract or remove the same the Sub-Contractor as a debt. Provided that the Contractor shall not be entitled to recover any liquidated damages from the Sub-Contractor without first obtaining the Architect's certificate of delay prescribed herein.

28.0 FLUCTATIONS

- 28.1 Unless otherwise stated in the sub-contract bills or specifications, the sub-contract price shall be deemed to have been calculated to include all duties and taxes imposed by statutory and other competent authorities in the country where the works are being carried out, and
- 28.2 The sub-contract price shall be deemed to be based on currency exchange rates current at the date of tender as regards materials or goods to be specifically imported for permanent incorporation in the works.
- 28.3 Should duties, taxes and exchange rates vary during the period of the contract, compensation thereof shall be calculated in accordance with sub-clause 35.1 and 35.2 of the main contract.

28.4 Compensation for change in prices of goods and materials incorporated in the works and in the rates of wages provided for at sub-clause 35.3,35.4 and 35.5 of the main contract shall not apply to the sub-contract unless specifically provided for in the bill of quantities or specifications.

29.0 **TERMINATION OF MAIN CONTRACT**

29.1 If, for any reason, the contractor's employment is terminated either under clause 38.0, 39.0 or 40.0 of the main contract, this sub-contract shall thereupon also terminate.

29.2 Upon termination, the sub-contractor shall cease all work and vacate the site. He shall not remove any equipment or any materials brought onto the site for the carrying out of the works without the written approval of the contractor and the Architect

29.3 Where the termination of the main contract occurs without the default of the sub-contractor, the sub-contractor shall be paid by the contractor for work done in the like manner as the Contractor is paid at clause 39.5 of the main contract.

29.4 Where the termination of main contract arises from the default by the sub-contractor, the adjustment of the sub-contract accounts shall be performed in the like manner as is provided at sub-clause 38.8 of the main contract regarding the main contract accounts.

30.0 **TRMINATION OF SUB-CONTRACT.**

30.1 Without prejudice to any other rights and remedies which the contractor may possess, if the sub-contractor shall make default in any one or more of the respects which would entitle the employer to terminate the main contract under clause 38.0 therein, the contractor shall give the sub-contractor a notice, with a copy to the Architect and to the employer by registered post of recorded delivery specifying the default. Should the sub-contractor continue the default for 14 days after receipt of such notice or at any time thereafter repeat such default and should the Architect certify that the sub-contractor is in default, the contractor may terminate the Sub-contract forthwith after the expiry of the notice provided that the notice is not given unreasonably or vexatiously. The termination letter shall be copied to the Architect and to the Employer.

30.2 Where the sub-contract is terminated due to the default of the sub-contractor as in sub-clause 30.1 herein, the adjustment of sub-contract accounts shall be performed in the like manner as is provided at sub-clause 38.8 of the main contract regarding the main contract accounts.

- 30.3 Without prejudice to any other rights and remedies which the Sub-Contractor may possess, if the Contractor shall make default in one or more of the respects which, if committed by the Employer, would entitle the contractor to terminate the main contract under clause 39.0 therein, the Sub-Contractor shall give the Contractor a notice, with a copy to the Architect and to the Employer, by registered post or recorded delivery specifying the default. Should the contractor continue the default for 14 days after receipt of such notice or at any time thereafter repeat such default, and should the Architect certify that the contractor is in default, the Sub-Contractor may terminate the sub-contract forthwith after expiry of the notice, provided that the notice is not given unreasonably or vexatiously. The termination letter shall be copied to the Architect and to the Employer.
- 30.4 If the Sub-Contract is terminated due to the default of the Contractor as in sub-clause 30.3 herein, the Contractor shall pay the sub-contractor for work done in the like manner as the Contractor would be paid at sub-clause 39.5 of the main contract where the termination is done by the Contractor.
- 30.5 Where the sub-contract is terminated due to the default of the Contractor, all expenses arising from the termination shall be done wholly by the Contractor and the termination shall not create any liability on the Employer.
- 30.6 Where the sub-contract is terminated due to the default of the Sub-Contractor, the sub-contractor shall be liable to the contractor for all expenses arising there from.

31.0 **SETTLEMENT OF DISPUTES**

- 31.1 In case any dispute or difference shall arise between the Contractor and Sub-Contractor, either during the progress or after the completion or abandonment of the sub-contract 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 30 days of the notice.
- 31.2 The dispute shall be referred to the arbitration and final decision of a person to be agreed by the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointment by the Chairman or Vice Chairman of the Architectural Association of Kenya or the Chairman or Vice Chairman of The Chartered Institute of Arbitrators, Kenya Branch, at the request of the applying party.
- 31.3 The arbitration may be on the construction of this sub-contract or on any matter or thing of whatsoever nature arising thereunder or in connection therewith including the rights and liabilities of the parties during the currency of the sub-contract and subsequent to the termination of the sub-contract.

- 31.4 Where the sub-contractor is aggrieved by the manner in which the Architect has exercised or failed to exercise his powers stipulated in the main contract, or in the sub-contact or by any action or inaction of the Employer, and in particular, if he is aggrieved by:
- 31.4.1 The failure or refusal of the Architect to recommend to the contractor an extension of sub-contract time, or
 - 31.4.2 The extend of the recommended time, or
 - 31.4.3 The amount certified to the sub-contractor either in an interim in a final certificate, or
 - 31.4.4 The issue of an instruction which the sub-contractor contends is not authorised by the main contract or the sub-contract, or
 - 31.4.5. Any other matter left to the discretion of the Architect in the main contract or in the sub-contract, then.
- 31.5 Subject to the Sub-Contractor giving the Contractor such indemnity and security as the Contractor may reasonably require, the Contractor shall allow the Sub-Contractor to use the contractor's name and, if necessary, shall join the Sub-Contractor in arbitration proceeding against the employer to decide the matters in dispute or in difference.
- 31.6 Provided that no arbitration proceedings shall be commenced on any dispute or difference where notice of a dispute or difference where notice of a dispute or difference has not been given by the applying party within 90 days of the occurrence or discovery of the matter or issue giving rise to the dispute or difference.
- 31.7 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.
- 31.8 In any event, no arbitration shall commence earlier than 90 days after the service of the notice of a dispute or difference, except as provided for at sub-clause 31.9 herein.
- 31.9 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 sub-contract without having to comply with sub clause 31.8 herein.

- 31.9.1 Whether or not the issue of an instruction by the Architect is authorized by the main contract or these conditions, and
- 31.9.2 Whether or not a payment certificate has been improperly withheld or is not in accordance with the main contract or these conditions or though issued, it has not been honoured.
- 31.10 All other matters in dispute shall only be referred to arbitration after the practical completion or alleged practical completion of the works or abandonment of the works or termination or alleged termination of the sub-contract, unless the Architect the contractor and the sub-contractor agree otherwise in writing.
- 31.11 The Arbitrator shall, without prejudice to the generality of his powers, have power 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 or included in any payment certificate.
- 31.12 The Arbitrator shall, without prejudice to the generality of his powers, have power 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.
- 31.13 Provided that any decision of the Architect which is final and binding on the Contractor under the main contract shall be final and binding between the Contractor and the Sub-Contractor.
- 31.14 The award of such Arbitrator shall be final and binding upon the parties.

SUB CONTRACTOR'S PERFORMANCE BOND

BY THIS AGREEMENT we.....(SURETY)
of..... are bound to.....(CONTRACTOR)
in the sum of Kenya shillings
.....(Kshs.....)

to be paid by us to the said(CONTRACTOR)

WHEREAS by an agreement in writing dated
.....(SUB-
CONTRACTOR)

entered into a sub-contract with

.....(CONTRACTOR)

to carry out and complete the works therein stated in the manner and by the time
therein

specified all in accordance with he provisions of the said sub-contract, namely:
(description of works)

.....

NOW the condition of the above written bond is such that if the said Sub-Contractor,
his

Executors, administrator, successors or assigns shall duly perform his obligations
under the Sub-Contract, if on default by the Sub-Contractor the surety shall satisfy and
discharge the damages sustained by the Contractor thereby up to the amount of the
above written bond, then this obligation shall be void, otherwise it shall remain in full
force and effect. Upon default, and without prejudice to his other rights under the Sub-
Contract, the contractor shall be entitled to demand forfeiture of the bond and we
undertake to honour the demand in the amount stated above.

PROVIDED always and it is hereby agreed and declared that no alteration in the terms
of the said Sub-Contract or in the extend or nature of the works to be carried out and
no extension of time by the Contractor under the sub-contract shall in any way release
the surety from any liability under the above written bond.

IN WITNESS whereof we have set out hand this day of
.....

Surety

Witness

Authrorised of Power of Attorney No

APPENDIX

Clause

Name of sub-contractor’s insurers	6.0
Name of sub-contractor’s surety	7.0
Amount of surety	7.0
Period of possession of site	8.1
Sub-Contract Period	8.2.....
Date of commencement of works	8.2
Date for practical completion	8.2
Interval for application of payment certificates	23.1
Minimum amount of payment certificate	23.4
Percentage of certified value retained	23.6
Limit of retention fund, if any	23.6
Name of the sub-contractor’s bank for purposes of interest calculation.	23.7,23.8
Defects liability period	23.11
Period of final measurement and valuation	23.12
Damages of delay in completion	27.1 at the rate of Kshs

Signed by the said:

.....
.....

CONTRACTOR

SUB-CONTRACTOR

APPENDIX TO KABCEC

(1) Amend clause 17

Replace ' Architect' with " Engineer"

(2) Amend clause 7

The surety **must** be from a Bank or approved Insurance, and is 5% the Sub-contract price

(3) Amend clause 28

Shall apply as per main contract

SECTION C

SUB-CONTRACT PRELIMINARIES

AND

GENERAL CONDITIONS

CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

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SECTION C

SUB-CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

1.01 Examination of Tender Documents

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

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

Work detailed in the Specification and in the Contract Drawings.

The Republic of Kenya Document "General Conditions of Contract for Electrical and Mechanical Works".

Other documents to which reference is made.

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

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

1.02 Discrepancies

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

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

1.03 Conditions of Contract Agreement

The Contractor shall be required to enter into a Sub-contract with the Main Contractor.

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

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

1.04 Payment

Payment will be made through certificates to the Main Contractor, All payments will be less retention as specified in the Main Contract. No payment will become due until materials are delivered to site.

1.05 Definition of Terms

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

- i) **Employer:** The term “**Employer**” shall mean **Kitui Municipality, County Government of Kitui**
- ii) **Architect:** The term “**Architect**” shall mean.
Heritage Associates Ltd
P.O.Box 56293-00200 - NAIROBI
- iii) **Project Manager:** The term **Project Manager** shall Mean:
The Chief Officer
Ministry of Lands, Infrastructure, Housing & Urban
Development (LIHUD)
P.O Box 33-90200
KITUI
- iii) **Quantity Surveyor:** The term “**Quantity Surveyor**” shall mean
Costbill System Ltd
P.O.Box 8593-00100 NAIROBI
- v) **Civil/Structural Engineers:** The term “**Civil/Structural Engineers**” shall mean
Grid Consult Ltd
P.O.Box 1285-00502 NAIROBI
- vi) **Engineer:** The term “**Engineer**” shall mean
Rex Consultants
P.O.Box 8593-00100- NAIROBI
- vii) **Main Contractor:** The term “**Main Contractor**” shall mean the firm or company appointed to carry out the Building Works and shall include his or their heir, executors, assigns, administrators, successors, and duly appointed representatives.
- Viii) **Sub-contractor:** The term “**Sub-contractor**” shall mean the persons or person, firm or Company whose tender for this work has been accepted, and who has entered into a contract agreement with the Contractor for the execution of the Sub-contract Works, and shall include his or their heirs, executors, administrators, assigns, successors and duly appointed representatives.

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

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

xi) **Working Drawings:** The term “**Working Drawings**” shall mean those drawings required to be prepared by the Sub-contractor as hereinafter described.

xii) **Record Drawings:** The term “**Record Drawings**” shall mean those drawings required to be prepared by the Sub-contractor showing “as installed” and other records for the Sub-contract Works.

xiii) **Abbreviations:**

CM shall mean **Cubic Metre**

SM shall mean **Square Metre**

LM shall mean **Linear Metre**

LS shall mean **Lump Sum**

mm shall mean **Millimetres**

No. Shall mean **Number**

Kg. shall mean **Kilogramme**

KEBS or **KS** shall mean **Kenya Bureau of Standards**

BS shall mean. **Current standard British Standard Specification published by the British Standard Institution, 2 Park Street, London W1, England**

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

1.06 **Site Location**

The site of the Contract Works is situated in **Kithomboani Market Kitui County**

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

1.07 **Duration of Sub-Contract**

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

1.08 **Scope of Contract Works**

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

The contractor shall supply all accessories, whether of items or equipment supplied by the Sub-Contractor but to be fixed and commissioned under this contract.

1.09 **Extent of the Sub-contractor's Duties**

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

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

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

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

1.10 **Execution of the Works**

The works shall be carried out strictly in accordance with:

- a) All relevant Kenya Bureau of Standards Specifications.
- b) All relevant British Standard Specifications and Codes Of Practice (hereinafter referred to B.S. and C.P. respectively).
- c) General specifications of materials and works Section D of this document

- d) The Contract Drawings.
- e) The Bye-laws of the Local Authority.
- f) The Architect's and/or Engineer's Instructions.

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

1.11 **Validity of Tender**

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

1.12 **Firm – Price Contract**

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

1.13 **Variation**

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

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

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

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

1.14 **Prime Cost and Provisional Sums**

A specialist Sub-contractor may be nominated by the Project Manager to supply and/or install any equipment covered by the Prime Cost or Provisional Sums contained within the Contract documents.

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

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

1.15 **Bond**

The tenderer must submit with his tender the name of one Surety who must be an established Bank only who will be willing to be bound to the Government for an amount equal to 7½ % of the Contract amount as Clause 28 of the Conditions of Contract.

1.16 **Government Legislation and Regulations**

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

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

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

1.17 **Import Duty and Value Added Tax**

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

1.18 **Insurance Company Fees**

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

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

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

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

- a) Attendance on the Sub-Contractor and the carrying out of all work affecting the structure of the building which may be necessary, including all chasing, cutting away and making good brickwork, etc., except that all plugging for fixing, fittings, machinery, fan ducting, etc., and all drilling and tapping of steel work shall be the responsibility of the Sub-contractor. Any purpose made fixing brackets shall not constitute Builder's Work and shall be provided and installed by the Sub-contractor unless stated hereinafter otherwise.
- b) The provision of temporary water, lighting and power: the Contractor pay for all these services utilized.
- c) Fixing of anchorage and pipe supports in the shuttering, shall be supplied by the Contractor who shall also supply the Project Manager with fully dimensioned drawings detailing the exact locations.
- d)
 - i) Provision of scaffolding, cranes, etc. It shall be the Contractor's responsibility to liaise with the Project Manager to ensure that there is maximum co-operation with other nominated Sub-contractors in the use of scaffolding, cranes, etc.
 - ii) Any specialist scaffolding, cranes, etc. by the Contractor for his own exclusive use shall be paid for by the Sub-contractor.

1.20 **Suppliers**

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

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

1.21 **Samples and Materials Generally**

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

1.22 **Administrative Procedure and Contractual Responsibility**

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

1.23 **Bills of Quantities**

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

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

1.24 **Contractor's Office in Kenya**

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

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

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

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

1.25 **Builder's Work**

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

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

Any purpose made fixing brackets shall be provided and installed by the Contractor.

1.26 **Structural Provision for the Works**

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

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

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

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

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

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

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

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

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

1.28 **Checking of Work**

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

1.29 **Setting to Work and Regulating System**

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

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

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

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

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

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

1.30 **Identification of Plant Components**

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

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

1.31 **Contract Drawings**

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

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

1.32 **Working Drawings**

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

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

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

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

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

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

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

Schematic Layout Drawings of services and of control equipment.

Layout Drawings of all embedded and non-embedded paperwork, ducts and electrical conduits.

Complete circuit drawings of the equipment, together with associated circuit description.

Such other drawings as are called for in the text of the Specification or Schedules or as the Engineer may reasonably require.

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

Six copies of the approved Working Drawings shall be given to the Project Manager by the Sub-contractor for information and distribution to other Sub-contractors carrying out work associated with or in close proximity to or which might be affected by the Sub-contract Works.

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

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

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

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

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

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

They shall include but not restricted to the following drawings or information:
Working Drawings amended as necessary but titled "Record Drawings" and certified as a true record of the "As Installed" Sub-contract Works. Subject to the approval of the Engineer such Working Drawings as may be inappropriate may be omitted.

Fully dimensioned drawings of all plant and apparatus.

General arrangement drawings of equipment, other areas containing plant forming part of the Contract Works and the like, indicating the accurate size and location of the plant and apparatus suitability cross-referenced to the drawings mentioned in (b) above and hereinafter.

Routes, types, sizes and arrangement of all pipework and ductwork including dates of installation of underground pipework.

Relay adjustment charts and manuals.

Routes, types, sizes and arrangement of all electric cables, conduits, ducts and wiring including the dates of installation of buried works.

System schematic and trunking diagrams showing all salient information relating to control and instrumentation.

Grading Charts.

Valve schedules and locations suitability cross-referenced.

Wiring and piping diagrams of plant and apparatus.

Schematic diagrams of individual plant, apparatus and switch and control boards. These diagrams to include those peculiar to individual plant or apparatus and also those applicable to system operation as a whole.

Operating Instruction

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

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

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

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

The Marked-up Drawings during the execution of the Contract Works or

The Record Drawings, etc., within one month of the Section or Practical Completion

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

1.34 **Maintenance Manual**

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

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

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

The manual shall contain full operating and maintenance instructions for each item of equipment, plant and apparatus set out in a form dealing systematically with each system. It shall include as may be applicable to the Contract Works the following and any other items listed in the text of the Specifications:

System Description.

Plant

Valve Operation

Switch Operation

Procedure of Fault Finding

Emergency Procedures

Lubrication Requirements

Maintenance and Servicing Periods and Procedures

Colour Coding Legend for all Services

Schematic and Wiring Diagrams of Plant and Apparatus

Record Drawings, true to scale, folded to International A4 size

Lists of Primary and Secondary Spares.

The manual is to be specially prepared for the Contract Works and manufacturer's standard descriptive literature and plant operating instruction cards will not be accepted for inclusion unless exceptionally approved by the Engineer. The Contractor shall, however, affix such cards, if suitable, adjacent to plant and apparatus. One spare set of all such cards shall be furnished to the Engineer.

1.35 **Hand-over**

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

The procedure to be followed will be as follows:

On the completion of the Contract Works to the satisfaction of the Engineer and the Employer, the Contractor shall request the Engineer, at site to arrange for handing over.

The Engineer shall arrange a Hand-over Meeting or a series thereof, at site.

The Contractor shall arrange with the Engineer and Employer for a complete demonstration of each and every service to be carried out and for instruction to be given to the relevant operation staff and other representatives of the Employer.

In the presence of the Employer and the Engineer, Hand-over will take place, subject to Agreement of the Hand-over Certificates and associated check lists.

1.36 **Painting**

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

1.37 **Spares**

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

1.38 **Testing and Inspection – Manufactured Plant**

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

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

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

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

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

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

1.39 **Testing and Inspection -Installation**

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

1.40 **Labour Camps**

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

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

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

1.41 **Storage of Materials**

The Contractor shall provide storerooms and workshop where required. He shall also provide space for storage to nominated sub-contractors who shall be responsible for these lock-up shades or stores provided.

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

1.42 **Initial Maintenance**

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

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

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

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

The Contractor shall, if required, enter into a maintenance and service agreement with the employer for the installation for a period of up to five years from the day following the last day of the liability for Defects Period which offers the same facilities as specified in Clause 1.41 (Initial Maintenance).

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

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

1.44 Trade Names

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

1.45 Water and Electricity for the Works

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

1.46 Protection

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

1.47 Defects After Completion

The defects liability period will be 6 months from the date of practical completion of the Works in the Contract and certified by the Engineer.

1.48 Damages for Delay

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

1.49 Clear Away on Completion

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

1.50 **Final Account**

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

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

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

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

1.51 **Fair Wages**

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

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

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

1.52 **Supervision**

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

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

Any instructions given to the Supervisor on site shall be deemed to have been given to the sub-contractor.

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

1.53 **Test Certificates**

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

1.54 **Labour**

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

1.55 **Discount to the Main Contractor**

No discount to any Sub-Contractor will be included in the tender for this installation.

1.56 **Guarantee**

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

1.57 **Direct Contracts**

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

1.58 **Attendance Upon the Tradesmen etc**

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

1.59 **Trade Unions**

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

1.60 Local and other Authorities notices and fees

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

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

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

1.61 Assignment or subletting

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

1.62 Partial Completion

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

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

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

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

1.63 Temporary Works

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

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

1.64 Patent Rights

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

1.65 Mobilization and Demobilization

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

1.66 Extended Preliminaries

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

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

1.67 Supervision by Engineer and Site Meetings

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

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

1.68 Amendment to Scope of Contract Works

No amendment to scope of sub-contract works is expected and in case of amendment or modification to scope of work, these shall be communicated to all tenderers in sufficient time before the deadline of the tender submission. However during the contract period and as the works progress the Project Manager may vary the works as per conditions of contract by issuing site instructions.

No claims shall be entertained on account of variation to scope of works either to increase the works (pre-financing) or reduction of works (loss of profit-see clause 1.70)

1.69 Contractor Obligation and Employers Obligation

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

1.70 APPENDIX TO SUB-CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

1 ADD TO CLAUSE 1.40

There are no labour camps.

2 ADD TO CLAUSE 1.17

Prices quoted shall include 16% VAT. In accordance with Government policy, 3% Withholding Tax shall be deducted from all payments made to the sub-contractor, and the same shall subsequently be forwarded to the Kenya Revenue Authority (KRA).

3. ADD TO CLAUSE 1.66

The amount or percentage that may be inserted in the bills of quantities for this item should not exceed the anticipated Liquidated damages amount for the same period.

SECTION D

GENERAL MECHANICAL SPECIFICATIONS

SECTION D

GENERAL MECHANICAL SPECIFICATION

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SECTION D

GENERAL MECHANICAL SPECIFICATION

2.01 General

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

2.02 Quality of Materials

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

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

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

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

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

2.03 Regulations and Standards

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

- a) The Kenya Government Regulations.
- b) The United Kingdom Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.

The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.

- d) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
- e) The Local Council By-laws.
- f) The Electricity Supply Authority By-laws.
- g) Local Authority By-laws.
- h) The Kenya Building Code Regulations.
- i) The Kenya Bureau of Standards

2.04 **Electrical Requirements**

Plant and equipment supplied under this Sub-contract shall be complete with all necessary motor starters, control boards, and other control apparatus. Where control panels incorporating several starters are supplied they shall be complete with a main isolator.

The supply power up to and including local isolators shall be provided and installed by the Electrical Sub-contractor. All other wiring and connections to equipment shall form part of this Sub-contract and be the responsibility of the Sub-contractor.

The Sub-contractor shall supply three copies of all schematic, cabling and wiring diagrams for the Engineer's approval.

The starting current of all electric motors and equipment shall not exceed the maximum permissible starting currents described in the Kenya Power and Lighting Company (KPLC) By-laws.

All electrical plant and equipment supplied by the Sub-contractor shall be rated for the supply voltage and frequency obtained in Kenya, that is 415 Volts, 50Hz, 3-Phase or 240Volts, 50Hz, 1-phase.

Any equipment that is not rated for the above voltages and frequencies shall be rejected by the Engineer.

2.05 **Transport and Storage**

All plant and equipment shall, during transportation be suitably packed, crated and protected to minimize the possibility of damage and to prevent corrosion or other deterioration.

On arrival at site all plant and equipment shall be examined and any damage to parts and protective priming coats made good before storage or installation.

Adequate measures shall be taken by the Sub-contractor to ensure that plant and equipment do not suffer any deterioration during storage.

Prior to installation all piping and equipment shall be thoroughly cleaned.

If, in the opinion of the Engineer any equipment has deteriorated or been damaged to such an extent that it is not suitable for installation, the Sub-contractor shall replace this equipment at his own cost.

2.06 **Site Supervision**

The Sub-contractor shall ensure that there is an English-speaking supervisor on the site at all times during normal working hours.

2.07 **Installation**

Installation of all special plant and equipment shall be carried out by the Sub-contractor under adequate supervision from skilled staff provided by the plant and equipment manufacturer or his appointed agent in accordance with the best standards of modern practice and to the relevant regulations and standards described under Clause 2.03 of this Section.

2.08 **Testing**

2.08.1 **General**

The Sub-contractor's attention is drawn to Part 'C' Clause 1.38 of the "Preliminaries and General Conditions".

2.08.2 **Material Tests**

All material for plant and equipment to be installed under this Sub-contract shall be tested, unless otherwise directed, in accordance with the relevant B.S Specification concerned.

For materials where no B.S. Specification exists, tests are to be made in accordance with the best modern commercial methods to the approval of the Engineer, having regard to the particular type of the materials concerned.

The Sub-contractor shall prepare specimens and performance tests and analyses to demonstrate conformance of the various materials with the applicable standards.

If stock material, which has not been specially manufactured for the plant and equipment specified is used, then the Sub-contractor shall submit satisfactory evidence to the Engineer that such materials conform to the requirements stated herein in which case tests of material may be partially or completely waived.

Certified mill test reports of plates, piping and other materials shall be deemed acceptable.

2.08.3 Manufactured Plant and Equipment – Work Tests

The rights of the Engineer relating to the inspection, examination and testing of plant and equipment during manufacture shall be applicable to the Insurance Companies or Inspection Authorities so nominated by the Engineer.

The Sub-contractor shall give two week's notice to the Engineer of the manufacturer's intention to carry out such tests and inspections.

The Engineer or his representative shall be entitled to witness such tests and inspections. The cost of such tests and inspections shall be borne by the Sub-contractor.

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

Plant and equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Sub-contractor's own risk and should the test and inspection certificates not be approved, new tests may be ordered by the Engineer at the Sub-contractor's expense.

2.08.4 Pressure Testing

All pipework installations shall be pressure tested in accordance with the requirements of the various sections of this Specification. The installations may be tested in sections to suit the progress of the works but all tests must be carried out before the work is buried or concealed behind building finishes. All tests must be witnessed by the Engineer or his representative and the Sub-contractor shall give 48 hours notice to the Engineer of his intention to carry out such tests.

Any pipework that is buried or concealed before witnessed pressure tests have been carried out shall be exposed at the expense of the Sub-contractor and the specified tests shall then be applied.

The Sub-contractor shall prepare test certificates for signature by the Engineer and shall keep a progressive and up-to-date record of the section of the work that has been tested.

2.09 **Colour Coding**

Unless stated otherwise in the Particular Specification all pipework shall be colour coded in accordance with the latest edition of B.S 1710 and to the approval of the Engineer or Architect.

2.10 **Welding**

2.10.1 Preparation

Joints to be made by welding shall be accurately cut to size with edges sheared, flame cut or machined to suit the required type of joint. The prepared surface shall be free from all visible defects such as lamination, surface imperfection due to shearing or flame cutting operation, etc., and shall be free from rust scale, grease and other foreign matter.

2.10.2 Method

All welding shall be carried out by the electric arc processing using covered electrodes in accordance with B.S. 639.

Gas welding may be employed in certain circumstances provided that prior approval is obtained from the Engineer.

2.10.3 Welding Code and Construction

All welded joints shall be carried out in accordance with the following Specifications:

Pipe Welding

All pipe welds shall be carried out in accordance with the requirements of B.S.806.

General Welding

All welding of mild steel components other than pipework shall comply with the general requirements of B.S. 1856.

Welders Qualifications

Any welder employed on this Sub-contractor shall have passed the trade tests as laid down by the Government of Kenya.

The Engineer may require to see the appropriate to see the appropriate certificate obtained by any welder and should it be proved that the welder does not have the necessary qualifications the Engineer may instruct the Sub-contractor to replace him by a qualified welder.

SECTION E

PARTICULAR PLUMBING AND DRAINAGE

SPECIFICATIONS

SECTION E
PARTICULAR PLUMBING AND DRAINAGE SPECIFICATIONS

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SECTION E

PARTICULAR PLUMBING AND DRAINAGE SPECIFICATIONS

3.1 GENERAL

This section specifies the general requirements for plant, equipment and materials forming part of the plumbing and drainage installations.

3.2 MATERIALS AND STANDARDS

3.2.1 Pipework and Fittings

Pipework materials are to be used as follows:

a) Galvanized Steel Pipework

Galvanized steel pipe work up to 65mm nominal bore shall be manufactured in accordance with B.S. 1387 Medium Grade, with tapered pipe threads in accordance with B.S. 21. All fittings shall be malleable iron and manufactured in accordance with B.S. 143.

Pipe joints shall be screwed and socketed and sufficient coupling unions shall be allowed so that fittings can be disconnected without cutting the pipe. Running nipples and long screws shall not be permitted unless exceptionally approved by the Engineer.

Galvanized steel pipe work, 80mm nominal bore up to 150mm nominal bore shall be manufactured to comply in all respects with the specification for 65mm pipe, except that screwed and bolted flanges shall replace unions and couplings for the jointing of pipes to valves and other items of plant. All flanges shall comply with the requirements of B.S. 10 to the relevant classifications contained hereinafter under Section 'C' of the Specification.

Galvanizing shall be carried out in accordance with the requirements of B.S. 1387 and B.S. 143 respectively.

b) Copper Tubing

All copper tubing shall be manufactured in accordance with B.S. 2871 from C.160 'Phosphorous De-oxidized Non-Arsenical Copper' in accordance with B.S. 1172.

Pipe joints shall be made with soldered capillary fittings and connections to equipment shall be with compression fittings manufactured in accordance with B.S. 864.

Short copper connection tubes between galvanized pipe work and sanitary fittings shall not be used because of the risk of galvanic action.

If, as may occur in certain circumstances, it is not possible to make the connection in any way than the use of copper tubing, then a brass straight connector shall be positioned between the galvanized pipe and the copper tube in order to prevent direct contact.

P.V.C. (Hard) Pressure Pipes and Fittings

All P.V.C. pipes and fittings shall be manufactured in accordance with B.S. 3505: 1968.

Jointing

The method of jointing to be employed shall be that of solvent welding, using the pipe and manufacturer's approved cement. Seal ring joint shall be introduced where it is necessary to accommodate thermal expansion.

Testing

Pipelines shall be tested in sections under an internal water pressure normally one and a half times the maximum allowable working pressure of the class of pipe used. Testing shall be carried out as soon as practical after laying and when the pipeline is adequately anchored. Precautions shall be taken to eliminate all air from the test section and to fill the pipe slowly to avoid risk of damage due to surge.

A.B.S. Waste System

Where indicated on the Drawings and Schedules, the Sub-contractor shall supply and fix A.B.S. waste pipes and fittings.

The pipes, traps and fittings shall be in accordance with the relevant British Standards, including B.S. 3943, and fixed generally in accordance with manufacturer's instructions and B.S. 5572: 1978.

Jointing of pipes shall be carried out by means of solvent welding, the manufacturer's instructions and B.S. 5572: 1978.

Jointing of pipes shall be carried out by means of solvent welding. The manufacturer's recommended method of joint preparation and fixing shall be followed.

Standard brackets, as supplied for use with this system, shall be used wherever possible. Where the building structure renders this impracticable the Sub-contractor shall provide purpose made supports, centers of which shall not exceed one meter.

Expansion joints shall be provided as indicated. Supporting brackets and pipe clips shall be fixed on each side of these joints.

e) **PVC Soil System**

The Sub-contractor shall supply and fix PVC soil pipes and fittings as indicated on the Drawings and Schedules.

Pipes and fittings shall be in accordance with relevant British Standards, including B.S. 4514

and fixed to the manufacturer's instructions and B.S. 5572.

The soil system shall incorporate synthetic rubber gaskets as provided by the manufacturer whose fixing instructions shall be strictly adhere to.

Connections to WC pans shall be effected by the use of a WC connector, gasket and cover, fixed to suit pan outlet.

Suitable supporting brackets and pipe clips shall be provided at maximum of one metre centres.

The Sub-contractor shall be responsible for the joint into the Gully Trap on Drain as indicated on the Drawings.

3.2.2 **Valves**

a) **Draw-off Taps and Stop Valves (Up to 50mm Nominal Bore)**

Draw-off taps and valves up to 50mm nominal bore, unless otherwise stated or specified for attachment or connection to sanitary fitment shall be manufactured in accordance with the requirements of B.S.1010.

b) **Gate Valves**

All gate valves 80mm nominal bore and above, other than those required for fitting to buried water mains shall be of cast iron construction, in accordance with the requirements of B.S. 3464. All gate valves required for fitting to buried water mains shall be of cast iron construction in accordance with the requirements of B.S.1218.

All gate valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S. 1952.

The pressure classification of all valves shall depend upon the pressure conditions pertaining to the site of works.

c) Globe Valves

All globe valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S.3061.

The pressure classification of all globe valves shall depend upon the pressure conditions pertaining to the site of works.

3.2.3 **Waste Fitment Traps**

a) Standard and Deep Seal P & S Traps

Where standard or deep seal traps are specified they shall be manufactured in suitable non-ferrous materials in accordance with the full requirements of B.S. 1184.

In certain circumstances, cast iron traps may be required for cast iron baths and in these instances bath traps shall be provided which are manufactured in accordance with the full requirements of B.S.1291.

b) Anti-Syphon Traps

Where anti-syphon traps are specified, these shall be similar or equal to the range of traps manufactured by Greenwood and Hughes Limited, Deacon Works Littlehampton, Sussex, England.

The tradename for traps manufactured by this company is 'Grevak'.

3.2.4 **Pipe Supports**

a) General

This sub-clause deals with pipe supports securing pipes to the structure of buildings for above ground application.

The variety and type of support shall be kept to a minimum and their design shall be such as to facilitate quick and secure fixings to metal, concrete, masonry or wood.

Consideration shall be given, when designing supports, to the maintenance of desired pipe falls and the restraining of pipe movements to a longitudinal axial direction only.

The Sub-contractor shall supply and install all steelwork forming part of the pipe support assemblies and shall be responsible for making good damage to builders work associated with the pipe support installation.

The Sub-contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection works commence.

b) Steel and Copper Pipes and Tubes

Pipe runs shall be secured by clips connected to pipeangers, wall brackets, or trapeze type supports. 'U' bolts shall not be used as a substitute for pipe clips without the prior approval of the Engineer.

An approximate guide to the maximum permissible supports spacing in metres for steel and copper pipe and tube is given in the following table for horizontal runs.

Size Nominal Bores	to B.S. 659	Copper Tube to B.S. 1387
15mm	1.25m	2.0m
20mm	2.0m	2.5m
25mm	2.0m	2.5m
32mm	2.5m	3.0m
40mm	2.5m	3.0m
50mm	2.5m	3.0m
65mm	3.0m	3.5m
80mm	3.0m	3.5m
100mm	3.0m	4.0m
125mm	3.0m	4.5m
150mm	3.5m	4.5m

The support spacing for vertical runs shall not exceed one and a half times the distances given for horizontal runs.

c) Expansion Joints and Anchors

Where practicable, cold pipework systems shall be arranged with sufficient bends and changes of direction to absorb pipe expansion providing that the pipe stresses are contained within the working limits prescribed in the relevant B.S. specification.

Where piping anchors are supplied, they shall be fixed to the main structure only. Details of all anchor design proposals shall be submitted to the Engineer for approval before erection commences.

The Sub-contractor when arranging his piping shall ensure that no expansion movements are transmitted directly to connections and flanges on pumps or other items of plant.

The Sub-contractor shall supply flexible joints to prevent vibrations and other movements being transmitted from pumps to piping systems or vice versa.

3.2.5 **Sanitary Appliances**

All sanitary appliances supplied and installed as part of the Sub-contract works shall comply with the general requirements of B.S. Code of Practice 305 and the particular requirements of the latest B.S. Specifications.

3.2.6 **Pipe Sleeves**

Main runs of pipework are to be fitted with sleeves where they pass through walls and floors. Generally the sleeves shall be of P.V.C. except where they pass through the structure, where they shall be mild steel. The sleeves shall have 6mm – 12mm clearance all around the pipe or for insulated pipework all around the installation. The sleeve will then be packed with slag wool or similar.

3.3 **INSTALLATION**

3.3.1 **General**

Installation of all pipework, valves, fittings and equipment shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The Sub-contractor shall be responsible to the Main Contractor for ensuring

that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

3.3.2 **Above Ground Installation**

a) **Water Services**

Before any joint is made, the pipes shall be hung in their supports and adjusted to ensure that the joining faces are parallel and any falls which shall be required are achieved without springing the pipe.

Where falls are not shown on the Contract Drawings or stated elsewhere in the Specification, pipework shall be installed parallel to the lines of the buildings and as close to the walls, ceilings, columns, etc., as is practicable.

All water systems shall be provided with sufficient drain points and automatic air vents to enable them to function correctly.

Valves and other user equipment shall be installed with adequate access for operation and maintenance. Where valves and other operational equipment are unavoidably installed

beyond normal reach or in such position as to be difficult to reach from a small step ladder, extension spindles with floor or wall pedestals shall be provided.

Screwed piping shall be installed with sufficient number of unions to facilitate easy removal of valves and fittings, and to enable alterations of pipework to be carried out without the need to cut the pipe.

Full allowances shall be made for the expansion and contraction of pipework, precautions being taken to ensure that any force produced by the pipe movements are not transmitted to valves, equipment or plant.

All screwed joints to piping and fittings shall be made with P.T.F.E. tape.

The test pressure shall be maintained by the pump for about one hour and if there is any leakage, it shall be measured by the quantity of water pumped into the main in that time.

A general leakage of 4.5 litres per 25mm of diameter, per 1.6 kilometres per 24 hours per 30 metres head, may be considered reasonable but any visible individual leak shall be repaired.

b) Sanitary Services

Soil, waste and vent pipe system shall be installed in accordance with the best standard of modern practice as described in B.S. 5572 to the approval of the Engineer.

The Sub-contractor shall be responsible for ensuring that all ground waste fittings are discharged to a gully trap before passing to the sewer via a manhole.

The Sub-contractor shall provide all necessary rodding and inspection facilities within the draining system in positions where easy accessibility is available.

Where a branch requires rodding facilities in a position to which normal access is unobtainable, then that branch shall be extended so as to provide a suitable purpose made rodding eye

in the nearest adjacent wall or floor to which easy access is available.

The vent stacks shall terminate above roof level and where stack passes through roof, a weather skirt shall be provided. The Sub-contractor shall be responsible for sealing the roof after installation of the stacks.

The open end of each stack shall be fitted with a plastic coated or galvanised steel wire guard.

Access for rodding and testing shall be provided at the foot of each stack.

Sanitary Appliances

All sanitary appliances associated with the Sub-contract works shall be installed in accordance with the best standard of modern practice as described in C.P. 305 to the approval of the Engineer.

TESTING AND INSPECTION

3.4.1 Site Tests – Pipework Systems

a) Above Ground Internal Water Services Installation

All water service pipe system installed above ground shall be tested hydraulically for a period of one hour to not less than one and half times to design working pressure.

If preferred, the Sub-contractor may test the pipelines in sections. Any such section found to be satisfactory need not be the subject of a further test when system has been completed, unless specifically requested by the Engineer.

During the test, each branch and joint shall be examined carefully for leaks and any defects revealed shall be made good by the Sub-contractor and the section re-tested.

The Sub-contractor shall take all necessary precautions to prevent damage occurring to special valves and fittings during the tests. Any item damaged shall be repaired or replaced

at the Sub-contractor's expenses.

b) Above Ground Soil Waste and Ventilation System

All soil, waste and ventilating pipe system forming part of the above ground installation, shall be given appropriate test procedures as described in B.S. 5572, 1972.

Smoke tests on above ground soil, waste and ventilating pipe system shall not be permitted.

Pressure tests shall be carried out before any work which is to be concealed is finally enclosed.

In all respects, tests shall comply with the requirements of B.S. 5572.

3.4.2 Site Test – Performance

Following satisfactory pressure test on the pipework system operational tests shall be carried out in accordance with the relevant B. S. Code of practice on the systems as a whole to establish that special valves, gauges, control, fittings, equipment and plant are functioning correctly to the satisfaction of the Engineer.

All hot water pipework shall be installed with pre-formed fibre glass lagging to a thickness of 25mm where the pipe runs above a false ceiling or in areas where the ambient temperature is higher than normal with the result that pipe "sweating", due to condensation will cause nuisance.

All lagged pipes which run in a visible position after erection shall be given a canvas cover and prepared for painting as follows:

- i) Apply a coating of suitable filler until the canvas weave disappears and allow to dry.
- ii) Apply two coats of an approved paint and finish in suitable gloss enamel to colors
- iii) approved by the Engineer.

All lagging for cold and hot water pipes erected in crawlways, ducts and above false ceiling which after erection are not visible from the corridors of rooms, shall be covered with a reinforced aluminium foil finish banded in colours to be approved by the Engineer.

In all respects, unless otherwise stated, the hot and cold water installation shall be carried out in accordance with the best standard of modern practice and described in C.P.342 and C.P.310 respectively to the approval of the Engineer.

The test pressure shall be applied by means of a manually operated test pump or, in the case of long main or mains of large diameter, by a power driven test pump which shall not be left unattended. In either case precautions shall be taken to ensure that the required pressure is not exceeded.

Pressure gauges should be recalibrated before the tests.

The Sub-contractor shall be deemed to have included in his price for all test pumps, and other equipment required under this specification.

The test pressure shall be one and a half times the maximum working pressure except where a pipe is manufactured from a material for which the relevant B.S. specification designates a maximum test pressure.

3.5 **STERILISATION OF COLD WATER SYSTEM**

All water distribution system shall be thoroughly sterilized and flushed out after the completion of all tests and before being fully commissioned for handover.

The sterilisation procedures shall be carried out by the Sub-contractor in accordance with the requirements of B.S. Code of Practice 301, Clause 409 and to the approval of the Engineer.

PART F

PARTICULAR SPECIFICATION

FOR

PORTABLE FIRE EXTINGUISHERS

PART F

PARTICULAR SPECIFICATION

FOR

PORTABLE FIRE EXTINGUISHERS

<u>CLAUSE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
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PART F

PARTICULAR SPECIFICATIONS

FOR

PORTABLE FIRE EXTINGUISHER AND HOSE REEL INSTALLATIONS

4.1 GENERAL

The particular specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers and Boosted Hose Reel System. The Sub-contractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the contract drawings but which are necessary for the completion and satisfactory functioning of the works.

If in the opinion of the Sub-contractor there is a difference between the requirements of the Specifications and the Contract Drawings, he shall clarify these differences with the Engineer before tendering.

4.2 SCOPE OF WORKS

The Sub-contractor shall supply, deliver, erect, test and commission all the portable fire extinguishers and Hose Reel which are called for in these Specifications and as shown on the Contract Drawings.

4.3 WATER/CO₂ EXTINGUISHERS

These shall be 9-litre water filled CO₂ cartridge operated portable fire extinguishers and shall comply with B.S. EN 3/BS 1449 and to the requirements of B.S.1004. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping. There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:

Method of operation.

The words 'WATER TYPE' (GAS PRESSURE) in prominent letters.

Name and address of the manufacturer or responsible vendor.

The nominal charge of the liquid in imperial gallons and litres.

The liquid level to which the extinguisher is to be charged.

The year of manufacture.

A declaration to the effect that the extinguisher has been tested to a pressure of 24.1 bar (350 p.s.i.).

h) The number of British Standard 'B.S' 1004 or B.S. 1449.

4.4 PORTABLE CARBON DIOXIDE FIRE EXTINGUISHERS

These shall be portable carbon dioxide fire extinguishers and shall comply with B.S. EN 3/BS 1449 and B.S. 1004.

The body of extinguisher shall be a stainless steel cylinder manufactured to one of the following British Standards; B.S. 401 or B.S. 1288.

The filling ratio shall comply with B.S. 5355 with valves fittings for compressed gas cylinders to B.S.341. Where a hose is fitted it shall be flexible and have a minimum working pressure of 206.85 bar (3000 p.s.i.). The hose is not to be under internal pressure until the extinguisher is operated.

The nozzle shall be manufactured of brass gunmetal, aluminium or stainless steel and may be fitted with a suitable valve for temporarily stopping the discharge if such means are not incorporated in the operating head.

The discharge horn shall be designed and constructed so as to direct the discharge and limit the entrainment of air. It shall be constructed of electrically non-conductive material.

The following markings shall be applied to the extinguishers:-

The words "Carbon Dioxide Fire Extinguisher" and to include the appropriate nominal gas content.

Method of operation.

The words "Re-charge immediately after use".

Instructions for periodic checking.

The number of the British Standard B.S. 3326: 1960 or B.S. 5423.

The manufacturers name or identification markings

4.5 DRY CHEMICAL POWDER PORTABLE FIRE EXTINGUISHER

The portable dry powder fire extinguishers shall comply with BS EN 3/BS 1449 and BS 1004. The body shall be constructed to steel not less than the requirements of BS 1449

or aluminium to BS 1470 : 1972 and shall be suitably protected against corrosion.

The dry powder charge shall be not-toxic and retain its free flowing properties under normal storage conditions. Any pressurizing agent used as an expellant shall be in dry state; in particular compressed air.

The discharge tube and gas tube if either is fitted shall be made of steel, brass, copper or other not less suitable material. Where a hose is provided it shall not exceed 1,060mm and shall be acid and alkali resistant. Provision shall be made for securing the nozzle when not in use.

The extinguisher shall be clearly marked with the following information

- a) The word "Dry Powder Fire Extinguisher"
- b) Method of operation in prominent letters.
- c) The working pressure and the weight of the powder charge in Kilogramme.
- d) Manufacturers name or identification mark
- e) The words "RECHARGE AFTER USE" if rechargeable type.
- f) Instructions to regularly check the weight of the pressure container (gas Cartridge) or inspect the pressure indicator on stored pressure types when fitted, and remedy any loss indicated by either.
- g) The year of manufacture.
- h) The Pressure to which the extinguisher was tested.
- i) The number of this British Standard BS 3465 or BS 5423: 1977.
- j) When appropriate complete instructions for charging the extinguisher shall be clearly marked on the extinguisher or otherwise be supplied with the refill.

4.6 AIR FOAM FIRE EXTINGUISHER

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. EN 3/BS 1449 and BS 1004 with the following specifications:-

Cylinder: **to B.S. 1449**

Necking: to be 76mm outside diameter steel EN 3A 2³/₄ X 8TPI female thread.

Head cap: to be plastic moulding acetyl resin.

CO2 Cylinder: to be 75gm P.V.C coated.

Internal Finish: to be polythene lining on phosphate coating.

External finish: to be phosphated - One coat primer paint and one coat stove enamel B.S. 381 C.

4.7 FIRE BLANKET

The fire blanket shall be made from cloth woven with pre-asbestos yarn or any other fire proof material and to measure 1800 x 1210 mm and shall be fitted with special tapes folded so as to offer instantaneous single action to release blanket from storing jacket to BS 1721.

4.8 SIGNAGE -FIRE EXIT SIGN

Proceed and procure and install as below;

Print **Fire Exit** signs on the Perspex plate, 5mm thick, with white colour background as follows:-

1. Lettering **IN RED COLOUR** of not less than 50mm in height.
2. A pendant sign bearing words, **FIRE EXIT** and with a **directional arrow**.
3. The sign must be capable of being read from both approaches to exit and so is double sided.

4.9 SIGNAGE -FIRE INSTRUCTION NOTICE

Print fire instruction on the Perspex plate, 5mm thick with White Colour Background measuring 510mm lengthx380mm width as follows;

FIRE INSTRUCTION NOTICE

In the event of fire;

- (1) Raise the alarm by actuating the nearest alarm system point, Sound Siren /gong or Shout Fire
- (2) Attack fire using the nearest available equipment
- (3) Call fire Brigade 2222181/2 or Police 999 and inform your switchboard (PABX) Operator
- (4) Ensure that all personnel not involved in fire fighting are evacuated to safety outside the building.
- (5) Close but **DO NOT LOCK** doors behind as you leave.
- (6) Evacuate the building using the nearest emergency exit Suitable. do not use Lifts/escalators walk calmly. Avoid panic.
Do not stop or return for personal belongings.
- (7) Assemble as per floor outside the building for roll call.

PART G
PARTICULAR SPECIFICATIONS
FOR
FIRE HYDRANTS
AND
FIRE SUPPRESSION SYSTEMS

PART G

**PARTICULAR SPECIFICATIONS FOR FIRE HYDRANT, FIRE HYDRANTS PUMP
AND INERT GAS AUTOMATIC FIRE SUPPRESSION SYSTEM**

<u>CLAUSE.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
7.1	General	G1
7.2	Scope of Works	G1
7.3	Fire Hydrant Details	G1
7.4	Stand Pipes	G3
7.5	Hose Pipe	G3
7.6	Fire Suppression	G4 – G15

7.1 GENERAL

This particular specification details the requirement for the supply, installation and commissioning of the Fire Hydrants and Fire Hydrant Pump. The hydrants installation shall comply in all respects to the requirements of BS. 750: 1977 or the latest version of it.

7.2 Scope of Works

The Sub-Contractor shall supply, deliver, erect, test and commission underground screw-down type fire hydrants and portable fire hydrant pumps.

7.3 FIRE HYDRANT DETAILS

(a) Hydrant body

The body of the hydrant shall be made of grey cast iron complying with the requirements of BS 1452 having a tensile strength not less than that given for grade 14.

(b) Hydrant Valve

The valve shall be faced with suitable resilient material. The threaded part of the valve, which engages with the spindle, shall be of bronze.

Body seating for the valves shall be of copper alloy complying with the requirements of BS 1400, or high tensile brass complying with the requirements of BS 2872 or BS 2874.

Turning the spindle cap in a clockwise direction when viewed from above shall close valves and the direction of opening shall be permanently marked on the gland.

(c) Spindle & Spindle Cap

The spindle note shall be either of the same material as the spindle, or of copper alloy complying with the requirements of BS/1400 either type LG 2 or type LG 4. It shall have a squared top formed to receive either a cast iron spindle cap.

The spindle shall be made of copper alloy complying with the requirements of BS 2874, either type CZ114 or type CZ115, and it shall have a threaded machined of trapezoidal form.

The spindle cap shall be of a cast iron secured to the spindle by on M12 hexagon socket set screw conforming to BS 4168.

(d) **Hydrant outlet**

The outlet flange of the hydrant shall have above nominal diameter 65mm, and shall be fitted with a screwed outlet – Both flanges shall be 50 mm conforming to
to
BS 4504: Part 1: 1969

The screwed outlet shall be provided with a cap of cast iron or other suitable material. The cap shall cover the outlet thread completely and shall be attached
to the hydrant by a chain

The distance between the axis of the outlet and the nearest point on the spindle fitting shall be not less than 100 mm.

The screwed outlet shall be made of

Copper alloy to BS 1400, type LG2G or DC BIC or
Copper alloy to BS 2872, type CZ114 or CZ115, or
Suitable spheroidal graphite iron to BS 2789 protected against corrosion
accordance with CP 2008.

(e) **Drain Boss**

Each shall be provided with a suitable drain boss on the outlet side. This shall be located at the lowest practical point which will permit the filling of self-operating a drilled drip plug.

(f) **Jointing**

The hydrants shall have machined joint faces through out and the fitting of adjoining parts shall be such as to make sound joints, corresponding parts of hydrants of the same design and manufacture shall be interchangeable.

(g) **Hydrant coating**

The hydrant shall be coated in accordance to BS. 4164.

(h) **Surface Box.**

The clear opening of hydrant surface boxes at ground level shall not be less than 250mm x 380mm

The depth of frame shall normally be

- a) for boxes located on footpaths: 100mm
- b) For boxes located in roads: 125mm

(i) **Markings**

Surface box covers shall be clearly marked by having the words 'FIRE HYDRANT' in letter not less than 30mm high, or the initials 'F.H.' in letters not less than 75mm high cost into the cover.

(j) **Surface Box Covers & Frames.**

The surface box frames and covers shall be graded in accordance with 2.1. of BS 497:1967 and shall meet the loading test requirement also given in BS 497

(k) **Testing**

The hydrants shall be deemed to have undergone the necessary hydrostatic and flow test at time of manufacture Necessary test certificates from the manufacturer shall be needed. The test, to conform to BS 750: 1977: Appendix a.1

7.4 **STAND PIPES**

One end of these shall have internal threads to couple with the 80mm diameter external threads of the screw down type fire Hydrant (BS750 type 2 hydrants) outlet. The other shall have 65mm diameter internal threads to couple with the interconnect or hose of the pump set

7.5 **HOSE PIPE**

Each cotton synthetic fibre rubberised fire hosepipe to be 25mm metres long with 65mm diameter female instantaneous type connector.

7.6 PARTICULAR SPECIFICATIONS FOR FIRE SUPPRESSION SYSTEMS

PROINERT SYSTEM

- **Zero Ozone Depletion Potential (ODP)** Proinert consists of Argon Nitrogen from nature. When released, they automatically return to their natural place in the environment.
- **Zero Global Warming Potential (GWP)** Argon and Nitrogen have no atmospheric lifetime, so they pose no risk to the environment.
- Similar To Air Density At discharge, the **PROINERT** gas mixture possesses a density similar to air. You can count on:
 - Exceptional Extinguisher Hold Time
 - Minimal Room Sealing required
 - Improved Penetration from Top to Bottom of the Protected Room
- **Easy Economical Refill and Real-Life Testing** Because Argon and Nitrogen occur naturally in the environment, our extinguishant is readily available and affordable. With **PROINERT**, a real-life Discharge Testing is feasible.
- **No Secondary Combustion Products** Argon and Nitrogen do not decompose into toxic or corrosive elements in a fire, making it a safe choice for people and assets.
- **No Fogging PROINERT** is ideal for occupied spaces because escape routes remain visible.
- **No Residue** That means no damage to your equipment and no clean up required.
- Produced oxygen levels will not sustain a combustion reaction but are acceptable for human exposure over a short period of time.

PROINERT extinguishes a fire by reducing the oxygen concentration.

Globally Approved and Recognized

- UL
- FM
- LPCB
- Included in ISO 14520
- Included in EN 14520
- Included in NFPA 2001
- US EPA SNAP listed
- HAG listed
- TPED compliant
- DOT compliant

FROM ART TO INDUSTRY PROINERT has a wide variety of industries and applications.

- Art Galleries
- Museums
- Archive Storage
- Computer / Operation Rooms
- Control Rooms
- Financial Centers and Banks
- Electronics and data Processing
- Insurance Industries
- Military Installations
- Pharmaceutical / Medical
- Process Industry Control Rooms
- Rare Book Libraries
- Record Storage facilities
- Substation Control Rooms
- Switch Rooms
- Telecom Centers
- Universities and Colleges

Inergen™ Fire Suppression System

Environmental – Impact

INERGEN agent is a mixture of three naturally occurring gases; nitrogen, argon, and carbon dioxide. As INERGEN agent is derived from gases present in the earth's atmosphere, it exhibits no ozone depleting potential, does not contribute to global warming, nor does it contribute unique chemical species with extended atmosphere lifetimes. Because INERGEN agent is composed of atmospheric gases, it does not pose the problems of toxicity associated with the chemically derived Halon alternative agents.

Product Description

The INERGEN Fire Suppression System, manufactured by Ansul, is an engineered system utilizing a fixed nozzle agent distribution network. The system is designed and installed in accordance with the National Fire Protection Association (NFPA) Standard 2001, "Clean Agent Fire Extinguishing System." When properly designed, the INERGEN system will extinguish surface burning fire in Class A, B and C hazards by lowering the oxygen content below the level that supports combustion.

INERGEN agent has also been tested by FMRCAs for inerting capabilities. Those tests have shown that INERGEN agent, at design concentration between 40% and 50% has successfully inerted mixtures of propane/air, and methane/air.

The system can be actuated by detection and control equipment for automatic system operation along with providing local and remote manual operation as needed. Accessories are used to provide alarms, ventilation control, door closures, or other auxiliary shutdown or functions.

When INERGEN agent is discharged into a room, it introduces the proper mixture of gases that will allow a person to breathe in a reduced oxygen atmosphere.

A system installation and maintenance manual is available containing information on system components and procedures concerning design, operation, inspection, maintenance, and recharge. The system is installed and serviced by authorized distributors that are trained by the manufacturer.

Basic Use – The INERGEN system is particularly useful for suppressing fires in hazards where an electrically nonconductive medium is essential or desirable, where clean-up of other agents present a problem; or where the hazard is normally occupied and requires a not toxic agent.

The following are typical hazards protected by INERGEN systems:

- Computer rooms
- Subfloors
- Tap storage
- Telecommunication/Switchgear
- Vaults
- Process equipment
- All normally occupied or unoccupied electronic areas where equipment is either sensitive or irreplaceable.

Composition and Materials – The basic system consist of extinguishing agent stored in high strength alloy steel cylinders. Various types of actuators, either manual or automatic, are available for release of the agent into the hazard area. The agent is distributed and discharge into the hazard area through a network of piping and nozzles. Each nozzle is drilled with a fixed orifice designed to deliver a uniform discharge to the protected area. On large hazards, where three or more cylinders are required, a screwed or welded pipe manifold assembly is employed. The cylinder(s) is connected to the distribution piping or the manifolds by means of a flexible discharge bend and check valve assembly. Different size cylinders may be connected to the same manifold.

Additional equipment Includes – Control panels, releasing devices, remote manual pull stations, corner pulleys, door closures, pressure trips, bells and alarms, and pneumatic switches. All or some are required when designing a total system.

INERGEN Agent

INERGEN agent is a mixture of three inerting (oxygen diluting) gases: 52% nitrogen, 40% argon, and 8% carbon dioxide. INERGEN gas extinguishes fire by lowering the oxygen content below the level that supports combustion. When INERGEN agent is discharged into a room, it introduces the proper mixture of gases that still allow a person to breath in a reduced oxygen atmosphere. It actually enhances the body's ability to assimilate oxygen. The normal atmosphere in a room contains 21% oxygen and less than 1% carbon dioxide. If the oxygen content is reduced below 15%, most ordinary combustibles will cease to burn. INERGEN agent will reduce the oxygen content to approximately 12.5% while increasing the carbon dioxide content to about 4%. The increase in the carbon dioxide content increased a person's respiration rate and the body's ability to absorb oxygen. Simply state, the human body is stimulated by the carbon dioxide to breathe more deeply and rapidly to compensate for the lower oxygen content of the atmosphere.

Cylinders – The cylinders are constructed, tested, and marked in accordance with applicable Dept. of Transportation (DOT) and the U.S. Bureau of Explosives specifications. As a minimum, the cylinders must meet the requirements of DOT 3AA2300 or 3AA2015+.

Cylinder Assembly – the cylinder assembly is of steel construction with a red standard finish. Four sizes are available to meet specific needs. Each is equipped with a pressure seat-type valve equipped with gauge. The valve is constructed of forged brass and is attached to the cylinder providing a leak tight seal. The valve also includes a safety pressure relief device which provides relief at 2900-3300 psi (20685-23167 kPa) per CGA test method. Cylinder charging pressure is 2175 psi at 70°F (14997 kPa at 21° C). The cylinders are shipped with a maintenance record card and shipping cap attached. The cap attached to the threaded collar on the neck of each cylinder to protect the valve while in transit. The cylinder serial number and date of manufacture are stamped near the neck of each cylinder.

Electric Solenoid Actuator – Electric actuation of an agent is accomplished by an electric solenoid actuator interfaced through an AUTOPULSE® Control system. This actuator can be used in hazardous environments where the ambient temperature range is between 32°F (0 °C and 54 °C). In auxiliary or override applications, a manual lever actuator can be installed on top of the cylinder valve.

Manual or Pneumatic Actuators – Two types of manual/pneumatic actuators are available for lever actuation of the cylinder valve. Manual actuation is accomplished by pulling the hand lever on the actuator. The lever design contains a forged mechanical detent which secures the lever in the open position when actuated. A pneumatic actuator is available to provide a pneumatic means for a remote pressure release from a remote pressure device.

Detection System – The AUTOPULSE Control System is used where an automatic electronic system is required to actuate the INERGEN system. This control system is used to control a single fixed fire suppression or alarm system based on inputs received from fire detection devices. The detection circuits can be configured using cross, counting, independent or priority-zone (counting) concepts. The control system has been tested to the applicable FCC Rules and Regulations for Class A Computing devices.

Nozzles – Nozzles are designed to direct the discharge of INERGEN agent using the stored pressure from the cylinders. Five sizes of nozzles are available. The system design specifies the nozzle and orifice size to be used for proper flow rate and distribution pattern. The nozzle selection depends on the hazard and location to be protected.

Orifice Union – The orifice union is required in the distribution piping to restrict the flow of INERGEN agent, thus reducing the agent pressure downstream of the union. The union contains a stainless steel orifice plate which is drilled to the specific size hole required based on the hydraulic calculation. The orifice plate provided readily visible orifice identification. The orifice is available in eight sizes ½ in, ¾ in, 1 in, 1¼ in, 1½ in, 2 in, 2½ in, and 3 in, NPT>

Pipe and Fittings – The system manifold must be constructed of Schedule 80 piping and class 2000 or 300lb. steel fitting, threaded or welded. The distribution piping downstream from the orifice union must be constructed of a minimum of Schedule 40 piping with class 300 malleable iron threaded fittings. All the following type must be black or galvanized. All piping must be black or galvanized steel of the following type and grade. ASTM A-53 seamless or electric resistance welded, grade A or B, or ASTM A-106 grade A, B, or C. **Do not use ASTM A-120, ASTM A-53 type F or ordinary cast iron pipe or fittings.**

Limitations – The INERGEN system must be designed and installed within the guidelines of the manufacturer's design, installation, operation, inspection, recharge, and maintenance manual. The ambient temperature limitations are 32 °C to 130 °F (0 °C to 54 °C). All AUTOPULSE Control Systems are designed for indoor application and for temperature ranges 32 °F and 120 °F (0 ° and 49 ° C)

Technical Data

Applicable Standards: The INERGEN system complies with NEPA Standard 2001, Standard for Clean Agent Fire Extinguisher Systems, and EPA Program SNAP, Significant New Alternate Policy.

Agent is listed and approved by Underwriters Laboratories, Inc. (UL) and factory Mutual Research Corporation (FMRC).

Installations

All system components and accessories must be installed by personnel trained by the manufacturer. All installations must be performed according to the guidelines stated in the manufacturer's design, installation, operation, inspection, recharge and maintenance manual.

Availability and Cost

Availability – INERGEN Systems are sold and serviced through an international network of independent distributors located in most states and many foreign countries.

Cost – Cost varies with type of system specified, size, and design.

Product Warranty

Warranty – The components of the fire suppression system supplied by Ansul Fire Protection (“Ansul”)

are warranted to you as the original purchaser for one year from the date of delivery against the defects in workmanship and material. Ansul will replace or repair and Ansul supplied components, which, in its opinion, are defective and have not been tampered with or subjected to misuse, abuse or exposed to

highly corrosive conditions provided that written notice of the alleged defect shall have been given to

Ansul within 30 days after discovery thereof and prior to the expiration of one year after delivery, and further provided that if Ansul so instructs, such article or part thereof is promptly returned to Ansul with shipping charges prepaid.

Disclaimer of Warranty and Limitation of Damage – the warranty described above is the only one given by Ansul concerning this system. ANSUL MAKES NO OTHER WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE. ANSUL'S MAXIMUM RESPONSIBILITY FOR ANY CLAIMS WHETHER IN CONTRACT, TORT, NEGLIGENCE, BREACH OF WARRANTY, OR STRICT LIABILITY SHALL BE LIMITED TO THE PURCHASE PRICE OF THE SYSTEM. UNDER NO CIRCUMSTANCES SHALL ANSUL BE RESPONSIBLE FOR SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES OF ANY KIND. Ansul does not assume or authorize any other person to assume for it any additional liability in connection with the sale of this system.

For repairs, parts, and service on the Ansul fire suppression system, contact a local Ansul representative, or Ansul Fire protection, Marinette, WI 54143-2542, 800-TO ANSUL (862-6785)

False Discharge Warranty

Subject to the conditions set forth below, Ansul will, as purchaser's sole remedy, replace INERGEN gas and pay reasonable costs to recharge the INERGEN/ Detection and Control System where, in Ansul's opinion, the discharge has occurred due to a defect in the material or workmanship of the products provided by

Ansul. This warranty is extended only to the original purchaser of the INTERGEN/Detection and Control System.

Ansul will only replace INERGEN gas and pay reasonable costs to recharge the INERGEN / Detection and Control System where, in Ansul's opinion, the discharge has occurred due to a defect in the material or Workmanship of the products provided by Ansul. For example, Ansul will not be responsible for discharges due to faulty maintenance or installation or service, intentional acts by the owner or their parties, or circumstances over which Ansul has no control. Ansul will not be responsible for discharges of the

INERGEN /Detection and Control System which occur if the INERGEN/Detection and Control System, as initially installed, has been altered or modified.

This warranty shall be effective only if the original purchaser maintains a semi-annual service agreement for the INERGEN/Detection and Control System with an Authorized Ansul Distributors from the date of installation. This warranty covers only the INERGEN/Detection and Control Systems purchased from

Ansul or its Authorized Distributors and only those INERGEN/Detection and Control System which incorporate and use only hardware and components, including detection and control devices manufactured, sold, or approved by Ansul. This warranty may not be.

ANSUL

Features

- Low pH Agent
- Proven design
- Reliable Cartridge Operated
- Aesthetically Appealing
- UL Listed – Meets Requirements of UL 300

Application

The Ansul R-102 Restaurant Fire Suppression System is an automatic, pre-engineered, fire suppression system designed to protect the following areas associated with cooking equipment; ventilating equipment including hoods, ducts, plenums, and filters; fryers; griddles and range tops; upright, natural charcoal, or chain-type broilers; electric, lava rock, mesquite or gas-radiant char-broilers and woks.

The system is ideally suitable for use in restaurants, hospitals, nursing homes, hotels, schools, airports, and other similar facilities.

Use of the R-102 system is limited to interior applications only. The regulated release and tank assemblies must be mounted in an area where the air temperature will not fall below 32 °F (0 °C) or exceed 130 °F (54 °C). The system must be designed and installed within the guidelines of the UL Listed design, installation, Recharge, and Maintenance Manual.

System Description

The restaurant fire suppression system is a pre-engineered, wet chemical, cartridge-operated, regulated pressure type with a fixed nozzle agent distribution network. It is listed with Underwriters Laboratories, Inc (UL).

The system is capable of automatic detection and actuation and / or remote manual actuation. Additional equipment is available for mechanical or electrical gas line shut-off applications

The detection portion of the fire suppression system allows for automatic detection by means of specific alloy rated fusible links, which, when the temperature exceeds the rating of the link, the link separates, allowing the regulated releaser to actuate.

A system owner's guide is available containing basic information pertaining to system operation and maintenance. A detailed technical manual is also available including system description, design, installation, recharge, and maintenance procedures, plus additional equipment installation and resetting instructions.

The system is installed and serviced by authorized distributors that are trained by the manufacturer.

The basic system consists of an ANSUL AUTOMATION regulated release assembly which includes a regulated release mechanism and a wet chemical storage tank housed within a single enclosure. Nozzle blow-offs caps, detectors, cartridges, agent fusible links, and pulley elbows are supplied in separate packages in the quantities needed for fire suppression system arrangements.

Additional equipment includes remote manual pull station, mechanical and electrical gas valves, pressure switches, and electrical gas line shut-off. Accessories can be added such as alarms, warning lights etc, to installation where required.

Tanks can be used in multiple arrangements to allow for larger hazard coverage. Each tank is limited to a listed maximum amount c flow numbers.

Component Description

Wet Chemical Agent – The extinguishing agent is a mixture of organic and inorganic salts designed for rapid flame knockdown and foam securement of grease related fires. It is available in plastic containers with instructions for wet chemical handling and usage.

Agent Tank – The agent tank is installed in a stainless steel enclosure or wall bracket. The tank is deep drawn carbon steel finished in red enamel.

Tanks are available in two sizes: 1.5 gallon (5.7L) and 3.0 gallon (11.4L). The tanks have a working pressure of 100psi (6.9 bar), a test pressure of 300 psi (20.7 bar), and a minimum burst pressure of 600 psi. (41.4 bar).

The tank included an adaptor /tube assembly. The adaptor is chrome-plated steel with a ¼ in. NPT female gas inlet and 3/8 in. NPT female agent outlet. The adaptor also contains a bursting disc seal which prevents the siphoning of agent up the pipe during extreme temperature variations.

Regulated Release Mechanism – The regulated release mechanism is a spring-loaded mechanical/pneumatic type capable of providing the expellant gas supply to one or two agents tanks, depending on the capacity of the gas cartridge uses. It contains a factory installed regulator deadest at 100 psi (6.9 bar) with an internal relief of approximately 145 psi (10.0 bar). It has automatic actuation capabilities by a fusible link detection system and remote manual actuation by a mechanical pull station.

The regulated release mechanism contains a release assembly, regulator, expellant gas hose, and agent storage tank housed in a stainless steel enclosure with cover. The enclosure contains knock-outs for ½ in. conduit. The cover contains an opening for a visual status indicator.

It is compatible with mechanical gas shut-off devices; or when equipped with a field or factory-installed switch, it is compatible with electric gas line or appliance shut-off devices.

Regulated Actuator Assembly – When more than two agents tanks are required, the regulated actuator is available to provide expellant gas for additional tanks. It is connected to the cartridge receiver outlet of the regulated actuator deadest at 100 psi (6.9 bar) with an internal relief of approximately 145 psi (10.0 bar). The regulated actuator assembly contains a regulated actuator, regulator, expellant gas hose, and agent tank housed in a stainless steel enclosure with cover. The enclosure contains knockouts to permit installations of the expellant gas line.

Discharge Nozzles – each discharge nozzle is tested and listed with the R-102 system for a specific application. Nozzle tips are stamped with the flow number designation (1/2, 1, 2, and 3). Each nozzle must have a metal or rubber blow-off cap to keep the nozzle tip orifice free of cooking grease build-up.

Approval

Applicable Standards: ULI listed under EX3470; ULC listed under CEX-747; meets requirements of

NFPA 96 (Standard for the installation of Equipment for the Removal of Smoke and grease-Laden

Vapors from Commercial Cooking Equipment); NFPA 17A (Standard on Wet Chemical Extinguishing Systems)

Ordering Information

Order all systems components through your local authorized Ansul Distributor.

Specifications

An Ansul R102 Fire Suppression System shall be furnished. The system shall be capable of protecting all hazard areas associated with cooking equipment.

1.0 General 1.1 References

- 1.1.1 Underwent Laboratories, Inc. (UL)
 - 1.1.1 UL Standard 1254
 - 1.1.1.2 UL Standard 300
- 1.1.2 National Fire Protection Association (NFPA)
 - 1.1.2.1 NFPA 96
 - 1.1.2.1 NFPA 17A

1.2 Submittals

- 1.2.1 Submit two sets of manufacturer's data sheets
- 1.2.1 Submit two sets of piping design drawings

1.3 System Description

- 1.3.1 The system shall be an automatic fire suppression system using a wet chemical agent for grease related fires
- 1.3.2 The system shall be capable of suppressing fires in the following area associated with cooking equipment: ventilating equipment including hoods, ducts, plenums, and filter fryers; griddles and range tops; upright, natural charcoal, or chain-type broilers; electric, lava rock, mesquite or gas-radiant char-broilers.
- 1.3.3 The system shall be the pre-engineered type having minimum and maximum guidelines established by the manufacturer and listed by underwriters Laboratories, Inc, (UL)
- 1.3.4 The system shall be installed and serviced by personnel trained by the manufacturer.
- 1.3.5

1.4 Quality Control

- 1.4.1 Manufacturer: The R-102 Restaurant Fire Suppression System shall be manufactured by a company with at least thirty years experience in the design and manufacture of Pre-engineered fire suppression systems. The manufacturer shall be ISO 9002 registered
- 1.4.2 Certificates: The wet agent shall be a specially formulated, aqueous solution of organic salts with a pH range between 7, 8 -8.2, designed for flame knockdown and foam securement of grease-related fires.

1.5 Warranty, disclaimer, and Limitations

- 1.5.1 The pre-engineered restaurant fire suppression system components shall be warranted for five years from date of delivery against defects in workmanship and material.
- 1.6 Delivery
- 1.6.1 Packaging: All system components shall be securely packaged to provide protection during shipment.
- 1.7 Environmental Conditions
- 1.7.1 The R-102 system shall be capable of operating in a temperature range of 32° F to 130 ° F (0 °C to 54 °C).

2.0 Product 2.1.1 Ansul fire Protection, One Stanton Street, Marinette, Wisconsin 54143-2542,
Telephone (715) 735-7411.

2.2 Components

- 2.2.1 The basic system shall consist of ANSUL AUTOMAN regulated release assembly which includes a regulated release mechanism and a wet chemical storage tank housed within a single enclosure. Nozzle, blow-off caps, detectors, cartridges, agent, fusible links, and pulley elbows shall be supplied in separate packages in the quantities needed for fire suppression system arrangements. Additional equipment shall include remote manual pull station, mechanical and electrical gas valves, pressure switches, and electrical switches for automatic equipment and gas line shut-off.
- 2.2.2 Wet Chemical Agent: The extinguishing agent shall be a specially formulated, aqueous solution of organic salts with a pH range between 7,8 – 8.2, designed for flame knockdown and foam securement of grease related fire.
- 2.2.3 Agent Tank: The agent tank shall be installed in a stainless steel enclosure or wall bracket. The tank shall be deep drawn carbon steel finished in red enamel. Tanks shall be available in two sizes: 1.5 gallon (5.7L) and 3.0 gallon (11.4L). The tanks shall have a working pressure of 100 psi (6.9 bar), a test pressure of 300 psi (20.7 bar), and a minimum burst pressure of 600 psi. (41.4 bar). The tank shall include adaptor/tube assembly containing a burst disc union.
- 2.2.4 Regulated Release Mechanism: The regulated release mechanism shall be a spring-loaded mechanical/pneumatic type capable of providing the expellant gas supply to one or two agents tanks, depending on the capacity of the gas cartridge used. It shall contains factory installed regulator deadest at 100 psi (6.9 bar) with an internal relief of approximately 145 psi (10.0 bar).
It shall have the following actuation capabilities: automation actuation by a fusible link detection system and remote manual actuation by a mechanical pull station.

The regulated release mechanism shall contain a release assembly, regulator, expellant gas hose, and agent storage tank housed in a stainless steel enclosure with cover. The enclosure shall contain knockouts for ½ in. conduit. The cover shall contain an opening for a visual status indicator.

It shall be compatible with mechanical gas shut-off devices; or when equipped with a field or factory-installed switch, it shall be compatible with electric gas line or appliance shut-off devices.

- 2.2.5 Regulated Actuator Assembly: When more than two agents tanks are required, the regulated actuator shall be available to provide expellant gas for additional tanks. It shall be connected to the cartridge receiver outlet of the regulated release mechanism providing simultaneous agent discharge. The regulator shall be deaest to 100 psi (6.9 bar) with an internal relief of approximately 145 psi (10.0 bar). The regulated actuator assembly shall contain a regulated actuator, regulator, expellant gas hose, and agent tank housed in a stainless steel enclosure with cover. The enclosure shall contain knockouts to permit installations of the expellant gas line.
- 2.2.6 Discharge Nozzles: Each discharge nozzle shall be tested and listed with the R-102 system for a specific application. Nozzle tips shall be stamped with the flow number designation (1/2, 1, 2, and 3). Each nozzle shall have a metal or rubber blow-off cap to keep the nozzle tip orifice free of cooking grease build-up.
- 2.2.7 Distribution Piping: Distribution piping shall be schedule 40 black iron, chrome-plated, or stainless steel pipe conforming to ASTM A120, A53, or A106.
- 2.2.8 Detectors: The detectors shall be the fusible link style designed to separate at a specific temperature.
- 2.2.9 Cartridges: The cartridge shall be a sealed steel pressure vessel containing either carbon dioxide or nitrogen gas. The cartridge seal shall be designed to be punctured by the releasing device supplying the required pressure to expel wet chemical agent from the storage tank.

3.0 Implementation

3.1 Installation

- 3.1.1 The R-102 fire suppression system shall be designed, installed, inspected, maintained, and recharged in accordance with the manufacturer's listed instruction manual.

3.2 Training

- 3.3.1 Training shall be conducted by representative of the manufacturer.

(b) Halon 1301

For many years Halon has received extensive application as a fire suppression system for electrical and electronic equipment.

However due to its ozone depletion effects, production of Halon has been discontinued through the Montreal protocol which was signed on 16 September, 1987 and put in force on 7th February, 1989.

c) **Inergen**

Inergen is a mixture of Nitrogen, Argon and Carbon Dioxide in a 52, 40 and 8% ratio respectively. Oxygen being the main ingredient in combustion, inergen suppresses fire by reducing the oxygen content below the critical level required for combustion to take place.

However, reducing the level of oxygen substantially in any enclosure inhibits breathing making it difficult for the building occupants to operate. To overcome this the small percentage of carbon dioxide contained in inergen results in a higher breathing rate enabling people to function normally (see attached extract from an Inergen System Manual).

d) **Hi-Fog**

the main component of Hi-fog fire suppression system is distilled water. The water droplets turn into steam at high speed thus absorbing energy from the fires. The average droplets in Hi-fog yield a total surface area of atleast 100 times greater than Conventional Sprinkler drops for the same water volume, and therefore much smaller amounts of water are required. Due to the light weight of the droplets it would be difficult to penetrate the flue gases produced by the combustion source, however to overcome this, the fog discharge at high pressure through specially developed nozzles.

The Hi-fog system has high pressure water fog for extinguishing and low pressure fog for cooling the source of fire thus reducing the risk of re-ignition.

In operation hi-fog acts like a gas and fills every part of a room even where the fog spray is not directed. The low water volume implies that Hi-fog has little or no damage on paper or computer equipment. Hi-fog fire suppression system is readily available in the market and therefore easy to replenish.

e) **FM 200**

FM 200 is the closest and most suitable replacement for Halon 1301. "Preussag" FM 200 is environmental friendly being safe for use in both occupied and unoccupied spaces.

FM200 system is operated by an automatic fire detection system specifically designed for extinguishant release.

Like the Hi-fog system described above FM200 operates by absorbing chemical energy from the combustion process so that the temperature falls below the critical points as flame propagation cannot exist below 1300°C.

FM200 total flooding fire suppression system has the following advantages:

- (i) FM200 does not remove significant quantities of oxygen due to the low concentration required to extinguish a fire, and hence does not impede human breathing.
- (ii) The toxicity of FM200 is low and within acceptable limits.
- (iii) FM200 does not obstruct vision
- (iv) FM200 is quickly cleared by natural ventilation and has zero ozone depletion potential.

General Comments

The above fire suppression agent are stored in re-usable mild steel cylinders size: 200mm dia by 820mm high for 20kg cylinder and size: 230mm dia by 1530mm high for a 50Kg cylinder. Every cylinder is fitted with a discharge valve and integral pressure gauge.

Large cylinder sizes have a level indicator which allows the facilities annual check without having to disconnect the container from the pipework.

From the cylinder the suppressant is plumbed into various stations via suitably sized steel pipes (seamless) properly clipped along the building walls at high level and terminating at the roof level discharge nozzles.

Central location of the storage cylinders is preferred as this has an advantage in both security and maintenance. These cylinders require a storage area on ground floor measuring; 2m by 2m and located either within the building or externally.

SECTION H:

BILLS OF QUANTITIES

AND

SCHEDULE OF UNIT RATES

BILLS OF QUANTITIES AND SCHEDULE OF UNIT RATES

CONTENTS

<u>CLAUSE No.</u>	<u>PAGE</u>
1. GENERAL NOTES TO TENDERERS.....	H-1 to H-2
2. STATEMENT OF COMPLIANCE.....	H-3
3. BILLS OF QUANTITIES	H-4to H-40
4. SUMMARY PAGE.....	H-41
5. SCHEDULE OF UNIT RATES.....	H-42

BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against item of preliminaries in the sub-contractor's Bills of Quantities and specification. These Bills are designated as Bill 1 in this Section. Where the sub-contractor fails to insert his price in any item he shall be deemed to have made adequate provision for this

on various items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

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

Preliminaries – Bill 1

Sub-contractors preliminaries are as per those described in section C – sub-contractor preliminaries and conditions of contractor. The sub-contractor shall study the conditions and make provision to cover their cost in this Bill. The number of preliminary items to be priced by

the Tenderer have been limited to tangible items such as site office, temporary works and others. However the Tenderer is free to include and price any other items he deems necessary taking into consideration conditions he is likely to encounter on site.

Installation Items – Other Bills

The brief description of the items in these Bills of Quantities should in no way modify or supersede the detailed descriptions in the contract Drawings, conditions of contract and specifications.

The unit of measurements and observations are as per those described in clause 3.05 of the section C.

(c) Summary

The summary contains tabulation of the separate parts of the Bills of Quantities carried forward with provisional sum, contingencies and any prime cost sums included. The sub-contract shall insert his totals and enter his grand total tender sum in the space provided below the summary.

This grand total tender sum shall be entered in the Form of Tender provided elsewhere in this document

SPECIAL NOTES

1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.
2. The prices quoted shall be deemed to include for all obligations under the 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**).

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

3. All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part thereof.
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 in before receiving **Written approval** from the Project Manager, the sub-contractor shall remove the material in question and, **at his own cost**, install the proper material.

5. The grand total of prices in the price summary page must be carried forward to the **Form of Tender for the tender to be deemed valid**.
6. Tenderers must enclose, together with their submitted tenders, detailed manufacturer's Brochures detailing Technical Literature and specifications on all the equipment they intend to offer.

Statement of Compliance

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

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

Signed:*for and on behalf of the Tenderer*

Date:

Official Rubber Stamp:

SCHEDULE 1 – SUB-CONTRACT

PRELIMINARIES

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	CTS
1	Discrepancies clause 1.02					
2	Conditions of sub-contract Agreement clause 1.03					
3	Payments clause 1.04					
4	Site location clause 1.06					
5	Scope of Contract Works clause 1.08					
6	Extent of the Contractor's Duties clause 1.09					
7	Firm price contract clause 1.12					
8	Variation clause 1.13					
9	Prime cost and provisional sum clause 1.14 (insert profit and attendance which is a percentage of expended PC or provisional sum.)					
10	Bond clause 1.15					
11	Government Legislation and Regulations clause 1.16					
12	Import Duty and Value Added Tax clause 1.17 (Note this clause applies for materials supplied only. VAT will also be paid by the sub-contractor as allowed in the summary page)					
13	Insurance company Fees clause 1.18					
14	Provision of services by the Main contractor clause 1.19					
15	Samples and Materials Generally clause 1.21					
	SUB-TOTAL CARRIED TO PAGE H-6					

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	CTS
16	Supplies clause 1.20					
17	Bills of Quantities clause 1.23					
18	Contractor's Office in Kenya clause 1.24					
19	Builder's Work clause 1.25					
20	Setting to work and Regulating system clause 1.29					
21	Identification of plant components clause 1.30					
22	Working Drawings clause 1.32					
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	Initial Maintenance clause 1.42					
	SUB-TOTAL CARRIED TO PAGE H-6					

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	CTS
31	Attendance Upon Tradesmen, etc. (Insert percentage only) clause 1.58					
32	Local and other Authorities notices and fees clause 1.60					
33	Temporary Works clause 1.63					
34	Patent Rights clause 1.64					
35	Mobilization and Demobilization Clause 1.65					
36	Extended Preliminaries Clause 1.66 (see appendix on page C -24)					
37	Supervision by Engineer and Site Meetings Clause 1.67					
38	Allow for profit and Attendance for the above					
39	Amendment to Scope of Sub-contract Works Clause 1.68					
40	Contractor Obligation and Employers Obligation clause 1.69(see appendix on page C -24))					
41	Any other preliminaries;					
	Subtotal above					
	S Subtotal brought forward from page H-4					
	S subtotal brought forward from page H-5					
	TOTAL FOR SCHEDULE NO. 1- PRELIMINARIES CARRIED FORWARD TO PRICE SUMMARY PAGE					

PROPOSED KITUI FRESH PRODUCE MARKET AT KITHOMBOANI MARKET FOR KITUI MUNICIPALITY, COUNTY GOVERNMENT OF KITUI

MECHANICAL ENGINEERING SERVICES BQ

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
	Bill No1: SANITARY APPLIANCES				
	Supply, Install, test and commission the following sanitary appliances complete with all the accessories including all connections to the services, waste, jointing to water supply overflows, supports and all plugging and screwing to walls and floors. Note:				
	(i) All sanitary fittings shall be in approved colour.				
	(ii) The Model and Ref No. indicated is only a guide to the type and quality of fittings.				
	(iii) Equivalent and Approved models may be acceptable.				
A	Water Closet (WC) Suite Squatting water closet suite in white vitreous wc bowl with top plate and integral foot threads, S trap connector, wall plate dolco flush valve As “Geberit” or approved equivalent.	4	No.		
B	Close-coupled WC suite in White colour complete with horizontal outlet to BS 3402 with S trap connector, wall plate dolco flush valve and heavy plastic seat and cover with heavy plastic hinges. As “Geberit” or approved equivalent.	15	No.		
C	Shower Fitting and Tray 900mmx900mm free standing heavy duty shower tray complete with anti-slip resistance base, stainless steel grid waste fitting, 50mm waste and trap. As “Geberit” or approved equivalent complete with Concealed shower fitting in Chrome plating bearing Hot and Cold Control Valves. The unit to incorporate changing valves. Shower fitting to be as "Tapis Delta" concealed shower fitting.	2	No		
D	Build-in soap and sponge tray in approved colour. As “Geberit” or equal and approved.	2	No		
E	Wash Hand Basin (WHB) wash hand basin on counter top size 635 x 500mm with one tap hole, 32mm diameter chrome plated chain waste, chain stay hole, chrome plated non- conclusive time delay press action pillar tap and heavy duty plastic bottle trap (32mm 'P' trap) with 75mm seal. All to be as “Geberit” or equal and approved.	24	No.		
	Total carried to collection page				
		H/7			

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
	Disabled Persons Water Closet and Wash Hand Basin Facility				
A	Wheel chair accessible W.C facility Comprising of the following:- i) Close coupled W.C with 7.5 litre cistern with bottom inlet and overflow. The bowl shall be of size 375x560x420mm high. The bowl and cistern shall be manufactured from “Geberit”.The unit shall be complete with valveless cistern fittings including syphon, 15mm side inlet ball valve, 20mm side overflow, plastics flushbend, inlet connector and reversible metallic chrome plated cistern lever. There shall also be a heavy duty seat(25mmhigh) and cover with chrome plated metal hinges, toilet roll holder, 610 x 610 x 6mm thick mirror and robe hook.	4	Set		
	ii) Semi pedestal wall mounted W.H.B of size 600x500x545mm high with flexible connectors to waste and taps. The basin shall be manufactured from “Geberit”.It shall have one L/H tap hole with 1/2" chrome plated lever action pillar tap, chrome plated waste with height adjustable trap, pedestal and wall fixing bolts.				
	iii) Hinged support rail with toilet roll holder 770mm long manufactured in nylon coated aluminium and mounted on a wall fixing plate size 230x100 mm, 4No 600mm grab rails with covered wall plates. The set shall be as“Geberit”wheelchair accessible W.C. facility or approved equivalent.				
	Urinals bowls				
B	Ceramic urinal bowl complete with 40mm heavy duty plastic bottle trap and 40mm diameter chrome plated outlet with grating firmly fixed on the wall with chrome plated screws. The fittings shall be as “Geberit” or equal and approved.	12	Set		
	Total carried to collection Page		H/8		

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
	Urinal Bowl Divisions				
A	Ceramic urinal bowl divisions separating the above described urinal bowl fixed firmly on the wall. The fittings shall be as “Geberit” or equal and approved.	12	No		
	Urinal Bowl Flush Valves				
B	25mm urinal bowl flush valve for the above urinal bowls complete with, back entry with integral vacuum breaker, non-hold-open features and non-return valve, inlet control stop and wall plate comprising flush valve, bent chrome plated flush pipe and rubber pipe connector. The flush valve to be push button type. The fittings shall be as “Geberit” or equal and approved.	12	No		
	Robe Hook				
C	Robe hook in Satin Aluminium to be mounted by concealed screws to wall wedges. To be as “Geberit” accessories or equal and approved.	26	No.		
	Soap Dispenser				
D	Wall mounted soap dispenser with a capacity of about one litre sensor operating soap release action complete with fixing screws. Allow for initial soap supply. To be as “Geberit” or approved equivalent.	12	No.		
E	Hand Driers Automatic hand drier in white colour, operating on an infra-red automatic sensing system with heating element safety cut-out complete with a 30 seconds safety timer, plastic rawl plugs and fixing screws. The hand drier to have a heating capacity of 2.1kw and performance flow rate of 135cfm (3.82m ³ /min) and to be of size 270x264x143mm deep It shall have a noise level below 72.5 dBA at 1.5m. It shall be as “Geberit” or approved equivalent.	12	No.		
	Mirror				
F	6mm thick polished plate glass silver backed mirror with beveled edges, size 1600 x 497mm, Plugged and screwed to wall with 6No. chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam.	8	No.		
	Total carried to collection Page	H/9			

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
	Mirror				
G	6mm thick polished plate glass silver backed mirror with beveled edges, size 610 x 497mm, Plugged and screwed to wall with 6No. Chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam for Disabled Washroom.	4	No.		
	Towel Rail				
H	Chrome plated towel rail 1000mm long with the rail and brackets as one piece, all as “Geberit” or equal and approved.	2	No.		
	Cleaners Sink				
I	“Geberit” Ceramic cleaners sink size 500x480x280mm INSET to be fixed on concrete counter to inclusive of Hansgrohe single lever tap grid waste fitting pad, plastic bottle trap.	4	No.		
	Total carried to collection Page				
		H/10			

Item	Description	Qty	Unit	Rate	Cost Kshs
	<u>Unions</u>				
	25mm -ditto-	350	No		
	32mm -ditto-	300	No		
	40mm -ditto-	200	No		
	50mm -ditto-	150	No		
	65mm -ditto-	100	No		
	<u>Reducers</u>				
	32/25mm reducers	200	No		
	40/32mm reducers	175	No		
	50/40mm reducers	100	No		
	65/50mm reducers	100	No		
	<u>Gate valve</u>				
	25mm dia "Geberit" gate valve	15	No		
	32mm -ditto-	15	No		
	40mm -ditto-	15	No		
	50mm -ditto-	10	No		
	65mm -ditto-	10	No		
	<u>Flexible connectors</u>				
B	"Geberit" Braided Stainless Toilet Flexible Water Connector with "Geberit" angle check valve size 15mm dia including unions and sockets to connect sanitary fittings to PP-R Pipework	30	No		
	Water Check Meter				
C	Cold water check meters including all necessary joints to approval	5	No		
	Total carried to collection Page		H/13		

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
C	Tees				
	50mm diameter sweep tee	250	No.		
	32mm diameter sweep tee	200	No.		
D	Access Caps				
	100mm diameter access cap	100	No.		
	40mm diameter access cap	100	No.		
	32mm diameter access cap	50	No.		
E	Boss Connectors				
	150 x 100mm diameter boss connector	100	No.		
	100 x 50mm diameter boss connector	400	No.		
	50 x 32mm diameter boss connector	160	No.		
F	Single Branches				
	100mm diameter single branch	250	No.		
	50mm diameter single branch	340	No.		
G	WC Connectors				
	100mm diameter WC connector	100	No.		
H	Traps				
	100 x 50mm diameter floor trap and grating	50	No.		
	50 x 50mm diameter U-shaped tubular trap	25	No.		
I	Drainage Connection				
	Allow for connecting the drainage pipe work to the existing drainage system.	1	Item		
J	Testing and Commissioning				
	Allow for testing and commissioning of the plumbing and drainage installations to the satisfaction of the Engineer.	1	Item		
	Total carried to collection Page				
		H/16			

<u>Bill No. 4: Automatic Fire Protection Sprinkler System</u>					
Item	Description	Unit	Qty	Rate Kshs	Total (Kshs)
	Supply, deliver and install the following sprinkler system as described below and shown on the drawings. All pipework and fittings in this installation to be black steel, SCHEDULE 40 heavy grade to BS 1387 and fittings to BS 143 to conform to ASTM/ANSI/ASME. Threaded joints shall only be done for pipes of diameter 50mm and smaller. Tenderers must allow in their prices for jointings, couplings, supports, plugging and clamping, reducers, tees, nipples, mortices, pipe sleeves through structural members, etc for proper functioning of the system according to NFPA 13 - 2002 Edition.				
	Pipework				
A	25mm dia Blacksteel Schedule 40	LM	800		
B	32mm ditto	LM	500		
C	40mm ditto	LM	350		
D	50mm ditto	LM	200		
E	65mm ditto	LM	150		
F	75mm ditto	LM	150		
G	100mm ditto	LM	100		
	Extra over tubing for the following:-				
H	25mm diameter bend/elbow	No.	300		
I	32mm ditto	No.	200		
J	40mm ditto	No.	180		
K	50mm ditto	No.	120		
L	65mm ditto	No.	60		
M	75mm ditto	No.	55		
N	100mm ditto	No.	40		
	Tees				
P	25mm diameter tee	No.	200		
Q	32mm ditto	No.	120		
R	40mm ditto	No.	80		
S	50mm ditto	No.	70		
T	65mm ditto	No.	80		
U	75mm ditto	No.	60		
V	100mm ditto	No.	30		
Total carried to collection Page					
		H/19			

Item	Description	Unit	Qty	Rate Kshs	Total (Kshs)
A	40x32mm diameter reducing bush	No.	150		
B	50x25mm diameter reducing bush	No.	60		
C	50x32mm diameter reducing bush	No.	50		
D	50x40mm diameter reducing bush	No.	50		
E	65x25mm diameter reducing bush	No.	30		
F	65x32mm diameter reducing bush	No.	30		
G	65x40mm diameter reducing bush	No.	40		
H	65x50mm diameter reducing bush	No.	30		
I	75x40mm diameter reducing bush	No.	25		
J	75x50mm diameter reducing bush	No.	35		
K	75x65mm diameter reducing bush	No.	20		
L	100x40mm diameter reducing bush	No.	50		
M	100x50mm diameter reducing bush	No.	45		
N	100x65mm diameter reducing bush	No.	35		
O	100x75mm diameter reducing bush	No.	38		
P	150x100mm diameter reducing bush	No.	10		
Q	200mm diameter manifold to connect pump outlets to 150mm diameter pipe to control valve.	No.	2		
	General Ancillary Items for Pipework				
R	Mount the sprinkler pipe-work to building fabric. Pipework supports and anchoring shall be designed and constructed to NFPA 13 - 2002 Edition. These will be in 25x25 Angle gms painted with brackets & screws Sum	Sum	1		
S	Allow for pipe sleeves through structural walls, beams and columns as per the specifications.	Sum	1		
T	Paint the sprinkler pipe-work installation with a coat of red oxide primer, undercoat and two gloss coats to NFPA colour code specification.	Item	1		
	Total carried to collection Page				
			H/20		

Item	Description	Unit	Qty	Rate Kshs	Total (Kshs)
	Installation Control Valve Station				
A	150mm diameter Installation Control Valve Station comprising swing check sprinkler alarm valve flanged (PN16) fitted with a butterfly isolation valve, 50mm drain valve, 50mm test valve, air release valve, alarm motor stop valve, alarm motor & gong, retard chamber, manual by-pass valve, strainers and all necessary trim, common key padlocks, pressure gauges and pressure switches to enable the valve to operate, etc, for complete installation to NFPA 13 2002 Edition guidelines. Control valve station must be rated for operation pressures up to 12.5 bar and shall be manufactured by "Angus Fire" or an approved equivalent.	No.	1		
B	200mm diameter anti-vortex plate (6mm thick) made from brass material.	No.	1		
C	150mm diameter approved sluice valve and its associated unions to BS 5154 PN16 for series B rating with wheel head and joints to steel tubing as manufactured by "crane" (model 156) or an approved equivalent. The gate valve to have tamper proof fitting (Lockable).	No.	2		
D	Ditto 200mm diameter high pressure sluice valve	No.	2		
E	25mm diameter high pressure gate valve	No.	1		
	Sprinkler Pumpset				
	Supply and install SPP packaged sprinkler pumping set or equal and approved, comprising of one electric pump, one diesel pump and a Jockey pump. One pump to be duty and the other pump standby. Pumps shall be electrically driven complete with delivery check valves, delivery stop valves, non-return valves, pressure switch arrangement, etc. and all other accessories.				
	Total carried to collection Page				
			H/21		

Item	Description	Unit	Qty	Rate Kshs	Total (Kshs)
	<p>i) Diesel Pump Diesel motor driven pump capable of delivering (1500L/min) against a pressure of 100m head Speed shall be 3500rpm. The pump to be complete with Engine, Fuel tank, controller, L.E.D acid batteries and the exhaust system comprising riser, flexible connector, bend and industrial silencers. The pump shall be as manufactured by SPP or approved equivalent.</p>				
	<p>ii) Electric Pumps Electric motor driven pump capable of delivering 37.5L/s (3350L/min) against a pressure of 3.0 bar. Speed shall be 4500rpm. Pump shall be close coupled complete with the panel (Star-delta starter). The pump shall be “Grundfos” or approved equivalent.</p> <p>iii) Jockey pump An automatic jockey pump with a capacity of 10m³/hr at 100m head. The pump to be complete with accessories and connected to the same control panel as for the main sprinkler pumps. The pump shall be “Grundfos” or approved equivalent.</p>				
	<p>The pumps and connections to equipment to be mounted on a common pumps baseframe all welded on a common base plate. It should include all necessary sluice valves and non-return valves. The installation to be with alignment facilities and mounting. The pumps should have a flooded suction or to be self-priming. The entire installation to conform to NFPA 13 - 2002 Edition.</p>	Set	1		
	Electrical Works				
A	<p>Allow for electrical wiring & control connections between pumps, control panel and local isolator in steel conduit.</p>	Item	1		
	Total carried to collection Page				
			H/22		

Item	Description	Unit	Qty	Rate (Kshs)	Amount (Kshs)
	Sprinkler Pump Control Panel				
A	Supply and install dual control panel for the above three sprinkler pumps complete with appropriate overload protection, phase failure protection, automatic change over switch, star-delta starter for electric pumps, neon indicators for tripping and resetting plus any other necessary control accessories to operate all the three pumps including fault indication volt-free contact. Control panel to be as “Grundfos” or equal and approved.	No.	1		
	Pressure Vessel				
B	100 litres pressure vessels (or any other suitable combination for pumps operation) with butyl rubber membranes pre-charged before installation. The vessels to be as VT 100 (or any other suitable combination) manufactured by VAREM of Italy or an approved equivalent. The vessels shall be complete with pressure gauges, pressure switches for jockey pump and main fire pumps. The pressure vessels to be complete with an array of switches for automation of the pumps and any other necessary accessories.	Item	1		
	Sprinkler Heads (Nozzles)				
C	Supply and install 15mm diameter automatic sprinkler head, pendant convectional pattern with universal deflector and red bulb for 68°C (degrees Celsius) operating temperature as manufactured by Firekil International or equal and approved. The sprinkler heads shall be corrosive resistant type and suitable for fixing in basement parking’s.	No.	150		
D	Ditto but sprinkler heads as spare to be handed over to the client after completion of the entire installations, together with a set of sprinkler spanners, all fixed in a cabinet.	No.	50		
	Fire Brigade Inlet Breeching Valve				
E	Two way Fire Department Connection (Fire Brigade Inlet Breeching Valve) complete with drain valve, check valve, chain & caps for inlets and drain valve. All to be housed in a lockable standard cabinet with 6mm wired glass and identification sign. As Angus fire (UK) or equal	No.	2		
	Carried to collection Page		H/23		

Bill No. 5: FIRE FIGHTING					
Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Supply, deliver and install the following fire fighting equipment in positions indicated on the contract drawings or as shall be instructed by the Engineer.				
	Hose Reel System				
	Hose Reel				
A	Swinging type hosereel fitted with 30 metres long, 20mm diameter reinforced non-kink rubber hose with 5/6 mm lever operated shut-off nozzle, mild steel feed pipe, isolation valve, guide and all other accessories as 'Angus Fire Armour' or equal and approved.	13	No.		
	GMS Pipes Class B				
B	20mm diameter pipework	600	Lm		
C	25mm diameter pipework	500	Lm		
D	50mm diameter pipework	400	Lm		
	Extra Over Pipework				
	Bends				
E	20mm diameter bend	100	No.		
F	25mm diameter bend	50	No.		
G	50mm diameter bend	50	No.		
	Tees				
H	25mm diameter equal tee	100	No.		
I	50mm diameter equal tee	50	No.		
	Reducers				
J	25 x 20 mm diameter reducer	50	No.		
K	50 x 25 mm diameter reducer	50	No.		
	Valves				
L	25mm diameter approved medium pressure screw down full way non-rising stem wedge gate valve to BS 1952, with wheel and head joints to steel tubing. The gate valve to be as PEGLER or approved equivalent.	13	No.		
M	50mm diameter gate valve	5	No.		
N	65mm diameter gate valve	5	No.		
	Total carried to collection Page	H/25			

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Unions				
A	25mm diameter pipe union	250	No.		
B	50mm diameter pipe union	150	No.		
	Hosereel Pumpset				
D	<p>Hose reel pumpset, one duty, the other standby mounted on a frame with a mild steel base plate. Each pump shall have a duty 5m³/hr against 65m head as Grundfos model CHV 4 - 100 or approved equivalent.</p> <p>In addition, there shall be a 100 litres diaphragm pressure vessel (as Varem or approved equivalent), pressure switches, a switch to protect dry run, 65mm foot valve and strainer, tank connections, gate valves and non-return valves. The pressure set to be as Dayliff or equal and approved. Control shall be effected via a pressure switch through a pre-wired control panel which shall give automatic change-over from duty to standby pump within 5 seconds should the duty pump fail to deliver for any reason. The pumpset shall include all non-returns valves, timer, isolating valves and pipe connections.</p>	1	Set		
	Control Panel				
E	Control panel for above pumps with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer, 120 meters long float switch control 4-core cable to the roof tanks, start/stop push buttons and indicator lights. All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet that is oven powder coated. There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to not more than 6 per hour. It should include a change-over switch to enable the pumps to work alternately.	1	Item		
	Total carried to collection Page		H/26		

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
	Painting				
F	Allow for painting of the hose reel pipework as per particular specifications.	1	Item		
	Portable Fire Extinguishers				
	Supply, deliver, install, test and commission the following portable fire extinguishers and conforming to BS EN 3 / BS 1449.				
	Water/Carbon Dioxide Gas Fire Extinguisher				
G	9 litres water/carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	26	No		
	Carbon Dioxide Gas Fire Extinguisher				
H	5 Kg carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	26	No		
	Dry Chemical Powder Fire Extinguisher				
I	6kg dry chemical powder portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	26	No		
	Automatic Dry Chemical Powder Fire Extinguisher				
J	10kg automatic dry chemical powder fire extinguisher complete with pressure gauge, initial charge, glass bulb, sprinkler head and mounting base. The operating temperature of the bulb shall be 79°C. The unit shall be mounted on the concrete slab ceiling using purpose-made screws and to be as Germania, model GD 25 or equal and approved.	26	No		
	Fire Notices				
K	Allow for fire signage for the hose reel system, fire exits and fire instructions as directed by the Project Engineer.	26	No.		
J	Fire Blanket	26	No.		
	Total carried to collection Page		H/27		

Bill No. 6: Water Tanks and Pumps					
Item	Description	Unit	Qty	Rate Kshs	Total (Kshs)
	To supply and install the following:				
A	Roof water tanks:				
	Supply, deliver and assemble a roof water tank, made of pressed steel sectional tank plates 6mm thick plates (type 1 and 4) and of size 1000mm x 1000mm capacity of tank to be 150,000 litres and of preferred dimensions 4000mm x 4000mm x 6000mm. The tank to come complete with tank cover, internal and external ladders, mosquito proof inspection vent, internal stays, jointing material, bolts and nuts including applying two coats of non-toxic bituminous paint on the inside and two coats of aluminum paint on the outside. The tank shall be complete with the following pipe connections. 50mm dia inlet 2No.50mm dia. Outlets 50mm dia. Washout 50mm dia. Overflow	No.	1		
C	Allow for sterilization of the entire plumbing pipework and Tanks with chlorine to Engineers Approval.	Item	1		
E	Allow for construction 210,000 litres concrete underground water tank to structural engineer's details	Item	4	Qs to measure	0.00
	Underground Water Tank Fittings				
F	Provide the following connections to a 250,000 litres concrete water tank done by others. Connections to be in 4mm thick ,400x400mm gms paddle flanges:	Item	1	Qs to measure	0.00
G	2No. 50mm diameter inlet pipes (Council and borehole)	Item	1		
H	50mm diameter outlet pipe for domestic booster pumpset	Item	1		
I	150mm diameter outlet pipe for hose reel & sprinkler pump	Item	1		
Total carried to collection Page			H/29		

Item	Description	Unit	Qty	Rate Kshs	Total (Kshs)
	Lift Sump Pump				
A	A submersible pump capable of delivering 2m ³ /hr against 5M head, power rating 1Kw, single phase, 50Hz as “Grundfos” or equal and approved complete with control panel, associated electrical works, protection against dry run, on/off neon lights, control/pump status display panel, audio alarm with manual silencer to indicate when the pump is faulty, float switch and all necessary controls.	No.	3		
	Pipe Sleeves				
B	100mm diameter heavy duty PVC (class 41, 2.5mm thick) pipe sleeves for crossing over columns and beams.	Lm	50		
	Sump Pump				
C	2No Linz submersible pumps duty & standby model as “Grundfos” or Equal, power rating: 1kw, 1 phase, duty: 2m ³ /hr at 5m head. Pumps to have low level cut off switch	Set	2		
D	Pump Control Panel (For Sump Pumps) Pressed steel enamel painted body automatic control panel for the above pumps. Control panel to be wired for automatic duty and standby changeover combined with a manual select. The control panels incorporate among others the following features:- - Neon indicator lights for pump status. - Starters , selector and change over switches - Volt free contacts for signal connection to the annunciator panel. - No voltage/over voltage and phase failure relay. All housed in rodent/insects dust proof housing lockable with an Allen key.	No.	1		
	Sump Drainage				
E	50mm diameter CPVC pipework from the basement sumps to storm water drain.	LM	50		
F	50mm diameter CPVC bend	No	5		
G	50mm diameter gate valve	No	4		
H	50mm diameter non-return valve	No	4		
			H/30		

Item	Description	Unit	Qty		
	Water Booster Pumpset				
A	Set of automatic electrically driven twin booster pump. One duty and the other one standby with automatic changeover, capable of delivering 16m ³ /hr against a head of 32 meters with a 4kw,3ph power source. The pumpset shall be complete with 100 litres pressure vessel (as Grundfos set or equal and approved) 4No. Float switches and all accessories required for proper and satisfactory operation. It includes pressure switches, time delay switch, a switch to protect against dry run, timer, gate valves, non-return valves, water level indicator, float level regulator, 50mm diameter foot valve and strainer. The pump to be as Grundfos or approved equivalent. Pump to be installed on mild steel frame with approved paint.	Set	1		
	Control Panel				
B	Control panel for above pumps with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer, 80 meters long float switch control cable to the roof tanks, start/stop push buttons and indicator lights. All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet that is oven powder coated. There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to not more than 6 per hour. It should include a change-over switch to enable the pumps to work alternately.	Item	2		
	Electrical Works				
C	Allow for electrical works wiring and fitting to all pumps, control panel and float switches, from isolator provided by others with 3 Metres distance.	Item	1		
	Total carried to collection Page		H/31		

	Bill No. 7:RAINWATER & SURFACE WATER DRAINAGE				
Item	Description	Unit	Qty	Rate (Kshs)	Amount (Kshs)
	Rain Water Drainage				
	Supply and fix uPVC pipes to BS 4660 and BS 4515 and MuPVC pipes to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	Pipes				
A	100mm diameter heavy gauge grey mUPVC down pipes	Lm	700		
B	50mm diameter heavy gauge grey mUPVC down pipes	No.	500		
	Bends				
C	150mm diameter bend	No.	100		
D	150mm diameter 45 ⁰ bend	No.	80		
E	100mm diameter bend	No.	100		
F	50mm diameter bend	No.	100		
	Tees				
G	150mm diameter tee	No.	50		
H	100mm diameter tee	No.	50		
	Others				
I	200mm diameter single branch with 150mm boss adaptor	No.	30		
J	200 x 150mm diameter reducing socket	No.	30		
K	150mm diameter cast iron fulbora	No.	30		
L	200mm diameter cast iron fulbora	No.	20		
M	100mm diameter floor drain with grating for balcony	No.	75		
	Total Carried to Collection Page		H/33		

Item	Description	Unit	Qty	Rate (Kshs)	Amount (Kshs)
	Surface Water Drainage				
	Supply and fix uPVC pipes to BS 4660 and BS 4515 and MuPVC pipes to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	Pipes				
A	200mm diameter heavy gauge grey mUPVC down pipes	Lm	400		
B	150mm diameter heavy gauge grey mUPVC down pipes	Lm	600		
C	100mm diameter heavy gauge grey mUPVC down pipes	No.	250		
	Bends				
D	200mm diameter bend	No.	80		
E	200mm diameter 45° bend	No.	150		
F	150mm diameter bend	No.	100		
G	100mm diameter bend	No.	50		
	Tees				
H	200mm diameter tee	No.	50		
I	150mm diameter tee	No.	0		
	Others				
J	200mm diameter single branch with 150mm boss adaptor	No.	30		
K	200 x 150mm diameter reducing socket	No.	30		
L	450mm wide channel with gms grating to SE detail (QS to measure)	No.	0	QS to measure	0.00
	Total Carried to Collection Page				
			H/34		

	Bill No. 8: Dry Riser Installation				
Item	Description	Unit	Qty	Rate (Kshs)	Amount (Kshs)
	Supply and installation the following fittings for dry riser				
	Sheet Metal Box				
A	Inlet breeching sheet metal box with wired glass door secured with spring locks openable from inside by smashing the glass and releasing the locking devices on the lock. Approximate size to be 595 x 295 x 395mm high.	No.	1		
	Fire Brigade Breeching Inlet				
B	100mm diameter inlet breeching with twin inlets, each inlet consisting of a 65mm diameter male instantaneous coupling with a non-return valve and black cap secured with a short length of chain.	No.	1		
	Landing Valve				
C	65 mm diameter gunmetal gate pattern landing valve with flanged inlet and female instantaneous outlet fitted with plug secured by short chains and fixed on 100mm diameter dry riser pipe.	No.	12		
	Fire Hose				
D	65mm diameter, 30 Metres long canvas fire hose complete with branch pipe, nozzle, female instantaneous coupling head, hanging hook and other associated fittings for its proper functioning.	No.	12		
	Associated Pipework				
E	Supply and installation of Galvanized mild steel piping and fittings with screwed & socketed joint to medium grade class "B" to BS. 1387.				
	GMS Pipework				
F	100mm diameter pipe	Lm	500		
G	65mm diameter ditto	Lm	350		
H	50mm diameter ditto	Lm	200		
	Bends/Elbows				
I	100mm diameter bends/elbows	No.	30		
J	65mm diameter bends/elbows	No.	30		
	Total Carried to Collection Page		H/36		

Bill No. 9:Staircase Pressurization and Roof Cyclone.					
Item	Description	Unit	Qty	Rate (Kshs)	Amount (Kshs)
	Supply and install the following				
A	Welded duct manufactured out of 0.8mm thick mild steel with flange joints with EPDM gasket, hot dipped galvanized after manufacture including any transformation pieces, bends, Tees etc. manufactured in accordance with SMACNA and HVCA specification DW/142 (latest edition) complete with necessary hangers and support.	SM	300		
B	Waterloo extract grille with internal back pressure damper blades size 400x300mm complete with Volume Control dampers.	No.	5		
	<u>Fire Pressurization Fan</u>				
	Supply, Install, test and commission the following Items including connection to power supply and drainage and providing servicing access				
C	Fan to be complete with supports, flexible connections and anti-vibration mountings. Fan capable of delivering 1.5m ³ /s against 400Pa total pressure. Fan as Woods Centrifugal or equal and approved. Unit to include annual 5-step transformer fan speed controller	No.	1		
D	Silencer 400mm dia x 800mm long silencer as "Systemair" or equal	No.	1		
E	Electrical Controls / Control panel Allow for all the wiring and controls including remote and fixed control panel for 2No fans above with Phase failure, over/under voltage relays and all other accessories including start, stop, trip indicator lights and wiring to controls at Managers	Item.	1		
	Roof Cyclone				
F	Roof Cyclone 300 Fixed	No.	8		
G	Roof Cyclone Top and bottom plates	No.	16		
H	Safety Frame (Adjustable)	No.	8		
I	Fiberglass Soaker Flange	No.	8		
	Bill No. 9:Staircase Pressurization and Roof Cyclone Total carried to Main collection Page		H/39		

	<u>Main Collection Page</u>				KSHS
	Total Bill 01: Sanitary Appliances B/F From Page H/11				
	Total Bill 02: Internal Plumbing B/F From Page H/14				
	Total Bill 03: Foul Water Internal Drainage B/F From Page H/18				
	Total Bill 04: Automatic Fire Protection Sprinkler System B/F From Page H/24				
	Total Bill 05: Fire Fighting B/F From Page H/28				
	Total Bill 06: Water Tanks And Pumps B/F From Page H/32				
	Total Bill 07: RainWater & Surface Water Drainage B/F From Page H/35				
	Total Bill 08: Dry Riser Installation B/F From Page H/38				
	Total Bill 09: Staircase Pressurization and Roof Cyclone B/F From Page H/39				
	TOTAL				
	PC SUMS				
	Borehole PC Sum				8,000,000.00
	TOTAL SUMS				
			H/40		

**PROPOSED KITUI FRESH PRODUCE MARKET AT KITHOMBOANI MARKET FOR
KITUI MUNICIPALITY, COUNTY GOVERNMENT OF KITUI**

Mechanical Services

MAIN SUMMARY

Section	Item	From Page			
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1	Preliminaries	H6			
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II	Bills of Quantities	Page H/40			
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III	Add Contingency sum				
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2,000,000.00

Total carried to Form of Tender					
--	--	--	--	--	--

Sub-Contractors Signature:.....

Name.....

Address.....

Signature.....

Date.....

Witness Signature.....

Address

Signature

Date

SCHEDULE OF UNIT RATES

ITEM	DESCRIPTION	UNIT	RATE (KShs)
1.	Fire blanket	No.	
2.	Allow for the construction of a standard pump house	LM	
3.	65mm Fire Hydrant (above Ground)	No.	
4.	40mm flush valve	No.	
5.	Concealed 9.0 cistern with push button	No.	
6.	Water Booster pump o flow rate of 16m ³ /hr against a head of 32 meters with a 4kw,3ph as GRUNDFOS Or Equal	No.	
7.	Drainage sump pump as ‘Linz’ with a flow rate of 2m ³ /hr at 5m head Power 1 Kw single phase	No.	
8.	Submersible pump Lift sump pump as with a flow rate of 2m ³ /hr at 5m head Power 1 Kw single phase	No.	
9.	Hose reel pumpset as with a flow rate of duty 5m ³ /hr against 65m head Power 1 Kw single phase, Grundfos model CHV 4 - 100 or approved equivalent.	No.	
10.	SPP packaged sprinkler pumping set or equal and approved, comprising of one electric pump, one diesel pump and a Jockey pump. One pump to be duty and the other pump standby.	No.	
11.	Water closets (WC) as Tywford	No.	
12.	Wash hand basin as Tywford	No.	
13.	Soap dispenser as Tywford	No.	
14.	Toilet roll holder as Tywford	No.	
15.	Shower Fitting Urinals as Tywford	No.	
16.	Soap Dish as Tywford	No.	
17.	Hand drier	No.	
18.	Urinals as Tywford	No.	
19.	Urinals bowl division as Tywford	No.	
20.	Disabled persons WC and WHB as Tywford	No.	
21.	Robe Hook as Tywford	No.	
22.	Tower Rail as Tywford	No.	
23.	Cleaners Sink as Tywford	No.	

SECTION I:

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

CONTENTS

<u>CLAUSE No.</u>		<u>PAGE</u>
1.	GENERAL NOTES TO THE TENDERER.....	I-1
2.	TECHNICAL SCHEDULE.....	I-2

TECHNICAL SCHEDULE

General Notes to the Tenderer

The tenderer shall submit technical schedules for all materials and equipment upon which he has based his tender sum.

The tenderer shall also submit separate comprehensive descriptive and performance details for all plant apparatus and fittings described in the technical schedules. Manufacturer's literature shall be accepted. Failure to comply with this may have his tender disqualified.

Completion of the technical schedule shall not relieve the Contractor from complying with the requirements of the specifications except as may be approved by the Engineer.

TECHNICAL SCHEDULE

ITEM	DESCRIPTION	MANUFACTURER	COUNTRY OF ORIGIN	REMARKS (Catalogue No.etc.)
1	Water closets			
2	Wash hand basin			
3	Soap dispenser			
4	Toilet roll holder			
5	Soap Dish			
6	Hand drier			
7	Urinals			
8	Disabled persons WC and WHB			
9	UPVC pipes			
10	GMS Pipes			
11	Gate valves			
12	Non-return valves			
13	PPRC pipes			
14	Fire Signage			
14	Fire Extinguishers			
16	Hose reel			
17	Fire Hydrants			
18	Landing valves and Breeching valves			
19	Water Booster pumps			
20	Hosereel Pumps			
21	Sump pumps			
22	Sprinkler pumps			

SCHEDULE OF CONTRACT DRAWINGS

R554-001M- Basement Floor Plumbing, Drainage & Firefighting layout

R554-002M- Ground Floor Plumbing, Drainage & Firefighting layout

R554-003M – First Floor Plumbing, Drainage & Firefighting layout

R554-004M- Second Floor Plumbing, Drainage & Firefighting layout

R554-005M- Third & Fourth Floor Plumbing, Drainage & Firefighting layout

R554-006M- Roof Plan Plumbing layout

SECTION J:

STANDARD FORMS

NOTE:

ALL FORMS IN THIS SECTION MUST BE FILLED AS THEY SHALL BE PART OF THE
EVALUATION CRITERIA

CONTENTS OF SECTION J

TITLE	PAGE
1. Performance Bank Guarantee.....	J/1
2. Tender Questionnaire.....	J/2
3. Confidential Business Questionnaire.....	J/3–J/4
4. Key Personnel.....	J/5
5. Schedule of Contracts completed in the last eight (8) years.....	J/6
6. Schedule of on-going projects.....	J/7
7. Schedule of major items of contractor’s equipment.	J/8
8. Financial reports for the last five (5) years	J/9
9. Evidence of Financial Resources.	J/10
10. Name, Address and Telephone, Telex and Facsimile of Banks.	J/11
11. Draft Program of Works	J/12
12. Details of Litigation or Arbitrations	J/13
13. Self-declaration form	J/14-J15

NOTE:

- 1.0** Tenderers must duly fill these Standard Forms as a mandatory requirement.
- 2.0** Any tender returned with **unfiled Standard Forms** shall be considered **non-responsive and shall automatically be disqualified.**

(i)

PERFORMANCE BANK GUARANTEE

To: The Municipality Manager
Kitui Municipality
P.O Box 33-90200
KITUI.

Dear Sir,

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

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

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

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of:

Kshs. (*amount of Guarantee in figures*)

Kenya Shillings (*amount of Guarantee in words*),

and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of Kenya Shillings

..... (*amount of Guarantee in words*) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

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

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

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

SIGNATURE AND SEAL OF THE GUARANTOR

Name of Bank

Address

Date

TENDER QUESTIONNAIRE

Please fill in block letters.

Full names of Tenderer:

.....

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

.....

Telephone number (s) of Tenderer:

.....

Telex/Fax Address of Tenderer:

.....

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

.....

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

CONFIDENTIAL BUSINESS QUESTIONNAIRE

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

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

Part 1 – General

Business Name

Location of business premises: Country/Town.....

Plot No..... Street/Road

Postal Address..... Tel No.....

Nature of Business.....

Current Trade Licence No..... Expiring date.....

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

Name of your bankers.....

Branch.....

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.
4.

Part 2(c) – Registered Company

Private or Public

State the nominal and issued capita of the company:

Nominal KShs.

Issued KShs.

Give details of all directors as follows:

	<i>Name in full</i>	<i>Nationality</i>	<i>Citizenship Details* Shares</i>
1.
2.
3.
4.

Part 2(d) Interest in the Firm:

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

I certify that the above information is correct.

.....
Title

.....
Signature

.....
Date

* *Attach proof of citizenship*

KEY PERSONNEL

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

POSITION	NAME	YEARS OF EXPERIENCE (GENERAL)	YEARS OF EXPERIENCE IN PROPOSED POSITION
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

I certify that the above information is correct.

.....
Title

.....
Signature

.....
Date

CONTRACTS COMPLETED IN THE LAST EIGHT (8) YEARS

Work performed on works of a similar nature, complexity and volume over the last 8 years.

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

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

.....
Title

.....
Signature

.....
Date

SCHEDULE OF ON-GOING PROJECTS

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

<u>PROJECT NAME</u>	<u>NAME OF CLIENT</u>	CONTRAC T SUM	% COMPLET E	COMPLETIO N DATE

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

.....
Title

.....
Signature
J/7

.....
Date

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

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

FINANCIAL REPORTS FOR THE LAST FIVE YEARS

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

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

**EVIDENCE OF FINANCIAL RESOURCES TO MEET QUALIFICATION REQUIREMENTS
(Cash in Hand, Lines of credit, e.t.c. List below and attach copies of supportive documents.)**

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

NAME, ADDRESS AND TELEPHONE, TELEX AND FACSIMILE OF BANKS

(This should be for banks that may provide reference if contacted by the employer)

NAME	ADDRESS	TELEPHONE	TELEX	FACSIMILE

DRAFT PROGRAM OF WORKS IN THE FORM OF A BAR CHART

DETAILS OF LITIGATIONS OR ARBITRATION PROCEEDINGS IN WHICH THE TENDERER IS INVOLVED AS ONE OF THE PARTIES

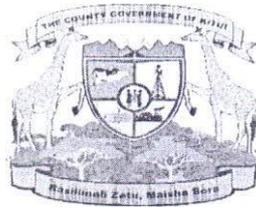
1. _____.
2. _____.
3. _____.
4. _____.
5. _____.
6. _____.
7. _____.
8. _____.
9. _____.
10. _____.

COUNTY GOVERNMENT OF KITUI

TEL: 044-4422041, 4422304

P.O BOX 33 - 90200 KITUI

Email: finance@kitui.go.ke



COUNTY TREASURY

SELF-DECLARATION FORM
PURSUANT TO SECTION 62 OF PPADA ACT,2015

ANTI-CORRUPTION & ANTI-FRAUDULENT PRACTICE DECLARATION

We (insert the name of the company / supplier) declares and guarantees that no offer, gift or payment, consideration or benefit of any kind, which constitutes an illegal or corrupt practice or fraudulent practice has been or will be made to anyone by our organization or agent, either directly or indirectly, as an inducement or reward for the award or execution of this procurement.

We further make a declaration that the documents, certificates, licenses and any other information provided to Kitui county Government in support of this bid are authentic and genuine.

In the event the above is contravened we accept that the following shall apply :

- a) The Person shall be disqualified from entering into a contract for the procurement;
- b) If a contract has already been entered into with the Person, the contract shall be voidable at the option of the county Government of Kitui;
- c) The voiding of a contract by the procuring entity under subsection (b) above does not limit any other legal remedy that the County Government of Kitui may have;
- d) Debarment proceedings shall be instituted in liaison with the PPRA.
- e) We shall take liability for all legal consequences.

NON - DEBARMENT DECLARATION

We (insert the name of the company / supplier)declares that we have not been debarred from participating in public procurement proceeding.

CONFLICT OF INTEREST

We (insert the name of the company / supplier)declares and guarantees that no director or any person who has any controlling interest in our organization is a Public Officer or State Officer or Member of a Committee/Board of the County Government of Kitui.

Name _____ .Signature.._____ Date _____

Company Seal / Business Stamp

Commissioner of oaths

NB: This form must be filled, signed and submitted by all bidders participating in this tender/quotation and it is a mandatory requirement.

J15