REPUBLIC OF KENYA

THE NATIONAL TREASURY AND PLANNING

PROPOSED NEW INSTALLATION AND REHABILITATION OF FIRE PROTECTION SYSTEMS AT TREASURY BUILDING, BIMA HOUSE AND HERUFI HOUSE

FOR

THE NATIONAL TREASURY AND PLANNING

TENDER NO: TNT/052/2019-2020

SPECIFICATIONS AND BILLS OF QUANTITIES

FOR

SUPPLY, DELIVERY, INSTALLATION, REHABILITATION, TESTING AND COMMISSIONING

OF

FIRE PROTECTION SYSTEMS AT TREASURY BUILDING, BIMA HOUSE AND HERUFI HOUSE

CLOSING DATED Tuesday 7th July, 2020 AT 11.00 A.M.

CHIEF ARCHITECT
Ministry of Transport, Infrastructure, Public Works, Housing and Urban Development
P.O BOX 30743
NAIROBI

CHIEF ENGINEER (ELECTRICAL)
Ministry of Transport, Infrastructure, Public Works, Housing and Urban Development
P.O BOX 30743
NAIROBI

CHIEF ENGINEER (MECHANICAL- BS) Ministry of Transport, Infrastructure, Public Works, Housing and Urban Development P.O BOX 30743

NAIROBI

JUNE, 2020

CHIEF ENGINEER (STRUCTURAL)
Ministry of Transport, Infrastructure, Public Works, Housing and Urban Development
P.O BOX 30743
NAIROBI

CHIEF QUANTITY SURVEYOR
Ministry of Transport, Infrastructure, Public Works, Housing and Urban Development
P.O BOX 30743
NAIROBI

CLIENT:
The Principal Secretary,
The National Treasury,
P.O. Box 30007 - 00100, Nairobi, Kenya.

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REPUBLIC OF KENYA

THE NATIONAL TREASURY AND PLANNING

PROPOSED INSTALLATION AND REHABILITATION OF FIRE PROTECTION SYSTEMS AT TREASURY BUILDING, BIMA HOUSE AND HERUFI HOUSE

TENDER NO. TNT/052/2019-2020

The National Treasury invites Tenders from eligible candidates for the Proposed Installation and Rehabilitation of Fire Protection Systems at Treasury Building, Bima House and Herufi House

A complete set of Tender Documents may be downloaded by interested candidates **Free of Charge** at http://treasury.go.ke **or** www.tender.go.ke and those who have downloaded the document from the website **must forward their particulars immediately for recording and any further clarifications and addenda to** procurement@treasury.go.ke**.**

Completed Tender Documents both "**Original**" and "**Copies**", enclosed in plain sealed envelope, marked with the Tender Number and be addressed to: -

The Principal Secretary,
The National Treasury,
P. O. Box 30007 – 00100,
Nairobi, Kenya

Should be Deposited in the Tender Box provided at the Treasury Building, 6th Floor, Harambee Avenue, Nairobi, so as to be received on or before **Tuesday 7th July, 2020 at 11.00 a.m.**

Bids shall be accompanied by a Bid Security of **Kenya Shillings Six Hundred and Fifty Thousand Only (Kshs. 650,000.00) from a reputable financial institution in Kenya valid for 30 days beyond the Tender Validity period**.

All Bid Documents must be serialized / paginated.

Tenders will be opened immediately after the closing date and time in the presence of candidates or their representatives who choose to attend at the Conference Room on 6th Floor, Conference Room 603 on **Tuesday 7th July, 2020 at 11.00 a.m.**

HEAD, SUPPLY CHAIN MANAGEMENT SERVICES.
FOR: PRINCIPAL SECRETARY / NATIONAL TREASURY

DEFINITIONS

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

The Employer:	Government of the Republic of Kenya
Represented by:	The Principal Secretary The National Treasury P.O. Box 30007 - 00100 NAIROBI.
Architect:	Chief Architect State Department of Public Works P.O. Box 30743-00100 NAIROBI
Engineer:	Chief Engineer Mechanical (BS) State Department of Public Works P.O. Box 41191 - 00100 NAIROBI
Quantity Surveyor:	Chief Quantity Surveyor State Department of Public Works P.O. Box 30743-00100 NAIROBI
Structural Engineer:	Chief Engineer (Structural) State Department of Public Works P.O. Box 30743-00100 NAIROBI
Employer's representative:	This shall mean the Project Manager and shall be The Works Secretary, Represented by: **Chief Engineer Mechanical (BS)** State Department of Public Works P.O. Box 41191-00100 NAIROBI
contractor	The firm appointed to carry out the works.
Site:	CBD-Nairobi County

SPECIAL NOTES

1. These notes shall form part of the Instructions to Tenderers and Conditions of Contract.

2. The tenderer is required to check the number of pages in this document and should he find any missing, or in duplicate, or indistinct he should inform the Chief Engineer Mechanical (BS), State Department of Public Works.

3. Should the tenderer be in any doubt about the precise meaning of any item or figure, for any reason whatsoever, he must inform the Chief Engineer Mechanical (BS), State Department of Public Works, in order that the correct meaning may be decided before the date of submission of tender.

4. No liability will be admitted nor claim allowed, in respect of errors in the tender due to mistakes in the specification, which should have been rectified in the manner, described above.

5. All tenderers must make a declaration that they have not and will not make any payment to any person which can be perceived as an inducement to enable them to win this tender.

6. Any tenderer whose firm uses the titles “Engineer” and “Engineers” must produce evidence of registration of at least one of the directors by the Engineers Registration Board of Kenya to avoid disqualification.

FORM OF TENDER

To: The Principal Secretary
The National Treasury
P.O. Box 30007 - 00100
NAIROBI

Dear Sir,

SUPPLY, DELIVERY, INSTALLATION, TESTING SUPPLY, DELIVERY, INSTALLATION, REHABILITATION, TESTING AND COMMISSIONING OF FIRE PROTECTION SYSTEMS AT TREASURY BUILDING, BIMA HOUSE AND HERUFI HOUSE

1. 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]*

2. 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.

3. We agree to abide by this tender for **a period of 180 days from the date of tender opening** and shall remain binding upon us and may be accepted at any time before that date.

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

5. Understand that you are not bound to accept the lowest or any tender you may receive.

   Dated this …….. day of ……20…..

   Signature ……in the capacity of …….

   duly authorized to sign tenders for and on behalf of:

   ……..*[Name of Tenderer]*

   of……*[Address of Tenderer]*

   PIN No. ……..

   VAT CERTIFICATE No. ……
   Witness: Name ……
   Address ……
   Signature ……

(iv)

FORM OF TENDER SECURITY FROM BANK

WHEREAS

……(he reinafter called "the Tenderer") has submitted his tender dated …… For the supply, delivery, installation, testing SUPPLY, DELIVERY, INSTALLATION, REHABILITATION, TESTING AND COMMISSIONING OF FIRE PROTECTION SYSTEMS AT TREASURY BUILDING, BIMA HOUSE AND HERUFI HOUSE.

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 will and truly to be made to the said Employer, the Bank binds itself, its successors and assigns by these presents sealed with the Common Seal of the said Bank this ……Day of ……20 ……

THE CONDITIONS of this obligation are:

1. If after tender opening the Tenderer withdraws his tender during the period of tender validity specified in the instructions to Tenderers

   Or

2. If the Tenderer, having been notified of the acceptance of 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 a period of 210 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)*

(v)

FORM OF TENDER SECURITY FROM INSURANCE

WHEREAS

……(hereinafter called "the Tenderer") has submitted his tender dated …… For the Supply, Delivery, Installation, Testing SUPPLY,
DELIVERY, INSTALLATION, REHABILITATION, TESTING AND COMMISSIONING OF FIRE PROTECTION SYSTEMS AT TREASURY BUILDING, BIMA HOUSE AND HERUFI HOUSE.

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 truly 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 this ……Day of ……20 ……

THE CONDITIONS of this obligation are:

3. If after tender opening the Tenderer withdraws his tender during the period of tender validity specified in the instructions to Tenderers

   Or

4. 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 a period of 210 days from 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)*

SECTION A:

INSTRUCTIONS TO TENDERERS

INSTRUCTIONS TO TENDERERS

CONTENTS

INSTRUCTIONS TO TENDERERS

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

GENERAL

1. Definitions

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

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

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

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

2. Eligibility and Qualification Requirements

2.1This invitation to tender is open to all tenderers who have been prequalified.

2.2To 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 here below and should be read together with any Addenda issued in accordance with Clause 7 of these instructions to tenderers.

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

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

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

6. Clarification of Tender Documents

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

7. Amendment of Tender Documents

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

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

7.3 If during the period of tendering, any circular letters (tender notices) shall be issued to tenderers by, or on behalf of, the Employer setting forth the interpretation to be paced on a part of the tender documents or to make any change in them, such circular letters will form part of the tender documents and it will be assumed that the tenderer has taken account of them in preparing his tender. The tenderer must promptly acknowledge any circular letters s/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 initialled 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 is 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 per cent) 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 fifty (180) 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 Security

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

13.2 The unconditional Tender Security 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 Security shall be in accordance with the sample form of Tender Security 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 Security will be rejected by the Employer as non-responsive.

13.4 The Tender Securities 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 Security of the successful tenderer will be returned upon the tenderer executing the Contract and furnishing the required Performance Security.

13.5 The Tender Security 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 initialled 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 initialled by the person of 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.

19.2 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.

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

19.4 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.

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

TENDER OPENING AND EVALUATION

20 Tender Opening

20.1 The Employer will open the tenders in the presence of the tenderers" representatives who choose to attend at the time and location indicated in the Letter of Invitation

to Tender. The tenderers" representatives who are present shall sign a register evidencing their attendance.

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

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

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

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

21 Process to be Confidential

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

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

22 Clarification of Tenders

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

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

23 Determination of Responsiveness

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

23.2 For the purpose of this clause, a substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tender documents

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

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

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

24 Correction of Errors

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

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

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

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

25 Conversion to Single Currency

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

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

26 Evaluation and Comparison of Tenders

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

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

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

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

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

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

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

26.6 Firms incorporated in Kenya where indigenous Kenyans own 51% or more of the share capital shall be allowed a 10% preferential bias provided that they do not 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 annual the tendering process and reject all tenders, at any time prior to award of Contract, without thereby incurring any liability to the affected tenderers or any obligation to inform the affected tenderers of the grounds for the Employer"s action.

28 Notification of Award

28.1 Prior to the expiration of the period of tender validity prescribed by the Employer, the Employer will notify the successful tenderer by cable, Telefax or telex and confirmed in writing by registered letter that his tender has been accepted. This letter (hereinafter and in all Contract documents called “Letter of Acceptance”) shall name the sum (hereinafter and in all Contract documents called “the Contract

Price") which the Employer will pay to the Contractor in consideration of the execution and completion of the Works as prescribed by the Contract.

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

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

28.4 Within 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 ap proved by the Employer and located in the Republic of Kenya and shall be divided into two elements namely, a performance security payable in foreign currencies (based upon the exchange rates determined in accordance with clause 35.4 of the Conditions of Contract) and a performance security payable in Kenya Shillings. The value of the two securities shall be in the same proportions of foreign and local currencies as requested in the form of foreign currency requirements.

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

30 Advance Payment

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

APPENDIX TO INSTRUCTIONS TO TENDERERS

1. CLAUSE 2.1
Change to read "This invitation to Tender is open to all tenderers in the categories specified."

2. OMIT
Clauses 4.3, 5.1 (a), (d), (f), (i), (j), 10.3, 10.4, 11.2, 11.3, 11.4, 15, 24, 25, 26.6, 30

3. ADD TO CLAUSE 5.1 (h)
Form of agreement refers to the latest edition of the Kenya Association of Building Civil Engineering Contractors (KABCEC) document

4. ADD TO CLAUSE 13.1
Amount of tender surety will be 1% of the tender Amount

5. ADD TO CLAUSE 13.2
Tender security to be valid for 180 days from tender opening date.

6. ADD TO CLAUSE 17.1
Only original tender document shall be submitted.

7. ADD TO CLAUSE 28.4
Amend to read „….within 21 days……"

8. ADD TO CLAUS E 29.1
Amend to read „….within 21 days……"
Amount of performance security will be five per cent (5%)

9. ADD TO CLAUSE 29.2
Performance security shall not be divided in two elements and shall be payable in Kenya Shillings Only.

10. ADD TO CLAUSE 26
The evaluation criteria as detailed on pages (A-11 to A-18) of this clause shall be applied.

TENDER EVALUATION CRITERIA

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

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

STAGE 1: PRELIMINARY /MANDATORY REQUIREMENTS

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

These conditions may include the following:

- Certified copies of Certificate of Registration / Certificate of Incorporation.
- Certified copies of Current Category of Registration with National Construction Authority (NCA) in the relevant trade; NCA 4 and above
- Certified copies of Annual Current Practicing Licenses with NCA
- Certified copies of Current Class of Licenses with the relevant statutory bodies e.g. County Governments attach Drain Layers License.
- Certified copies of County Government Single Business Permit
- Dully filled, signed and stamped Form of Tender
- Provision of Original tender Security of **Kshs. 650,000.00 from a reputable financial institution. Valid for 30 days beyond the Tender Validity period;**
- Certified copies of Valid Tax Compliance Certificate;
- Certified copies of Certificate of Confirmation of Directors and Shareholding (CR 12) for Limited company.
- Dully filled Signed and Stamped Confidential Business Questionnaire;
- Declaration that the firm has not been debarred from participating in public procurement proceedings.
- Duly filled, signed and Stamped Statement of Compliance
- Declaration that the firm has not been convicted of corrupt or fraudulent practices and that it will not engage in any corrupt or fraudulent practice.
- Declaration that the firm comply with all labour laws and the minimum wage regulations.
- The bid document "**Original**" and "**Copies**" must be sequentially paginated / serialized.
- Bidders to Submit written commitment that they shall furnish the employer with Insurance Cover
- Dully filled, signed and stamped Site Visit Certification Form
- Compliance with specialist works specifications (Table 2 Assessment of Deviations)
- Must have an Original Manufacturer's Authorization Form (MAF) for all the equipment.
- Must submit brochures for all the equipment's

Note that;

a. Site visit and inspection to be done before quoting and will be open daily up to Three (3) days before Tender submission
b. All certifications copies to be undertaken by a Commissioner of Oaths

Note:

a) The bid security shall be in accordance with clauses 13 and 23.2 of Instruction to Tenderers which states as follows:

Clause 13.1 of Instruction to Tenderers, "the tenderers shall furnish as part of his tenders a Bid surety in the amount stated in the tender document in the Appendix to Instructions to Tenderers".

- *Clause 13.2 of Instruction to Tenderers, "the unconditional Tender surety shall be in Kenya shillings and be in form of a certified cheque, bank draft, an irrevocable letter of credit or a guarantee from a reputable Bank/ Insurance approved by PPOA located in the Republic of Kenya. The format of the security shall be in accordance with the sample form included in the tender documents and the tender security shall be valid for **210 days** from the date of tender opening".*

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

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

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

STAGE 2 TECHNICAL EVALUATION

A) Assessment for eligibility

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

„In accordance with clause 2.2 of Instruction to Tenderers, the tenderers will be required to provide evidence for eligibility of the award of the tender by satisfying the employer of their eligibility under sub clause 2.1 of Instruction to Tenderers and adequacy of resources to effectively carry out the subject contract. The tenderers shall be required to fill the Standard Forms provided for the purposes of providing the required information. The tenderers may also attach the required information if they so desire.

The award of points for the STANDARD FORMS considered in this section shall be as shown below

	PARAMETER	MAXIMUM POINTS
(i)	Tender Questionnaire	5
(ii)	Key personnel	20
(iii)	Contract Completed in the last Five (5) years	15

(iv)	Schedules of on-going projects	8
(v)	Schedules of contractors equipment	20
(vi)	Audited Financial Report for the last 3 years	10
(vii)	Evidence of Financial Resources	15
(viii)	Name, Address and Telephone of Banks (Contractor to provide)	5
(ix)	Litigation History	2
	TOTAL	100

The detailed scoring plan shall be as shown in table 1 below: -

TABLE 1: Assessment for Eligibility

Item	Description	Point Scored	Max. Point
i.	**Tender Questionnaire Form** - Completely filled ----------5 - Not filled ---------- 0		5
ii	~~Key Personnel (Attach evidence)~~ **Director of the firm** - Holder of degree in relevant Engineering field ---------- 6 - Holder of diploma in relevant Engineering field ---------- 5 - Holder of certificate in relevant Engineering field---------- 3 - Holder of trade test certificate in relevant Engineering field-- 2 - No relevant certificate ……. 1		6
	At least 1No. degree/diploma holder of key personnel in relevant field - With over 10 years relevant experience …….. 6 - With over 5 years relevant experience---------- 4 - With under 5 years relevant experience ---------- 2		6
	At least 1No certificate holder of key personnel in relevant field - With over 10 years relevant experience---------- 4 - With over 5 years relevant experience ---------- 3 - With under 5 years relevant experience ---------- 1		4
	At least 2No artisan (trade test certificate in relevant field) - Artisan with over 10 years relevant experience --------- 2 - Artisan with under 10 years relevant experience -------- 1 - Non skilled worker with over 10 years relevant experience --- 1		4
iii	**Contract completed in the last five (5) years (Max of 5No. Projects)- Provide Evidence** Project of similar nature, complexity or magnitude ----- 4 - Project of similar nature but of lower value than the one in consideration ---------- 3 - No completed project of similar nature ---------- 0		

Item	Description	Point Scored	Max. Point	
iv	**On-going projects – Provide Evidence** • Four and above Project of similar nature, complexity and magnitude ---------- 8 • Three and below Projects of similar, nature complexity and magnitude ……. 6 • No Projects of similar nature, complexity and magnitude……. 4		8	
v	**Schedule of contractors equipment and transport (proof or evidence of ownership/Lease)** **a)Relevant Transport** • Means of transport (Vehicle) ---------- 10 • No means of transport ---------- 0		10	**20**
	b)Relevant Equipment • Has relevant equipment for work being tendered ----- 10 • No relevant equipment for work being tendered –- --- 0		10	
vi	**Financial report** a) Audited financial report (last three (3) years) • Average Annual Turn-over equal to or greater than the cost of the project ----------10 • Average Annual Turn-over above 50% but below 100% of the cost of the project ----------6 • Average Annual Turn-over below 50% of the cost of the project ----------3		10	
	b) Evidence of Financial Resources (cash in hand, lines of credit, over draft facility etc) • Has financial resources to finance the projected **monthly cash flow*** for three months ---------- 15 • Has financial resources equal to the projected **monthly cash flow***---------- 10 • Has financial resources less the projected **monthly cash flow***---------- 5 • Has not indicated sources of financial resources ------ 0		15	
vii	**Litigation History** • Duly Filled ---------- ---------- 2		2	

	□ Not filled ---------- 0		
	TOTAL		100

Any bidder who scores 70 % and above shall be considered for further evaluation

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

B) Compliance with Specialist Works Specifications

In this section, the bid will be analyzed to determine compliance with General and Particular technical specifications for the works as indicated in the tender document. The tenderer shall fill in the Technical Schedule as specified in the tender document for Equipment and Items indicating the Country of Origin, Model/Make/Manufacturer of the Item/Equipment they propose to supply.

The tenderer shall also submit relevant technical brochures/catalogues with the tender document, highlighting the catalogue Numbers of the proposed items. Such brochures/catalogues should indicate comprehensive relevant data of the proposed equipment/items which should include but not limited to the following:

a) Standards of manufacture;
b) Performance ratings/characteristics;
c) Material of manufacture;
d) Electrical power ratings; and
e) Any other necessary requirements (Specify).

Following the above analyses, where the proposed equipment is found not to conform to the stipulated specifications, the tender will be deemed Non– Responsive and will not be evaluated further.

C) Assessment of deviations

Pursuant to section 64 of the Act, a tender is deemed responsive if it conforms to all the mandatory requirements and it **does not contain major** deviations. Section 23.2 of the instruction to tenderers, defines major deviations as

a) One that affects in a substantial way the scope, quality, completion timing, administration of works to be undertaken by the tenderer under the contract, inconsistent with the tender document; or
b) Which limits in any substantial way the rights of the employer or the tenderers obligations; or
c) Whose rectification would affect unfairly the competitive position of other tenderers presenting substantially responsive tenders.

Where the deviations are minor in the view of the tender evaluation committee, with the concurrence of the procuring entity representative, the committee shall quantify such deviations pursuant to section 64 (3) of the Act which requires that a minor deviation shall:

a) Be quantified to the extent possible; and
b) Be taken into account in the evaluation and comparison of tenders.

Where the deviation in the view of the tender committee with the concurrence of the procuring entity representative is major, the tender shall be deemed non-responsive and will not be evaluated further.

TABLE 2: Assessment of Deviations

Item	Does the Deviation Substantively Affect the following:	YES	NO
1	Scope of the Works or Services to be delivered		
2	Quality of the Works or Services to be delivered		
3	Completion Timing		
4	Administration of the Works		
5	Consistency with the tender document		
6	Rights of the Employer in a negative manner		
7	Limit the Tenderer's Obligation		
8	Affect unfairly the competitive position of other tenderers		
	COMMENT		

Any bidder who OBTAINS A YES in the above table shall be considered NON RESPONSIVE and shall not be evaluated further.

STAGE 3 - FINANCIAL EVALUATION

Upon completion of the technical evaluation a detailed financial evaluation shall follow. The financial evaluation shall proceed in the manner described in the Public Procurement and Asser Disposal Act (2015) of the laws of Kenya (Section 227) and the Public Procurement and Disposal Regulations.

The evaluation shall be in **three stages**

a) Comparison of Rates; and
b) Consistency of the Rates.

A) Determination of the corrected tender sums

The Corrected Tender Sum for each bid shall be determined by-

1. *Taking the bid price, as read out at the bid opening*;

3. Where applicable, *converting all tenders to the same currency*, using a uniform exchange rate prevailing at the date indicated in the tender documents;

4. *Adjusting the tender sum by applying any discounts offered* in the tender;

5. *Adjusting the tender sum by applying any margin of preference* indicated in the tender documents

B) Comparison of rates-

Items that are under-priced or overpriced may indicate potential for non-delivery and front loading respectively. The Evaluation Committee shall promptly write to the tenderer asking for any clarification in relations to the tender.

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

a) Recommend no adverse action to the tenderer after a convincing response;
b) Employer requiring that the amount of the performance bond be raised at the expense of the successful tenderer to a level sufficient to protect the employer against potential financial losses;
c) Recommend non-award based on the response provided and the available demonstrable evidence that the scope, quality, completion timing, administration of works to be undertaken by the tenderer, would adversely be affected or the rights of the employer or the tenderers obligations would be limited in a substantial way.

d) No bidder shall be disqualified on the basis of quoting below or above the Engineer's estimates per the Public Procurement and Asset Disposal Act, 2015.

C) Consistency of the Rates

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

STAGE 4 - RECOMMENDATION FOR AWARD

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

SECTION B:

CONDITIONS OF CONTRACT (MAIN WORKS)

CONDITIONS OF CONTRACT (MAIN WORKS)

CONTENTS

CONDITIONS OF CONTRACT (MAIN WORKS)

1. Definitions

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

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

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

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

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

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

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

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

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

"A Defect" is any part of the Works not completed in accordance with the Contract.

"The Defects Liability Certificate" is the certificate issued by Employer"s Representative upon correction of defects by the Contractor.

"The Defects Liability Period" is the period named in the Appendix to Conditions of Contract and calculated from the Completion Date.

"Drawings" include calculations and other information provided or approved by the Employer"s Representative for the execution of the Contract.

"Employer" includes Central or Local Government administration, Universities, Public Institutions and Corporations and is the party who employs the Contractor to carry out the Works.

"Equipment" is the Contractor's machinery and vehicles brought temporarily to the Site for the execution of the Works.

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

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

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

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

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

" A 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.

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

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

2. Contract Documents

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

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

3. Employer"s Representative"s Decisions

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

4. Works, Language and Law of Contract

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

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

4. Safety, Temporary works and Discoveries

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

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

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

6. Work Programme and Sub-contracting

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

6.2The Contractor may sub-contract the Works (but only to a maximum of 25 percent of the Contract Price) with the approval of the Employer"s Representative. However,

he shall not assign the Contract without the approval of the Employer in writing. Sub-contracting shall not alter the Contractor's obligations.

7. The site

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

7.2The Contractor shall allow the Employer"s Representative and any other person authorized by the Employer"s Representative, access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

8. Instructions

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

9. Extension of Completion Date

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

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

Delay by:-

(a) *force majeure*, or

(b) reason of any exceptionally adverse weather conditions, or

(c) reason of civil commotion, strike or lockout affecting any of the trades employed upon the Works or any of the trades engaged in the preparation, manufacture or transportation of any of the goods or materials required for the Works, or

(d) reason of the Employer"s Representative"s instructions issued under these Conditions, or

(e) reason of the contractor not having received in due time necessary instructions, drawings, details or levels from the Employer"s Representative for which he specifically applied in writing on a date which having regard to the date for Completion stated in the appendix to these Conditions or to any extension of time then fixed under this Clause was neither unreasonably distant from nor unreasonably close to the date on which it was necessary for him to receive the same, or

(f) delay on the part of artists, tradesmen or others engaged by the Employer in executing work not forming part of this Contract, or

(g) reason of delay by statutory or other services providers or similar bodies engaged directly by the Employer, or

(h) reason of opening up for inspection of any Work covered up or of the testing or any of the Work, materials or goods in accordance with these conditions unless the inspection or test showed that the Work, materials or goods were not in accordance with this Contract, or

(i) reason of delay in appointing a replacement Employer"s Representative, or

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

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

10. Management Meetings

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

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

11. Defects

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

11.2 The Employer"s Representative shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Appendix to Conditions of Contract.

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

12. Bills of Quantities/Schedule of Rates

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

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

13. Variations

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

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

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

14. Payment Certificates and Final Account

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

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

(ii) First stage (*define stage)* ***AS PER PROGRESS***

(iii) Second stage *(define stage*) ***AS PER PROGRESS***

(iv) Third stage (*define stage)* ***AS PER PROGRESS***

(v) After defects liability period.

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

14.3 The Contractor shall supply the Employer"s Representative with a detailed final account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Employer"s Representative shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 30 days of receiving the Contractor's account if it is correct and complete. If it is not, the Employer"s Representative shall issue within 21 days a schedule that states the scope of the corrections or additions that are necessary. If the final account is still unsatisfactory after it has been resubmitted, the Employer"s Representative shall decide on the amount payable to the Contractor and issue a Final Payment Certificate. The Employer shall pay the Contractor the amount so certified within 60 days of the issue of the Final Payment Certificate.

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

15. Insurance

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

16. Liquidated Damages

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

17. Completion and Taking Over

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

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

18. Termination

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

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

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

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

(d) the Employer"s Representative gives notice that failure to correct a particular defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time.

18.2 If the Contract is terminated, the Contractor shall stop Work immediately, and leave the Site as soon as reasonably possible. The Employer"s Representative shall

immediately thereafter arrange for a meeting for the purpose of taking record of the Works executed and materials, goods, equipment and temporary buildings on Site.

19. Payment Upon Termination

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

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

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

20. Corrupt Gifts and Payments of Commission

20.1 The Contractor shall not:

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

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

21. Settlement of Disputes

21.1 Any dispute arising out of the Contract which cannot be amicably settled between the parties shall be referred by either party to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed by the chairman of the Chartered Institute of Arbitrators, Kenya branch, on the request of the applying party.

APPENDIX TO CONDITIONS OF CONTRACT

THE EMPLOYER IS

Name: **Government of the Republic of Kenya**
Represented By:
THE PRINCIPAL SECRETARY
THE NATIONAL TREASURY
P.O. Box 30007 - 00100
NAIROBI.

Name of Employer"s Representative: **Works Secretary represented by: The Chief Engineer Mechanical-BS, State Department of Public Works, P.O. Box 41191-00100, NAIROBI**

The name (and identification number) of the Contract is PROPOSED INTALLATIONS AND REHABILITATION OF FIRE PROTECTION SYSTEMS AT TREASURY BUILDING, BIMA HOUSE AND HERUFI HOUSE

The works consist of supply, delivery, installation, testing SUPPLY, DELIVERY, INSTALLATION, REHABILITATION, TESTING AND COMMISSIONING OF FIRE PROTECTION SYSTEMS AT TREASURY BUILDING, BIMA HOUSE AND HERUFI HOUSE.

The Start Date shall be as in agreement with the main contractor

The Intended contract period for the whole of the Works shall be Four (4 No.) Months

The following documents also form part of the Contract; **as listed in Clause 2 i.e.**

Agreement - The latest agreement and conditions of subcontract for building works by the **Kenya Association of Building and Civil Engineering Contractors (KABCEC)** signed between the main contractor and the subcontractor.

Letter of acceptance – letter addressed to the main contractor by the project manager instructing the main contractor to enter into the sub contractor agreement with the nominated subcontractor.

Contractors tender – the completed tendering document submitted by the subcontractor to the employer.

Conditions of contract – refers to the conditions of contract in the main works and conditions of subcontract as described in the subcontract agreement **(KABCEC).**

Specifications – specifications of subcontract works as described in the document.

Bills of Quantities or schedule of Rates (Whichever is applicable) – as described in this document.

Drawings - include calculations and other information provided or approved by the Employer"s Representative for the execution of the Contract.

The Site Possession Date shall be **as per the letter of acceptance.**

Amount of Tender Security is Kshs. 650,000.00.

Clause 7
The Site is located within **CBD-Nairobi County**

Clause 1 & 11
The Defects Liability Period is **6 Months**

The name and Address of the Employer"s representative for the purposes of submission of tenders is **Chief Engineer**
Mechanical-BS, State Department of Public Works, P.O. Box

41191-00100, NAIROBI The tender opening date and time is **as**

stated in the invitation to tender.

The amount of performance security is **5% percent** Bank Guarantee of the Contract Price.

Period of final measurement…… **3 months from practical completion**

Clause 16
Liquidated and Ascertained damages: **At the rate of Kshs. 10,000.00 per week or part thereof**

Prime cost sums for which the: …… Contractor desires to tender Clause 14.1	**Nil**
Period of interim certificate: Clause 14.2	**Monthly**
Period of honouring certificate: Clause 26.1 (Main Contractor's Conditions)	**45 days**
Percentage of certified value retained: Clause 32.1 (Main Contractor's Conditions)	**10%**
Limit of retention fund:	**5%**

Note: Clauses 26.1 and 32.1 mentioned above are in the Main Contractor's Document.

SECTION C:

SUB-CONTRACT PRELIMINARIES

AND

GENERAL CONDITIONS

CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

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 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 **The Principal Secretary, The National Treasury.**

ii) **Architect:** The term **"Architect"** shall mean **The Chief Architect, State Department of Public Works**

iii) **Quantity Surveyor**: The term **"Quantity Surveyor"** shall mean **The Chief Quantity Surveyor, State Department of Public Works**

iv) **Civil/Structural Engineers**: The term **"Civil/Structural Engineers"** shall mean **The Chief Engineer (Structural), State Department of Public Works**

v) **Engineer**: The term **"Engineer"** shall mean **Chief Engineer Mechanical (BS), State Department of Public Works**

vi) **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.

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.

viii) **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.

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

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

xi) **Record Drawings:** The term **"Record Drawings"** shall mean those drawings required tobe prepared by the Sub-contractor showing "as installed" and other records for the Sub-contract Works.

xii) **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 **CBD-Nairobi 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 180 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 utilized by the Contractor shall be deducted from the value of the Contract price when calculating the final account.

1.15 Bond

The tenderer must submit with his tender the name of one Surety who must be an established Bank only who will be willing to be bound to the 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 accepted).

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

Color Coding Legend for all Services

Schematic and Writing 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 color 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 Contract 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 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 **Discounts 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 OMIT CLAUSE 1.12

This is not a firm price contract

2 MODIFY CLAUSE 1.15

Amount of performance security will be Five per cent (5%)

3 ADD TO CLAUSE 1.17

Prices quoted shall include 16% VAT. In accordance with Government policy, the 16% VAT and 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).

4 ADD TO CLAUSE

1.40 There are no labour camps.

5. 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

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.
a) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
b) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
e) The Local Council By-laws.
f) The Water Supply Authority By-laws.
g) County 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 minimise 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 pipe work 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 pipe work 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 pipe work shall be color 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:

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

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

2.10.4 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 SPECIFICATION FOR PORTABLE FIRE EXTINGUISHER BOOSTED HOSE REEL SYSTEM, DRY RISER, FIRE HYDRANT INSTALLATIONS AND FIRE SPRINKLER SYSTEM

1.0 PORTABLE FIRE EXTINGUISHER AND HOSE REEL INSTALLATIONS

1.1 General

The particular specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers, Hose Reel, Fire Hydrant and Dry Riser. 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.

1.2 Scope of Works

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

1.3 Water/CO2 Extinguishers

These shall be 9-litre water filled CO2 cartridge operated portable fire extinguishers and shall comply with B.S. 1382: 1948 and to the requirements of B.S.4523: 1977. 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:

a) Method of operation.
b) The words „WATER TYPE" (GAS PRESSURE) in prominent letters.
c) Name and address of the manufacturer or responsible vendor.
d) The nominal charge of the liquid in imperial gallons and litres.
e) The liquid level to which the extinguisher is to be charged.
f) The year of manufacture.
g) A declaration to the effect that the extinguisher has been tested to a pressure of 24.1 bar (350 psi.).
h) The number of British Standard „B.S" 1382 or B.S. 5423: 1977.

1.4 Portable Carbon Dioxide Fire Extinguishers

These shall be portable carbon dioxide fire extinguishers and shall comply with B.S. 3326: 1960 and B.S. 5423: 1977.

The body of extinguisher shall be a seamless 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:-

a) The words "Carbon Dioxide Fire Extinguisher" and to include the appropriate nominal gas content.
b) Method of operation.
c) The words "Re-charge immediately after use".
d) Instructions for periodic checking.
e) The number of the British Standard B.S. 3326: 1960 or B.S. 5423.
f) The manufacturers name or identification markings

1.5 Dry Chemical Powder Portable Fire Extinguisher

The portable dry powder fire extinguishers shall comply with BS3465: 1962 and BS 5423. 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 it s 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.

1.6 Air Foam Fire Extinguisher

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. 5423 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. 3

1.7 Fire Blanket

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

2.0 Boosted Hose Reel System

2.1 General

The Particular Specification details the requirements for the supply, installation and commissioning of the hose reel installation. The hose reel installation shall comply in all respects requirements set out in C.O.P 5306 Part 1: 1976, B.S 5041 and B.S 5274.

The System shall comprise of a pumped system.

2.2 Hose Reel Pumps

The fire hose reel pumps shall consist of a duplicate set of multi-line centrifugal pumps from approv manufacturers.

The pumps shall be capable of delivering 0.76 lit/sec at a running pressure of 2 bars.
The pump casing shall be of cast iron construction with the impeller shaft of stainless steel with mechanical seal.

2.3 Control Panel

The control panel shall be constructed of mild steel 1.0mm thick sheet, be moisture, insect and rodent proof and shall be provided complete with circuit breakers and a wiring diagram enclosed in plastic laminate.

The pump shall be controlled by a flow switch therefore; the control panel shall include the follow

(a) „On" push button for setting the control panel to live.
(b) Green indicator light for indicating control panel live.
(c) Duty / Stand-by pump auto change over.
(d) Duty pump run green indicator light.
(e) Stand-by pump run green indicator light.
(f) Duty pump fail red indicator light.
(g) Stand-by pump fail red indicator light.
(h) Low water condition pump cut-out with red indicator light.

The pumps are to be protected by a low level cut-out switch to prevent dry pump run when low level water conditions occur in the water storage tank.

2.3.1 Hose Reel

The hose reel to the installation shall consist of a recessed, swing-type hose reel as Angus Fire Armour Model III or from other approved manufacturers.

The hose reel shall comply with B.S. 5274: 1975 and B.S 3161: 1970 and is to be installed to the requirements of C.P.
5306 Part 1: 1976.

The hose reel shall be supplied and installed complete with a first-aid Non-kinking hose 30 meters long with a nylon spray / jet / shut-off nozzle fitted. A screw down chrome - plated globe valve to B.S 1010 to the inlet to the reel is to be supplied.

The orifice to the nozzle is to be not less than 4.8mm to maintain a minimum flow of 0.4 lit / sec to jet.

The hose reels shall be installed complete with electro-galvanized cabinet recessed on the wall.

The hose reels shall be installed at 1.5 meters centre above the finished floor level in locations shown in the contract drawings.

2.3.2 Pipe Work

The pipe work for the hose reel installation shall be galvanized wrought steel tubing heavy grade Class B to B.S 1387:
1967 with pipe threads to B.S 21. The pipe work and all associated fittings shall be in approved colour for fire fittings.

2.3.3 Pipe Fittings

The pipe fittings shall be wrought steel pipe fittings, welded or seamless fittings conforming to B.S. 1740 or malleable iron fittings to B.S 143.
All changes in direction will be with standard bends or long radius fittings. No elbows will be provided.

2.3.4 Non-return Valves

The non-return valves up to and including 80mm diameter shall be to B.S. 5153: 1974. The valves shall be of cast iron construction with gunmetal seat and bronze hinge pin.

2.3.5 Gate Valves

The gate valves up to and including 80mm diameter shall be non-rising stem and wedge disc to B.S 5154: 1974 with screwed threads to B.S. 21 tapes thread

2.3.6 Sleeves

Where pipe work passes through walls, floors or ceilings, a sleeve shall be provided one diameter larger than the diameter of the pipe, the space between them to be packed with mineral wool, to the Engineer"s approval.

2.3.7 Earthing

The hose reel installation shall be electrically earthed by a direct earth connection. The installation of the earthing shall be carried out by the Electrical Sub- contractor.

2.3.8 Finish Painting

Upon completion of testing and commissioning the hose reel installation, the pipe work shall be primed and finish painted with 2 No. coats of paints to the Engineer"s requirements.

2.3.9 Testing and Commissioning

The hose reel installation shall be flushed out before testing to ensure that no Builder's debris has entered the system. The installation is to be then tested to one and half times the working pressure of the installation to the approval of the Engineer. Simulated fault conditions of the pumping equipment are to be carried out before acceptance of the System by the Engineer.

2.3.10 Instruction Period

The Sub-contractor shall allow in his contract sum for instructing of the use of the equip ment to the Client"s maintenance staff. The period of instruction may be within the contract period but may also be required after the contract period has expired.

The period of time required shall be stipulated by the Client but will not exceed two days in which time the Client"s staff shall be instructed on the operation and maintenance of the equipment.

3.0 Signage-Fire Instruction /Fire Exit

3.1 Fire Instruction Notice

Print fire instruction on the Perspex plates with White Colour Background measuring 510mm length x 380mm width x 4mm thick 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 nearest fire Brigade or Police 999 and inform your switchboard (PABX) Operator
4. Ensure that all personnel not involved in fire fighting evacuation to safety outside the building.
5. Close but **DO NOT LOCK** doors behind as you leave.
6. Evacuate the building using stairs or fire escapes. 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.

3.1.1.1 Fire Exit Sign

Print Fire Exit signs on the Perspex plate, 4mm thick, with white colour background as follows:-

1. Lettering **IN RED COLOR** of not less than 50mm in height.
2. A pendant sign bearing words, **FIRE EXIT** and with a directional arrow.

The sign must be capable of being read from both approaches to exit and so is double sided.

3.1.1.2 Hose Reel Label

Print Fire Exit signs on the Perspex plate, 4mm thick, with white colour background as follows:-

1. Lettering **IN RED COLOR** of not less than 50mm in height.
2. A pendant sign bearing words, **HOSE REEL** and with a directional arrow.

The sign must be capable of being read from both approaches to exit and so is double sided.

4.0 The Dry Riser Installation

4.1 Definition

Dry riser installation is a system where a pipe is installed vertically through a building with and inlet breeching provided at a street level through which the fire brigade can pump water.

4.2 Installation

The dry riser is installed with Fire Brigade Breeching inlet installed at street level in front of the building at a position where fire brigade can access and pump water into the building. Landing valves are then installed on each floor above the ground level to which the fire brigade can attach fire fighting hoses.

4.3 Landing Valves

The Hydrant outlets shall comply with the requirements of C.P 5306 Part 1:1976 and B.S 5041 Part 1. The hydrant Riser outlets shall be 2No minimum per floor including the roof and shall be mounted with their centre line between 910mm and 1060mm above finished floor level positioned at the entry lobby on each floor.

4.4 Fire Brigade Breeching Inlets

One of the Brigade Breeching inlets shall consist of four (4No.) 64mm internal diameter instantaneous male coupling for connection to the fire brigade pumps and other two shall consist of two (2No.) 64mm internal diameter instantaneous male coupling.

The breeching inlet shall incorporate a 100mm diameter flanged connection to the 100mm dry riser mains.

The breeching inlet shall be located 1000mm to the centre line of the box above ground level.

The breeching inlet shall be enclosed in a galvanized mild steel cabinet of suitable dimensions to contain all visible pipe work. A 7.5mm thick wired glass front shall be provided with 50mm high, red lettering, **DRY RISER BREECHING CONNECTOR.** The reminder of the box is to be finished in fire red enamel paint.

4.5 Pipework

The pipe work fittings shall be wrought steel pipe fittings welded or seamless fittings conforming to B.S 1740 Part 1971 or malleable iron fittings to B.S 193.
All changes in direction will be standard bends or long radius fittings. **No elbows will be permitted.**

4.6 Flanges

The flanges shall comply with B.S 4504:1969. All flanges shall comply with a nominal Pressure Rating of 16 bars and shall be of either grey cast iron or steel.

4.7 Gaskets

The gaskets for use with flanges to B.S 4504: 1969 shall comply with B.S 4865 Part 1: 1972 for pressure up to 64 bars.

4.8 Air Relief Valves

The dry riser shall terminate 1M above the roof landing valve with an air relief valve. The valve construction shall be of iron Grade E conforming to B.S 1452. Float Guide and Seat Ring shall be of A.B.S plastic with seal ring of moulded rubber, Maximum working pressure of the valve is to be 16 bar.

4.9 Non-Return Valves

The non-return valves up to and including 80mm diameter shall conform to B.S 5153:1974 with flanges to B.S 4504 PN 16. The valves shall be of cast iron construction with gunmetal seat and disc with spring of phosphor bronze.

Non return valves exceeding 80mm diameter and up to 300mm diameter shall be conform to B.S 5153:1974 with flanges to B.S 4504 PN 16. The valve shall be is Cast Iron Construction with Gunmetal seat to B.S 1400.

4.10 Gate Valves

The gate valves up to and including 80mm shall be non rising stem and wedge disc to B.S. 1952:1964 (B.S 5154:1974) with screwed threads to B.S.21(KS ISO 7 – 1) taper thread. The valves shall be of high grade bronze construction.

Gate valves exceeding 80mm and up to 300mm shall be to B.S 5163 with flanges to B.S 4504 PN 16. The valve is to be double flanged cast iron wedge gate valve for water works purposes with cast iron body to B.S 1452 GRADE 14 with rubber covered cast iron gate. The stem is to be of Forged Stainless Steel to B.S 970 with cast iron hand wheel.

4.11 Sleeves

Where Pipework pass through walls or floors or ceiling a sleeve shall be provided one diameter larger than the diameter of the pipe the space between to be the packed with mineral wool, to the Engineers approval.

4.12 Floor and Ceiling Plates

Where pipes pass through floors, walls and ceilings, floor, wall and ceilings plates shall be secured around the pipe. The plated shall be of stainless steel construction and will serve no other purpose than to present a neat finish to the exposed installations.

4.13 Earthing

The dry riser shall be electrically earthed by a direct earth connection. The installation of the earthing to be carried out by the electrical Sub-Contractor

4.14 Finish Painting

Upon completion, testing and commissioning of the dry rise installation the pipe work shall be primed and finish painted with 2No. Coats of paint by the Sub-Contractor to the Engineer"s requirements.

4.15 Testing and Commissioning

The installation is to be tested to one and half times the working pressure of the installation, all to the approval of the Engineer. The pressure shall be maintained for about 1 hour ensuring that there is no change in pressure is observed

4.16 Canvas Hose

The canvas hose shall be 65mm diameter 30m long designed for a bursting pressure of 34 bars. The canvas hose shall have attached instantaneous hose coupling, branch pipes and nozzle to B.S 336: 1965.

4.17 Hose Cradle

The hose cradle shall be a high quality fitting designed for use in public buildings. The cradle **shall be made in aluminium** throughout and shall be supplied with a wall bracket and the finish shall be polished or chrome plated

5.0 Fire Hydrant

5.1 Fire Hydrant Details

5.1.1 Definition

The fire hydrant is a system which is installed along the water mains to used as a means of providing water to the fire brigades through the connection of the hose from a stand pipe.

5.1.2 Installation

The fire hydrants are installed along the water mains with the first hydrant at a location which is not more than 60 m from the entry of any building and they should not be more than 120 m apart.

5.1.3 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.

5.1.4 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 (KS 06 – 744 – 1:1991) 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.

5.1.5 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 (KS 06 – 744 – 1:1991). 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 (KS 06 – 744 – 1:1991), 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.

5.1.6 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 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 (KS 06 – 744 – 1:1991), or Copper alloy to BS 2872, or Suitable Spheroidal graphite iron to BS 2789 protected against corrosion accordance with CP 2008.

5.1.7 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.

5.1.8 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.

5.1.9 Hydrant coating

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

5.1.10 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

5.1.11 Marking

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

5.1.12 Surface Box Covers & Frames

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

5.2 Stand Pipes

One end of these shall have internal threads to couple with the 80mm diameter external threads of the screw down type or above ground fire Hydrant (BS 750 type 2 hydrants) outlet. It shall have 65mm diameter internal threads to couple with the interconnect or hose of the pump set

5.3 Hose Pipe

Each cotton synthetic fibre rubberized fire hosepipe to be at least 30 metres long with 65mm diameter female
instantaneous type connector complete with nozzle.

5.4 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:

6.0 PARTICULAR SPECIFICATION FOR SPRINKLER SYSTEM

6.1 General

The particular specification details the requirements for the supply, installation and commissioning of the Automatic
Sprinkler Installation. The sprinkler installation shall comply in all respects to the requirements set out in the National
Fire Protection Association (NFPA 13, 2002 Edition and any ADDENDUM thereafter) for Automatic Sprinkler
Installation, for Ordinary Hazard Installations.

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.

No claims for extra payment shall be accepted from the Sub-Contractor because of his non-compliance with the above requirements.

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

6.2 Climatic Conditions

a) The following climatic conditions apply at the site of the works and all plant, equipment, apparatus, materials and installations shall be suitable for these conditions.
b) Where not otherwise stated, all rating of plant equipment and apparatus shall be interpreted at site rating and NOT sea level or other ratings.

c) Maximum mean temperature -	28.30 C
Minimum mean temperature -	120 C
Range of relative humidity -	40-90%
Altitude	1687 meters
Latitude	10 16"S
Longitude	340 48"E
Rainfall	Heavy at certain periods of the year

The sub-contractor shall be deemed to have taken account of the above details in his prices and his planning of the execution of the works.

6.3 Scope of Works

The sub-contractor shall supply, deliver, erect, test and commission all the automatic fire fighting sprinkler installation which is called for in this specification and shown on the Contract Drawings listed in the drawing schedule.

The Sub-Contractor shall be responsible for making a new connection to the existing Local Authority water mains, supplying laying and connecting service pipe up to water tank.

The Sub-contractor shall install all the electrical pumps called for in this Sub-Contract, including inter-wiring from a local isolator to the Control Panel. The electrical Sub-Contractor shall supply electrical power, up to and including the local isolator.

If so desired, the Sub-Contractor shall ask the Electrical Sub-Contractor to install starting and stopping gears, indication equipment and all electrical connections to the sprinkler system in compliance with electrical regulation. However, the Sub-Contractor for the Works contained in this document shall retain full responsibility for the correct functioning of the installation.

The Sprinkler system shall be fed by the sources of water supply described below:

i. A 50mm nominal diameter water service main tapped off the existing Local Authority Water Mains.
ii. A concrete water storage tank in the basement and 1No. Automatic electric pump 1No. Diesel Pump and 1No. Jockey pump.
iii. A two-way inlet breeching valve to be used by the Local Authority"s Fire Brigade.

6.4 Standards and Definitions

a) General: Comply with applicable standards as indicated herein, and as required by governing authorities for general requirements to comply with applicable standards for the work. The latest edition of the following industry standards contains provisions which are explicitly applicable to the works.
b) Standards
   1. "Approval Guide" by Factory Mutual (FM)
   2. "Fire Protection Equipment Directory" by Underwriters Laboratories, Inc. (UL)
   3. Standards by the National Fire Protection Association (NFPA), including the following:

a. Std. 13, Installation of Sprinkler Systems.
b. Std. 14, Installation of Standpipe and Hose Systems.
c. Std. 20, Installation of Centrifugal Fire Pumps.
d. Std. 24, Installation of Private Fire Service Mains/Apparatuses.
e. Std. 25, Water Based Fire Protection Systems.
f. Std. 70, National Electric Code.

c) Definitions: Except as otherwise indicated herein, refer to NFPA 13 for definition of general fire sprinkler terminology used in this Section.

6.5 Submittals

a. General: Submit the following, in compliance with provisions of Section 01301, "Construction Submittals" hereof, and in compliance with CC&C provisions.

b. Product Data for system components. Include descriptive and technical literature, catalogue cuts and installation instructions. Submit (6) bound copies of product data.

c. Shop Drawings in accordance with NFPA 13 must be submitted to the Engineer for review and approval prior to purchasing of equipment or installation of system. Shop drawings must be no smaller than 607 x 914 mm in size and in minimum scale of 1:100.

d. Quality Control Data: Following installation of work in this Section, including field testing, submit field test report and certified statement of compliance with requirements duly signed by a trained personnel.

e. Provide Project Record Drawings (As-Built), not smaller than 607 x 914 mm and in minimum scale of 1:100. Identify final installed location of valves, auxiliary drains, sprinkler heads, piping, etc. on project record drawings. Provide project record drawings prior to time of commissioning.

6.6 Quality Assurance

a. Installer Qualifications: The contractor shall employ at least one person qualified for installation of automatic fire sprinkler systems. The automatic sprinkler system installer shall have a minimum of five years experience in the requirements and installation of automatic sprinkler systems. The contractor shall complete an automatic sprinkler system certificate of completion and present this documentation to the Project Engineer with a copy to the Client. The individual shall remain on site for the commissioning and acceptance of the system, and to resolve any discrepancies found by Engineer.

b. Components and Installation: Provide equipment and installation in compliance with NFPA 13, "Automatic Sprinkler Systems."

c. NFPA Compliance: Provide fire sprinkler system conforming to requirements of NFPA 13, "Automatic Sprinkler Systems."

6.7 Automatic Sprinkler Pumps

The automatic sprinkler pumps shall consist of automatic horizontally mounted centrifugal electrically driven pump, diesel pump and an automatic jockey pump.

The automatic sprinkler pumps shall be SPP packaged sprinkler pumping set (or approved equivalent), comprising of two pumps and a Jockey pump. One pump shall be duty and the other pump standby. Both pumps shall be supplied with power as per

FOC regulations and be complete with delivery check valves, delivery stop valves, pressure switch arrangement, etc. and all other accessories

Both pumps shall be connected to the maintained bus bar of the MV switchboard and the other one to be coupled to a diesel engine.

6.7.1 Electric Pump

The pump shall be capable of providing at the installation control valve a running pressure of at least 1.4 bars plus the pressure equivalent of the difference in height between the highest sprinkler and the valves when the water is being discharge from the valves at a rate of 2250L/min (37.2 L/s).

The pump shall be constructed of cast iron with impeller of cast iron and shall have mechanical seals. Electric motor driven pump shall be close coupled complete with the panel (Star-delta starter).

The motor shall be three phase totally enclosed fan cooled squirrel cage continuously rated complying in general with B.S 1613/1970.

The pump construction shall be according to LPC rules for automatic sprinkler installations and shall incorporate BS 5306 part 2.

Provision shall be made for **low level cut outs** to the pumps to prevent dry pump run in the event of low level water conditions.

The pump shall be provided with a plate giving the output pressure at the nominal flow specified. Where the performance characteristic is achieved with an orifice plate not integral with the pump delivery, the pump name plate shall carry a reference to the fact that the performance given is that of the pump and orifice plate combination, and reference shall be made to the orifice K factor.
An automatic jockey pump shall be capable of delivering 6.3L/s) at a static pressure of 10.0 bars. Speed shall be 2900rpm as SPP model or approved equivalent complete with accessories and connected to the same control panel as for the main sprinkler pumps.

6.7.2 The Diesel Engine.

The diesel engine construction shall incorporate the following requirements:

6.7.2.1Type and Design

Vertical type multi - cylinder four-stroke diesel engine to be gear driven through flexible coupling, the fuel pump shall be integral and shall incorporate a hand primer, complete with all necessary ancillary equipment and drives, constructed to comply with B.S 649 and suitable for running continuously on oil engine fuel to B.S 2369, Class A.

6.7.2.2 Rating

The rating shall be continuous as defined in B.S. 649.

6.7.2.3 Speed and Governing

The normal speed of the engine shall be 1500 revolutions per minute.
Speed governing shall be to B.S 649, Class A and over speed protection shall be provided.

6.7.2.4 Time of Run-up to Speed.

From the initial operation of the starting switch, the engine shall start, run up to normal speed and capable of accepting full load within a minimum time of 10-15 seconds.

6.7.2.5 Cooling

Engine cooling - shall be by water jacket, with water circulating pump and heavy radiator with mechanical or electrically driven fan. The radiator shall be fitted with flanged or other suitable arrangement to enable ventilating ductwork to be attached with airtight joints. The fan rating shall be adequate allowing for the additional resistance to air flow of any ductwork and louvers fitted.

A thermostatically controlled valve shall be provided in the cooling system to assist rapid heating up of the water in the engine jacket when starting from cold and to control its temperature when the engine in running. Where necessary to limit the oil temperature rise a water – cooled lubricating oil temperature stabilizer
Complying with B.S 3274 (KS ISO 4548 – 3:1997), shall be incorporated in the engine cooling system. Sufficient inhibitor shall be added to the cooling water to protect the cooling system from internal corrosion.

6.7.2.6 Engine Starting

Engine starting shall be by a battery powered electric starter complete with automatic starting sequencing control equipment and starter cut-out switch. The engine starting control equipment shall be arranged to disconnect the mains operated battery charger to prevent its being overloaded during starting. The starter motor shall be of adequate power for its duty and of the non-hold-on" type in which the pinion is moved axially to engage within a gear-ring on the engine fly wheel before the starter motor is fully energized. The pinion shall positively disengage when the engine starts or when the motor is de-energized.

6.7.2.7 Fail-to-start Protection

The starting equipment shall incorporate a suitable automatic process timer, so arranged that, if the engine fails to start within a reasonable time (e.g. 8 seconds), the starter motor shall be disconnected. The starting attempt shall be repeated after an interval of 3 seconds and, if necessary, repeated a third time. If the engine fails to start at the third attempt, the starter motor shall be automatically isolated from the battery.

Disconnection of the starter by the fail-to-start device shall operate the visual warning indicators(s) and audible alarm(s) specified hereafter.

6.7.2.8 Engine Safeguards

Safeguard shall be provided and arranged to stop the engine automatically by de-energizing a solenoid couple to the stop lever on the fuel injection pump rack. The operation of this safeguard shall at the same time give individual warning of the failure by illuminating appropriate visual indicator and sounding audible alarm(s) as specified hereafter.

The safeguard shall operate when any of the following conditions occur, Irrespective of whether the set is on automatic or manual control:-

Engine Over speed
High Cooling Water Temperature
Low Lubricating Oil Pressure
Low Cooling Water Level

A key operated switch shall be fitted on the control panel and so connected as to override the engine safeguards and, in an emergency, allow the engine to be restarted under manual control, but with the visual warnings remaining operative.

6.7.2.9 Lubrication

The engine shall be totally enclosed and the engine components shall be lubricated via pressure oil system from an integral oil pump driven by the engine.

6.7.2.10 Oil Dipstick

A lubricated oil level dipstick suitably graduated shall be provided and located in an accessible position.

The engine shall be totally enclosed and the engine components shall be lubricated via pressure oil system from an integrated oil pump driven by the engine.

6.7.2.11 Starting Handle or Barring Gear

Suitable means shall be provided for turning by hand engine main shaft and the associated pump to facilitate inspection and overhaul and to allow hand starting if necessary.

6.7.2.12 Starter Battery

The starter battery shall be 24 volts heavy duty high performance quality lead-acid type of adequate size, suitable for trickle charging and rapid re-charging after use and shall be supplied complete with corrosion resisting outer container or box of an approved type standing direct on the floor.

The type, voltage and ampere-hours capacity of the battery shall be stated in the appropriate schedule. The battery shall be supplied in a fully charged state ready for use and shall be complete with hydrometer for testing the electrolyte.

The tender price shall be based on the provision of a lead acid type battery, but an alkaline battery may be offered as an alternative and, together with its charging equipment, shall then be separately described and priced in the appropriate schedule.

6.7.2.13 Dynamo, Cut-out, etc

An engine driven battery charging dynamo (or alternator with static rectification) of adequate capacity shall be provided complete with cut-out, automatic voltage regulator, ammeter, wiring and engine mounted control board.

6.7.2.14 Engine Instruments

The following dial type engine instruments shall be provided:-

- Engine shaft speed indicating tachometer reading revolutions per minute.

- Service hours counter.
- Lubricating Oil Pressure Gauge
- Lubricating Oil Thermometer
- Cooling Water Thermometer

The instruments may be mounted on a suitable panel fixed to the engine or may be incorporated in the main control panel.

6.7.2.15 Exhaust System and silencing

The exhaust system shall be manufactured in heavy quality steel tubing to B.S 1387 (KS 06 – 259:1998) fitted with suitable robust flexible gas-tight sections close to the engine to allow engine movement and to reduce the transmission of engine vibration to the remainder of the exhaust system and the surroundings. Bends shall have a minimum radius of three times the diameter of the tube. As far as possible, flexible sections shall be vertical, free from bends and have sufficient length or slack to allow free movement without damage.

Silencers shall be of heavy duty baffle and absorption type, so designed and installed as to reduce noise to the minimum practicable level without appreciably impairing the working efficiency of the engine.

The silencers and exhaust pipe work shall be properly and adequately supported clear of fuel tank and fuel pipes
and shall be provided with suitable insulation to protect personnel, plant and buildings from excessive heat.
The pipe work shall drain away from the exhaust manifold and drain cocks shall be fitted in the lower parts of
the system to enable condensate readily to be removed.

The system shall be so constructed as to enable it to be readily dismantled for maintenance. Bolts, washers and nuts shall be greased with graphite grease or other suitable heat resisting lubricant during assembly.

The finish of all exhaust pipe work and silencers exposed to the open air shall be sprayed metallic aluminium by a process complying with B.S 2569, Part 2, Process A.

The exhaust system shall terminate at a safe point outside of the building to be approved by the Engineer.

6.7.2.16 Intake Air Cleaner.

A suitable and efficient air cleaner /silencer of an approved type complying with B.S 1701 „A" (KS06 – 294:1986) for use in a medium atmosphere shall be fitted on the air intake manifold.

6.7.2.17 Drain Plugs and Cocks

Drain plugs and cocks, as appropriate shall be fitted adequately to drain the engine of lubricating oil, water and fuel. They shall be designed and constructed as to be free from leaks and so positioned as to be readily

accessible and allow draining to be undertaken without need for special receptacles.

6.7.2.18 Fuel and Lubrication Oil Filters

Suitable and efficient oil filters of an approved type and construction, having replaceable filter elements, shall be provided in the fuel and engine lubrication systems, The oil filters shall be readily accessible and allow the elements to be changed without difficulty. The fuel oil filter shall be located as close as possible to the fuel pump manifold.

6.7.2.19 Wiring on Engine Unit

The electrical wiring on the engine unit shall be carried out with M.I.C.C cable having a conductor minimum cross section of 1.5mm2 for single core cables and for multi-core cables.

All wiring shall be adequately supported and protected from accidental damage and properly installed and terminated in suitable terminal boxes with flexible connections , all in accordance with manufacturers recommendations. Special arrangements shall be made where wiring is subject to movement and vibration.

Mains voltage circuits and extra-low voltage circuits shall be segregated as far as practicable.

6.7.2.20 Fuel tank and Connections

A fuel service tank shall be provided having a capacity sufficient to give **ten hours** full load running of the engine and manufactured and installed generally in accordance with B.S 799, Part 1. The tank, complete with all necessary pipe work, valves and connections, shall be arranged as an integral part of the set or shall be installed at high level on adequate and approved supports adjacent to the set.

The service tank shall be clearly labeled to indicate the type of fuel to be used and the capacity of the tank in litres and gallons, and shall be provided with the following: -

i. Filling orifice, oil strainer, filling pipe extension and filler cap.
ii. Vent pipe to atmosphere
iii. Dial type contents level indicator, with adequate size scale clearly marked in proportional part content, i.e. empty, quarter, half, three-quarters and full.
iv. Connections for the engine leak-off return pipe (where necessary).
v. Drain valve and drain hose connection.

6.7.2.21 Fuel Tank Filling Pump

A cast iron wall mounted hand operated semi-rotary fuel transfer pump shall be provided of a size capable (with normal operation) of transferring fuel from

the delivery drum of other vessel to the service tank at a rate of at least twenty times the maximum consumption of the engine at full output.

The pump shall be clearly labelled to indicate the type of oil to be used and shall be provided and fitted with suitable connecting pipe work including a length of oil -resisting non- collapsible flexible pipe on the suction side. The removable protective cap or cover with retaining chain shall be provided for each end of the pump line to prevent ingress of dirt, etc. A removable type filter shall be incorporated in the oil supply.

6.7.2.22 Coupling to Pump

The engine shall be coupled to the pump in an approved manner in a mono-bloc arrangement or by a suitable shaft coupling and satisfactorily guarded to comply with B.S 1649.

6.8 Installation Control Valves

The Sub-Contractor shall supply and install approved installation control valves called for on the Contract Drawings and in this specification. The installation control valves set shall comprise of a main stop valve, wet pipe alarm valve, drain valve, a water motor alarm and gong, installation pressure gauges. It shall be as manufactured by **the Central Sprinkler Company** or approved equivalent that is **L.P.C/U.L/F.M** listed.

6.9 Spares

The Sub-Contractor shall comply and fix a cabinet with 24No. Spare sprinkler heads together with a set of sprinkler spanners for each type of sprinkler heads.

6.10 Control Panel

The control panels are to be of mild steel construction or other approved material, moisture-proof and insect and rodent-proof and shall be provided complete with a wiring diagram that is moisture –proof. They shall have hinged lockable doors. They shall conform to **LPC** rules and shall be as manufactured by SPP pumps or approved equivalent.

Pump operation shall be controlled by pressure switches; the control panel is therefore to include the following.

a) Manual Stop/Reset push button to No.1 electric duty pump.

b) Manual Stop/Reset push button to No.2 standby pump.

c) Test push button with green indicator light to No. 1 electric duty pump.

d) Test push button with green indicator light to No.2 standby pump.

e) Electric alarm bell provided for remote warning of systems operation during pump run.

f) Red warning for indication of „no water" in Storage Tank.

g) BMS Stop/Run, fault indication (volt free contact)

h) Any other necessary components as per NFPA 13 Edition 2002.

6.11 Sprinkler Heads

The sprinkler heads shall be of conventional pattern, designed with a universal deflector and shall be as manufactured by **Spraysafe automatic sprinklers Ltd** or equal and approved. All the sprinkler heads and deflectors shall be corrosion resistant to withstand the harsh climatic conditions.

All sprinkler heads shall comply with the following requirements:-

Nominal size	15mm
K Factor	115+ 5%
Temperature rating	680C (Red colour).

A. Types: Automatic sprinklers shall be of the following types:

1. Standard coverage concealed spray pendent sprinklers (quick response type) shall be installed in all areas with finished ceilings with matching ceiling plates.

2. Standard coverage convectional sprinklers (quick response type) shall be installed in non-public, unfinished areas such as basement car park and other utility rooms.

B. Final Selection: The Engineer will select finishes for all automatic sprinklers and escutcheons from samples of available finishes supplied by Contractor.

C. Uniformity: All sprinklers within a space shall be from the same manufacturer and have the same heat response element, including temperature rating and response characteristics.

D. Temperature Rating: It shall be the Contractor's responsibility to install sprinklers of the proper temperature rating as required by NFPA 13.

E. Corrosion and Mechanical Protection: Corrosion and Mechanical Protection: Provide corrosion-resistant sprinkler heads where they are exposed to weather, moisture or corrosive vapours. Protect heads installed where they might receive mechanical injury or are less than 2.1 meters above the floor level with approved guards in accordance with NFPA 13.

F. Sprinkler Escutcheons: Escutcheons shall be metal and be listed with the sprinklers for recessed sprinkler locations.

G. Sprinkler Orifice: All sprinklers shall be standard orifice sprinklers (12.5mm orifice) unless specifically approved otherwise.

H. Return bends in the piping arrangement supplying all pendent sprinklers shall be used.

6.12 Pipework

The pipework for the sprinkler systems shall be black steel, class C heavy grade, to comply with BS 1387, E337, BS 143 and to NFPA guidelines.

Pipe and Fittings: Sprinkler system piping or tubing shall meet the requirements of NFPA 13. Contractor shall use black steel, class C heavy grade above ground.

A. Thin wall Pipe: Schedule 10 Pipe meeting ASTM A-53, A-135 or A-795 requirements with:

   1. Mechanical grooved pipe couplings and fittings for roll grooved pipe sizes 65mm and larger.

   2. Plain-end pipe couplings and fittings for pipe sizes 25mm through 50mm, inclusive.

   3. Threaded fittings for tubing specifically listed for such uses and installed in accordance with the manufacturers recommendations and listing requirements.

B. Black steel, class C heavy grade: The pipes shall conform to BS 1387 requirements with:

   1. Threaded pipe couplings and fittings

   2. Mechanical grooved pipe couplings and fittings for roll or cut pipe sizes 65mm and larger.

   3. Plain-end pipe couplings and fittings shall not be allowed.

C. Pressure Ratings: Pressure ratings of all fittings shall meet or exceed maximum working pressures available within the system but shall never be less than 15 bars.

D. Corrosion protection: All piping and hangers where exposed to the weather or installed in a corrosive atmosphere shall be protected against corrosion.

E. Seismic bracing for the system piping shall be incorporated in accordance with NFPA 13 Edition 2002. The installation of such bracing shall meet the requirements of NFPA 13. System shall be designed for seismic zone 2A.

6.13 Pipe Support

The variety and type of pipe supports shall be kept to a minimum and their design shall be such as to facilitate quick and secure fixing to metal, concrete, cement screed and wood.
Piping shall be secured in the normal manner with pipe clips. „U" bolts shall not be used as substitute for pipe clips.

Where the design of the structure is in reinforced concrete, pipe hangers and brackets shall be secured to the structure by means of redheads, raw bolts or other approved means.

Where the structure is constructed of hollow clay pot and concrete fill the Sub-Contractor shall arrange for hip pipe hangers and brackets to be supported from the concrete columns and beams, No raw bolts and redheads shall be inserted in any clay pot constructions unless specifically and exceptionally approved by the Engineer.

An approximate guide to maximum permissible support spacing for different classes of pipe and tube is given for horizontal runs in the following table:-

Vertical pipe runs shall be supported at intervals not greater than one and a half times the distance shown in the table

Size N/Bore (mm)	Copper to B.S 659 (mm)	Steel Tube to B.S 1387 Heavy Grade (mm)
15	1200	1800
20	1200	2000
25	1500	2500
32	1500	2500
40	1800	2700
50	1800	3000
65	1800	3400
80	2000	3400
100	2500	3700
125	2700	4000
150	2700	4300

The Sub-Contractor shall submit all; pipe support designs for the Engineer"s approval.

Positions and type of supports shall be shown on the working drawings and submitted to the Engineer for approval.

6.14 Pipe Fittings

The pipe fittings for sprinkler systems shall comply with black steel, class C heavy grade fittings and shall meet the requirements of NFPA 13

6.15 Flanges

The flanges shall comply with B.S 4504: 1969. All flanges shall comply to a nominal pressure of 16 bar (PN 16) and shall be either grey cast iron or steel with raised faces.

6.16 Gaskets

The gaskets for use with flanges to B.S 4504: 1969 shall comply with B.S 4865 Part I 1972 for pressure up to 64 bars.

6.17 Foot Valves

The foot valves shall be as CRANE to B.S 5153 1974 incorporating strainer, with flanges to B.S 4504 PN 16.

The strainer shall be Meehanite Cast iron with strainer area no less than twice the suction pipe area.

6.18 Non-return Valves

The non-return valves shall be as CRANE conforming to B.S 5153: 1974 with flanges to B.S 4504 PN 16.
The body, door and cover are to be of Meehanite cast iron constriction with gun metal seat to B.S 1400.

6.19 Gate Valves

The gate valves up to and including 150mm diameter shall be as CRANE to B.S 5163 with flanges to B.S 4504 PN 16 with raised faces. The valve is a double flanged cast iron wedge gate valve for water work purposes with Meehanite cast iron body to BS 1452 Grade 14 with rubber covered meehinite cast iron gate. The stem is to be forged stainless steel to B.S 970 with meehanite cast iron hand wheel.

6.20 Control and Drain Valves

Sprinkler system control and drain valves shall be the following types:

1. 100, 150 and 200mm butterfly valves on the sprinkler system risers. All riser valves shall count on integral valve supervisory switches, whose entire assembly is approved for use in sprinkler systems.

2. 50mm valves on each of the system main drains shall be incorporated as part of each first level test/drain assembly.

3. Provide gate valves in piping to sprinklers protecting machine rooms, and other utility rooms. Valves shall be located outside the room in an accessible location. Provide tamper switches on all such valves.
4. Provide signs indicating area of coverage in conspicuous location for all control valves.

5. Provide permanently fixed ladder for all control valves greater than 2100mm above floor level.

6.21 Check Valves

All check valves shall be clear opening swing-check type.

1. 50mm and smaller check valves shall be all bronze with screw ends.

2. 65mm and larger check valves shall be either iron body, brass mounted with flanged ends, access plate, and non-ferrous metal set rings and bearings or groove-lock type.

6.22 Drain Assemblies

Drain Assemblies shall be provided in all drain lines as required by NFPA 13. Connect all drain piping to approved drain locations and provide splash guards, where necessary, at discharge outlets.

1. The main drain valve(s) shall discharge outside the building.

2. All drain discharge outlets on the outside of the building shall be located no higher than 0.3 meters above grade level.

6.23 Test Valves

Inspector's Test Connection: Install test valves conveniently accessible within 2.1 meters of the floor. An Inspector's Test Connection, located at the floor control valve, shall be provided to test each water-flow device. The test connection shall discharge to a drain assembly.

6.23 Identification Signs

Attach properly lettered and approved metal signs to each control valve, alarm device, inspector's test valve, drain valve, and alarm bypass valve. Each sign shall indicate the normal valve position as well as the portion of the system that the valve serves. Permanently affix hydraulic design data nameplates to the riser of each system. All control valves shall be labelled to indicate the area/zone serviced by that valve. The hydraulic name plate shall indicate the following information:

(1) Water supply and pressure available at that point,
(2) Location of the most remote design area(s) for that floor or level,
(3) Design discharge density over the design area(s) for that floor or level,
(4) Required flow and residual pressure demand at that point on the riser,
(5) Hose stream demand included in addition to the sprinkler demand.

Description: Signs shall be rigid, flat steel or aluminium plaques with embossed enamel background and lettering. Signs shall be secured by chain or durable wire to each sprinkler zone control valve, or in an obvious location specifically approved by the Engineer/Architect.

6.24 Pipe Sleeves

General: Provide pipe sleeves where piping passes entirely through walls, floors and partitions. Secure sleeves in position during construction. Provide sleeves of sufficient length to pass through entire thickness of walls, floors and roofs. Provide 25 mm minimum clearance between exterior of piping and interior of sleeve or core-drilled hole. Firmly pack space with mineral wool insulation. Seal space at both ends of the sleeve or core-drilled hole with plastic waterproof cement, which will dry to a firm but pliable mass, or provide a mechanically adjustable segmented elastomeric material. Penetrations of fire-rated wall and floor assemblies shall be sealed with a listed fire-stopping material.

Sleeves in masonry and concrete walls, floors and roofs: Provide hot-dip galvanized steel, ductile-iron, or cast iron sleeves. Core-drilling of masonry and concrete may be provided in lieu of pipe sleeves when cavities in the core-drilled hole are completely grouted smooth.

Sleeves in Other Than Masonry and Concrete Walls, Floors, and Roofs:
Provide 26 gauge galvanized steel sleeves.

The sleeves shall be two pipes diameter higher than the sprinkler pipes and should have flanges where necessary or as shall be instructed by the project engineer.

6.25 Miscellaneous Products

Pressure Gauges: Pressure gauges shall be UL listed 65mm diameter minimum dial type gauges with a maximum limit of not less than twice the normal working pressure at the point installed. All gauges shall be provided with a shut-off valve (gauge-cock).

6.26 Finish Painting

Upon completion of testing and commissioning the sprinkler installation shall be painted with 1No. coat red oxide primer, undercoat and 2No. coats of gloss coat to NFPA colour code specifications.

6.27 Supervisory and Alarm Equipment

All water flow and valve supervisory switches shall be furnished, installed and properly adjusted by the sprinkler contractor.

A. Contacts: All water flow and valve supervisory switches shall be provided with two "Form C" (D.P.D.T.) contacts for monitoring. Specific contact rating shall be coordinated with the fire alarm contractor.

B. Vane-Type Waterflow Switches: Provide vane-type waterflow switches where indicated on the drawings. The device shall contain double pole, double throw contacts and screw terminals for each conductor. Devices shall also be equipped with a time delay feature, which is field adjustable from zero to at least 90 seconds. The time delay shall be initially set to 30 seconds.

C. Supervisory (Tamper) Switches: Provide a tamper switch for each interior sprinkler system control valve. Tamper switches shall have double pole, double throw contacts with screw terminals for each conductor. Operation of the switch shall cause a supervisory signal to be transmitted to the FACP upon not more than two complete turns of the valve wheel or a closure of twenty percent, whichever is less.

6.28 Instruction Period

The Sub-Contractor shall allow in his contract sum for instructing of the use of the equipment to the Clients maintenance staff. The period of instruction may be within the contract period but may also be required after the contract period had expired.

The period of time required shall be stipulated by the Client but will not exceed **fourteen** working days in which the Client"s staff shall be instructed in the operation and maintenance of the equipment.

6.29 Approval of Automatic Sprinkler System

After the tender contract had been awarded, the Sub-Contractor shall prepare complete detailed working drawings of the sprinkler system with plans of the floor, details of water supplies up to the installation control valve and any pressure reducing valves, water meters , water locks and any orifice plates. The drawings shall be on an indicated scale not less than 1:100. The drawings shall be submitted in both hard copy and soft copy to the engineer for approval. A key of any symbol used is too included in the drawing legend.

A summary schedule should be included stating:-

(i) Total number of sprinkler heads in each installation

(ii) Height of highest sprinkler head in each installation.

(iii) Type of installation, in this case to be wet pipe system and the size of main control valves to be indicated.

The above data shall be submitted by the Sub-Contractor to the Engineer for final approval before erection of the equipment is commenced.

6.30 Testing and Commissioning of Sprinkler System

The installation is to be tested to one and half times the working pressure of the installation, all to the approval of the Project Engineer. The pressure shall be maintained for about 1 hour ensuring that there is no change in pressure is observed

SECTION G:

BILLS OF QUANTITIES

AND

SCHEDULE OF UNIT RATES

BILLS OF QUANTITIES AND SCHEDULE OF UNIT RATES

CONTENTS

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 14% VAT**).

   In accordance with Government policy, the 14% VAT and 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 there of.

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

   Should the sub-contractor install any material not specified here in before receiving **written approva**l 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.

1. Statement of Compliance

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

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

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

Date: ……..

Official Rubber Stamp: ……

BILLS No. 1

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:-

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

b. Installation Items – Other Bills

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

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

BILL No. 1 PRELIMINARIES

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	cts
1	Discrepancies clause 1.02					
2	Conditions of sub-contract Agreement clause 1.03					
3	Payments clause1.04					
4	Site location clause 1.06					
5	Scope of Contract Works clause 1.08					
6	Extent of the Contractor's Duties clause 1.09					
7	Firm price contract clause 1.12					
8	Variation clause 1.13					
9	Prime cost and provisional sum clause 1.14 (insert profit and attendance which is a percentage of expended PC or provisional sum.)					
10	Bond clause 1.15					
11	Government Legislation and Regulations clause 1.16 Import Duty and Value Added Tax clause 1.17					
12	(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 F-6

ITEM	DESCRIPTION	QTY	UNIT	RATEKSHS	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 F-6

TEM	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**				500,000	
38	Allow for all taxes, 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 page C- 24)					
41	Any other preliminaries;					
	Subtotal above					
	Subtotal brought forward from page G-4					
	Subtotal brought forward from page G-5					

TOTAL FOR BILL NO. 1- PRELIMINARIES
CARRIED FORWARD TO PRICE MAIN SUMMARY

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA

BILL NO. 1: FIRE DETECTION AND ALARM SYSTEM EXTENSION INSTALLATIONS

Item	Description	Unit	Qty	Rate	Amount
	Supply, install, set up test and commission the following Items on the existing Fire Alarm & Detection System according to BS 5839 latest version.				
	Fire Alarm Points				
	A Fire Alarm Points wired in 2C-1.5mm fire resistant turf cable drawn in 25mm dia. PVC codiut concealed in building fabric.	No.	37		
	Treasury 1st Floor Server Room				
	B Addressable Optical Smoke Detetector as Menvier MAP820 or approved equivalent.	No.	1		
	Treasury 1st Floor Server Room Kitchen				
	C Addressable Photo Thermal Sensor as Menvier MAOH850 or approved equivalent.	No.	1		
	Treasury G/Floor Server Room Kitchen				
	D Addressable Photo Thermal Sensor as Menvier MAOH850 or approved equivalent.	No	1		
	Herufi Backyard				
	E Addressable Photo Thermal Sensor as Menvier MAOH850 or approved equivalent.	No.	4		
	Herufi Data Centre				
	F Addressable Optical Smoke Detetector as Menvier MAP820 or approved equivalent.	No.	4		
	G Addressable Manual Call Point as Menvier MBG813 or approved equivalent.	No.	2		
	H Intelligent Addressable Wall Sounder Beacon c/w high powered LED Beacon to provide both audible and visual alarm signals as Menvier MASB860 or approved equivalent.	No.	1		
	Bima House Generator Room				
	I Addressable Photo Thermal Sensor as Menvier MAOH850 or approved equivalent.	No.	1		
	Sub Total C/F to Collection Page below				

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA

Item	Description	Unit	Qty	Rate	Amount
	Bima House 13th Floor				
A	Addressable Optical Smoke Detetector as Menvier MAP820 or approved equivalent.	No.	13		
B	Addressable Photo Thermal Sensor as Menvier MAOH850 or approved equivalent.	No.	4		
C	Addressable Manual Call Point as Menvier MBG813 or approved equivalent.	No.	3		
D	Intelligent Addressable Wall Sounder Beacon c/w high powered LED Beacon to provide both audible and visual alarm signals as Menvier MASB860 or approved equivalent.	No.	2		
E	Addressable Pasive Repeater Panel Panel as Menvier DF6000/PR or approved equivalent	No.	1		
F	Communication Network Card as Menvier DF6000/NC or approved equivalent	No.	1		
G	Testing and Commissioning	No.	2		
	Sub-total C/F to Collection Page below				

Collection

1.1 Total from above

1.2 Total from page BQ1-1

1.3 **Sub Total Carried Forward to Summary Page**

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT Ksh.
	BILL NO. 2				
	HOSEREEL SYSTEM AND PORTABLE FIRE EXTINGUISHERS				
	Hosereel System				
	Supply, deliver and install hose reels, compact automatic pump package and associated galvanised mild steel pipes and fittings heavy grade class 'B' to BS 1387.				
	Hosereels				
7.	Swinging type hose reel fitted with 30 metres long, 20mm diameter reinforced non-kink rubber hose with 5/6mm lever operates shutt-off nozzle.	18	No.		
	Automatic Packaged Hosereel Pump Set				
2.	Automatic fire packaged pump set capable of discharging 2.27litres/second against a pressure of 2.0 bars manufactured and tested as complete unit comprising of duty and stand-by electric driven pump sets, membrane pressure vessels, pressure switch, delivery pressure gauge, float switches automatic controls, control panel with indicator lights showing pumps status and incorporating programmable logic control (PLC) for interfacing with building management system (BMS) by others, interconnecting pipework (including necessary valves and fittings), all mounted on a fabricated steel baseplate. The Hosereels Packaged Pump Set to be as "SPP Hosestream" or equal and approved.	1	item		
	Associated electrical works				
C	Allow for power connection from local isolators provided by others to the pump set's control panels.	1	item		
	ASSOCIATED PIPEWORK				
	Galvanised steel pipes and fittings heavy grade class "C" to B.S. 1387. Allow for all the unions, couplings, nipples, sockets, joints, fixing clips and holderbats etc. as required in running lengths of pipework but not measured.				
	Piping				
D	65mm diameter	100	LM		
E	50mm ditto	180	LM		
F	25mm ditto	70	LM		
G	20mm ditto	30	LM		
	Total Cost Carried Forward To Hose Reel & Portable fire extinguishers Collection Page				

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT Ksh.
	EXTRA OVER PIPING FOR FITTINGS:-				
	Equal/Unequal Tees				
A	65 x 65 x 65mm tee	15	No.		
B	50 x 50 x 50mm ditto	40	No.		
C	50 x 50 x 25mm ditto	22	No.		
	Elbows/Various bends				
D	65mm elbow/bends	10	No.		
E	50mm ditto	20	No.		
F	25mm ditto	26	No.		
G	20mm ditto	26	No.		
	Reducers				
H	65 x 50mm diameter reducer	12	No.		
I	65 x 40mm ditto	14	No.		
J	65 x 25mm ditto	14	No.		
K	50 x 25mm ditto	21	No.		
L	25 x 20mm ditto	21	No.		
	Unions				
M	65mm diameter union	8	No.		
N	50mm ditto	8	No.		
O	25mm ditto	6	No.		
P	20mm ditto	30	No.		
	Isolating Valves				
Q	65mm Isolating valves	6	No.		
R	50mm ditto	10	No.		
S	25mm ditto	18	No.		
T	65mm Non-return valve	18	No.		
	Pipe Plug				
U	65mm pipe plug	8	No.		
	Painting				
6.	Allow for painting of the whole Hose reel system installation with one coat of epoxy primer and 2No. coats of paint to Engineer's approval and Loss prevention council rules.	1	Item		
	PORTABLE FIRE EXTINGUISHERS				
	Supply, delivery and installation of portable fire extinguishers including all the necessary mouting accessories together with agent charging, seals and inspection labels. All items shall comply to BS 5423: 1982 and BS 5306 part 3 and shall be postioned as indicated in the contract drawings.				
W	9 litres, water/carbon dioxide gas portable fire extinguisher with content gauge and with initial fill to be as "ANGUS" or equal and approved.	24	No.		
	Total Cost Carried Forward To Hose Reel & Portable fire extinguishers Collection Page				

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT Ksh.
A	9 litres dry chemical powder portable extinguisher with content guage and with initial fill to be as "ANGUS" or equal and approved.	24	No.		
B	5kg carbon dioxide gas extinguisher with content guage and with initial fill to be as "ANGUS" or equal and approved.	24	No.		
C	9" (225mm) wall mounted manual bell.	24	No.		
D	**TESTING AND COMMISSIONING** Allow for testing and commissioning of the Hose reel system and portable fire extinguishers installations to the satisfaction of the Engineer.	1	Item		
Total Cost Carried Forward To Hose Reel & Portable fire extinguishers Collection Page					

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA

Collection Page for Hose Reel System and Portable Fire extinguishers

ITEM No.	DESCRIPTION	AMOUNT Ksh.	
A	Total from page BQ2-1		
B	Total from page BQ2-2		
C	Total from page BQ2-3		
Total for Hosereel and Portable Fire Extinguishers carried forward to Summary			

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT Ksh.
	BILL NO. 3				
	SPRINKLER SYSTEM INSTALLATION				
	Supply, deliver and install galvanised mild steel pipes and fittings heavy grade class 'C' to BS 1387. Allow for all the unions, coupling, nipples, sockets, joints fixing clips, and holderbats etc, as required in running lengths of pipework but not measured.				
	Piping				
A	150mm diameter pipework	40	LM		
B	100mm ditto	80	LM		
C	80mm ditto	60	LM		
D	65mm ditto	36	LM		
E	50mm ditto	40	LM		
F	40mm ditto	30	LM		
G	32mm ditto	30	LM		
H	25mm ditto	280	LM		
	Bends /Elbows				
I	150mm diameter bend	22	No.		
J	100mm ditto	22	No.		
K	80mm ditto	24	No.		
L	50mm ditto	22	No.		
M	40mm ditto	32	No.		
N	32mm ditto	46	No.		
O	25mm ditto	76	No.		
P	150mm diameter double flanged bend	5	No.		
Q	100mm ditto	8	No.		
	Extra Over Piping For Fittings:-				
	Equal/Unequal tees				
R	150 x 150 x 150mm flanged tee	14	No.		
S	100 x 100 x 100mm tee	10	No.		
T	80 x 80 x 80mm ditto	16	No.		
U	65 x 65 x 65mm ditto	14	No.		
V	50 x 50 x 50mm ditto	32	No.		
W	40 x 40 x 40mm ditto	36	No.		
X	32 x 32 x 25mm ditto	46	No.		
Y	25 x 25 x 25mm ditto	56	No.		
Z	25 x 25 x 15mm ditto	76	No.		
	Total Cost Carried Forward to sprinkler Collection Page				

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT Ksh.
Reducers					
A.	150 x 100mm diameter reducer	6	No.		
B.	100 x 80mm ditto	6	No.		
C.	100 x 65mm ditto	12	No.		
D.	100 x 50mm ditto	12	No.		
E.	80 x 65mm ditto	14	No.		
F.	65 x 50mm ditto	12	No.		
G.	65 x 40mm ditto	12	No.		
H.	65 x 32mm ditto	14	No.		
5.	50 x 40mm ditto	16	No.		
J	50 x 32mm ditto	14	No.		
K	40 x 32mm ditto	32	No.		
L	32 x 25mm ditto	46	No.		
M	25 x 15mm ditto	75	No.		
	Unions				
N	100mm diameter union	12 20	No. No.		
O	80mm ditto	16	No.		
P	65mm ditto	32	No.		
Q	25mm ditto				
	Isolating Valves				
R.	150mm flanged solid wedge non - rising stem	4	No.		
S.	isolating valve as Glenfield or equal and approved.	8	No.		
T.	100mm ditto	4	No.		
U.	100mm flanged non-return valves	1	No.		
V.	150mm foot valve and strainer	1	No.		
W.	100mm solid wedge non - rising stem isolating valve as Glenfield or equal and approved.	2	No.		
X.	65mm ditto	2	No.		
	50mm ditto	2	No.		
Y	50mm non-return valve	4	No.		
Access Plugs					
Z	100mm pipe plug	4	No.		
AA	15mm pipe plug				
	Total Cost Carried Forward to sprinkle Collection				

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Flanged nipples				
2	150mm double flanged nipple	6	No.		
3	100mm ditto	4	No.		
4	150mm single flanged nipple	4	No.		
5	100mm ditto	4	No.		
6	80mm ditto	4	No.		
	Puddle flange				
7	100mm puddle flange	2	No.		
	Johnson Coupling				
8	100mm diameter Johnson coupling	4	No.		
	Splinkler heads				
9	15mm diameter automatic sprinkler head, pendant convectional pattern with universal deflector and red bulb for 68^0C (degrees celcius) operating temperature as manufactured by Firekil International or equal and approved	98	No.		
	Spares				
I	Sprinkler heads for spare as above	16	No.		
	Main Installation Control Valve				
5.	100mm diameter main installation control valve comprising a Main (Upstream) stop alarm valve b Installation vet alarm valve c Down stream stop valve d Water motor alarm and gong e Pressure guages fitted immediately above Main stop valve and vet alarm valve 6. Strainer 7. Test valves and flow meter 8. Drain valve	1	No.		
	Zone Subsidiary stop valve				
p.	100mm Zone subsidiary stop valve complete Flow switch Test valve Drain valve	2	No.		
	Painting				
7.	Allow for painting of the whole sprinkler installation with one coat of epoxy primer and 2No. coats of paint to Engineer's approval and Loss prevention council rules.	1	Item		
	Total Cost Carried Forward to sprinkle Collection Page				

ITEM No.	DESCRIPTION	QTY		UNIT	RATE	AMOUNT Ksh.
	SPRINKLER PUMPS AND CONTROLS Supply, deliver and install electric and engine driven fire pump set complete with the associated controls.					
8.	**Electric Motor Driven Fire Pump** Self priming electric motor driven centrifugal pump to Loss prevention council rules (LPC). The pump and motor should be supplied on a common base plate or frame and as a matched unit. i) Pump End suction fire pump suitable for positive suction head. Duty: 100m^3/hr. continuos flow against 18 metres head and running at 2900 r.p.m. Pump type: SPP - PD04K or equal and approved. ii) Motor Supplied as a matching unit to pump and to be suitable for 50Hz; 3 phase power supply, running at 2900 r.p.m. iii) Motor Starter Automatic star - delta starter to (LPC) with an override emergency manual start facility. The control panel shall incorporate programmable logic control (PLC) for interfacing with building management system (BMS) by others.		1	set		
	Total Cost Carried Forward to sprinkle Collection Page					

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT Ksh.
	Engine Driven Fire Pump				
9.	Self priming electric motor driven centrifugal pump to Loss Prevention Council rules (LPC). The pump and the engine are assembled and tested as a packaged unit, complete with fabricated steel base plate, coupling, coupling guard, controller, fuel tank, fuel tank stand, hand filling pump, starting batteries, exhaust system and inter-connecting fuel piping and wiring. The equipment should be fitted with as domestic silencer at the exhaust system. i) Pump End suction fire pump suitable for positive suction head condition. Duty: 100m^3/hr. continuos flow against 18 metres head and running at 2900 r.p.m. Pump type: SPP - PD04K or similar ii) Diesel Engine Diesel engine air cooled, compression ignition and mechanical injection. Supplied as a matching unit to the pump. The pump and diesel engine should be supplied with common base plate. 1 set iii) Diesel Engine Controller Combined automatic and manual controller to LPC. The control panel shall have indicator lamps, ammeters, mode selector switch, push button for manual cranking of the engine, battery charger on or off switch.The control panel shall incorporate programmable logic control (PLC) for interfacing with building management system (BMS) by others. DC supply - 12 volts for engine starting circuits and alarms. AC supply 240V, 50Hz, single pahse (for battery charging system)				
	Jockey Pump				
10.	Self priming electric motor driven centrifugal pump.The pump and motor should be supplied on a common base plate or frame and as a matched unit. Duty: 1.3 m^3/hr. continuous flow against 20.0 metres head. Pump type: SPP - Instream pump or equal and approved	1	No.		
	Total Cost Carried Forward to sprinkle Collection				

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT Ksh.
	Fire Pump Alarm Panel				
11.	Panel to be wall mounted and shall have visual indicator lamps for electric and diesel pumps and electronic sounder. The control panel shall incorporate programmable logic control (PLC) for interfacing with building management system (BMS) by others.	1	No.		
	AC supply: 240V, 50Hz, single pahse				
	Tools and Spare Parts				
	ATools and Spare Parts to LPC rules to be provided with the engine.				
	i) A standard kit of tools	1	KIT		
	ii) Two sets of fuel filters, elements and seals.	1	SET		
	iii) Two sets of lubricating oil filters, element and	1	SET		
	iv) Two sets of belts.	1	SET		
	v) One complete set of engine to do 8bar against a head of 250m Complete with joints, gaskets and the losers.	1	SET		
	vi) Two injectors nozzles.	1	Item		
	Testing and Commissioning				
1	Allow for testing and commissioning of the BWhole Sprinkler installation to the satsifaction of the Engineer.		Item		
	Total Cost Carried Forward To Sprinkler Collection page				

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA

Collection Page for Sprinkler Installation

Item	Descriptions	Amount (Kshs)	
A	Total from page BQ3-1		
B	Total from page BQ3-2		
C	Total from page BQ3-3		
D	Total from page BQ3-4		
E	Total from page BQ3-5		
F	Total from page BQ3-6		
	Total for Sprinkler carried forward to Price Summary Page		

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT KSH
	BILL NO. 4				
	EXTERNAL FIRE HYDRANT				
	Supply, deliver and install galvanised mild steel pipes and fittings heavy grade class 'C' to B.S 1387. Allow for all the unions, joints, nipples, fixing clips and holderbats etc as required in running lengths of pipework but not measured.				
	Piping				
A	100mm ditto	140	LM		
B	80mm ditto	50	LM		
C	65mm ditto	12	LM		
D	50mm ditto	15	LM		
	Exta overpiping for fittings:-				
	Equal /Unequal tees				
E	100x100x100mm	4	No		
F	100x100x80mm	4	No		
G	100x100x40mm	4	No		
H	80x80x80mm	4	No		
	Elbows/ Bends				
I	100mm	4	No		
J	100mm, 45°	4	No		
K	80mm	8	No		
L	80mm, 45°	4	No		
M	65mm	4	No		
N	50mm	2	No		
O	20mm	2	No		
	Reducers				
P	100 x80mm	4	No.		
Q	100 x65mm	4	No.		
R	100 x50mm	4	No.		
S	80 x50mm	4	No.		
Total cost carried to Hydrant Installation Collection page					

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT KSH
A	80 x40mm	8	No.		
B	65 x50mm	8	No.		
C	50 x 40mm	8	No.		
D	40 x20mm	8	No.		
	Unions				
E	100mm	8	No		
F	80mm	8	No		
G	65mm	8	No		
H	50mm	1	No		
	Valves				
I	100mm ditto	4	No		
J	80mm isolating valve	4	No		
K	65mm ditto	4	No		
L	50mm ditto	2	No		
M	20mm ditto	2	No		
N	100mm flanged non- return valve	3	No		
O	50mm non- return valve	2	No		
P	40mm medium pressure ball valve	4	No		
	Flanged nipples				
R	150mm double flanged nipple	4	No.		
S	100mm ditto	4	No.		
	Johnsons coupling				
T	100mm	4	No.		
	plug				
U	150mm end plug	3	No.		
V	100mm ditto	3	No.		
	Fire hydrant				
A	80mm above ground fire hydrant to BS 750 type	4	No.		
	Valve chamber				
B	Construct Masonary valve chamber of size 300x 300x 300 mm deep with locable cast iron cover for pipes of diameters not exceeding 100mm.	4	No.		
	Excavation				
C	Excavate trench in hard soil/ murram for depth not exceeding 750mm deep for pipes of 100 & 80mm diameters and make good as before.	200	LM		
	Testing and Commissioning				
G	Allow for testing and commissioning of the external fire hydrant installation to satisfaction of the Engineer.	1	Item		
	Total cost carried to Hydrant Collection page				

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA
Collection Page for Bill No. 4: External Fire Hydrant Installation

ITEM No.	DESCRIPTION	AMOUNT KSH	
A	Total cost brought forward from above		
B	Total cost brought forward from page BQ4-1		
Total for ~~Hydrant installation carried to price summary~~ page page			

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ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT Ksh.
	BILL NO. 5				
	DRY RISER INSTALLATION				
	Supply, deliver and install galvanised mild steel pipes and fittings heavy grade class 'C' to BS 1387. Allow for all the unions, joints, nipples fixing clips, puddle flanges, etc as required in running lengths of pipework but not measured.				
	Piping				
A	150mm diameter piping	25	LM		
B	100mm ditto	168	LM		
C	50mm ditto	20	LM		
	Extra Over Piping For Fittings:-				
	Tees				
D	150 x 150 x 150mm flanged tee	3	No.		
E	100 x 100 x 100mm tee	5	No.		
	Elbows/bends				
F	150mm double flanged bend	3	No.		
G	150mm 45^0 double flanged bend	3	No.		
H	100mm tee	20	No.		
	Reducers				
I	150 x 100mm diameter reducer	3	No.		
J	100 x 65mm ditto	15	No.		
	Unions				
K	65mm diameter union	8	No.		
	Access Cap/Plugs				
L	150mm access cap	3	No.		
	Flanged nipples				
M	150mm double flanged nipple	3	No.		
N	150mm single flanged nipple	3	No.		
O	100mm ditto	2	No.		
	Puddle flange				
P	150mm puddle flange	3	No.		
Q	100mm ditto	1	No.		
	Johnson coupling				
R	100mm diameter johnson coupling	5	No.		
	Total Cost Carried Forward To Dry riser Collection Page				

ITEM No.	DESCRIPTION	QTY	UNIT	RATE	AMOUNT Ksh.
	Landing valve				
	A65mm diameter Landing valve manufactured from gunmetal wirh cast iron handwheel, plastic blank cap and chain with flanged inlet and female instantaneous outlet.	15	No.		
	Hose pipe				
	B65mm diameter x 25m long rubber lined delivery hose pipe complete with quick fitting coupling to fit into a 65mm diameter landing valve outlet.	10	No.		
	C65mm diameter instantaneous branch pipe and nozzle.	5	No.		
	Wall mounted cabinet				
	D600 x 225 x 750mm wall mounted cabinet manufactured from 18swg mild steel and covered with red undercoat and finished with coats of red enamel to house items 'B' & 'C' above.	15	No.		
	Air release valve				
	E50mm air release valve	3	No.		
	Breeching Inlet				
	FInlet breeching with four inlets, each inlet consisting of 65mm diameter male instantaneous coupling to BS 336 with a non-return valve and a blank cap secured with a short length of chain. The inlet shall be grouped together into a single casing (Breeching piece) with a single flanged or screwed outlet and will be complete with a 25mm drain valve.	1	No.		
Sheet Metal Inlet Box					
12.	Inlet breeching sheet metal box with a wired glass door in accordance with BS 3980 and secured with springs locks openable from inside by smashing the glass and releasing the lock.	1	No.		
	Painting				
H	Allow for painting of the whole dry riser installation with one coat of epoxy primer and 2No. coats of paint to Engineer's approval and Loss prevention council rules.	1	Item		
	Testing and Commissioning				
I	Allow for testing and commissioning of the Whole Dry Riser installation to the satsifaction of the Engineer.	1	Item		
	Total Cost Carried Forward To Dry Riser Collection Page Below				

Collection Page for Dry Riser Installation

ITEM No.	DESCRIPTION	AMOUNT Ksh.
1	Total from above	
2	Total from page BQ5-1	
Total for Dry Riser Installation carried to Summary Page		

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA
REHABILITATION OF THE INERGEN GAS GAS FIRE SUPPRESSION SYSTEM

BILL NO. 6: TREASURY BUILDING

Item	Description	Unit	Qty	Rate	Amount
	Carry out the following activities and installations according to the relevant clauses in the latest version of BS 5839 - nergen Gas Fire Suppression system and make good at the discretion of the Mechanical Engineer.:				
A	Supply and Deliver 80 Ltr 300Bar Gas Cylinders as Inergen Apollo MODEL	No.	4		
B	Replacement of the faulty optical smoke detectors	No.	12		
C	Fabricate and replace the existing cylinder manifold, the Brackets and the 12mm Roll Bolts to match the new cylinder arrangement	Item	1		
D	Supply and Replace the existing panel with new Extinguishing panel as Apollo	No.	1		
E	Carry out the extension of GI piping with fittings and electrical conduits as as follows :				
	a) 32mm Class B	LM	180		
	b) 25mm PVC conduits	LM	320		
	13. Cabling Supply 2.00mm Fire redundant cable and carry out cabling on the system to match with the new design				
	14. Supply 2.00mm Fire redundant cable and carry out cabling on the system to match with the new design	LM	1,200		
H	Supply and replace the existing faulty batteries and their connections and load test them by momentarily connectong the mains.	No.	4		

Sub-total C/F to Next Page

Item	Description	Unit	Qty	Rate	Amount
	Sub-total C/F From Previous Page				
13.	Supply and replace manual call points of the Panel for Treasury Blg. and test all the functions of its Control equipment, indicating equipment including fault indicators and automatic transmission of alarm signals to an alarm receiving centre for functionality	No.	4		
(d)	Test all printers to ensure that they operate correctly and that characters are legible. It should be ensured that all printer consumables are sufficient in quantity or condition to ensure that the printer can be expected to operate until the time of the next service visit	No.	4		
C	Carry out all further checks and tests recommended by the manufacturer of the control and indicating equipment and other components of the system.	No.	4		
D	**Call Points** Test the switch mechanism of all manual call point, either by removal of a frangible element, insertion of a test key or operation of the device as it would be operated in the event of fire.	No.	16		
E	**Visual Fire Alarm Devices** Replace all visual fire alarm devices lenses reprogram them on the control panel and make sure they are in correct operation.	No.	6		
F	Reprogram the new extinguishing panel to accommodate the new devices and extensions	No.	1		
	Sub-total C/F to Summary Page				

BILL NO. 7: HERUFI HOUSE

Item	Description	Unit	Qty	Rate	Amount
	Carry out the following activities and installations according to the relevant clauses in the latest version of BS 5839 - nergen Gas Fire Suppression System for Buildings and make good to the discretion of the PM.:				
A	Supply and deliver 80Ltr 300Bar Gas Cylinders as Inergen	No.	1		
B	Replacement of the faulty optical smoke detectors	No.	8		
C	Fabricate and replace the cylinder manifold to match the new cylinder arrangement	Item	1		
D	Supply and replacement of new Extinguishing panel as Apollo	No.	1		
	Carry out the extension of GI piping with fittings and electrical conduits as follows with the approval of the Project Engineer to match the new design				
E	a) 32mm Class B	Lm	80		
	Sub-total C/F to Next Page				

Item	Description	Unit	Qty	Rate	Amount
Sub-total C/F From Previous Page					
	b) 25mm PVC Conduits	Lm	100		
15.	Supply 2.00mm Fire Redundant cable and carry out the cabling to match the new design	LM	1,350		
16.	Supply and replace the existing faulty batteries and their connections and load test them by mommentarilly connecting the mains	No.	4		
(c)	Supply and replace manual call point of the panel for Herufi Data Centre and test all functions of its control and indicating equipment including faulty indicators and automatic transmission of alarm signals to alarm receiving centre for functionality	No.	18		
17.	Test the switch mechanism of all manual call points	Item	1		
18.	Replace all visual fire alarm devices lenses reprogram them on the panel and make sure they are in operation	No.	6		
F	Reprogram the new extinguishing panel	Item	1		
20	Test all printers to ensure that they operate correctly and that characters are legible. It should be ensured that all printer consumables are sufficient in quantity or condition to ensure that the printer can be expected to operate until the time of the next service visit	No.	4		
21	Carry out all further checks and tests recommended by the manufacturer of the control and indicating equipment and other components of the system.	No.	4		
Sub-total C/F to Summary Page					

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA

BILL NO. 8

REHABILITATION OF THE FIRE EXIT DOORS IN TREASURY BUILDING BIMA AND HERUFI

Item	Description	Unit	Qty	Rate	Amount
A	Replace all the Faulty Fire Exit Doors with New current Self Closing Standard Fire Exit Doors	No.	32		
	Sub-total C/F to Summary Page				

REHABILITATION OF SPRINKLER SYSTEM AT TREASURY

BILL NO.9

Item	Description	Unit	Qty	Rate	Amount
	Carry out the following activities/ tests according to the relevant clauses in the latest version of BS 5839 - Rehabilitation of Fire Sprinkler Systems for Buildings. Make appropriate entries into the Log Book and report any outstanding defects to the PM.:				
A	Supply and Replacement of the Electric Pump with all its automated controls to match the existing system as SPP or Equal and approved	No.	1		
	Sub-total C/F to Summary Page				

BILL NO. 4:- SUMMARY PAGE -REHABILITATION

Item	Description	Amount
I	Sub-total for Bill No. 1: Rehabilitation of the Fire suppression System at Treasury Building	
II	Sub-total for Bill No.2 : Rehabilitation of Fire Suppression System AT Herufi House	
III	Sub-total for Bill No.3: Rehabiiilitation of Fire Exit Doors in Three Buildings	
IV	Sub-total for Bill No.2 : Rehabilitation of Sprinkler System at Treasury Building	
	Sub-total for Rehabilitation of Fire Suppression, Fire	

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Project managers stationery and expenses				
A	Ream white photocopying paper A/4 80g/m2	10	Ream		
B	Letter head quality paper, size A4, 80g/cm^3, Green, 500 sheets	5	Ream		
C	Letter head quality paper, Blue, 500 Sheets as Classic or Conqueror or approved equivalent.	5	Ream		
D	HP Leserjet Print Cartridge serial 5A No. CE505A	3	No.		
E	8 Giga Bit Storage Flash disk as Transcend or approved equivalent	2	No		
F	2 Terabit External portable harddrive as seagate or approved equivalent	2	No.		
G	Tablet with 9.7 inch retina LED backlit display, 128GB internal storage, WIFI, Bluetooth and 4G enabled, Front and Back camera of 12 megapixels minimum complete with a book cover as 'I PAD PRO'.	2	No.		
H	Laptop Computer Intel corei 7 eight generation processor /2.7GHz Quad-core/16GB System RAM/1TB SSD/ win10/HD13.3" Screen/carry porch and preinstalled with MS Office 16 and an antivirus as 'Hp Spectre X 360'.	2	No.		
I	HP printer catridge for P2015-Q7553A toner Cartridge	5	No.		
Total Project Stationery Carried to Summary Page					

PROPOSED NEW INSTALLATION WORKS FOR FIRE SYSTEMS IN TREASURY BUILDING, BIMA
SUMMARY PAGE

ITEM	DESCRIPTION	AMOUNT (Kshs)
A	PRELIMINARIES F1-F6	
B	TOTAL AMOUNT FOR BILL NO. 1 (FIRE DETECTION AND ALARM	
C	TOTAL AMOUNT FOR BILL NO. 2 (HOSEREEL AND PORTABLE FIRE	
D	TOTAL AMOUNT FOR BILL NO. 3 (SPRINKLER SYSTEM)…….....	
E	TOTAL AMOUNT FOR BILL NO. 4 (FIRE HYDRANT SYSTEM)……	
F	TOTAL AMOUNT FOR BILL NO. 5 (DRY RISERS)……	
G	TOTAL AMOUNT FOR REHABILITATION……	
H	TOTAL AMOUNT FOR PROJECT STATIONERY……	
I	ALLOW FOR CONTIGENCY SUM	4,000,000
J	ALLOW FOR A PROVISIONAL SUM FOR PROJECT ADMINISTRATION	1,000,000
	TOTAL AMOUNT FOR SPRINKLER SYSTEM, DRY RISER, HOSE REEL,	

Total Amount in words……
……..…….

Tenderer's Name and Stamp……..

Contract period……

Signature…… Date……..

PIN NO…… VAT Certificate……

Witness……Address……..

Signature……Date……..

Item	Description	RATE(KES)
	SUPPLY DELIVER ,INSTALL AND COMMISSION THE FLLOWING:- 9 litres water CO2 fire extinguisher complete with siphon tube,flexible rubber hose,pressure gauge, and nozzle including fixing to the wall brackets to BS 5423 or equivalent 9kg all welded 16 swg steel body handle dry powder fire extinguisher with textile reinforced, neoprene hose and high impact plastic nozzle and strike knob as Nimrod or equal and approved, including fixing to the wall by us of wall brackets as described to BS 3466 5kg Carbon dioxide gas ire extinguisher 5"x 5"fibre glass fire blanket Carbon dioxide horn Siphon valve Portable fire extinguisher hose holder Super swivel ½ " x 3/8" 5000PSI,Model BN-6626 Ditto but ½ "x ½ " model RR 5004-007 PSI for 4000&5500 series Hose reel extended swivels Universal Mount bracket socket Skid Mount Bracket socket Wall mount bracket socket for hose reels Base mount bracket socket Universal mount-pivot Reel Bracket Non pivot Reel Bracket Vertical Non-pivot Reel bracket Reel Inlet Jumper hose General reversing switch Explosive proof stationery push button switch Sealed push button Solenoid relay Circuit breaker Variable speed control Swivel repair kit Side mount reel mounting Stacking bracket Carbon dioxide cartridge Hose reels Swing or fixed type-to approved BS EN671-1,,mual or automatic, 19mm diameter hose, Hose reel cabinets.	

SECTION G:

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

CONTENTS

TECHNICAL SCHEDULE

1. General Notes to the Tenderer

1.1The tenderer shall submit technical schedules for all materials and equipment upon which he has based his tender sum.

1.2The 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.

1.3Completion 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

The tenderer must complete in full the technical schedule. Apart from the information required in the technical schedule, the tenderer **MUST SUBMIT** comprehensive manufacturer"s technical brochures and performance details for all items listed in this schedule (fill forms attached).

TECHNICAL OF ITEMS TO BE SUPPLIED ***(Failure to fill this Form leads to Automatic Disqualification*)**

Item	Description	Make	Model	Country of origin
	SUPPLY DELIVER ,INSTALL AND COMMISSION THE FLLOWING:- 9 litres water CO2 fire extinguisher complete with siphon tube,flexible rubber hose,pressure gauge, and nozzle including fixing to the wall brackets to BS 5423 or equivalent 9kg all welded 16 swg steel body handle dry powder fire extinguisher with textile reinforced, neoprene hose and high impact plastic nozzle and strike knob as Nimrod or equal and approved, including fixing to the wall by us of wall brackets as described to BS 3466 5kg Carbon dioxide gas ire extinguisher 5"x 5"fibre glass fire blanket Carbon dioxide horn Siphon valve Portable fire extinguisher hose holder Super swivel ½ " x 3/8" 5000PSI,Model BN-6626 Ditto but ½ "x ½ " model RR 5004-007 PSI for 4000&5500 series Hose reel extended swivels Universal Mount bracket socket Skid Mount Bracket socket Wall mount bracket socket for hose reels Base mount bracket socket Universal mount-pivot Reel Bracket Non pivot Reel Bracket Vertical Non-pivot Reel bracket Reel Inlet Jumper hose General reversing switch Explosive proof stationery push button switch Sealed push button Solenoid relay			

	Circuit breaker Variable speed control Swivel repair kit Side mount reel mounting Stacking bracket Carbon dioxide cartridge Hose reels Swing or fixed type-to approved BS EN671-1,,mual or automatic, 19mm diameter hose, Hose reel cabinets.			

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Item	Description	Make	Model	Country of origin
	FIRE SPRINKLER PARTS			
	Fire sprinkler connection			
	Fire hose valves			
	Fire sprinkler cages			
	Sprinkler Escutcheons			
	Sprinkler Gauges			
	Clapper hatch			
	Rubber clapping			
	Check valve ¾ " 1"			
	Alarm			
	Alarm strainer			
	Alarm test valve			
	Drain valve			
	Water alarm Motor alarm Gong			
	9' manual fire alarm bell			
	FIRE DOORS			
	New standard door complete with Latches guides, rollers ,lock ,door hinges etc Locks			
	Latches			
	Guides			
	Rollers			
	Landing valves			
	FIRE HYDRANT			
	Landing valves			
	Pin hose racks			
	Branch pipe			
	PUMPS			
	Bearings			
	Coupling			
	Starters			
	Pressure switch			
	Packing glands			
	Suction line pressure			

Catalogue must be attached for all the tems **in the schedule of material above**

SECTION H:

DRAWING SCHEDULE

CONTENTS

DRAWING SCHEDULE:

As shall be provided during project implementation.

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SECTION J:

STANDARD FORMS

STANDARD FORMS

CONTENTS

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

PERFORMANCE BANK GUARANTEE

To: The Principal Secretary
The National Treasury
P.O. Box 30007 - 00100
NAIROBI

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

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized 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 there under 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 ……

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TENDER QUESTIONNAIRE

Please fill in block letters.

1. Full names of Tenderer:

   ……

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

   ……

3. Telephone number (s) of Tenderer:

   ……

4. Telex/Fax Address of Tenderer:
   ……

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

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

   ……

   ……

_____
Signature of Tenderer

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:

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

Part 2(c) – Registered Company

Private or Public ……

State the nominal and issued capita of the company:

Nominal KShs. ……..
KShs.
Issued ……..

Give details of all directors as follows:

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

Part 2(d) Interest in the Firm:

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

I certify that the above information is correct.

……..	……	……
Title	Signature	. Date

** Attach proof of citizenship*

KEY PERSONNEL

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

POSITION	NAME	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 …… Date

Signature

CONTRACTS COMPLETED IN THE LAST FIVE (5) YEARS

Work performed on works of a similar nature and volume over the last five years.

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

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

…… …… ……
. ….
Title Signature Date

SCHEDULE OF ON-GOING

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

PROJECT NAME	NAME OF CLIENT	CONTRACT SUM	% COMPLETE	COMPLETION DATE

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

…… …… ……

Title …… Date

Signature

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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

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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. ._____.

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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?)

SELF DECLARATION FORMS - DEBARRED

(r.47)

FORM SD1

SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015.

I, ……., of Post Office Box ……. being a resident of …….. in the Republic of ……. do hereby make a statement as follows: -

1. THAT I am the Company Secretary/ Chief Executive/Managing Director/Principal Officer/Director of ……..…….. (insert name of the Company) who is a Bidder in respect of Tender No. …….. for …….. (insert tender title/description) for ……..(insert name of the Procuring entity) and duly authorized and competent to make this statement. Kenya Subsidiary Legislation, 2020

2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.

3. THAT what is deponed to hereinabove is true to the best of my knowledge, information and belief.

…… …… ……
(Title) (Signature) (Date)

Bidder Official Stamp

FORM SD2

7.12 SELF DECLARATION FORMS - CORRUPT OR FRAUDULENT PRACTICE

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

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

1. THAT I am the Chief Executive/Managing Director/Principal Officer/Director of ……..…… (insert name of the Company) who is a Bidder in respect of Tender No. …….. for …….. (insert tender title/description) for ……(insert name of the Procuring entity) and duly authorized and competent to make this statement, Kenya Subsidiary Legislation, 2020

2. THAT the aforesaid Bidder, its servants and/or agents /subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of ……..(insert name of the Procuring entity) which is the procuring entity.

3. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered any inducement to any member of the Board, Management, Staff and/or employees and/or agents of ……..(name of the procuring entity)

4. THAT the aforesaid Bidder will not engage /has not engaged in any corrosive practice with other bidders participating in the subject tender

5. THAT what is deponed to hereinabove is true to the best of my knowledge information and belief.

…… …… ……
(Title) (Signature) (Date)

Bidder's Official Stamp

SITE VISIT CERTIFICATION FORM

I……..as **In-Charge of Data Centre** and Client Representative of **ICT Unit** in The National Treasury and Planning do hereby certify that…….

(Name of tender/tenderers representative)

of…….... (Name of bidding firm and address)

Have actually visited the site for the proposed……..

……...

……

(Name of proposed works for which bids are invited)

This…….day of……..month……..201……

……

……

Signature **Official Stamp**

Declaration (by Tenderer)

I……

… (Name of tenderer)

Do hereby declare that I have visited the site for the proposed works and that I am satisfied/not satisfied with the (delete as appropriate) information gathered.

…… ……..… ……..

Signature **Date** **Official Stamp**