SALARIES AND REMUNERATION COMMISSION (SRC)
P.O BOX 43126– 00100 NAIROBI

PROPOSED PARTITIONING WORKS OF SALARIES AND REMUNERATION COMMISSION (SRC) OFFICES AT WILLIAMSON HOUSE-NAIROBI -PHASE 2

TENDER NO. SRC/OP/03/2021-2022

NOTICE DATE: TUESDAY 24/08/2021

CLOSING DATE: WENESDAY 15/09/2021 AT 11:00AM

RESERVED FOR AGPO GROUPS

PROJECT MANAGER

WORKS SECRETARY
M.T.I.H.U.D& PW-SDPW
P.O. BOX 30743-00100
NAIROBI

ARCHITECT

CHIEF ARCHITECT
M.T.I.H.U.D& PW-SDPW
P.O. BOX 30743-00100
NAIROBI

QUANTITY SURVEYOR

CHIEF QUANTITY SURVEYOR
M.T.I.H.U.D& PW-SDPW
P.O. BOX 30743-00100
NAIROBI

ELECTRICAL ENGINEER

CHIEF ENGINEER ELECTRICAL (BS)
M.T.I.H.U.D& PW-SDPW
P.O. BOX 30743-00100
NAIROBI

MECHANICAL ENGINEER

CHIEF ENGINEER MECHANICAL. (BS)
M.T.I.H.U.D& PW-SDPW
P.O. BOX 30743-00100
NAIROBI

STRUCTURAL ENGINEER

CHIEF ENGINEER (STRUCTURAL)
M.T.I.H.U.D& PW-SDPW
P.O. BOX 30743-00100
NAIROBI

AUGUST, 2021

PROPOSED PARTITIONING WORKS OF SALARIES AND REMUNERATION COMMISSION (SRC) OFFICES AT WILLIAMSON HOUSE-NAIROBI
-PHASE 2

ITEM

1.	CONTENTS PAGE	(i)
2.	STANDARD TENDER DOCUMENT (STD)	2-107
4.	PARTICULAR PRELIMINARIES	PP/1 – PP/8
5.	GENERAL PRELIMINARIES	GP/1 – GP/16
	BILLS OF QANTITIES & SPECIFICATIONS	
6.	BUILDER'S WORK-6th Floor	6BW/1-6BW/9
7.	BUILDER'S WORK-3rd Floor Completion	3BW/1-3BW/6
8.	SANITARY FITTINGS, INTERNAL PLUMBING & DRAINANGE WORKS	F4-F24
9.	AIR CONDITIONING & MECHANICAL VENTILATION	C4-C10
10.	SERVER ROOM PRECISION ENVIRONMENT CONTROL &, FIRE FIGHTING EQUIPMENT	D4-D12
9.	ELECTRICAL INSTALLATION WORKS	F3-F7
9.	STRUCTURED CABLING INSTALLATION WORKS	F3-F5
10.	PROVISIONAL SUMS	PS
11.	GRAND SUMMARY	GS

STD -TABLE OF CONTENTS

INVITATION TO TENDER..... i

SECTION I - INSTRUCTIONS TO TENDERERS **1**

A. General Provisions **9**
1. Scope of Tender 9
2. Fraud and Corruption 9
3. Eligible Tenderers 9
4. Eligible Goods, Equipment, and Services 11
5. Tenderer's Responsibilities 11

B. Contents of Tender Documents **11**
6. Sections of Tender Document 11
7. Site visit 12
8. Pre-Tender Meeting 12
9. Clarification and amendment of Tender Documents 13
10. Amendment of Tender Documents 13

C. Preparation of Tenders **13**
11. Cost of Tendering. 13
12. Language of Tender 13
13. Documents Comprising the Tender 13
14. Form of Tender and Schedules 14
15. Alternative Tenders 14
16. Tender Prices and Discounts 14
17. Currencies of Tender and Payment 15
18. Documents Comprising the Technical Proposal 15
19. Documents Establishing the Eligibility and Qualifications of the Tenderer
20. Period of Validity of Tenders 16
21. Tender Security 16
22. Format and Signing of Tender 17

D Sealing and Marking of Tenders **17**
23. Sealing and Marking of Tenders 17
24. Deadline for Submission of Tenders 18
25. Late Tenders 18
26. Withdrawal, Substitution, and Modification of Tenders 18
27. Tender Opening 18

E. Evaluation and Comparison of Tenders **19**
28. Confidentiality 19
29. Clarification of Tenders 19
30. Deviations, Reservations, and Omissions 20
31. Determination of Responsiveness 20
32. Non-material Non-conformities 20
33. Arithmetical Errors 20
34. Conversion to Single Currency 21
35. Margin of Preference and Reservations 21

36. Subcontractors 21
37. Evaluation of Tenders 21
38. Comparison of Tenders 22
39. Abnormally Low Tenders 22
40. Abnormally High Tenders 22
41. Unbalanced and/or Front-Loaded Tenders 22
42. Qualifications of the Tenderer 23
43. Best Evaluated Tender 23
44. Procuring Entity's Right to Accept Any Tender, and to Reject Any or All Tenders 23

F. Award of Contract 23

45. Award Criteria 23
46. Notice of Intention to enter into a Contract 23
47. Standstill Period 24
48. Debriefing by the Procuring Entity 24
49. Letter of Award 24
50. Signing of Contract 24
51. Appointment of Adjudicator 24
52. Performance Security. 24
53. Publication of Procurement Contract. 25
53. Procurement Related Complaints 25

SECTION II-TENDER DATA SHEET(TDS) **26**

SECTION III - EVALUATION AND QUALIFY ON CRITERIA **31**
1. General Provisions 31
2. Preliminary examination for Determination of Responsiveness 31
3. Tender Evaluation (ITT 35) 31
4. Multiple Contracts 31
5. Alternative Tenders (ITT 13.1) 32
6. Margin of Preference is not applicable 32
7. Post qualification and Contract ward (ITT 39), more specifically 32

SECTION IV – TENDERING FORMS 33

QUALIFICATION FORMS 34
1. Form Equ. Equipment 36
2. Form per-1 37
4. FORM PER-2: 38

5. TENDERERS QUALIFICATION WITHOUT PRE-QUALIFICATION 40
FORM ELI -1.1 40
FORM ELI -1.2 41
FORM CON – 2 42
5.4 FORM FIN – 3.1: 44
5.5 FORM FIN – 3.2: 45
5.6 FORM FIN – 3.3: 46
5.7 FORM FIN – 3.4: 46
5.8 FORM EXP - 4.1 47
5.9 FORM EXP - 4.2(a) 48
5.11 FORM EXP - 4.2(b) 49

OTHER FORMS 50

6. FORM OF TENDER 50

a) TENDERER'S ELIGIBILITY- CONFIDENTIAL BUSINESS QUESTIONNAIRE 53
b) CERTIFICATE OF INDEPENDENT TENDER DETERMINATION 56
c) SELF-DECLARATION FORM - SELF DECLARATION OF THE TENDERER 57
d) APPENDIX 1- FRAUD AND CORRUPTION 60

7. FORM OF TENDER SECURITY - DEMAND BANK GUARANTEE 62
8. FORM OF TENDER SECURITY (TENDER BOND) 63
9. FORM OF TENDER-SECURING DECLARATION 64

10. APPENDIX TO TENDER 65

PART II - WORK REQUIREMENTS 66

SECTION V - DRAWINGS 66
SECTION VI - SPECIFICATIONS 66
SECTION VII - BILLS OF QUANTITIES 67
1. Objectives 67
2. Day work Schedule 67
3. Provisional Sums 67
4. The Bills of Quantities 67

PART III-CONDITIONS OF CONTRACT AND CONTRACT FORMS 68

SECTION VIII - GENERAL CONDITIONS OF CONTRACT 68

A. General
1. Definitions 69
2. Interpretation 69
3. Language and Law 70
4. Project Manager's Decisions 71
5. Delegation 71
6. Communications 71
7. Subcontracting 71
8. Other Contractors 71
9. Personnel and Equipment 71
10. Procuring Entity's and Contractor's Risks 71
11. Procuring Entity's Risks 71
12. Contractor's Risks 71
13. Insurance 72
14. Site Data 72
15. Contractor to Construct the Works 72
16. The Works to Be Completed by the Intended Completion Date 72
17. Approval by the Project Manager 72
18. Safety 73
19. Discoveries 73
20. Possession of the Site 73
21. Access to the Site 73
22. Instructions, Inspections and Audits 73
23. Appointment of the Adjudicator 73
24. Settlement of Claims and Disputes 74
25. Fraud and Corruption 76

B. Time Control 76
1. Program 76
2. Extension of the Intended Completion Date 77
3. Acceleration 77
4. Delays Ordered by the Project Manager 77
5. Management Meetings 77
6. Early Warning 78

C. Quality Control 79
1. Identifying Defects 79
2. Tests 79
3. Correction of Defects 79
4. Uncorrected Defects 79

D. Cost Control 80
1. Contract Price 80
2. Changes in the Contract Price. 80
3. Variations 81
4. Cash Flow Forecasts 82
5. Payment Certificates 82
6. Payments 82
7. Compensation Events 83
8. Tax 83
9. Currency y of Payment 83
10. Price Adjustment 83
11. Retention 84
12. Liquidated Damages 84
13. Bonus 84
14. Advance Payment 84
15. Securities 85
16. Dayworks 85
17. Cost of Repairs 85

E. Finishing the Contract 90
1. Completion 90
2. Taking Over 91
3. Final Account 92
4. Operating and Maintenance Manuals 93
5. Termination 94
6. Payment upon Termination 95
7. Property 96
8. Release from Performance 96

SECTION IX - SPECIAL CONDITIONS OF CONTRACT 97
SECTION X - CONTRACT FORMS 98

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD
FORM No. 2 - NOTIFICATION OF AWARD - LETTER OF ACCEPTANCE
FORM No. 3 - CONTRACT AGREEMENT
FORM No. 4 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee]
FORM No. 5- PERFORMANCE SECURITY [Option 2– Performance Bond]
FORM No. 6- ADVANCE PAYMENT SECURITY
FORM No. 7- RETENTION MONEY SECURITY

Salaries & Remuneration Commission
Rewarding productivity

TENDER DOCUMENTS FOR PROCUREMENT OF SMALLWORKS

NAME AND CONTACT ADDRESSES OF PROCURING ENTITY

1) Name: **Salaries & Remuneration Commission**

2) P.O BOX 43126– 00100 Nairobi

3) Email address: **procurement@src.go.ke**

2) Invitation to Tender (ITT) No**. SRC/OP/03/2021-2022**

3) Tender Name**:** **PROPOSED PARTITIONING WORKS OF SALARIES AND REMUNERATION COMMISSION (SRC) OFFICES AT WILLIAMSON HOUSE- NAIROBI - PHASE 2**

INVITATION TO TENDER

PROCURING ENTITY: SALARIES AND REMUNERATION COMMISSION

CONTRACT NAME AND DESCRIPTION: Proposed office partitioning works Phase Two and Three for Salaries and Remuneration Commission Offices located at Williamson House 3rd and 6th Floors

1. Salaries and Remuneration Commission invites sealed tenders for the office partitioning works for their offices located at Williamson House- 4th Ngong Road- Upper Hill, 3rd and 6th Floors

2. Tendering will be conducted under open competitive method (National tender) *using* a standardized tender document. Tendering is reserved to all qualified and interested Tenderers in the **AGPO** registered with The National Treasury under Small Works/construction category. Tenderers will be allowed to tender for one or more lots".

3. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours ***[i.e. 0900 to 1600 hours]*** at the address given below.

4. A complete set of tender documents may be purchased or obtained by interested tenders upon payment of a non-refundable fees of (*1,000 Kenya shillings*) in cash or Banker's Cheque and payable to the address given below. Tender documents may be obtained electronically from the Website(s) **www.src.go.ke** or **www.tenders.go.ke** Tender documents obtained electronically will be free of charge.

5. Tender documents may be viewed and downloaded for free from the website www.src.go.ke; and www.tenders.go.ke; . Tenderers who download the tender document must forward their particulars immediately to procurement@src.go.ke to facilitate any further clarification or addendum. Pre-tender Site visit is on Wednesday 9th June 2021 at 1100hrs.

6. Tenders shall be quoted in Kenya Shillings and shall include all taxes. Tenders shall remain valid **for 120 days** from the date of opening of tenders.

7. All Tenders must be accompanied by a **Tender-Securing Declaration**

8. The Tenderer shall chronologically serialize all pages of the tender documents submitted.

9. Completed tenders must be delivered to the address below on **or before [15.9.2021 at 11:00].** Electronic Tenders will not be permitted.

10. Tenders will be opened immediately after the deadline date and time specified above or any dead line date and time specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend at the address below.

11. Late tenders will be rejected.

10. The addresses referred to above are:

A. Address for obtaining further information and for purchasing tender documents

Salaries and Remuneration Commission
5th Floor, Williamson House, 4th Ngong Road, Upper Hill- Nairobi
P.O. 43126 – 00100
NAIROBI, KENYA
Head of Procurement, Tel: 020 2710065 Email: procurement@src.go.ke

B. Address for Submission of Tenders.

Salaries and Remuneration Commission
P.O Box 43126- 00100
Nairobi, Kenya
5th Floor, Williamson House, 4th Ngong Avenue, Upper Hill- Nairobi

C. Address for Opening of Tenders.

Salaries and Remuneration Commission
6th Floor, Williamson House, 4th Ngong Avenue, Upper Hill- Nairobi

COMMISSION SECRETARY

1st June 2021

PART 1 - TENDERING PROCEDURES

SECTION I: INSTRUCTIONS TO TENDERERS

A General Provisions

1. Scope of Tender

1.1 The Procuring Entity as defined in the Appendix to Conditions of Contract invites tenders for Works Contract as described in the tender documents. The name, identification, and number of lots (contracts) of this Tender Document are **specified in the TDS.**

2. Fraud and Corruption

2.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015, Section 62 "Declaration not to engage in corruption". The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.

2.2 The Procuring Entity requires compliance with the provisions of the Competition Act 2010, regarding collusive practices in contracting. Any tenderer found to have engaged in collusive conduct shall be disqualified and criminal and/or civil sanctions may be imposed. To this effect, Tenders shall be required to complete and sign the "Certificate of Independent Tender Determination" annexed to the Form of Tender.

2.3 Unfair Competitive Advantage - Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. To that end, the Procuring Entity shall indicate in the **Data Sheet** and make available to all the firms together with this tender document all information that would in that respect give such firm any unfair competitive advantage over competing firms.

2.4 Unfair Competitive Advantage -Fairness and transparency in the tender process require that the Firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender being tendered for. The Procuring Entity shall indicate in the **TDS** firms (if any) that provided consulting services for the contract being tendered for. The Procuring Entity shall check whether the owners or controllers of the Tenderer are same as those that provided consulting services. The Procuring Entity shall, upon request, make available to any tenderer information that would give such firm unfair competitive advantage over competing firms.

3. Eligible Tenderers

3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.7 or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. Public employees and their close relatives *(spouses, children, brothers, sisters and uncles and aunts)* are not eligible to participate in the tender. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the tendering process and, in the event the JV is awarded the Contract, during contract execution. The maximum number of JV members shall be specified in the **TDS.**

3.2 Public Officers of the Procuring Entity, their Spouses, Child, Parent, Brothers or Sister. Child, Parent, Brother or Sister of a Spouse, their business associates or agents and firms/organizations in which they have a substantial or controlling interest shall not be eligible to tender or be awarded a contract. Public Officers are also not allowed to participate in any procurement proceedings.

3.3 A Tenderer shall not have a conflict of interest. Any tenderer found to have a conflict of interest shall be disqualified. A tenderer may be considered to have a conflict of interest for the purpose of this tendering process, if the tenderer:

a) Directly or indirectly controls, is controlled by or is under common control with another tenderer; or

b) Receives or has received any direct or indirect subsidy from another tenderer; or

c) Has the same legal representative as another tenderer; or

d) Has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process; or

e) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender; or

f) any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as Engineer for the Contract implementation; or

g) Would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the contract specified in this Tender Document or

h) Has a close business or family relationship with a professional staff of the Procuring Entity who:

   i) are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract; or

   ii) would be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.

3.4 A tenderer shall not be involved in corrupt, coercive, obstructive, collusive or fraudulent practice. A tenderer that is proven to have been involved any of these practices shall be automatically disqualified.

3.5 A Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. A firm that is not a tenderer or a JV member may participate as a subcontractor in more than one tender. Members of a joint venture may not also make an individual tender, be a subcontractor in a separate tender or be part of another joint venture for the purposes of the same Tender.

3.6 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT 4.8.A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub-consultants for any part of the Contract including related Services.

3.7 Tenderer that has been debarred from participating in public procurement shall be ineligible to tender or be awarded a contract. The list of debarred firms and individuals is available from the website of PPRA www.ppra.go.ke.

3.8 Tenderers that are state-owned enterprises or institutions may be eligible to compete and be awarded a Contract(s) only if they are accredited by PPRA to be (i) a legal public entity of the state Government and/or public administration, (ii) financially autonomous and not receiving any significant subsidies or budget support from any public entity or Government, and (iii) operating under commercial law and vested with legal rights and liabilities similar to any commercial enterprise to enable it compete with firms in the private sector on an equal basis.

3.9 A Firms and individuals may be ineligible if their countries of origin (a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country, or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country. A tenderer shall provide such documentary evidence of eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

3.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, subcontracts and labor) from national suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided in for this purpose is be provided in *"SECTION III - EVALUATION AND QUALIFICATION CRITERIA, Item 9"*.

3.11 Pursuant to the eligibility requirements of ITT 4.10, a tender is considered a foreign tenderer, if the tenderer is not registered in Kenya or if the tenderer is registered in Kenya and has less than 51 percent ownership by Kenyan

Citizens. JVs are considered as foreign tenderers if the individual member firms are not registered in Kenya or if are registered in Kenya and have less than 51 percent ownership by Kenyan citizens. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.

3.12 The National Construction Authority Act of Kenya requires that all local and foreign contractors be registered with the National Construction Authority and be issued with a Registration Certificate before they can undertake any construction works in Kenya. Registration shall not be a condition for tender, but it shall be a condition of contract award and signature. A selected tenderer shall be given opportunity to register before such award and signature of contract. Application for registration with National Construction Authority may be accessed from the website www.nca.go.ke.

3.13 The Competition Act of Kenya requires that firms wishing to tender as Joint Venture undertakings which may prevent, distort or lessen competition in provision of services are prohibited unless they are exempt in accordance with the provisions of Section 25 of the Competition Act, 2010. JVs will be required to seek for exemption from the Competition Authority. Exemption shall not be a condition for tender, but it shall be a condition of contract award and signature. A JV tenderer shall be given opportunity to seek such exemption as a condition of award and signature of contract. Application for exemption from the Competition Authority of Kenya may be accessed from the website www.cak.go.ke

3.14 A Kenyan tenderer shall provide evidence of having fulfilled his/her tax obligations by producing a valid tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority.

4. Eligible Goods, Equipment, and Services

4.1 Goods, equipment and services to be supplied under the Contract may have their origin in any country that is not eligible under ITT 3.9. At the Procuring Entity's request, Tenderers may be required to provide evidence of the origin of Goods, equipment and services.

4.2 Any goods, works and production processes with characteristics that have been declared by the relevant national environmental protection agency or by other competent authority as harmful to human beings and to the environment shall not be eligible for procurement.

5. Tenderer's Responsibilities

5.1 The tenderer shall bear all costs associated with the preparation and submission of his/her tender, and the Procuring Entity will in no case be responsible or liable for those costs.

5.2 The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine the Site of the Works and its surroundings, and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the tenderer's own expense.

5.3 The Tenderer and any of its personnel or agents will be granted permission by the Procuring Entity to enter upon its premises and lands for the purpose of such visit. The Tenderer shall indemnify the Procuring Entity against all liability arising from death or personal injury, loss of or damage to property, and any other losses and expenses incurred as a result of the inspection.

5.4 The tenderer shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including charts, as necessary or required.

B. Contents of Tender Documents

6. Sections of Tender Document

6.1 The tender document consists of Parts 1, 2, and 3, which includes all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITT 8.

PART 1 Tendering Procedures

i) Section I - Instructions to Tenderers (ITT)
ii) Section II - Tender Data Sheet (TDS)
iii) Section III - Evaluation and Qualification Criteria
iv) Section IV - Tendering Forms

PART 2 Works Requirements

i) Section V - Drawings
ii) Section VI - Specifications
iii) Section VII - Bills of Quantities

PART 3 Conditions of Contract and Contract Forms

i) Section VIII - General Conditions of Contract (GCC)
ii) Section IX - Special Conditions of Contract (SC)
iii) Section X - Contract Forms

6.2 The Invitation to Tender Document (ITT) issued by the Procuring Entity is not part of the Contract documents.

6.3 Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 8. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail.

The Tenderer is expected to examine all instructions, forms, terms, and specifications in the Tender Document and to furnish with its Tender all information and documentation as is required by the Tender document.

7. Site Visit

7.1 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine and inspect the Site of the Required Services and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for the Services. The costs of visiting the Site shall be at the Tenderer's own expense.

8. Pre-Tender Meeting

8.1 The Procuring Entity shall specify in the TDS if a pre-tender meeting will be held, when and where. The Procuring Entity shall also specify in the TDS if a pre-arranged pretender site visit will be held and when. The Tenderer's designated representative is invited to attend a pre-arranged pretender visit of the site of the works. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

8.2 The Tenderer is requested to submit any questions in writing, to reach the Procuring Entity not later than the period specified in the TDS before the meeting.

8.3 Minutes of the pre-Tender meeting and the pre-arranged pretender site visit of the site of the works, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents in accordance with ITT 6.3. Minutes shall not identify the source of the questions asked.

8.4 The Procuring Entity shall also promptly publish anonym zed (*no names*) Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works at the web page identified in the TDS. Any modification to the Tender Documents that may become necessary as a result of the pre-tender meeting and the pre-arranged pretender site visit, shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT 8 and not through the minutes of the pre-Tender meeting. Nonattendance at the pre-Tender meeting will not be a cause for disqualification of a Tenderer.

9. Clarification and amendments of Tender Documents

9.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the TDS or raise its enquiries during the pre-Tender meeting and the pre-arranged pretender visit of the site of the works if provided for in accordance with ITT 8.4. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the TDS prior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender Documents in accordance with ITT 6.3, including a description of the inquiry but without identifying its source. If specified in the TDS, the Procuring Entity shall also promptly publish its response at the web page identified in the TDS. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents appropriately following the procedure under ITT 8.4.

10. Amendment of Tendering Document

10.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tendering document by issuing addenda.

10.2 Any addendum issued shall be part of the tendering document and shall be communicated in writing to all who have obtained the tendering document from the Procuring Entity in accordance with ITT 6.3. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's web page in accordance with ITT 8.4.

10.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity shall extend, as necessary, the deadline for submission of Tenders, in accordance with ITT 25.2 below.

C. Preparation of Tenders

11. Cost of Tendering

11.1 The Tenderer shall bear all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

12. Language of Tender

12.1 The Tender, as well as all correspondence and documents relating to the tender exchanged by the tenderer and the Procuring Entity, shall be written in the English Language. Supporting documents and printed literature that are part of the Tender may be in another language provided they are accompanied by an accurate and notarized translation of the relevant passages into the English Language, in which case, for purposes of interpretation of the Tender, such translation shall govern.

13. Documents Comprising the Tender

13.1 The Tender shall comprise the following:

a) Form of Tender prepared in accordance with ITT 14;
b) Schedules including priced Bill of Quantities, completed in accordance with ITT 14 and ITT 16;
c) Tender Security or Tender-Securing Declaration, in accordance with ITT 21.1;
d) Alternative Tender, if permissible, in accordance with ITT 15;
e) Authorization: written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordance with ITT 22.3;
f) Qualifications: documentary evidence in accordance with ITT 19establishing the Tenderer's qualifications to perform the Contract if its Tender is accepted;
g) Conformity: a technical proposal in accordance with ITT 18;
h) Any other document required in the TDS.

13.2 In addition to the requirements under ITT 11.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender,

together with a copy of the proposed Agreement. The Tenderer shall chronologically serialize pages of all tender documents submitted.

13.3 The Tenderer shall furnish in the Form of Tender information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Tender.

14. Form of Tender and Schedules

14.1 The Form of Tender and Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITT 20.3. All blank spaces shall be filled in with the information requested.

15. Alternative Tenders

15.1 Unless otherwise specified in the TDS, alternative Tenders shall not be considered.

15.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the TDS, and the method of evaluating different alternative times for completion will be described in Section III, Evaluation and Qualification Criteria.

15.3 Except as provided under ITT 13.4 below, Tenderers wishing to offer technical alternatives to the requirements of the Tender Documents must first price the Procuring Entity's design as described in the Tender Documents and shall further provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Winning Tender conforming to the basic technical requirements shall be considered by the Procuring Entity. When specified in the TDS, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the TDS, as will the method for their evaluating, and described in Section VII, Works' Requirements.

16. Tender Prices and Discounts

16.1 The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender and in the Bill of Quantities shall conform to the requirements specified below.

16.2 The Tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Tenderer shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the Procuring Entity. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Tender, and provided that the Tender is determined substantially responsive notwithstanding this omission, the average price of the item quoted by substantially responsive Tenderers will be added to the Tender price and the equivalent total cost of the Tender so determined will be used for price comparison.

16.3 The price to be quoted in the Form of Tender, in accordance with ITT 14.1, shall be the total price of the Tender, including any discounts offered.

16.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 14.1.

16.5 It will be specified in the TDS if the rates and prices quoted by the Tenderer are or are not subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, except in cases where the contract is subject to fluctuations and adjustments, not fixed price. In such a case, the Tenderer shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Procuring Entity may require the Tenderer to justify its proposed indices and weightings.

16.6 Where tenders are being invited for individual lots (contracts)or for any combination of lots (packages), tenderers wishing to offer discounts for the award of more than one Contract shall specify in their Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITT 16.4, provided the Tenders for all lots (contracts) are opened at the same time.

16.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 30 days prior to the deadline for submission of Tenders, shall be included in the rates and prices and the total Tender Price submitted by the Tenderer.

17. Currencies of Tender and Payment

17.1 Tenderers shall quote entirely in Kenya Shillings. The unit rates and the prices shall be quoted by the Tenderer in the Bill of Quantities, entirely in Kenya shillings. A Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya shall device own ways of getting foreign currency to meet those expenditures.

18. Documents Comprising the Technical Proposal

18.1 The Tenderer shall furnish a technical proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV, Tender Forms, in sufficient detail to demonstrate the adequacy of the Tenderer's proposal to meet the work's requirements and the completion time.

19. Documents Establishing the Eligibility and Qualifications of the Tenderer

19.1 Tenderers shall complete the Form of Tender, included in Section IV, Tender Forms, to establish Tenderer's eligibility in accordance with ITT 4.

19.2 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract the Tenderer shall provide the information requested in the corresponding information sheets included in Section IV, Tender Forms.

19.3 A margin of preference will not be allowed. Preference and reservations will be allowed, individually or in joint ventures. Applying for eligibility for Preference and reservations shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 33.1.

19.4 Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a contractor or group of contractors qualifies for a margin of preference. Further the information will enable the Procuring Entity identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and thereby help to prevent any corrupt influence in relation to the procurement process or contract management.

19.5 The purpose of the information described in ITT 19.4 above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.

19.6 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to ownership and control which information on any changes to the information which was provided by the tenderer under ITT 6.3. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.

19.7 All information provided by the tenderer pursuant to these requirements must be complete, current and accurate as at the date of provision to the Procuring Entity. In submitting the information required pursuant to these requirements, the Tenderer shall warrant that the information submitted is complete, current and accurate as at the date of submission to the Procuring Entity.

19.8 If a tenderer fails to submit the information required by these requirements, its tender will be rejected. Similarly, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.

19.9 If information submitted by a tenderer pursuant to these requirements, or obtained by the Procuring Entity (whether through its own enquiries, through notification by the public or otherwise), shows any conflict of interest which could materially and improperly benefit the tenderer in relation to the procurement or contract management process, then:

i) if the procurement process is still ongoing, the tenderer will be disqualified from the procurement process,

ii) if the contract has been awarded to that tenderer, the contract award will be set aside,

iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other persons have committed any criminal offence.

19.10 If a tenderer submits information pursuant to these requirements that is incomplete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 6.7 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material, or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tenderer.

20. Period of Validity of Tenders

20.1 Tenders shall remain valid for the Tender Validity period specified in the TDS. The Tender Validity period starts from the date fixed for the Tender submission deadline (as prescribed by the Procuring Entity in accordance with ITT 24). A Tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.

20.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT 21.1, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting its Tender security. A Tenderer granting the request shall not be required or permitted to modify its Tender, except as provided in ITT 20.3.

20.3 If the award is delayed by a period exceeding the number of days to be specified in the TDS days beyond the expiry of the initial tender validity period, the Contract price shall be determined as follows**:**

a) in the case of **fixed price** contracts, the Contract price shall be the tender price adjusted by the factor specified in the **TDS**;

b) in the case of **adjustable price** contracts, no adjustment shall be made; or in any case, tender evaluation shall be based on the tender price without taking into consideration the applicable correction from those indicated above.

21. Tender Security

21.1 The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender Security as specified in the TDS, in original form and, in the case of a Tender Security, in the amount and currency specified in the TDS. A Tender-Securing Declaration shall use the form included in Section IV, Tender Forms**.**

21.2 If a Tender Security is specified pursuant to ITT 19.1, the Tender Security shall be a demand guarantee in any of the following forms at the Tenderer's option:

a) an unconditional Bank Guarantee issued by reputable commercial bank); or

b) an irrevocable letter of credit;

c) a Banker's cheque issued by a reputable commercial bank; or

d) another security specified **in the TDS**,

21.3 If an unconditional bank guarantee is issued by a bank located outside Kenya, the issuing bank shall have a correspondent bank located in Kenya to make it enforceable. The Tender Security shall be valid for thirty (30) days beyond the original validity period of the Tender, or beyond any period of extension if requested under ITT 20.2.

21.4 If a Tender Security or Tender-Securing Declaration is specified pursuant to ITT 19.1, any Tender not accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.

21.5 If a Tender Security is specified pursuant to ITT 21.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the

Performance Security and any other documents required in the TDS. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined nonresponsive or a bidder declines to extend tender validity period.

21.6 The Tender Security of the successful Tenderer shall be returned as promptly as possible once the successful Tenderer has signed the Contract and furnished the required Performance Security, and any other documents required in the TDS.

21.7 The Tender Security may be forfeited or the Tender-Securing Declaration executed:

e) if a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender, or any extension thereto provided by the Tenderer; or

f) if the successful Tenderer fails to:

i) sign the Contract in accordance with ITT 50; or

ii) furnish a Performance Security and if required in the TDS, and any other documents required in the TDS.

21.8 Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA that PPRA debars the Tenderer from participating in public procurement as provided in the law.

21.9 The Tender Security or the Tender-Securing Declaration of a JV shall be in the name of the JV that submits the Tender. If the JV has not been legally constituted into a legally enforceable JV at the time of tendering, the Tender Security or the Tender-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITT 4.1 and ITT 11.2.

21.10 A tenderer shall not issue a tender security to guarantee itself.

22. Format and Signing of Tender

22.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 13 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 15, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies of the Tender, in the number specified in the TDS and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

22.2 Tenderers shall mark as "CONFIDENTIAL" all information in their Tenders which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.

22.3 The original and all copies of the Tender shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified in the TDS and shall be attached to the Tender. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Tender where entries or amendments have been made shall be signed or initialed by the person signing the Tender.

22.4 In case the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

22.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender.

D. Submission and Opening of Tenders

23. Sealing and Marking of Tenders

23.1 Depending on the sizes or quantities or weight of the tender documents, a tenderer may use an envelope, package or container. The Tenderer shall deliver the Tender in a single sealed envelope, or in a single sealed package, or in a single sealed container bearing the name and Reference number of the Tender, addressed to the Procuring Entity and a warning not to open before the time and date for Tender opening date. Within the single envelope, package or container, the Tenderer shall place the following separate, sealed envelopes:

a) in an envelope or package or container marked "ORIGINAL", all documents comprising the Tender, as described in ITT 11; and

b) in an envelope or package or container marked "COPIES", all required copies of the Tender; and

c) if alternative Tenders are permitted in accordance with ITT 15, and if relevant:

   i) in an envelope or package or container marked "ORIGINAL –ALTERNATIVE TENDER", the alternative Tender; and

   ii) in the envelope or package or container marked "COPIES- ALTERNATIVE TENDER", all required copies of the alternative Tender.

The inner envelopes or packages or containers shall:

a) bear the name and address of the Procuring Entity.

b) bear the name and address of the Tenderer; and

c) bear the name and Reference number of the Tender.

23.2 If an envelope or package or container is not sealed and marked as required, the *Procuring Entity* will assume no responsibility for the misplacement or premature opening of the Tender. Tenders that are misplaced or opened prematurely will not be accepted.

24. Deadline for Submission of Tenders

24.1 Tenders must be received by the Procuring Entity at the address specified in the TDS and no later than the date and time also specified in the TDS. When so specified in the TDS, Tenderers shall have the option of submitting their Tenders electronically. Tenderers submitting Tenders electronically shall follow the electronic Tender submission procedures specified in the TDS.

24.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the Tender Documents in accordance with ITT 8, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

25. Late Tenders

25.1 The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of tenders, in accordance with ITT 24. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned unopened to the Tenderer.

26. Withdrawal, Substitution, and Modification of Tenders

26.1 A Tenderer may withdraw, substitute, or modify its Tender after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITT 22.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

a) prepared and submitted in accordance with ITT 22 and ITT 23 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION;"and

b) received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 24.

26.2 Tenders requested to be withdrawn in accordance with ITT 26.1 shall be returned unopened to the Tenderers.

26.3 No Tender may be withdrawn, substituted, or modified in the interval between the deadline for submission of Tenders and the expiration of the period of Tender validity specified by the Tenderer on the Form of Tender or any extension thereof.

27. Tender Opening

27.1 Except in the cases specified in ITT 23 and ITT 26.2, the Procuring Entity shall publicly open and read out all Tenders received by the deadline, at the date, time and place specified in the TDS, in the presence of Tenderers' designated representatives who chooses to attend. Any specific electronic Tender opening procedures required if electronic Tendering is permitted in accordance with ITT 24.1, shall be as specified in the TDS.

27.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelopes with the corresponding Tender shall not be opened, but returned to the Tenderer. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Tender opening.

27.3 Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Tender being substituted, and the substituted Tender shall not be opened, but returned to the Tenderer. No Tender substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Tender opening.

27.4 Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Tender. No Tender modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Tender opening.

27.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Tenderer and whether there is a modification; the total Tender Price, per lot (contract) if applicable, including any discounts and alternative Tenders; the presence or absence of a Tender Security or Tender-Securing Declaration, if required; and any other details as the Procuring Entity may consider appropriate.

27.6 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further for evaluation. The Form of Tender and pages of the Bills of Quantities are to be initialed by the members of the tender opening committee attending the opening. The number of representatives of the Procuring Entity to sign shall be specified in the TDS.

27.7 At the Tender Opening, the Procuring Entity shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 25.1).

27.8 The Procuring **Entity shall prepare minutes of the Tender Opening that shall include, as a minimum:**

a) the name of the Tenderer and whether there is a withdrawal, substitution, or modification;
b) the Tender Price, per lot (contract) if applicable, including any discounts;
c) any alternative Tenders;
d) the presence or absence of a Tender Security, if one was required.
e) number of pages of each tender document submitted.

27.9 The Tenderers' representatives who are present shall be requested to sign the minutes. The omission of a Tenderer's signature on the minutes shall not invalidate the contents and effect of the minutes. A copy of the tender opening register shall be distributed to all Tenderers upon request.

E. Evaluation and Comparison of Tenders

28. Confidentiality

28.1 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderers or any other persons not officially concerned with the Tender process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 46.

28.2 Any effort by a Tenderer to influence the Procuring Entity in the evaluation of the Tenders or Contract award decisions may result in the rejection of its tender.

28.3 Notwithstanding ITT 28.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any **matter related to the tendering process, it shall do so in writing.**

29. Clarification of Tenders

29.1 To assist in the examination, evaluation, and comparison of the tenders, and qualification of the tenderers, the Procuring Entity may, at its discretion, ask any tenderer for a clarification of its tender, given a reasonable time for a response. Any clarification submitted by a tenderer that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the

Procuring Entity in the evaluation of the tenders, in accordance with ITT 33.

29.2 If a tenderer does not provide clarifications of its tender by the date and time set in the Procuring Entity's request for clarification, its Tender may be rejected.

30. Deviations, Reservations, and Omissions

30.1 During the evaluation of tenders, the following definitions apply:

a) "Deviation" is a departure from the requirements specified in the tender document;

b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the tender document; and

c) "Omission" is the failure to submit part or all of the information or documentation required in the Tender document.

31. Determination of Responsiveness

31.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the tender itself, as defined in ITT 13.

31.2 A substantially responsive Tender is one that meets the requirements of the Tender document without material deviation**, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:**

a) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or

b) limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the tenderer's obligations under the proposed contract; or

c) if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsive tenders.

31.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 18, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.

31.4 If a tender is not substantially responsive to the requirements of the tender document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

32. Non-material Non-conformities

32.1 Provided that a tender is substantially responsive, the Procuring Entity may waive any non-conformities in the tender.

32.2 Provided that a Tender is substantially responsive, the Procuring Entity may request that the tenderer submit the necessary information or documentation, within a reasonable period, to rectify nonmaterial non-conformities in the tender related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the tender. Failure of the tenderer to comply with the request may result in the rejection of its tender.

32.3 Provided that a tender is substantially responsive, the Procuring Entity shall rectify quantifiable nonmaterial non-conformities related to the Tender Price. To this effect, the Tender Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified in the **TDS.**

33. Arithmetical Errors

33.1 The tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment or amendment in any way by any person or entity.

33.2 Provided that the Tender is substantially responsive, the Procuring Entity shall handle errors on the following basis:

a) Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualification of the tender as non-responsive.

b) Any errors in the submitted tender arising from a miscalculation of unit price, quantity, and subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive. and

c) if there is a discrepancy between words and figures, the amount in words shall prevail

33.3 Tenderers shall be notified of any error detected in their bid during the notification of a ward.

34. Currency provisions

34.1 Tenders will priced be in Kenya Shillings only. Tenderers quoting in currencies other than in Kenya shillings will be determined non-responsive and rejected.

35. Margin of Preference and Reservations

35.1 No margin of preference shall be allowed on contracts for small works.

35.2 Where it is intended to reserve the contract to specific groups under Small and Medium Enterprises, or enterprise of women, youth and/or persons living with disability, who are appropriately registered as such by the authority to be specified in the TDS, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses/firms belonging to those specified groups are the only ones eligible to tender. Otherwise if no so stated, the invitation will be open to all tenderers.

36. Nominated Subcontractors

36.1 Unless otherwise stated in the **TDS**, the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected in advance by the Procuring Entity.

36.2 Tenderers may propose subcontracting up to the percentage of total value of contracts or the volume of works as specified in the TDS. Subcontractors proposed by the Tenderer shall be fully qualified for their parts of the Works.

36.3 The subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works unless their specialized parts of the Works were previously designated by the Procuring Entity in the TDS as can be met by subcontractors referred to hereafter as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractors proposed by the Tenderer may be added to the qualifications of the Tenderer.

37. Evaluation of Tenders

37.1 The Procuring Entity shall use the criteria and methodologies listed in this ITT and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Procuring Entity shall determine the Best Evaluated Tender in accordance with ITT 40.

37.2 To evaluate a Tender, the Procuring Entity shall consider the following:

a) price adjustment due to discounts offered in accordance with ITT 16;
b) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT39;
c) price adjustment due to quantifiable nonmaterial non-conformities in accordance with ITT 30.3; and
d) any additional evaluation factors specified **in the TDS** and Section III, Evaluation and Qualification Criteria.

37.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be considered in Tender evaluation.

37.4 In the case of multiple contracts or lots, Tenderers shall be allowed to tender for one or more lots and the methodology to determine the lowest evaluated cost of the lot (contract) combinations, including any discounts offered in the **Form of Tender, is specified in Section III, Evaluation and Qualification Criteria.**

38. Comparison of Tenders

38.1 The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 38.2 to determine the Tender that has the lowest evaluated cost.

39. Abnormally Low Tenders

39.1 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price or that genuine competition between Tenderers is compromised.

39.2 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.

39.3 After evaluation of the price analyses, in the event that the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

40. Abnormally High Tenders

40.1 An abnormally high price is one where the tender price, in combination with other constituent elements of the Tender, appears unreasonably too high to the extent that the Procuring Entity is concerned that it (the Procuring Entity) may not be getting value for money or it may be paying too high a price for the contract compared with market prices or that genuine competition between Tenderers is compromised.

40.2 In case of an abnormally high tender price, the Procuring Entity shall make a survey of the market prices, check if the estimated cost of the contract is correct and review the Tender Documents to check if the specifications, scope of work and conditions of contract are contributory to the abnormally high tenders. The Procuring Entity may also seek written clarification from the tenderer on the reason for the high tender price. The Procuring Entity shall proceed as follows:

i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.

ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case may be.

40.3 If the Procuring Entity determines that the Tender Price is abnormally too high because genuine competition between tenderers is compromised (*often due to collusion, corruption or other manipulations*), the Procuring Entity shall reject all Tenders and shall institute or cause competent Government Agencies to institute an investigation on the cause of the compromise, before retendering**.**

41. Unbalanced and/or Front-Loaded Tenders

41.1 If in the Procuring Entity's opinion, the Tender that is evaluated as the lowest evaluated price is seriously unbalanced and/or front loaded, the Procuring Entity may require the Tenderer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the tender prices with the scope of works, proposed methodology, schedule and any other requirements of the Tender document.

41.2 After the evaluation of the information and detailed price analyses presented by the Tenderer, the Procuring Entity may as appropriate:

a) accept the Tender; or

b) require that the total amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding a 30% of the Contract Price; or

c) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works; or

d) reject the Tender,

42. Qualifications of the Tenderer

42.1 The Procuring Entity shall determine to its satisfaction whether the eligible Tenderer that is selected as having submitted the lowest evaluated cost and substantially responsive Tender, meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

42.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 19. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the Tender document), or any other firm(s) different from the Tenderer.

42.3 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in disqualification of the Tender, in which event the Procuring Entity shall proceed to the Tenderer who offers a substantially responsive Tender with the next lowest evaluated price to make a similar determination of that Tenderer's qualifications to perform satisfactorily.

42.4 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price.

42.5 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.

42.6 After evaluation of the price analyses, if the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

43. Best Evaluated Tender

43.1 Having compared the evaluated prices of Tenders, the Procuring Entity shall determine the Best Evaluated Tender. The Best Evaluated Tender is the Tender of the Tenderer that meets the Qualification Criteria and whose Tender has been determined to be:

a) Most responsive to the Tender document; and
b) the lowest evaluated price.

44. Procuring Entity's Right to Accept Any Tender, and to Reject Any or All Tenders.

44.1 The Procuring Entity reserves the right to accept or reject any Tender and to annul the Tender process and reject all Tenders at any time prior to Contract Award, without thereby incurring any liability to Tenderers. In case of annulment, all Tenderers shall be notified with reasons and all Tenders submitted and specifically, Tender securities, shall be promptly returned to the Tenderers.

F. Award of Contract

45. Award Criteria

45.1 The Procuring Entity shall award the Contract to the successful tenderer whose tender has been determined to be the Lowest Evaluated Tender.

46. Notice of Intention to enter into a Contract

46.1 Upon award of the contract and Prior to the expiry of the Tender Validity Period the Procuring Entity shall issue a Notification of Intention to Enter into a Contract / Notification of award to all tenderers which shall contain, at a minimum, the following information:

a) the name and address of the Tenderer submitting the successful tender;
b) the Contract price of the successful tender;

c) a statement of the reason(s) the tender of the unsuccessful tenderer to whom the letter is addressed was unsuccessful, unless the price information in (c) above already reveals the reason;
d) the expiry date of the Standstill Period; and
e) instructions on how to request a debriefing and/or submit a complaint during the standstill period;

47. Standstill Period

47.1 The Contract shall not be signed earlier than the expiry of a Standstill Period of 14 days to allow any dissatisfied tender to launch a complaint. Where only one Tender is submitted, the Standstill Period shall not apply.

47.2 Where a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to Enter **into a Contract with the successful Tenderer.**

48. Debriefing by the Procuring Entity

48.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 46, an unsuccessful tenderer may make a written request to the Procuring Entity for a debriefing on specific issues or concerns regarding their tender. The Procuring Entity shall provide the debriefing within five days of receipt of the request.

48.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending **such a debriefing meeting.**

49. Letter of Award

49.1 Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 42.1, upon addressing a complaint that has been filed within the Standstill Period, the Procuring Entity shall transmit the Letter of Award to the successful Tenderer. The letter of award shall request the successful tenderer to furnish the Performance Security within 21days of the date of the letter.

50. Signing of Contract

50.1 Upon the expiry of the fourteen days of the Notification of Intention to enter into contract and upon the parties meeting their respective statutory requirements, the Procuring Entity shall send the successful Tenderer the Contract Agreement.

50.2 Within fourteen (**14**) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and return it to the Procuring Entity.

50.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period

51. Appointment of Adjudicator

51.1 The Procuring Entity proposes the person named in the TDS to be appointed as Adjudicator under the Contract, at the hourly fee specified in the TDS, plus reimbursable expenses. If the Tenderer disagrees with this proposal, the Tenderer should so state in his Tender. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority designated in the Special Conditions of Contract (SCC) pursuant to Clause 23.1 of the General Conditions of Contract (GCC), to appoint the Adjudicator.

52. Performance Security

52.1 Within twenty-one (21) days of the receipt of the Letter of Acceptance from the Procuring Entity, the successful Tenderer shall furnish the Performance Security and, any other documents required in the TDS, in accordance with the General Conditions of Contract, subject to ITT 40.2 (b), using the Performance Security and other Forms included in Section X, Contract Forms, or another form acceptable to the Procuring Entity. A foreign institution providing a bank guarantee shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent bank is not required.

52.2 Failure of the successful Tenderer to submit the above-mentioned Performance Security and other documents required in the TDS, or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the Tenderer offering the next Best Evaluated Tender.

52.3 Performance security shall not be required for contracts estimated to cost less than Kenya shillings five million shillings**.**

53. Publication of Procurement Contract

53.1 Within fourteen days after signing the contract, the Procuring Entity shall publish the awarded contract at its notice boards and websites; and on the Website of the Authority. At the minimum, the notice shall contain the following information:

a) name and address of the Procuring Entity;
b) name and reference number of the contract being awarded, a summary of its scope and the selection method used;
c) the name of the successful Tenderer, the final total contract price, the contract duration.
d) dates of signature, commencement and completion of contract;
e) names of all Tenderers that submitted Tenders, and their Tender prices as read out at Tender opening.

54. Procurement Related Complaints

54.1 The procedures for making Procurement-related Complaints are as specified in the TDS.

Section II - Tender Data Sheet (TDS)

The following specific data shall complement, supplement, or amend the provisions in the Instructions to Tenderers (ITT). Whenever there is a conflict, the provisions herein shall prevail over those in ITT.

A. General	
ITT 1.1	The Name of the Contract is:-**PROPOSED OFFICE PARTITIONING WORKS PHASE TWO AND THREE FOR SALARIES AND REMUNERATION COMMISSION OFFICES LOCATED AT WILLIAMSON HOUSE 3RD AND 6TH FLOORS** Reference No. of the Contract:- W.P. ITEM No. D110/NB/NB/1801 JOB No.10402 B Lot 1- Name _____ N/A Lot 2- Name _____ N/A Lot… Name _____ N/A
ITT 2.3	The Information made available on competing firms is as follows: None
ITT 2.4	The firms that provided consulting services for the contract being tendered for are: **STATE DEPARTMENT OF PUBLIC WORKS**
ITT 3.1	Maximum number of members in the Joint Venture shall be N/A
B. Contents of Tender Document	
8.1	(A) A Pre-Tender Conference Shall Not Take Place; Friday 3rd September, 2021 (B) A Pre-Tender Site Visit Shall Take Place as follows: Date:**3rd September,2021** Time**: 11:00 am** Place**:** SRC 3rd and 6th Floor offices; Williamson House, 4th Ngong Avenue-Upper Hill, Nairobi
ITT 8.2	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than **13th September, 2021 at 5pm**
ITT 8.4	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender site visit will be published is _____ **www.src.go.ke**

ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: (1) Name of Procuring Entity: **Salaries and Remuneration Commission** (2) Physical address for hand Courier Delivery to an office or Tender Box: **6th Floor, Williamson House, 4th Ngong Avenue- Upper Hill, Nairobi P.O Box 43126-00100, Nairobi Kenya** (3) Postal Address: **43126-00100 Nairobi** (4) Insert name, telephone number and e-mail address of the officer to be contacted: **HEAD OF PROCUREMENT, 020 4023000, 0706866984, 0736559152, procurement@src.go.ke; dmwacharo@src.go.ke**

C. Preparation of Tenders

ITP 13.1 (h)	The Tenderer shall submit the following additional documents in its Tender: [*list any additional document not already listed in ITT 11.1 that must be submitted with the Tender. The list of additional documents should include the following:}* ***NONE***
ITT 15.1	Alternative Tenders ***SHALL NOT BE*** considered
ITT 15.2	Alternative times for completion ***"shall not be"*** *}* Permitted.
ITT 15.4	Alternative technical solutions shall be permitted for the following parts of the Works: **NONE** *:*
ITT 16.5	The prices quoted by the Tenderer shall be: ***FIXED***
ITT 22.1	The Tender validity period shall be **120 days**.
ITT 21.3 (a)	(a) The delayed to exceeding **N/A** number of days. The Tender price shall be adjusted by the following percentages of the tender pence: *(b)* By **0%** of *the local currency portion of the Contract price adjusted to reflect local inflation during the period of extension,* *(c) and* *(i) By* **0 %** *the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of*

ITT 21.1	**A Tender Security SHALL NOT BE** required. **A Tender-Securing Declaration SHALL BE** required.

ITT 21.2 The other Tender Security shall be **NIL**

(d)

ITT 21.5	On the Performance Security, other documents required shall be **1%**

ITT 21.9	Salaries and Remuneration Commission may declare the Tenderer ineligible to be awarded a contract by the Procuring Entity for a period of ***12 Months***
ITT 22.1	In addition to the original of the Tender, the number of copies is: **ONE (1NO.)**
ITT 22.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: **POWER OF ATTORNEY**

D. Submission and Opening of Tenders

ITT 24.1	(A) For Tender submission purposes only, the Procuring Entity's address is: **(1)** Name of Procuring Entity: **Salaries and Remuneration Commission (SRC)** **(2)** Postal Address:**43126-00100**, **Nairobi (Attn: Commission Secretary)** (3) Physical address for hand Courier Delivery to an office or Tender Box: **6th Floor, SRC Office, Williamson House, 4th Ngong Avenue-** Upper Hill, Nairobi **(4)** Date and time for submission of Tenders: **15th August, 2021 at 11:10am** (5) Tenderers shall **not submit** tenders electronically.

ITT 27.1	The Tender opening shall take place at the time and the address for Opening of Tenders provided below: (1) Name of Procuring Entity: **Salaries and Remuneration Commission** (2) Physical address for the location: **6th Floor, SRC Office, Williamson House, 4th Ngong Avenue-** Upper Hill, Nairobi

E. Evaluation, and Comparison of Tenders	
ITT 32.3	The adjustment shall be based on the **Average** price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
ITT 35.2	The invitation to tender is extended to the following groups that qualify for Reservations –AGPO GROUPS ONLY–
ITT 36.1	At this time, the Procuring Entity **DOES NOT** plan to execute certain specific parts of the Works by subcontractors selected in advance.
ITT 36.2	Contractors may propose subcontracting: Maximum percentage of subcontracting permitted is**: 10%** *of the total contract amount.* Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience.
ITT 36.3	The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: 1.ELECTRICAL WORKS with attached specifications 2.MECHANICAL WORKS with attached specifications For the above-designated parts of the Works that may require Specialized Subcontractors, the relevant qualifications of the proposed Specialized Subcontractors will be added to the qualifications of the Tenderer for the purpose of evaluation.
ITT 37.2 (d)	Additional requirements apply. These are detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria.
ITT 51.1	The person named to be appointed as Adjudicator: As captured under special conditions of contract.
ITT52.2	Other documents required N/A

ITT 53.1	The procedures for making a Procurement related complaint are available at PPRA website www.ppra.go.ke or email complaints@ppra.go.ke. If a Tenderer wishes to make a Procurement –related complaint, the Tenderer should submit its complaint following these procedures, in writing by hand delivery or email. Attn: Ag Director, Public Procurement Regulatory Authority Email: complaints@ppra.go.ke In summary, a Procurement-related Complaint may challenge any of the following: i. The terms of the Tender Documents; and (i) SRC's decision to award the contract.

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1. General Provisions

Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the Kenya Shilling equivalent using the rate of exchange determined as follows:

a) For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.
b) Value of single contract - Exchange rate prevailing on the date of the contract signature.
c) Exchange rates shall be taken from the publicly available source identified in the ITT 14.3. Any error in determining the exchange rates in the Tender may be corrected by SRC.

This section contains the criteria that the Employer shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in Section IV, Tendering Forms.

Evaluation and contract award Criteria

SRC shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. That is the tender that;

(i) meets the qualification criteria,

(ii) has been determined to be substantially responsive to the Tender Documents, and

(iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

2. *Preliminary examination for Determination of Responsiveness*

SRC will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements of "Part 2 – SRC's Works Requirements", including checking for tenders with unacceptable errors, abnormally low tenders, abnormally high tenders and tenders that are front loaded.

The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides very clear guide on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will be considered irresponsive and will not be considered further.

3. **Tender Evaluation (ITT 35) Price evaluation**: in addition to the criteria listed in ITT 35.2 (a) – (c) the following

criteria shall apply:

i) **Alternative Completion Times, i**f permitted under ITT 13.2, will be evaluated as follows:
……

ii) **Alternative Technical Solutions** for specified parts of the Works, if permitted under ITT 13.4, will be evaluated as follows: ……

iii) **Other Criteria; i**f permitted under ITT 35.2(d):
……

Multiple Contracts-Multiple contracts will NOT be permitted in accordance with ITT 35.4. Tenderers are evaluated on basis of the lowest evaluated tenderer.

4. **Margin of Preference** is not applicable

5. **Post qualification and Contract ward (ITT 39), more specifically,**

a) In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of pre-qualification data, if so required.
b) In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.

i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of Kenya Shillings _____.

ii) Minimum average annual construction turnover of Kenya Shillings_____ [insert amount], equivalent calculated as total certified payments received for contracts in progress and/or completed within the last_____[insert of year] years.

iii) At least_____(insert number) of contract(s) of a similar nature executed within Kenya, or the East African Community or abroad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings_____ equivalent.

iv) Contractor's Representative and Key Personnel, which are specified as _____

v) Contractors key equipment listed on the table "Contractor's Equipment" below and more specifically listed as [specify requirements for each lot as applicable] _____

vi) Other conditions depending on their seriousness.

a) **History of non-performing contracts**:
Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that Non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last_____(specify years). The required information shall be furnished in the appropriate form.

b) **Pending Litigation**
Financial position and prospective long-term profitability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above if all pending litigation will be resolved against the Tenderer. Tenderer shall provide information on pending litigations in the appropriate form.

c) Litigation History
There shall be no consistent history of court/arbitral award decisions against the Tenderer, in the last _____(specify years). All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the years specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

TENDER EVALUATION CRITERIA

After tender opening, the tenders will be evaluated in 4 Main Stages, namely:

1. Preliminary examination – in 2 stages;
   i. Stage i for Main Contractor
   ii. Stage ii for Domestic Sub- Contractors;
2. Technical evaluation; For Main Contractor and Domestic Sub- Contractors
3. Financial Evaluation; and
4. Recommendation for Award.

1. PRELIMINARY EVALUATION

Stage i)-Mandatory Requirements for Main Contractor

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 shall include provision of the following: -

ITEM	MANDATORY REQUIREMENT (MR)	MUST SUBMIT(YES/NO)
MR 1	Must submit one original and copy of the Tender Document	
MR 2	The tenderer MUST submit his/her tender document as follows: • The tender must be downloaded as issued without altering the format- both original and the copy and shall be typed or written in indelible ink and be signed by an Authorized person appointed by the tenderer and the letter appointing the Authorized person Must be attached –The letter must be signed by the director of the firm or by power of attorney and the letter must indicate the name and the position held by person authorize to sign the tender on behalf of the tenderer, typed or printed below the signature. • The Authorized person to sign the tender on behalf of the tenderer and **mus**t sign or initialized all the pages of the Tender where entries (i.e. all the forms) or amendments have been made. • The entire/complete original and copy (including attachments) Must be serialized/paginated using a numbering machine, hand written pagination will be deemed non-responsive	
MR 3	Tenderer must fill **Form ELI-1**:-Tenderer Information Form and must attach copies of original documents of the below listed where applicable as instructed:- □ Articles of Incorporation (or equivalent documents of constitution or association), and or documents of registration of the legal entity named above, in accordance with ITT4.1.4 □ *In case of state owned enterprise or institution, in accordance with ITT 4.1.6 documents establishing* □ *Include organizational chart, Board of Directors and Beneficial ownership*	

MR 4	Attach a duly filled, signed and stamped Form of Tender The Form of Tender shall include the following Forms duly completed and signed by the Tenderer. • Tenderer's Eligibility-Confidential Business Questionnaire • Certificate of Independent Tender Determination • Self-Declaration of the Tenderer:- **Form SD1** and **Form SD2**	
MR 5	Attach a duly filled, signed and stamped Declaration and Commitment to the Code of Ethics	
MR 6	Submit a copy of valid company's Certificate of Registration/ Incorporation as per ITT 4.1.4	
MR 7	Provide copy of valid Tax Compliance certificate or tax exemption certificate issued by the Kenya Revenue Authority in accordance with ITT 4.1.13 for Kenyan firms.	
MR 8	Must Submit a completed company's profile and a copy of CR12/CR13 from issued by the Registrar of companies	
MR 9	Attach the current business permit/Trade License from the county government.	
MR 10	Attach Relevant trade current registration certificate from (NCA) in Builders works - category NCA 6 and above as per 4.1.8	
QUALIFICATION FORM		
MR 11	Tenderer must fill Form CON–1 Historical Contract Non-Performance and Pending Litigation.	
MR 12	Valid Copy of AGPO certificate	
MR 13	Submission of original & copy of tender document properly **TAPE BOUND** and **PAGINATED in the correct sequence**. **NB: Spiral binding and box files shall lead to disqualification**	
MR 14	Power of attorney/ Authorization Letter duly signed (should be signed by directors appearing in CR12/13) , giving the name of person who has been authorized to submit/execute this agreement as a binding document and this person should sign all the documents related to this tender.	
MR 15	Must submit a dully filled, stamped and signed Tender Declaration Form	

NB:

Tenderers submission will either be responsive or non- responsive. Failure to meet any of the above mandatory requirements will lead to automatic disqualification

Stage ii) MANDATORY REQUIREMENTS FOR DOMECTIC SUB-CONTRACTORS

The Main Contractor **MUST** team up with domestic Sub-Contractors registered by National Construction Authority (NCA) and MUST meet/provide the requirements below for every service works where applicable:

SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF AIR CONDITIONING& MECHANICAL VENTILATION, SANITARY FITTINGS, PLUMBING & DRAINAGE, SERVER ROOM PRECISION ENVIRONMENT CONTROL &, FIRE SUPPRESSION INSTALLATION WORKS

1. Company certificate of incorporation/registration.
2. Current category of Registration with National Construction Authority (NCA-7 and Above) in the relevant trades highlighted above;
3. Current Class of Licenses with the relevant statutory bodies e.g County Governments, Water Management Boards etc. where applicable;
4. Valid Tax Compliance Certificate;
5. Dully signed Statement of Compliance;
6. Compliance with Technical Specifications;
7. Pre-Contract agreement between the Main Contractor and Mechanical Sub - Contractor signed and commissioned by commissioner of Oaths.

STRUCTURED CABLING & ELECTRICAL INSTALLATION WORKS

1. Company Certificate of incorporation/registration;
2. Current National Construction Authority Registration Certificate NCA 6 and above in both Structured Cabling and IP telephony installation and Electrical installation
3. Provide Current National Construction Authority Annual Contractors Practicing License;
4. Current Class of License with Energy & Petroleum Regulatory Authority (EPRA C1 and Above)
5. Current Class of Licenses with the Communication Authority of Kenya (CAK).
6. Valid Tax Compliance Certificate;
7. Compliance with Technical Specifications;
8. Pre-Contract agreement between the Main Contractor and Mechanical Sub - Contractor signed and commissioned by commissioner of Oaths

Note:

On compliance with Technical Specifications, bidders shall supply equipment/items, which comply with the technical specifications set out in the bid document. In this regard, the bidder will be required to submit relevant technical brochure/catalogues with the tender document, highlighting (using a mark-pen or highlighter) the Catalogue Number/model of the proposed items. Such brochures/ catalogues should indicate comprehensive relevant data of the proposed equipment/items, which should include but not limited to the following:

(i) Standards of manufacture;
(ii) Performance ratings/characteristics;
(iii) Material of manufacture;
(iv) Electrical power ratings; and
(v) All other requirements as indicated in the technical specifications of the bid.

- *The bids will then be analyzed, using the information in the technical brochures, to determine compliance*

with technical specifications for the works/items as indicated in the tender document. Bidders not complying with any of the technical specifications shall be adjudged technically non-responsive while those meeting all technical specifications shall be considered technically responsive.

- *The tenderer shall also fill in the Technical Schedule as specified in the tender document for Equipment and Items indicating the Country of Origin, Model/Make/Manufacturer and catalogue numbers of the Items/Equipment they propose to supply.*

Any bidder whose sub-contractor (s) are non-responsive at this stage shall not be evaluated further

2. TECHNICAL EVALUATION

Bidders who meet the preliminary evaluation criteria above shall be evaluated at technical evaluation with the following guideline **complementing** the Qualification Form Summary.

No.	Parameters	YES/NO
1.	**Experience of the firm in similar services: -Building Construction works** **a)** Provide Three (3) Assignments of Office Partitioning and Fit Out Works and related Electrical /Mechanical services of similar nature: Attach copies of LSOs or contracts and Completion certificate (s) with other corporate clients between the Period 2018 – 2020 a) The tenderer MUST fill the forms listed below in the format provided 1. Form EXP – 4.1 Experience – General Construction Experience 2. Form EXP – 4.2 Specific and Contract Management Experience 3. Form EXP – 4.2.b Construction Experience in Key Activities	
2.	**Qualification and Experience**	
	Academic Qualification **a) Director/Project Manager** ✓ Degree in Civil/Construction or equivalent and relevant Engineering **b) Two foremen/clerk of works** ✓ Diploma in Civil/Construction or equivalent and relevant Engineering	
	c) Experience for the Personnel in (2a) and (2b) above **Director/Project Manager** ✓ Over 4 years ✓ Less than4 years **Two foremen/clerk of works** ✓ Over 3 years ✓ Less than 3 years The tenderer MUST fill the forms listed below in the format provided and attach the necessary qualification certificates: 1. Form PER - 1 Contractor's Representative and Key Personnel Schedule 2**.** Form PER - 2 Resume and Declaration - Contractor's Representative and Key Personnel.	
3.	**Methodology** ✓ Provide a detailed work methodology of how the entire works will be executed	
4.	**Adequacy of tools and equipment** The tenderer must show proof of ownership or leasing of the following equipment: - 1. At least 3No, 2No, and 2No. Relevant Equipment for Builder's Work, Electrical Works, Plumbing /Air Conditioning Works respectively required for these Works	
	QUALIFIED YES/NO	

3. FINANCIAL EVALUATION

Bidders who qualify at the technical evaluation shall be evaluated this stage.
The successful bidder shall be the tenderer with the **lowest evaluated tender price subject to SRC's right to exercise due diligence relating to confirmation of information submitted by the bidder before the award of the tender pursuant to Section 83 of the Public Procurement and Asset Disposal Act, 2015**.

4. RECOMMENDATIONS FOR AWARD

The Procuring Entity will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements of "Part 2 – Procuring Entity's Works Requirements", including checking for tenders with unacceptable errors, abnormally low tenders, abnormally high tenders and tenders that are front loaded.

Arithmetical Errors -Any errors in the submitted tender arising from a miscalculation of unit price, quantity, subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive.

The tenderer with the **lowest price** that meets all the above requirements at financial evaluation stage will be awarded the contracts

The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides very clear guide on how to deal with review of these requirements.

5.Margin of Preference is not applicable

6.The Procuring Entity will provide Post qualification and Contract award (ITT 39), more specifically,

In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of pre-qualification data, if so required.

In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.

i. The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance pay ment) sufficient to meet the construction cash flow of Kenya Shillings

ii. Minimum average annual construction turnover of Kenya Shillings_____ *[insert amount]*, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last_____*[insert of year]* years.
iii. At least_____(*insert number)* of contract(s) of a similar nature executed within Kenya, or the East African Community or abroad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings_____equivalent.
iv. Contractor's Representative and Key Personnel, which are specified as _____
v. Contractors key equipment listed on the table "Contractor's Equipment" below and more specifically listed as *[specify requirements for each lot as applicable]* _____
vi. Other conditions depending on their seriousness.

1. **History of non-performing contracts**
   Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that Non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last_____(*specify years*). The required information shall be furnished in the appropriate form.

2. **Pending Litigation**
   Financial position and prospective long-term profitability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above if all pending litigation will be resolved against the Tenderer. Tenderer shall provide information

on pending litigations in the appropriate form.

3. Litigation History

There shall be no consistent history of court/arbitral award decisions against the Tenderer, in the last (*specify years*). All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the years specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender

6. ***Tender Evaluation (ITT 35) Price evaluation****: in addition to the criteria listed in ITT 35.2 (a) – (c) the following*

criteria shall apply:

iv) Alternative Completion Times, i*f permitted under ITT 13.2, will be evaluated as follows:*
……

v) Alternative Technical Solutions *for specified parts of the Works, if permitted under ITT 13.4, will be evaluated as follows: ……*

vi) Other Criteria; i*f permitted under ITT 35.2(d):*
……

Multiple Contracts-*Multiple contracts will be permitted in accordance with ITT 35.4. Tenderers are evaluated on basis of Lots and the lowest evaluated tenderer identified for each Lot. The Procuring Entity will select one Option of the two Options listed below for award of Contracts.*

OPTION 1

i) If a tenderer wins only one Lot, the tenderer will be awarded a contract for that Lot, provided the tenderer meets the Eligibility and Qualification Criteria for that Lot.

ii) If a tenderer wins more than one Lot, the tender will be awarded contracts for all won Lots, provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the Lots. The tenderer will be awarded the combination of Lots for which the tenderer qualifies and the others will be considered for award to second lowest the tenderers.

OPTION 2

The Procuring Entity will consider all possible combinations of won Lots [contract(s)] and determine the combinations with the lowest evaluated price. Tenders will then be awarded to the Tenderer or Tenderers in the combinations provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the won Lots.

7. Alternative Tenders (ITT 13.1)

An alternative if permitted under ITT 13.1, will be evaluated as follows:

The Procuring Entity shall consider Tenders offered for alternatives as specified in Part 2- Works Requirements. Only the technical alternatives, if any, of the Tenderer with the Best Evaluated Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

8. Post qualification and Contract ward (ITT 39), more specifically,

c) In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of pre-qualification data, if so required.

d) In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.

i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of Kenya Shillings _____.

ii) Minimum average annual construction turnover of Kenya Shillings_____ *[insert amount],* equivalent calculated as total certified payments received for contracts in progress and/or completed within the last_____*[insert of year]* years.

iii) At least_____(*insert number)* of contract(s) of a similar nature executed within Kenya, or the

East African Community or abroad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings_____equivalent.

iv) Contractor's Representative and Key Personnel, which are specified as _____

v) Contractors key equipment listed on the table "Contractor's Equipment" below and more specifically listed as *[specify requirements for each lot as applicable]* _____

vi) Other conditions depending on their seriousness.

a) ***History of non-performing contracts****:*
Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that Non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last_____(specify years). The required information shall be furnished in the appropriate form.

b) ***Pending Litigation***
Financial position and prospective long-term profitability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above if all pending litigation will be resolved against the Tenderer. Tenderer shall provide information on pending litigations in the appropriate form.

c) ***Litigation History***
There shall be no consistent history of court/arbitral award decisions against the Tenderer, in the last_____(specify years). All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the years specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

9. QUALIFICATION FORM SUMMARY

1	2	3	*4*	*5*
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
1	Nationality	Nationality in accordance with ITT 3.6	Forms ELI – 1.1 and 1.2, with attachments	
2	Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by the the Kenya Revenue Authority in accordance with ITT 3.14.	Form of Tender	
3	Conflict of Interest	No conflicts of interest in accordance with ITT 3.3	Form of Tender	
4	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.8	Form of Tender	
5	State- owned Enterprise	Meets conditions of ITT 3.7	Forms ELI – 1.1 and 1.2, with attachments	
6	Goods, equipment and services to be supplied under the contract	To have their origin in any country that is not determined ineligible under ITT 4.1	Forms ELI – 1.1 and 1.2, with attachments	
7	History of Non-Performing Contracts	Non-performance of a contract did not occur as a result of contractor default since 1st January […….].	Form CON-2	
8	Suspension Based on Execution of Tender /Proposal Securing Declaration by the Procuring Entity	Not under suspension based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 19.9	Form of Tender	
9	Pending Litigation	Tender's financial position and prospective long-term profitability still sound according to criteria established in 3.1 and assuming that all pending litigation will NOT be resolved against the Tenderer.	Form CON – 2	
10	Litigation History	No consistent history of court/arbitral award decisions against the Tenderer since 1st January *[insert year]*	Form CON – 2	

1	2	3	*4*	*5*
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
11	Financial Capabilities	(i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as Kenya Shillings *[insert amount]* equivalent for the subject contract(s) net of the Tenderer's other commitments. (ii) The Tenderers shall also demonstrate, to the satisfaction of the Procuring Entity, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments. (iii) The audited balance sheets or, if not required by the laws of the Tenderer's country, other financial statements acceptable to the Procuring Entity, for the last *[insert number of years]* years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability.	Form FIN – 3.1, with attachments	
12	Average Annual Construction Turnover	Minimum average annual construction turnover of Kenya Shillings *[insert amount]*, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last *[insert of year]* years, divided by *[insert number of years]* years	Form FIN – 3.2	
13	General Construction Experience	Experience under construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor for at least the last *[insert number of years]* years, starting 1st January *[insert year]*.	**4.** Form EXP – 4.1 **Experience**	

1	2	3	*4*	*5*
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
	Specific Construction & Contract Management Experience	A minimum number of *[state the number]* similar contracts specified below that have been satisfactorily and substantially completed as a prime contractor, joint venture member, management contractor or sub-contractor between 1st January [*insert year*] and tender submission deadline i.e. …. (number) contracts, each of minimum value Kenya shillings…….. equivalent. [*In case the Works are to be tender as individual contracts under multiple contract procedure, the minimum number of contracts required for purposes of evaluating qualification shall be selected from the options mentioned in ITT 35.4]* The similarity of the contracts shall be based on the following: [*Based on Section VII, Scope of Works, specify the minimum key requirements in terms of physical size, complexity, construction method, technology and/or other characteristics including part of the requirements that may be met by specialized subcontractors, if permitted in accordance with ITT 34.3]*	Form EXP 4.2(a)	

QUALIFICATION FORMS

1. FORM EQU: EQUIPMENT

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Tenderer.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment ☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Tenderer.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

2. FORM PER -1

Contractor's Representative and Key Personnel Schedule

Tenderers should provide the names and details of the suitably qualified Contractor's Representative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Contractor' Representative and Key Personnel

1.	**Title of position:** Contractor's Representative	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
2.	**Title of position:** *[_____]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
3.	**Title of position:** *[_____]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
4.	**Title of position:** *[_____]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]

5.	**Title of position:** *[insert title]*	
	Name of candidate	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]

---

3. FORM PER-2:

Resume and Declaration - Contractor's Representative and Key Personnel.

Name of Tenderer		
Position [*#1*]: [*title of position from Form PER-1*]		
Personnel information	Name:	Date of birth:
	Address:	E-mail:
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: *[language and levels of speaking, reading and writing skills]*	
Details		
	Address of Procuring Entity:	
	Telephone:	Contact (manager / personnel officer):
	Fax:	
	Job title:	Years with present Procuring Entity:

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Project	Role	Duration of involvement	Relevant experience
[main project details]	*[role and responsibilities on the project]*	*[time in role]*	*[describe the experience relevant to this position]*

Declaration

I, the undersigned *[insert either "Contractor's Representative" or "Key Personnel" as applicable]*, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Tender:

Commitment	**Details**
Commitment to duration of contract:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*
Time commitment:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*

I understand that any misrepresentation or omission in this Form may:

a) be taken into consideration during Tender evaluation;
b) result in my disqualification from participating in the Tender;
c) result in my dismissal from the contract.

Name of Contractor's Representative or Key Personnel: [*insert name*]

Signature: _____

Date: (day month year): _____ Countersignature

of authorized representative of the Tenderer:

Signature:_____ Date: (day month

year): _____

4. TENDERERS QUALIFICATION WITHOUT PRE-QUALIFICATION

To establish its qualifications to perform the contract in accordance with Section III, Evaluation and Qualification Criteria the Tenderer shall provide the information requested in the corresponding Information Sheets included hereunder.

FORM ELI -1.1 Tenderer Information Form

Date:_____ ITT No. and title: _____

Tenderer's name
In case of Joint Venture (JV), name of each member:
Tenderer's actual or intended country of registration: *[indicate country of Constitution]*
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITT 3.6 ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 3.5 ☐ In case of state-owned enterprise or institution, in accordance with ITT 3.8, documents establishing: • Legal and financial autonomy • Operation under commercial law • Establishing that the Tenderer is not under the supervision of the Procuring Entity 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

FORM ELI -1.2

Tenderer's JV Information Form

(to be completed for each member of Tenderer's JV)

Date:_____ ITT No. and title:_____

Tenderer's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITT 3.6. ☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 3.8. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

FORM CON - 2

Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: _____ Date:_____ JV Member's Name _____ITT No. and title: _____ _____

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
☐ Contract non-performance did not occur since 1st January *[insert year]*specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1. ☐ Contract(s) not performed since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
Year	**Non- performed portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and Kenya Shilling equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Procuring Entity: *[insert full name]* Address of Procuring Entity: *[insert street/city/country]* Reason(s) for nonperformance: *[indicate main reason(s)]*	*[insert amount]*
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
☐ No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3. ☐ Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.			

Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)
		Contract Identification: _ _ _ Name of Procuring Entity:_____ Address of Procuring Entity:_____ Matter in dispute:_____ Party who initiated the dispute: _ Status of dispute: _____	__
		Contract Identification: Name of Procuring Entity: Address of Procuring Entity: Matter in dispute:Party who initiated the dispute: Status of dispute:	

Litigation History in accordance with Section III, Evaluation and Qualification Criteria

D No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4.

D Litigation History in accordance with Section Ill, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.

Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)
[insert year]	*[insert percentage}*	Contract Identification: [indicate complete contract name, number, and any other identification] Name of Procuring Entity: *[insert full name]* Address of Procuring Entity: *[insert street/city/country}* Matter in dispute: *[indicate main issues in dispute]* Party who initiated the dispute: *[indicate "Procuring Entity" or "Contractor"]* Reason(s) for Litigation and award decision *[indicate main reason(s)]*	*[insert amount}*

Financial Situation and Performance

Tenderer's Name: _____ Date:_____ JV Member's Name_____ ITT No. and title: _____

5.4.1. Financial Data

*Refer to ITT 15 for the exchange rate

Type of Financial information in (currency)

Historic information for previous _____ *years,*

(amount in currency, currency, exchange rate*, USD equivalent)

	Year 1	Year 2	Year 3	Year 4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	Source of finance	Amount (Kenya Shilling equivalent)
1		
2		
3		

Financial documents

The Tenderer and its parties shall provide copies of financial statements for_____years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

a) reflect the financial situation of the Tenderer or in case of JV member, and not an affiliated entity (such as parent company or group member).

b) be independently audited or certified in accordance with local legislation.

c) be complete, including all notes to the financial statements.

d) correspond to accounting periods already completed and audited.

Attached are copies of financial statements[1] for the_____years required above; and complying with the requirements

5.5 FORM FIN – 3.2

Average Annual Construction Turnover

Tenderer's Name: _____ Date:_____ JV Member's Name___
_____ ITT No. and title: _____

	Annual turnover data (construction only)		
Year	Amount Currency	Exchange rate	Kenya Shilling equivalent
[indicate year]	*[insert amount and indicate currency]*		
Average Annual Construction Turnover *			

** See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2.*

[1] *If the most recent set of financial statements is for a period earlier than 12 months from the date of Tender, the reason for this should be justified.*

Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as specified in Section III, Evaluation and Qualification Criteria

Financial Resources		
No.	Source of financing	Amount (Kenya Shilling equivalent)
1		
2		
3		

FORM FIN – 3.4:

Current Contract Commitments / Works in Progress

Tenderers and each member to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Current Contract Commitments					
No.	Name of Contract	Procuring Entity's Contact Address, Tel,	Value of Outstanding Work [Current Kenya Shilling /month Equivalent]	Estimated Completion Date	Average Monthly Invoicing Over Last Six Months [Kenya Shilling /month)]
1					
2					
3					
4					
5					

FORM EXP - 4.1

General Construction Experience

Tenderer's Name: _____ Date:_____ JV Member's Name____
_____ ITT No. and title: _____

Page_____of_____pages

Starting Year	Ending Year	Contract Identification	Role of Tenderer
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	

FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

Tenderer's Name: _____ Date:_____ JV Member's Name_____ ITT No. and title: _____

Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**Kenya Shilling**	
If member in a JV or sub-contractor, specify participation in total Contract amount				
Procuring Entity's Name:				
Telephone/fax number E-mail:				

Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:	
1. Amount	
2. Physical size of required works items	
3. Complexity	
4. Methods/Technology	
5. Construction rate for key activities	
6. Other Characteristics	

FORM EXP - 4.2(b)

Construction Experience in Key Activities

Tenderer's Name: _____ Date:_____ Tenderer's JV Member Name:_____Sub-contractor's Name[2] (as per ITT 34): _____ITT No. and title: _____

All Sub-contractors for key activities must complete the information in this form as per ITT 34 and Section III, Evaluation and Qualification Criteria, Sub-Factor 4.2.

1. Key Activity No One: -

	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contracto ☐
Total Contract Amount			**Kenya Shilling**	
Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year	Total quantity in the contract (i)		Percentage participation (ii)	Actual Quantity Performed (i) x (ii)
Year 1				
Year 2				
Year 3				
Year 4				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				
Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III:				

2. Activity No. Two 3. ……

[2] If applicable

OTHER FORMS

6. FORM OF TENDER

INSTRUCTIONS TO TENDERERS

i) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address.

ii) All italicized text is to help Tenderer in preparing this form.

iii) Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION OF THE TENDERER attached to this Form of Tender.

iv) The Form of Tender shall include the following Forms duly completed and signed by the Tenderer.

- *Tenderer's Eligibility- Confidential Business Questionnaire*
- *Certificate of Independent Tender Determination*
- *Self-Declaration of the Tenderer*

Date of this Tender submission: *[insert date (as day, month and year) of Tender submission]*

Request for Tender No.: *[insert identification*]

Name and description of Tender *[Insert as per ITT)*

Alternative No.: [*insert identification No if this is a Tender for an alternative*]

To: [*insert complete name of Procuring Entity*] Dear Sirs,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct and complete the Works and remedy any defects therein for the sum of Kenya Shillings [*[Amount in figures]*_____Kenya Shillings *[amount in words]*_____.

   The above amount includes foreign currency amount (s) of [*state figure or a percentage and currency*] [figures]_____[words]_____.

   The percentage or amount quoted above does not include provisional sums, and only allows not more than two foreign currencies.

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

3. We agree to adhere by this tender until_____*[Insert date]*, and it shall remain binding upon us and may be accepted at any time before that date.

4. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us. We further understand that you are not bound to accept the lowest or any tender you may receive.

5. We, the undersigned, further declare that:
   i) *No reservations:* We have examined and have no reservations to the tender document, including Addenda issued in accordance with ITT 28;
   ii) *Eligibility:* We meet the eligibility requirements and have no conflict of interest in accordance with ITT 3 and 4;
   iii) *Tender-Securing Declaration:* We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender-Securing or Proposal-Securing Declaration in the Procuring Entity's Country in accordance with ITT 19.8;
   iv) Conformity: We offer to execute in conformity with the tendering documents and in accordance with the implementation and completion specified in the construction schedule, the following Works: *[insert a brief description of the Works];*

v) *Tender Price:* The total price of our Tender, excluding any discounts offered in item 1 above is: *[Insert one of the options below as appropriate]*

vi Option 1, in case of one lot: Total price is: [*insert the total price of the Tender in words and figures, indicating the various amounts and the respective currencies*]; Or

Option 2, in case of multiple lots:

a) Total price of each lot [*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies*]; and

b) Total price of all lots (sum of all lots) [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];

vii) *Discounts:* The discounts offered and the methodology for their application are:

viii) The discounts offered are: [*Specify in detail each discount offered.*]

ix) The exact method of calculations to determine the net price after application of discounts is shown below: [*Specify in detail the method that shall be used to apply the discounts*];

x) *Tender Validity Period:* Our Tender shall be valid for the period specified in TDS 18.1 (as amended, if applicable) from the date fixed for the Tender submission deadline specified in TDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

xi) *Performance Security:* If our Tender is accepted, we commit to obtain a Performance Security in accordance with the Tendering document;

xii) *One Tender Per Tender:* We are not submitting any other Tender(s) as an individual Tender, and we are not participating in any other Tender(s) as a Joint Venture member or as a subcontractor, and meet the requirements of ITT 3.4, other than alternative Tenders submitted in accordance with ITT 13.3;

xiii) *Suspension and Debarment:* We, along with any of our subcontractors, suppliers, Project Manager, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Public Procurement Regulatory Authority or any other entity of the Government of Kenya, or any international organization.

xiv) *State-owned enterprise or institution:* [*select the appropriate option and delete the other*] [*We are not a state-owned enterprise or institution*] / [*We are a state-owned enterprise or institution but meet the requirements of ITT 3.8*];

xv) *Commissions, gratuities, fees:* We have paid, or will pay the following commissions, gratuities, or fees with respect to the tender process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity].*

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

xvi) Binding Contract: We understand that this Tender, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;

xvii) Not Bound to Accept: We understand that you are not bound to accept the lowest evaluated cost Tender, the Most Advantageous Tender or any other Tender that you may receive;

xviii) Fraud and Corruption: We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption;

xix) Collusive practices: We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded. To this effect we have signed the "Certificate of Independent Tender Determination" attached below.

xx) We undertake to adhere by the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal, copy available from_____(*specify website*) during the procurement process and the execution of any resulting contract.

xxi) We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:
   a) Tenderer's Eligibility; Confidential Business Questionnaire – to establish we are not in any conflict to interest.
   b) Certificate of Independent Tender Determination – to declare that we completed the tender without colluding with other tenderers.
   c) Self-Declaration of the Tenderer – to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.
   d) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal

Further, we confirm that we have read and understood the full content and scope of fraud and corruption as informed in **"Appendix 1- Fraud and Corruption**" attached to the Form of Tender.

Name of the Tenderer: *[*insert complete name of person signing the Tender*]

Name of the person duly authorized to sign the Tender on behalf of the Tenderer: **[*insert complete name of person duly authorized to sign the Tender*]

Title of the person signing the Tender: [*insert complete title of the person signing the Tender*]

Signature of the person named above: [*insert signature of person whose name and capacity are shown*

above] **Date signed** [*insert date of signing*] day of [*insert month*], [*insert year*]

Date signed_____day of_____, _____

Notes
** In the case of the Tender submitted by joint venture specify the name of the Joint Venture as Tenderer*
*** Person signing the Tender shall have the power of attorney given by the Tenderer to be attached with the Tender.*

A. TENDERER'S ELIGIBILITY- CONFIDENTIAL BUSINESS QUESTIONNAIRE

Instruction to Tenderer

Tender is instructed to complete the particulars required in this Form, *one form for each entity if Tender is a JV*. Tenderer is further reminded that it is an offence to give false information on this Form.

(a) **Tenderer's details**

	ITEM	DESCRIPTION
1	Name of the Procuring Entity	
2	Reference Number of the Tender	
3	Date and Time of Tender Opening	
4	Name of the Tenderer	
5	Full Address and Contact Details of the Tenderer.	1. Country 2. City 3. Location 4. Building 5. Floor 6. Postal Address 7. Name and email of contact person.
6	Current Trade License Registration Number and Expiring date	
7	Name, country and full address (*postal and physical addresses, email, and telephone number*) of Registering Body/Agency	
8	Description of Nature of Business	
9	Maximum value of business which the Tenderer handles.	
10	State if Tenders Company is listed in stock exchange, give name and full address (*postal and physical addresses, email, and telephone number*) of state which stock exchange	

General and Specific Details

b) Sole Proprietor, provide the following details.

Name in full_____Age_____ Nationality _____Country of Origin_____ Citizenship _____

c) Partnership, provide the following details.

	Names of Partners	Nationality	Citizenship	% Shares owned
1				
2				
3				

d) Registered Company, provide the following details.

i) Private or public Company_____

ii) State the nominal and issued capital of the Company_____

Nominal Kenya Shillings (Equivalent)..... Issued

Kenya Shillings (Equivalent).....

iii) Give details of Directors as follows.

	Names of Director	Nationality	Citizenship	% Shares owned
1				
2				
3				

(e) DISCLOSURE OF INTEREST- Interest of the Firm in the Procuring Entity.

i) Are there any person/persons in …… …… (*Name of Procuring Entity)* who has/have an interest or relationship in this firm? Yes/No……

If yes, provide details as follows.

	Names of Person	Designation in the Procuring Entity	Interest or Relationship with Tenderer
1			
2			
3			

ii) Conflict of interest disclosure

	Type **of Conflict**	**Disclosure YES OR NO**	**If YES provide details of the relationship with Tenderer**
1	Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer.		
2	Tenderer receives or has received any direct or indirect subsidy from another tenderer.		
3	Tenderer has the same legal representative as another tenderer		
4	Tender has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process.		
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract Specified in this Tender Document.		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.		

f) Certification

On behalf of the Tenderer, I certify that the information given above is complete, current and accurate as at the date of submission.

Full Name_____ Title or

Designation_____

_____ _____

(Signature) *(Date)*

B. CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying Letter of Tender to the_____[Name of Procuring Entity] for:_____[Name and number of tender] in response to the request for tenders made by:_____[Name of Tenderer] do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of_____[Name of Tenderer] that:

1. I have read and I understand the contents of this Certificate;

2. I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am the authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tender on behalf of the Tenderer;

4. For the purposes of this Certificate and the Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
   a) has been requested to submit a Tender in response to this request for tenders;
   b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities orexperience;

5. The Tenderer discloses that [check one of the following, as applicable:
   a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;
   b) the Tenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;

6. In particular, without limiting the generality of paragraphs (5)(a) or (5)(b) above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   a) prices;
   b) methods, factors or formulas used to calculate prices;
   c) the intention or decision to submit, or not to submit, a tender; or
   d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuant to paragraph (5)(b) above;

7. In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by the procuring authority or as specifically disclosed pursuant to paragraph (5)(b) above;

8. the terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, whichever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5)(b) above.

Name_____ Title__ Date _____

[Name, title and signature of authorized agent of Tenderer and Date].

C. SELF - DECLARATION FORMS

FORM SD1

SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENTAND ASSET DISPOSALACT 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.

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 herein above is true to the best of my knowledge, information and belief.

……. ……. …… (Title)
(Signature) (Date)

Bidder Official Stamp

FORM SD2

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.

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 herein above is true to the best of my knowledge information and belief.

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

Bidder's Official Stamp

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

I ……..……. (person) on behalf of *(Name of the Business/ Company/Firm*) ……. declare that I have read and fully understood the contents of the Public Procurement & Asset Disposal Act, 2015, Regulations and the Code of Ethics for persons participating in Public Procurement and Asset Disposal and my responsibilities under the Code.

I do hereby commit to abide by the provisions of the Code of Ethics for persons participating in Public Procurement and Asset Disposal.

Name of Authorized signatory……..... Sign…….....

Position…….....…….....

Office address……. Telephone…….....…….

E-mail…….....….....…

Name of the Firm/Company…….....……

Date…….....…. (Company Seal/ Rubber

Stamp where applicable)

Witness

Name ……..... Sign.....

Date……

D. APPENDIX 1- FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

1. Purpose

2. The Government of Kenya's Anti-Corruption and Economic Crime laws and their sanction's policies and procedures, Public Procurement and Asset Disposal Act *(no. 33 of 2015)* and its Regulation, and any other Kenya's Acts or Regulations related to Fraud and Corruption, and similar offences, shall apply with respect to Public Procurement Processes and Contracts that are governed by the laws of Kenya.

3. Requirements

The Government of Kenya requires that all parties including Procuring Entities, Tenderers, (applicants/proposers), Consultants, Contractors and Suppliers; any Sub-contractors, Sub-consultants, Service providers or Suppliers; any Agents (whether declared or not); and any of their Personnel, involved and engaged in procurement under Kenya's Laws and Regulation, observe the highest standard of ethics during the procurement process, selection and contract execution of all contracts, and refrain from Fraud and Corruption and fully comply with Kenya's laws and Regulations as per paragraphs 1.1 above.

Kenya's public procurement and asset disposal act *(no. 33 of 2015)* under Section 66 describes rules to be followed and actions to be taken in dealing with Corrupt, Coercive, Obstructive, Collusive or Fraudulent practices, and Conflicts of Interest in procurement including consequences for offences committed. A few of the provisions noted below highlight Kenya's policy of no tolerance for such practices and behavior: -

1) a person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or asset disposal proceeding;

2) A person referred to under subsection (1) who contravenes the provisions of that sub-section commits an offence;

3) Without limiting the generality of the subsection (1) and (2), the person shall be: -

   a) disqualified from entering into a contract for a procurement or asset disposal proceeding; or

   b) if a contract has already been entered into with the person, the contract shall be voidable;

4) The voiding of a contract by the procuring entity under subsection (7) does not limit any legal remedy the procuring entity may have;

5) An employee or agent of the procuring entity or a member of the Board or committee of the procuring entity who has a conflict of interest with respect to a procurement: -

   a) shall not take part in the procurement proceedings;

   b) shall not, after a procurement contract has been entered into, take part in any decision relating to the procurement or contract; and

c) shall not be a subcontractor for the bidder to whom was awarded contract, or a member of the group of bidders to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.

6) An employee, agent or member described in subsection (1) who refrains from doing anything prohibited under that subsection, but for that subsection, would have been within his or her duties shall disclose the conflict of interest to the procuring entity;

7) If a person contravenes subsection (1) with respect to a conflict of interest described in subsection (5)(a) and the contract is awarded to the person or his relative or to another person in whom one of them had a direct or indirect pecuniary interest, the contract shall be terminated and all costs incurred by the public entity shall be made good by the awarding officer. Etc.

8) In compliance with Kenya's laws, regulations and policies mentioned above, the Procuring Entity:

a) Defines broadly, for the purposes of the above provisions, the terms set forth below as follows:

   i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

   ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

v) "obstructive practice" is:

- deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
- acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.

b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:

"fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal process or the exercise of a contract to the detriment of the procuring entity or the tenderer or the contractor, and includes collusive practices amongst tenderers prior to or after tender submission designed to establish tender prices at artificial non-competitive levels and to deprive the procuring entity of the benefits of free and open competition.

c) Rejects a proposal for award[1] of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

d) Pursuant to the Kenya's above stated Acts and Regulations, may sanction or recommend to appropriate authority (ies) for sanctioning and debarment of a firm or individual, as applicable under the Acts and Regulations;

e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring (i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect[2] all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the PPRA or any other appropriate authority appointed by Government of Kenya; and

f) Pursuant to Section 62 of the above Act, requires Applicants/Tenderers to submit along with their Applications/Tenders/Proposals a "Self-Declaration Form" as included in the procurement document declaring that they and all parties involved in the procurement process and contract execution have not engaged/will not engage in any corrupt or fraudulent practices.

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[1] *For the avoidance of doubt, a party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and tendering, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.*

[2] *Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Investigating Authority or persons appointed by the Procuring Entity to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.*

7. FORM OF TENDER SECURITY - DEMAND BANK GUARANTEE

Beneficiary: _____

Request for Tenders No: _____

Date: _____

TENDER GUARANTEE No.: _____

Guarantor: _____

1. We have been informed that _____ (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Tender (hereinafter called "the Tender") for the execution of _____

2. under Request for Tenders No. _____ ("the ITT").

3. Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.

4. At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Applicant; or

b) having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension thereto provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.

5. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) twenty-eight days after the end of the Tender Validity Period.

6. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

[signature(s)]

FORM OF TENDER SECURITY (TENDER BOND)

[The Surety shall fill in this Tender Bond Form in accordance with the instructions indicated.]

BOND NO. _____

1. BY THIS BOND *[name of tenderer]* as Principal (hereinafter called "the Principal"), and *[name, legal title, and address of surety]*,**authorized to transact business in** *[name of country of* Procuring Entity*]*, as Surety (hereinafter called "the Surety"), are held and firmly bound unto *[name of* Procuring Entity*]* as Obligee (hereinafter called "the Procuring Entity") in the sum of *[amount of Bond][amount in words]*, for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

2. WHEREAS the Principal has submitted or will submit a written Tender to the Procuring Entity dated the____day of_____, 20 , for the supply of *[name of Contract]* (hereinafter called the "Tender").

3. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:
   a) has withdrawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Principal; or
   b) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers ("ITT") of the Procuring Entity's Tenderding document.

   Then the Surety undertakes to immediately pay to the Procuring Entity up to the above amount upon receipt of the Procuring Entity's first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

4. The Surety hereby agrees that its obligation will remain in full force and effect up to and including the date 30 days after the date of expiration of the Tender Validity Period set forth in the Principal's Letter of Tender or any extension thereto provided by the Principal.

5. IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this_____day of_____20_____.

Principal:_____ Corporate Seal (where appropriate)

(Signature)

(Printed name and title)

Surety:

_____

(Signature)

(Printed name and title)

TENDER-SECURING DECLARATION FORM

[The Bidder shall complete this Form in accordance with the instructions indicated]

Date:.....*[insert date (as day, month and year) of Tender Submission]*
Tender No.:.....*[insert number of tendering process]*
To:..... *[insert complete name of Purchaser]* I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.

2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of our obligation(s) under the bid conditions, because we – (a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the instructions to tenders.

3. I/We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer(s), upon the earlier of:
   a) our receipt of a copy of your notification of the name of the successful Tenderer; or
   b) thirty days after the expiration of our Tender.

4. I/We understand that if I am/we are/in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid, and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed:……..…….....….. Capacity / title (director or partner or sole proprietor, etc.) …….…….....……. Name: …….. Duly authorized to sign the bid for and on behalf of: *[insert complete name of Tenderer]*

Dated on ……. day of ……..……. *[Insert date of signing]* Seal or stamp

Appendix to Tender

Schedule of Currency requirements

Summary of currencies of the Tender for_____*[insert name of Section of the Works]*

Name of currency	*Amounts payable*
Local currency: _____	
Foreign currency #1: _____	
Foreign currency #2: _____	
Foreign currency #3: _____	
Provisional sums expressed in local currency _____	[To be entered by the Procuring Entity]

PART II - WORK REQUIREMENTS

SECTION V - DRAWINGS

A list of drawings should be inserted here.

The actual drawings including Site plans shall be provided in a separate booklet during site Handover.

SECTION VI - SPECIFICATIONS

Notes for preparing Specifications

1. Specifications must be drafted to present a clear and precise statement of the required standards of materials, and workmanship for tenderers to respond realistically and competitively to the requirements of the Procuring Entity and ensure responsiveness of tenders. The Specifications should require that all materials, plant, and other supplies to be permanently incorporated in the Works be new, unused, of the most recent or current models, and incorporating all recent improvements in design and materials unless provided otherwise in the Contract. Where the Contractor is responsible for the design of any part of the permanent Works, the extent of his obligations must be stated.

2. Specifications from previous similar projects are useful and may not be necessary to re-write specifications for everyWorks Contract.

3. There are considerable advantages in standardizing **General Specifications** for repetitive Works in recognized public sectors, such as highways, urban housing, irrigation and water supply. The General Specifications should cover all classes of workmanship, materials and equipment commonly involved in constructions, although not necessarily to be used in a particular works contract. Deletions or addenda should then adapt the General Specifications to the particular Works.

4. Care must be taken in drafting Specifications to ensure they are not restrictive. In the Specifications of standards for materials, plant and workmanship, existing Kenya Standards should be used as much as possible, otherwise recognized international standards may also be used.

5. The Procuring Entity should decide whether technical solutions to specified parts of the Works are to be permitted. Alternatives are appropriate in cases where obvious (and potentially less costly) alternatives are possible to the technical solutions indicated in tender documents for certain elements of the Works, taking into consideration the comparative specialized advantage of potential tenderers.

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

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

SECTION VII- BILLS OF QUANTITIES

1. Objectives

The objectives of the Bill of Quantities are:

a) to provide sufficient information on the quantities of Works to be performed to enable tenders to be prepared efficiently and accurately; and

b) when a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and contents of the Bill of Quantities should be as simple and brief as possible.

2. Day work Schedule

A Day work Schedule should be included only if the probability of unforeseen work, outside the items included in the Bill of Quantities, is high. To facilitate checking by the Procuring Entity of the realism of rates quoted by the Tenderers, the Day work Schedule should normally comprise the following:

a) A list of the various classes of labor, materials, and Constructional Plant for which basic day work rates or prices are to be inserted by the Tenderer, together with a statement of the conditions under which the Contractor shall be paid for work executed on a day work basis.

b) Nominal quantities for each item of day work, to be priced by each Tenderer at day work rates as Tender. The rate to be entered by the Tenderer against each basic day work item should include the Contractor's profit, overheads, supervision, and other charges.

3. Provisional Sums

A general provision for physical contingencies (quantity overruns) may be made by including a provisional sum in the Summary Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a provisional sum in the Summary priced Bill of Quantities. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises. Where such provisional sums or contingency allowances are used, the Special Conditions of Contract should state the manner in which they shall be used, and under whose authority (usually the Project Manager's).

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by other contractors should be indicated in the relevant part of the Bill of Quantities as a particular provisional sum with an appropriate brief description. A separate procurement procedure is normally carried out by the Procuring Entity to select such specialized contractors. To provide an element of competition among the Tenderers in respect of any facilities, amenities, attendance, etc., to be provided by the successful Tenderer as prime Contractor for the use and convenience of the specialist contractors, each related provisional sum should be followed by an item in the Bill of Quantities inviting the Tenderer to quote a sum for such amenities, facilities, attendance, etc.

These Notes for Preparing a Bill of Quantities are intended only as information for the Procuring Entity or the person drafting the tendering document. They should not be included in the final tendering document.

4. The Bills of Quantities

The Bills of Quantities should be divided generally into the following sections:

a) Preambles
b) Preliminary items
c) Work Items
c) Daywork Schedule; and
d) Provisional items
e) Summary.

5. **The Summary to the Bills of Quantities** will take this form or some other form but including these items.

SUMMARY ITEMS	***Page***	***Amount***
Bill No. 1: Preliminary Items		
Bill No. 2: Work Items		
Bill No 3: Day work Summary		
Bill No 4: Provisional Sums		
Subtotal of Bills No 1-4		
Allow for any Discounts;		
TOTAL TENDER PRICE Carried forward to Form of Tender		

- **PLEASE SEE ATTACHED BILLS OF QUANTITIES**

SECTION VIII - GENERAL CONDITIONS OF CONTRACT

These General Conditions of Contract (GCC), read in conjunction with the Special Conditions of Contract (SCC) and other documents listed therein, should be a complete document expressing fairly the rights and obligations of both parties.

These General Conditions of Contract have been developed on the basis of considerable international experience in the drafting and management of contracts, bearing in mind a trend in the construction industry towards simpler, more straightforward language.

The GCC can be used for both smaller admeasurement contracts and lump sum contracts.

General Conditions of Contract

A. General

1. Definitions

Boldface type is used to identify defined terms.

a) **The Accepted Contract** Amount means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.

b) **The Activity Schedule** is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.

c) **The Adjudicator** is the person appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.

d) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.

e) **Compensation Events** are those defined in GCC Clause 42 hereunder.

f) **The Completion Date** is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 53.1.

g) **The Contract** is the Contract between the Procuring Entity and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.

h) **The Contractor** is the party whose Bid to carry out the Works has been accepted by the Procuring Entity.

i) **The Contractor's Bid** is the completed bidding document submitted by the Contractor to the Procuring Entity.

j) **The Contract Price** is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.

k) **Days** are calendar days; months are calendar months.

l) **Day work**s are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.

m) **A Defect** is any part of the Works not completed in accordance with the Contract.

n) **The Defects** Liability Certificate is the certificate issued by Project Manager upon correction of defects by the Contractor.

o) **The Defects Liability Period** is the period **named in the SCC** pursuant to Sub-Clause 34.1 and calculated from the Completion Date.

p) **Drawings** means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Procuring Entity in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.

q) **The Procuring Entity** is the party who employs the Contractor to carry out the Works, **as specified in the SCC,** who is also the Procuring Entity.

r) **Equipmen**t is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

s) **"In writing" or "written"** means hand-written, type-written, printed or electronically made, and resulting in a permanent record;

t) The Initial Contract Price is the Contract Price listed in the Procuring Entity's Letter of Acceptance.

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

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

w) **Plant i**s any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

x) **The Project Manager** is the person **named in the SCC** (or any other competent person appointed by the Procuring Entity and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract.

y) **SCC** means Special Conditions of Contract.

z) **The Site** is the area of the works as **defined as such in the SCC**.

aa) Site Investigation Reports are those that were included in the bidding document and are factual and interpretative reports about the surface and subsurface conditions at the Site.

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

cc) The Start Date is **given in the SCC**. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

dd) **A Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

ee) **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

ff) **A Variation** is an instruction given by the Project Manager which varies the Works.

gg) **The Works** are what the Contract requires the Contractor to construct, install, and turn over to the Procuring Entity, **as defined in the SCC**.

2. Interpretation

In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.

If sectional completion is **specified in the SCC**, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

The documents forming the Contract shall be interpreted in the following order of priority:

a) Agreement,
b) Letter of Acceptance,
c) Contractor's Bid,
d) Special Conditions of Contract,
e) General Conditions of Contract, including Appendices,
f) Specifications,
g) Drawings,
h) Bill of Quantities[6], and
i) any other document **listed in the SCC** as forming part of the Contract.

[6] *In lump sum contracts, delete "Bill of Quantities" and replace with "Activity Schedule."*

3. Language andLaw

The language of the Contract is English Language and the law governing the Contract are the Laws of Kenya.

Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Procuring Entity's Country when

a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country; or

b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

4. Project Manager's Decisions

Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the Procuring Entity and the Contractor in the role representing the Procuring Entity.

5. Delegation

Otherwise **specified in the SCC,** the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.

6. Communications

Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.

7. Subcontracting

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

8. Other Contractors

The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Procuring Entity between the dates given in the Schedule of Other Contractors, as **referred to in the SCC.** The Contractor shall also provide facilities and services for them as described in the Schedule. The Procuring Entity may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

9. Personnel andEquipment

The Contractor shall employ the key personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of key personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.

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

If the Procuring Entity, Project Manager or Contractor determines, that any employee of the Contractor be determined to have engaged in Fraud and Corruption during the execution of the Works, then that employee shall be removed in accordance with Clause 9.2 above.

10. Procuring Entity's and Contractor's Risks

The Procuring Entity carries the risks which this Contract states are Procuring Entity's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Procuring Entity's Risks

From the Start Date until the Defects Liability Certificate has been issued, the following are Procuring Entity's risks:

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

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

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

b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the Procuring Entity's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is a Procuring Entity's risk except loss or damage due to

a) a Defect which existed on the Completion Date,

b) an event occurring before the Completion Date, which was not itself a Procuring Entity's risk, or

c) the activities of the Contractor on the Site after the Completion Date.

12. Contractor's Risks

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

13. Insurance

The Contractor shall provide, in the joint names of the Procuring Entity and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles **stated in the SCC** for the following events which are due to the Contractor's risks:

a) loss of or damage to the Works, Plant, and Materials;

b) loss of or damage to Equipment;

c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and

d) personal injury or death.

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

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

Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.

Both parties shall comply with any conditions of the insurance policies.

14. Site Data

The Contractor shall be deemed to have examined any Site Data **referred to in the SCC**, supplemented by any information available to the Contractor.

15. Contractor to Construct the Works

The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.

16. The Works to Be Completed by the Intended Completion Date

The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

17. Approval by the Project Manager

The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.

The Contractor shall be responsible for design of Temporary Works.

The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.

All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.

18. Safety

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

19. Discoveries

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

20. Possession of the Site

The Procuring Entity shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date **stated in the SCC,** the Procuring Entity shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.

21. Access to the Site

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

22. Instructions, Inspections and Audits

The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.

The Contractor shall keep, and shall make all reasonable efforts to cause its Subcontractors and sub-consultants to keep, accurate and systematic accounts and records in respect of the Works in such form and details as will clearly identify relevant time changes and costs.

The Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Procuring Entity and/or persons appointed by the Public Procurement Regulatory Authority to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Public Procurement Regulatory Authority. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 25.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Public Procurement Regulatory Authority's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Public Procurement Regulatory Authority's prevailing sanctions procedures).

23. Appointment of the Adjudicator

The Adjudicator shall be appointed jointly by the Procuring Entity and the Contractor, at the time of the Procuring Entity's issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority **designated in the SCC**, to appoint the Adjudicator within 14 days of receipt of such request.

Should the Adjudicator resign or die, or should the Procuring Entity and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the Procuring Entity and the Contractor. In case of disagreement between the Procuring Entity and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority **designated in the SCC** at the request of either party, within 14 days of receipt of such request.

24. Settlement of Claims and Disputes

Contractor's Claims

If the Contractor considers itself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give Notice to the Project Manager, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 30 days after the Contractor became aware, or should have become aware, of the event or circumstance.

If the Contractor fails to give notice of a claim within such period of 30 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub- Clause shall apply.

The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Procuring Entity's liability, the Project Manager may, after receiving any notice under this Sub-Clause, monitor the record- keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project Manager.

Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

a) this fully detailed claim shall be considered as interim;

b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Project Manager may reasonably require; and

c) the Contractor shall send a final claim within 30 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.

Within 42 days after receiving a Notice of a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within the above defined time period.

Within the above defined period of 42 days, the Project Manager shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

If the Project Manager does not respond within the timeframe defined in this Clause, either Party may consider that the claim is rejected by the Project Manager and any of the Parties may refer to Arbitration in accordance with Sub-Clause 24.4 [Arbitration].

The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause 24.3.

Amicable Settlement

Where a notice of a claim has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a notice of a claim in accordance with Sub-Clause 24.1 above should move to commence arbitration after the fifty-sixth day from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

Matters that may be referred to arbitration

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

a) The appointment of a replacement Project Manager upon the said person ceasing to act.
b) Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.
c) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
e) Any dispute arising in respect of war risks or war damage.
f) All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless the Procuring Entity and the Contractor agree otherwise in writing.

Arbitration

Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 24.3 shall be finally settled by arbitration.

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

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

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

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

The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Project Manager, relevant to the dispute. Nothing shall disqualify representatives

of the Parties and the Project Manager from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

Neither Party shall be limited in the proceedings before the arbitrators to the evidence, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.

Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Project Manager shall not be altered by reason of any arbitration being conducted during the progress of the Works.

24.4.8 The terms of the remuneration of each or all the members of Arbitration shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

Arbitration with National Contractors

If the Contract is with national contractors, arbitration proceedings will be conducted in accordance with the Arbitration Laws of Kenya. In case of any claim or dispute, such claim or dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed, on the request of the applying party, by the Chairman or Vice Chairman of any of the following professional institutions;

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

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

Alternative Arbitration Proceedings

Alternatively, the Parties may refer the matter to the Nairobi Centre for International Arbitration (NCIA) which offers a neutral venue for the conduct of national and international arbitration with commitment to providing institutional support to the arbitral process.

Failure to Comply with Arbitrator's Decision

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

In the event that a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to any other rights it may have, refer the matter to a competent court of law.

Contract operations to continue

Notwithstanding any reference to arbitration herein,

a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
b) the Procuring Entity shall pay the Contractor any monies due the Contractor.

25. Fraud and Corruption

The Government requires compliance with the country's Anti-Corruption laws and its prevailing sanctions policies and procedures as set forth in the Constitution of Kenya and its Statutes.

The Procuring Entity requires the Contractor to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

B. Time Control

1. Program

Within the time **stated in the SCC**, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump sum contract, the activities in the Program shall be consistent with those in the Activity Schedule.

An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period **stated in the SCC.** If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount **stated in the SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of a lump sum contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.

The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

2. Extension of the Intended Completion Date

The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.

The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

3. Acceleration

When the Procuring Entity wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Procuring Entity accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Procuring Entity and the Contractor.

If the Contractor's priced proposals for an acceleration are accepted by the Procuring Entity, they are incorporated in the Contract Price and treated as a Variation.

4. Delays Ordered by the Project Manager

The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.

5. Management Meetings

Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Procuring Entity. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

6. Early Warning

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

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

C. Quality Control

1. Identifying Defects

The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.

2. Tests

If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.

3. Correction of Defects

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

Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.

4. Uncorrected Defects

If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

D. Cost Control

1. Contract Price[7]

The Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.

2. Changes in the Contract Price[8]

If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change. The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Procuring Entity.

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

3. Variations

All Variations shall be included in updated Programs[9] produced by the Contractor.

The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.

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

If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

If the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 39.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work[10].

Value Engineering: The Contractor may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following;

a) the proposed change(s), and a description of the difference to the existing contract requirements;
b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs) the Procuring Entity may incur in implementing the value engineering proposal; and
c) a description of any effect(s) of the change on performance/functionality.

The Procuring Entity may accept the value engineering proposal if the proposal demonstrates benefits that:

a) accelerate the contract completion period; or
b) reduce the Contract Price or the life cycle costs to the Procuring Entity; or
c) improve the quality, efficiency, safety or sustainability of the Facilities; or
d) yield any other benefits to the Procuring Entity, without compromising the functionality of the Works.

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[7] *In lump sum contracts, replace GCC Sub-Clauses 36.1 as follows:*
36.1 The Contractor shall provide updated Activity Schedules within 14 days of being instructed to by the Project Manager. The Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to monitor and control the performance of activities on which basis the Contractor will be paid. If payment for materials on site shall be made separately, the Contractor shall show delivery of Materials to the Site separately on the Activity Schedule.

[8] *In lump sum contracts, replace entire GCC Clause 37 with new GCC Sub-Clause 37.1, as follows:*
The Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor's own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.

[9] *In lump sum contracts, add "and Activity Schedules" after "Programs."* [10] *In lump sum contracts, delete this paragraph.*

If the value engineering proposal is approved by the Procuring Entity and results in:

a) a reduction of the Contract Price; the amount to be paid to the Contractor shall be the **percentage specified in the SCC** of the reduction in the Contract Price; or

b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the Contractor shall be the full increase in the Contract Price.

4. Cash FlowForecasts

When the Program[11], is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

5. Payment Certificates

The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

The value of work executed shall be determined by the Project Manager.

The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed[12].

The value of work executed shall include the valuation of Variations and Compensation Events.

The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (*which would be the tender price*), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: *(corrected tender price – tender price)/tender price X 100*.

6. Payments

Payments shall be adjusted for deductions for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of each certificate. If the Procuring Entity makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.

If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.

Items of the Works for which no rate or price has been entered in shall not be paid for by the Procuring Entity and shall be deemed covered by other rates and prices in the Contract.

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[11] *In lump sum contracts, add "or Activity Schedule" after "Program."*

[12] *In lump sum contracts, replace this paragraph with the following: "The value of work executed shall comprise the value of completed activities in the Activity Schedule."*

7. Compensation Events

The following shall be Compensation Events:

a) The Procuring Entity does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.

b) The Procuring Entity modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.

c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.

d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.

e) The Project Manager unreasonably does not approve a subcontract to be let.

f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.

g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Procuring Entity, or additional work required for safety or other reasons.

h) Other contractors, public authorities, utilities, or the Procuring Entity does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.

i) The advance payment is delayed.

j) The effects on the Contractor of any of the Procuring Entity's Risks.

k) The Project Manager unreasonably delays issuing a Certificate of Completion.

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

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

The Contractor shall not be entitled to compensation to the extent that the Procuring Entity's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

8. Tax

The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 30 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 44.

9. Currency y of Payment

All payments under the contract shall be made in Kenya Shillings

10. Price Adjustment

Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC.** If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by

applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies:

P = A + B Im/Io

where: P is the adjustment factor for the portion of the Contract Price payable.

A and B are coefficients[13] **specified in the SCC,** representing the non-adjustable and adjustable portions, respectively, of the Contract Price payable and Im is the index prevailing at the end of the month being invoiced and IOC is the index prevailing 30 days before Bid opening for inputs payable.

If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

11. Retention

The Procuring Entity shall retain from each payment due to the Contractor the proportion **stated in the SCC** until Completion of the whole of the Works.

Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC 53.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an "on demand" Bank guarantee.

12. Liquidated Damages

The Contractor shall pay liquidated damages to the Procuring Entity at the rate per day **stated in the SCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount **defined in the SCC.** The Procuring Entity may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 41.1.

13. Bonus

The Contractor shall be paid a Bonus calculated at the rate per calendar day **stated in the SCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.

14. Advance Payment

The Procuring Entity shall make advance payment to the Contractor of the amounts **stated in the SCC** by the date **stated in the SCC,** against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Procuring Entity in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.

The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

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[13] *The sum of the two coefficients A_1 and B_2 should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the non-adjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other non-adjustable components. The sum of the adjustments for each currency are added to the Contract Price.*

The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

15. Securities

The Performance Security shall be provided to the Procuring Entity no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the SCC,** by a bank or surety acceptable to the Procuring Entity, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 day from the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year from the date of issue of the Completion Certificate in the case of a Performance Bond.

16. Dayworks

If applicable, the Dayworks rates in the Contractor's Bid shall be used only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

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

The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

17. Cost of Repairs

Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

1. Completion

The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the whole of the Works is completed.

2. Taking Over

The Procuring Entity shall take over the Site and the Works within seven days of the Project Manager's issuing a certificate of Completion.

3. Final Account

The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

4. Operating and Maintenance Manuals

If “as built” Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates **stated in the SCC.**

If the Contractor does not supply the Drawings and/or manuals by the dates **stated in the SCC** pursuant to GCC Sub-Clause 56.1**,** or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the SCC** from payments due to the Contractor.

5. Termination

The Procuring Entity or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

Fundamental breaches of Contract shall include, but shall not be limited to, the following:

a) the Contractor stops work for 30 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager;

b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;

c) the Procuring Entity or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction oramalgamation;

d) a payment certified by the Project Manager is not paid by the Procuring Entity to the Contractor within 84 days of the date of the Project Manager's certificate;

e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;

f) the Contractor does not maintain a Security, which is required;

g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the SCC**; or

h) if the Contractor, in the judgment of the Procuring Entity has engaged in Fraud and Corruption, as defined in paragraph 2.2 a of the Appendix A to the GCC, in competing for or in executing the Contract, then the Procuring Entity may, after giving fourteen (14) days written notice to the Contractor, terminate the Contract and expel him from the Site.

Notwithstanding the above, the Procuring Entity may terminate the Contract for convenience.

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

When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 56.2 above, the Project Manager shall decide whether the breach is fundamental ornot.

6. Payment upon Termination

If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as **specified in the SCC.** Additional Liquidated Damages shall not apply. If the total amount due to the Procuring Entity exceeds any payment due to the Contractor, the difference shall be a debt payable to the Procuring Entity.

If the Contract is terminated for the Procuring Entity's convenience or because of a fundamental breach of Contract by the Procuring Entity, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

7. Property

All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Procuring Entity if the Contract is terminated because of the Contractor's default.

8. Release from Performance

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

SECTION IX - SPECIAL CONDITIONS OF CONTRACT

Except where otherwise specified, all Special Conditions of Contract should be filled in by the Procuring Entity prior to issuance of the bidding document. Schedules and reports to be provided by the Procuring Entity should be annexed.

A. General	
GCC 1.1 (r)	Name of Procuring Entity SALARIES AND REMUNERATION COMMISSION, P.O BOX 43126-00100, NAIROBI Authorized Representative-CEO
GCC 1.1 (v)	The Intended Completion Date of the Whole of the Works 16 WEEKS FROM COMMENCEMENT DATE
GCC 1.1 (y)	The Project Manager is WORKS SECRETARY, STATE DEPARTMENT FOR PUBLIC WORKS, P.O Box 30743-00100, NAIROBI *[insert*
GCC 1.1 (aa)	The Site Is Located at 5th Floor, Williamson House, 4th Ngong Road, Upper Hill- Nairobi, Nairobi
GCC 1.1 (dd)	The Start Date Shall Be AS AGREED WITH THE PROJECT MANAGER
GCC 1.1 (hh)	The Works Consist Of OFFICE PARTITIONING /(FIT OUT WORKS), ELECTRICAL AND MECHANICAL WORKS AS PROVIDED IN THE BILLS OF QUANTITIES AND SPECIFICATIONS ATTACHED
GCC 2.2	Sectional Completions Are N/A
GCC 5.1	The Project Manager May Delegate his Duties and Resiponsibilities
GCC 8.1	Schedule of other Contractors:N/A
GCC 9.1	**Key Personnel** of the GCC 9.1 is replaced with the following: 9.1 Key Personnel are the Contractor's personnel named in this GCC 9.1 Special Conditions of Contract. The Contractor shall employ the Key Personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of Key Personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid. [insert the name/s of each Key Personnel agreed by the Procuring Entity prior to Contract signature.]
GCC 13.1	The minimum insurance amounts and deductibles shall be: (a) for Loss or Damage to Works Plant and Materials:- ENTIRE CONTRACT SUM (b) for Loss or Damage to Equipment **2,000,000.00** (c) for Loss or Damage to Property (Except works, plant, materials and equipment) in connection with the Contract: **5,000,000.00** (d) for personal injury or death: (i) of the Contractor's Employees AS PER THE APPLICABLE LAWS IN KENYA (ii) of other people: AS PER THE APPLICABLE LAWS IN KENYA

GCC 14.1	Site Data are: *N/A*
GCC 20.1	The Site Possession Date shall be AS AGREED WITH THE PROJECT MANAGER
GCC 23.1 & **GCC 23.2**	13.1 Appointing Authority for the Adjudicator Shall be Chairman or Vice Chairman of any of the following professional institutions; *(i) Architectural Association of Kenya* *(ii) Institute of Quantity Surveyors of Kenya* *(iii) Association of Consulting Engineers of Kenya* *(iv) Chartered Institute of Arbitrators (Kenya Branch)* *(v) Institution of Engineers of Kenya*
GCC 24.3	Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: *As Applicable*

B. Time Control

GCC 26.1	The Contractor shall submit for approval a Program for the Works within ***7No***. days from the date of the Letter of Acceptance.
GCC 26.3	The period between Program updates is *30No.* Days. The amount to be withheld for late submission of an updated Program is ***WHOLE CERTIFICATE***

C. Quality Control

GCC 34.1	The Defects Liability Period is: ***180*** **days.**

D. Cost Control

GCC 38.7	If the value engineering proposal is approved by the Procuring Entity the amount to be paid to the Contractor shall be *N/A_%* *The percentage is normally up to 50%)* of the reduction in the Contract Price.
GCC 44.1	The currency of the Procuring Entity's Country is: *KENYA SHILLINGS*
GCC 45.1	The Contract ***IS NOT*** subject to price adjustment in accordance with GCC Clause 45, and the following information regarding coefficients *does not* apply. The coefficients for adjustment of prices are: (a) *N/A percent* nonadjustable element (coefficient A). (b) *N/A percent* adjustable element (coefficient B). (c) The Index I for shall be *N/A.*
GCC 46.1	The proportion of payments retained is: 10%

GCC 47.1	The liquidated damages for the whole of the Works are Kshs.***15, 000*** **per Week.** The maximum amount of liquidated damages for the whole of the Works is *10%* of the final Contract Price.

GCC 48.1	The ~~Bonus~~ for the whole of the Works is *N/A* per day. The maximum amount of Bonus for the whole of the Works is *[insert percentage}* of the final Contract Price.
GCC 49.1	The Advance Payments shall **NOT BE GRANTED**
GCC 50.1	The **Performance Security** amount is ***1%*** of contract sum denominated in the types and proportions of the currencies in which the Contract Price is payable, or in a freely convertible currency acceptable to the Procuring Entity (a) Performance Security - Bank Guarantee: in the amount(s) of *as above* percent of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract Amount.

E. Finishing the Contract

GCC 56.1	The date by which operating and maintenance manuals are required is *UPON PRACTICAL COMPLETION* The date by which "as built" drawings are required is *UPON PRACTICAL COMPLETION*
GCC 56.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required in GCC 58.1 is *AS DETERMINED BY THE PROJECT MANAGER*
GCC 57.2 (g)	The maximum number of days is: *AS DETERMINED BY THE PROJECT MANAGER*
GCC 58.1	The percentage to apply to the value of the work not completed, representing the Procuring Entity's additional cost for completing the Works, is *AS DETERMINED BY THE PROJECT MANAGER*

FORM No 1: NOTIFICATION OF INTENTION TO AWARD

This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender. Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form on the format below.

FORMAT

1. For the attention of Tenderer's Authorized Representative
   - *i)* Name: *[insert Authorized Representative's name]*
   - *ii)* Address: *[insert Authorized Representative's Address]*
   - *iii)* Telephone: *[insert Authorized Representative's telephone/fax numbers]*
   - *iv)* Email Address: *[insert Authorized Representative's email address]*

   [IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

2. Date of transmission: [*email*] on [*date*] (local time)

   This Notification is sent by (*Name and designation*) _____

3. Notification of Intention to Award

   - *i)* Procuring Entity: *[insert the name of the Procuring Entity]*
   - *ii)* Project: *[insert name of project]*
   - *iii)* Contract title: *[insert the name of the contract]*
   - *iv)* Country: *[insert country where ITT is issued]*
   - *v)* ITT No: *[insert ITT reference number from Procurement Plan]*

   This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

4. Request a debriefing in relation to the evaluation of your tender

   Submit a Procurement-related Complaint in relation to the decision to award the contract.

   a) The successful tenderer

      i) Name of successful Tender_____

      ii) Address of the successful Tender _____

      iii) Contract price of the successful Tender Kenya Shillings (in words_____)

   b) Other Tenderers

   Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out. For Tenders not evaluated, give one main reason the Tender was unsuccessful.

SNo	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why not Evaluated
1				
2				
3				
4				
5				

(Note a) State NE if not evaluated

5. How to request a debriefing

a) DEADLINE: The deadline to request a debriefing expires at midnight on [*insert date*] (*local time*).

b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (5) Business Days of receipt of this Notification of Intention to Award.

c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:

i) Attention: [*insert full name of person, if applicable*]

ii) Title/position: [*insert title/position*]

ii) Agency: [*insert name of Procuring Entity*]

iii) Email address: [*insert email address*]

d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (3) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (3) Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.

e) The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.

f) If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Days from the date of publication of the Contract Award Notice.

6. How to make a complaint

a) Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, [*insert date*] (local time).

b) Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:

i) Attention: [*insert full name of person, if applicable*]

ii) Title/position: [*insert title/position*]

iii) Agency: [*insert name of Procuring Entity*]

iv) Email address: [*insert email address*]

c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available from the Website info@ppra.go.ke or complaints@ppra.go.ke.

You should read these documents before preparing and submitting your complaint.

e) There are four essential requirements:

i) You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tendering process, and is the recipient of a Notification of Intention to Award.

ii) The complaint can only challenge the decision to award the contract.

iii) You must submit the complaint within the period stated above.

iv) You must include, in your complaint, all of the information required to support your complaint.

7. Standstill Period

i) DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).

ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.

iii) The Standstill Period may be extended as stated in paragraph Section 5 (d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature:_____ Name:_____

Title/position:_____ Telephone:___ Email: _____

FORM NO 2: NOTIFICATION OFAWARD - LETTER OFACCEPTANCE

[letterhead paper of the Procuring Entity] [date]

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers, is hereby accepted by …… (*name of Procuring Entity)*.

You are requested to furnish the Performance Security within 30 days in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the Tender Document.

Authorized Signature:.....

Name and Title of Signatory:.....

Name of Procuring Entity.....

Attachment: *Contract Agreement*.....

FORM NO 3: CONTRACT AGREEMENT

THIS AGREEMENT made the_____day of_____, 20____, between _____of _____ (hereinafter "the Procuring Entity"), of the one part, and_____of_____(hereinafter "the Contractor"), of the other part:

WHEREAS the Procuring Entity desires that the Works known as_____should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Procuring Entity and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
   a) the Letter of Acceptance
   b) the Letter of Tender
   c) the addenda Nos_____(if any)
   d) the Special Conditions of Contract
   e) the General Conditions of Contract;
   f) the Specifications
   g) the Drawings*;* and
   h) the completed Schedules and any other documents forming part of the contract.

3. In consideration of the payments to be made by the Procuring Entity to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Procuring Entity to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the Laws of Kenya on the day, month and year specified above.

Signed and sealed by_____(for the Procuring Entity)

Signed and sealed by_____(for the Contractor).

FORM NO. 4 - PERFORMANCE SECURITY

[Option 1 - Unconditional Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[insert name and Address of* Procuring Entity*]* **Date:** _____

_____ *[Insert date of issue]*

Guarantor: [*Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ dated _____ with (*name of Procuring Entity*) _____ (the Procuring Entity as the Beneficiary), for the execution of _____ (hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

3. At the request of the Contractor, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (*in words*),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

4. This guarantee shall expire, no later than the …. Day of ……, 2...…[2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

5. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

[Name of Authorized Official, signature(s) and seals/stamps].

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2] *Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM No. 5 - PERFORMANCE SECURITY

[Option 2– Performance Bond]

[Note: Procuring Entities are advised to use Performance Security – Unconditional Demand Bank Guarantee instead of Performance Bond due to difficulties involved in calling Bond holder to action]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: _____ *[insert name and Address of* Procuring Entity*]* **Date:** _____ *[Insert date of issue]***.**

PERFORMANCE BONDNo.: _____

Guarantor: [*Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond _____ as Principal (hereinafter called "the Contractor") and _____] as Surety (hereinafter called "the Surety"), are held and firmly bound unto _____] as Obligee (hereinafter called "the Procuring Entity") in the amount of _____ for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the _____ day of _____, 20 , for _____ in accordance with the documents, plans, specifications, and amendments thereto, which to the extent herein provided for, are by reference made part hereof and are hereinafter referred to as the Contract.

3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:
   1) complete the Contract in accordance with its terms and conditions; or
   2) obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or
   3) pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.

4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named herein or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.

6. In testimony whereof, the Contractor has hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this day _____ of .20_____.

SIGNED ON _____ on behalfof By____ in the capacity of In the presence of

SIGNED ON _____ on behalf of By___ in the capacity of In the presence of

FORM NO. 6 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[Insert name and Address of* Procuring Entity*]*
Date: _____ *[Insert date of issue]*

ADVANCE PAYMENTGUARANTEE No.: _____ *[Insert guarantee reference number]* **Guarantor:**

_____ **[***Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ *dated* _____ with the Beneficiary, for the execution of _____

2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ (*in words*) is to be made against an advance payment guarantee.

3. At the request of the Contractor, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (*in words* _____)[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
   a) has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
   b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Contractor on its account number _____ at _____.

5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the _____ day of _____, 2 ,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months][one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

[1] *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency of the advance payment as specified in the Contract.*

[2] *Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM NO. 7 - RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____*[Insert name and Address of* Procuring Entity*]*

Date:_____*[Insert date of issue]*

Advance payment guarantee no. *[Insert guarantee reference number]*

Guarantor: [*Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have beeninformed that_____*[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Contractor") has entered into Contract No. _____*[insert reference number of the contract]* dated_____with the Beneficiary, for the execution of_____*[insert name of contract and brief description of* Works*]* (hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of *[*insert the second half of the Retention Money] is to be made against a Retention Money guarantee.

3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* ___(*[insert amount in words*__ obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number_____at *[insert name and address of Applicant's bank]*.

5. This guarantee shall expire no later than the …..... Day of ….....……, 2.....…[2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year],* in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]
Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

[1]*The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.*

[2]*Insert a date that is twenty-eight days after the expiry of retention period after the actual completion date of the contract. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

ITEM	DESCRIPTION	AMOUNT
	PARTICULAR PRELIMINARIES	
A	**PRICING ITEMS OF PRELIMINARIES** Prices will be inserted against items of Preliminaries in the Contractor's priced Bills of Quantities and Specification. The Contractor shall be deemed to have included in his prices or rates for the various items in the Bills of Quantities or Specification for all costs involved in complying with all the requirements for the proper execution of the whole of the works in the Contract. Failure to price an item shall not exempt the contractor from carrying out works described therein. Should the contractor fail to carry out works which he/she did not price and after having received a written instruction from the Project Manager, then the value of such works shall be deducted from the very immediate certificate issued to the contractor. *Preliminaries to the contract are mandatory conditions and resiponsibilities, the contractor is required to observe and fulfill for complete and proper execution of the contract.The contractor is advised to read and understand all his obligations under preliminaries.Should he find that fulfilment of any of the items will lead to him incurring any cost not covered under measured works or any other part of these bills of Quantities, he shall price such items.*	
B	**DESCRIPTION OF THE WORKS** The works to be carried out under this contract comprise; OFFICE PARTITIONING/(FIT OT WORKS) AND ELECTRICAL MECHANICAL WORKS AS SPECIFIED IN THE BILLS OF QUANTITIES The Contractor is advised to visit the site, to familiarize with the nature and position of the site. No claims arising from the Contractor’s failure to do so will be allowed.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**LOCATION OF SITE** The site of the proposed works is at **Williamson House along 4th Ngong Avenue, Kilimani, Nairobi** The Contractor is advised to visit the site, to familiarize with the nature and position of the site. No claims arising from the Contractor's failure to do so will be entertained.	
B	**BID BOND** A bid bond shall be required in terms of clause 3.7 of instructions to tenderers or the amount stated in the invitation to tender or advertisement The Bid bond shall be from EITHER an approved insurance company or bank.	
C	**CLEARING AWAY** The Contractor shall remove all temporary works, rubbish, debris and surplus materials from the site as they accumulate and upon completion of the works, remove and clear away all plant, equipment, rubbish, unused materials and stains and leave in a clean and tidy state to the reasonable satisfaction of the Project Manager The whole of the works shall be delivered up clean, complete and in perfect condition in every respect to the satisfaction of the Project Manager	
D	**WORKING CONDITIONS** This is a rented site with other occupants.The contractor must allow for compliance with all County & Civic Authority laws & regulations	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**CLAIMS** It shall be a condition of this contract that upon it becoming reasonably apparent to the Contractor that he has incurred losses and/or expenses due to any of the contract conditions, or by any other reason whatsoever, he shall present such claim or intent to claim notice to the PROJECT MANAGER within the contract period. No claims shall be entertained upon the expiry of the said contract period.	
B	**LABOUR CAMPS** The Contractor shall not be allowed to house labour on site. Allow for transporting workers to and from the site during the tenure of the contract.	
C	**PRICING RATES**	
i	The tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities.	
ii	**Items for which no rate or price is entered by the tenderer shall be deemed to be covered in the rates and prices of the priced items in the Bill of Quantities.**	
iii	The tenderer shall include for all costs in executing the whole of the works, including transport, replacing damaged items, fixing, all to comply with the Conditions of Contract*./The contract is broken down to work item that in total describes all that is required to have the contract works satisfactorily completed.The rate for anyitem of the works described shall therefore include executing the item to the final fixed and working state including material purchase and transport, fixing in position, replacing damaged items, all statutory levies and taxes (including VAT) and site and head office overheads.*	
iv	Prices quoted must be in Kenya shillings .	
v	Prices shall remain valid for one hundred and fifty (150) days from the closing date of tender.	
vi	The rates and prices quoted by the tenderer shall only be subject to adjustment during the performance of the Contract if provided for in the Appendix to Conditions of Contract and provisions made in the Conditions of Contract.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**MATERIALS FROM DEMOLITIONS** Any materials arising from demolitions SHALL NOT BE re-used and shall become the property of the client unless otherwise advised.	
B	**URGENCY OF THE WORKS** The Contractor is notified that these **"works are urgent"** and should be completed within the period stated in Particular Preliminaries.The Contractor shall allow in his rates for any costs he/she may incur by having to complete the works within the stipulated contract period.	
C	**PAYMENT FOR MATERIALS ON SITE** Valuation for interim payment certificates shall be based on work done and materials delivered to site in accordance with clause 23 of the Conditions of contract.However, in certain circumstances the Project manager may allow for payment of materials procured purposely for the project but stored either at the contactor's yard or workshop.Such circumstances include where materials are used for fabrication of components for the project or a material or equipment is bought in advance but has to await the completion of some portion of the works necessary for their installation.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**ADVANCE PAYMENTS** The tenderer's attention is drawn to the fact that the Government does not make advance payments.	
B	**EXISTING SERVICES** Prior to the commencement of any work, the Contractor is to ascertain from the relevant authority the exact position, depth and level of all existing services in the area and shall make whatever provisions may be required by the authorities for the support, maintenance and protection of such services.	
C	**MEASUREMENTS** In the event of any discrepancies arising between the Bills of Quantities and the actual works, the site measurements shall take precedence. However, such discrepancies between any contract documents shall immediately be referred to the PROJECT MANAGER in accordance with Clause 22 of the Conditions of Contract. The discrepancies shall then be treated as a variation and be dealt with in accordance with Clause 22 of the said Conditions.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
	TRANSPORT AND LUNCH ALLOWANCE	
A	Allow PROVISIONAL SUM of Kenya Shillings FIVE HUNDRED THOUSAND only for Transport and Lunch allowances to be expended as directed by the Project Manager	500,000.00
B	Allow for profits and overheads (%)	
	AIR TIME	
C	Allow PROVISIONAL SUM of Kenya Shillings FIFTY THOUSAND only for Air time to be expended as directed by the Project Manager	50,000.00
D	Allow for profits and overheads (%)	
	STATIONERY	
E	Allow PROVISIONAL SUM of Kenya Shillings FIVE HUNDRED THOUSAND only for Stationery to be expended as directed by the Project Manager	500,000.00
F	Allow for profits and overheads (%)	
	CLERK OF WORKS	
G	Allow PROVISIONAL SUM of Kenya Shillings THREE HUNDRED THOUSAND only	300,000.00
H	Allow for profits and attendance (%)	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	PARTICULARS OF INSERTIONS TO BE MADE IN APPENDIX TO CONTRACT AGREEEMENT	
	The following are the insertions to be made in the appendix to the contract Agreement:-	
A	**Period of Final Measurement** 3 Months from Practical Completion	
B	**Defects Liability Period** 6 Months from Practical Completion	
C	**Date for Possession** To be agreed with the Project Manager	
D	**Date for Completion** **16 WEEKS** from the Date of possession	
E	**Liquidated and Ascertained Damages** At a rate of **KSh 15,000 Per week or part thereof**	
F	**Period of Interim Certificates** Monthly	
G	**Period of Honouring Certificates** 30 Days	
H	**Percentage of Certified Value Retained 10%**	
I	**Limit of Retention Fund 10%**	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
	COLLECTION	
	Brought forward from page PP/1	
	Brought forward from page PP/2	
	Brought forward from page PP/3	
	Brought forward from page PP/4	
	Brought forward from page PP/5	
	Brought forward from page PP/6	
	Brought forward from page PP/7	
	TOTAL PARTICULAR PRELIMINARIES CARRIED TO GRAND SUMMARY	

ITEM	DESCRIPTION	AMOUNT
	GENERAL PRELIMINARIES	
A	**ABBREVIATIONS** Throughout these Bills units of measurement and terms are abbreviated and shall be interpreted as follows:- CM or Cm — Shall mean cubic meter SM or Sm — Shall mean square meter LM or Lm — Shall mean linear meter MM or mm — Shall mean Millimeter KG or Kg. — Shall mean Kilogramme No or Nr — Shall mean Number PRS or Prs. — Shall mean Pairs B.S. — Shall mean the British Standard Specification Published by the British Standards Institution, 2 Park Street, London W.I England M.S. — Shall mean measured separately Ditto — shall mean the whole of the preceding description except as qualified in the description in which it occurs. Do — shall mean the whole of the preceding description except as qualified in the description in which it occurs. a.b. — Shall mean as above a.b.d. — Shall mean as before described	
B	**FORM OF CONTRACT** The Form of Contract shall be as stipulated in the Republic of Kenya's Standard Tender Document for Procurement of Building Works (2007 Edition) included herein. The Conditions of Contract are also included herein.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**FIRM PRICE CONTRACT** Unless otherwise specifically stated in the Contract Data and/or Particular preliminaries this is a firm price contract and the contractor must allow in his tender rates for any increase in the cost of labour and/or materials during the execution of the contract.	
B	**PERFORMANCE BOND** The contactor shall within 14 days after receipt of letter of acceptance in accordance with clause 6.5 of instructions to tenderers (as ammended in Appendix to instructions to tenderers) submit a Bond from an approved bank in an amount equal to five percent (5%) of the contract sum for the due performances of the contract up to the date of the issuance of the certificate of practical completion by the Project Manager.The format of the Bond shall be as per the standard form of perfomance security form annexed herrein (without the addition of any limitations)In case the Bond submitted is not accetable to the Employer, the contractor shall submit acceptable bond within seven days.	
C	**EXCEPTION TO THE STANDARD METHOD OF MEASUREMENT** **Attendance ;** Clause B19(a) of the Standard Method of Measurement is deleted and the following clause is substituted:- Attendance on nominated Sub-Contractors shall be given as an item in each case shall be deemed to include: allowing use of standing scaffolding, mess rooms, sanitary accommodation and welfare facilities; provision of special scaffolding where necessary;providing space for office accommodation and for storage of plant and materials;providing light and water for their work: clearing away rubbish; unloading checking and hoisting: providing electric power and removing and replacing duct covers, pipe casings and the like necessary for the execution and testing of Sub- Contractors' work and being responsible for the accuracy of the same.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
	PARTIES TO THE CONTRACT	
A	**EMPLOYER** The "Employer" is **SALARIES AND REMUNERATION COMMISSION** P.O BOX 43126-00100, NAIROBI The term "Employer" and "Government" wherever used in this contract document shall be synonymous	
B	**PROJECT MANAGER shall be -:** The term "P.M." wherever used in these Bills of Quantities shall be deemed to imply the Project Manager as defined in Condition 1 of the Conditions of Contract or such person or persons as may be duly authorised to represent him on behalf of the Government. In this Project, the Project Manager shall be -: **WORKS SECRETARY(STATE DEPARTMENT FOR PUBLIC WORKS)** **P.O. BOX 30743-00100** **NAIROBI**	
C	**ARCHITECT** The term "Architect" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is as above	
D	**QUANTITY SURVEYOR** The term "Quantity Surveyor" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is as above	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**ELECTRICAL ENGINEER** The term "Electrical Engineer" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is as above	
B	**MECHANICAL ENGINEER** The term "Mechanical Engineer" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is as above	
C	**STRUCTURAL ENGINEER** The term "Structural Engineer" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is as above	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**PLANT, TOOLS AND VEHICLES** Allow for providing all scaffolding, plant, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for the use of nominated Sub-Contractors as described herein. No timber used for scaffolding, formwork or temporary works of any kind shall be used afterwards in the permanent work.	
B	**MATERIALS AND WORKMANSHIP.** All materials and workmanship used in the execution of the work shall be of the best quality and description unless otherwise stated. The Contractor shall order all materialsto be obtained from overseas immediately after the Contract is signed and shall also order materials to be obtained from local sources as early as necessary to ensure that they are onsite when required for use in the works. The Bills of Quantities shall not be used for the purpose of ordering materials.	
C	**SIGN FOR MATERIALS SUPPLIED.** The contractor will be required to sign for all items, including Drawing, Bills of Quantities and site instructions, supplied by the PROJECT MANAGER at the time of taking delivery thereof, as prove of receipt in good time and order.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**STORAGE OF MATERIALS** The Contractor shall provide at his own risk and cost where directed on the site weather proof lock-up sheds and make good damaged or disturbed surfaces upon completion to the satisfaction of the PROJECT MANAGER Nominated Sub-Contractors are to be made liable for the cost of any storage accommodation provided especially for their use.	
B	**SAMPLES** The Contractor shall furnish at his own cost any samples of materials or workmanship including concrete test cubes required for the works that may be called for by the PROJECT MANAGER for his approval until such samples are approved by the PROJECT MANAGER and the PROJECT MANAGER, may reject any materials or workmanship not in his opinion to be up to approved samples. The PROJECT MANAGER shall arrange for the testing of such materials as he may at his discretion deem desirable, but the testing shall be made at the expense of the Contractor and not at the expense of the PROJECT MANAGER PROVIDED THEY PASS THE TEST. The Contractor shall pay for the testing in accordance with the current scale of testing charges laid down by the Ministry of Public Works. The procedure for submitting samples of materials for testing and the method of marking for identification shall be as laid down by the PROJECT MANAGER The Contractor shall allow in his tender for such samples and tests except those in connection with nominated sub-contractors' work. Samples of paint, carpets, curtains & covers, tiles & timber shall be required for approval by the PM together with the employer. No alternte rate shall be offered on account that the employer has chosen a superior finish unless the bidder had attached the sample he priced.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**PUBLIC AND PRIVATE ROADS.** Maintain as required throughout the execution of the works and make good any damage to public or private roads arising from or consequent upon the execution of the works to the satisfaction of the local and other competent authority and the PROJECT MANAGER	
B	**EXISTING PROPERTY.** The Contractor shall take every precaution to avoid damage to all existing property including roads, cables, drains and other services and he will be held responsible for and shall make good all such damage arising from the execution of this contract at his own expense to the satisfaction of the PROJECT MANAGER	
C	**ACCESS TO SITE AND TEMPORARY ROADS.** Means of access to the Site shall be agreed with the PROJECT MANAGER prior to commencement of the work and Contractor must allow for building any necessary temporary access roads for the transport of the materials, plant and workmen as may be required for the complete execution of the works including the provision of temporary culverts, crossings, bridges, or any other means of gaining access to the Site. Upon completion of the works, the Contractor shall remove such temporary access roads; temporary culverts, bridges, etc., and make good and reinstate all works and surfaces disturbed to the satisfaction of the PROJECT MANAGER	
D	**AREA TO BE OCCUPIED BY THE CONTRACTOR** The area of the site which may be occupied by the Contractor for use of storage and for the purpose of erecting workshops, etc., shall be defined on site by the PROJECT MANAGER	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**SECURITY OF WORKS ETC.** The Contractor shall be entirely responsible for the security of all the works stores,materials, plant, personnel, etc., both his own and sub-contractors' and must provide all necessary watching, lighting and other precautions as necessary to ensure security against theft, loss or damage and the protection of the public.	
B	**PROGRESS CHART.** The Contractor shall provide within two weeks of Possession of Site and in agreement with the PROJECT MANAGER a Progress Chart for the whole of the works including the works of Nominated Sub-Contractors ; one copy to be handed to the PROJECT MANAGER and a further copy to be retained on Site. Progress to be recorded and chart to be amended as necessary as the work proceeds.	
C	**INSURANCE** The Contractor shall insure as required in Conditions No. 30 of the Conditions of Contract. No payment on account of the work executed will be made to the Contractor until he has satisfied the PROJECT MANAGER either by production of an Insurance Policy or and Insurance Certificate that the provision of the foregoing Insurance Clauses have been complied with in all respects. Thereafter the PROJECT MANAGER shall from time to time ascertain that premiums are duly paid up by the Contractor who shall if called upon to do so, produce the receipted premium renewals for the PROJECT MANAGER's inspection.	
D	**CONTRACTOR'S SUPERINTENDENCE/SITE AGENT** The Contractor shall constantly keep on the works a literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the Project Manager and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**PROVISIONAL WORK** All work described as "Provisional" in these Bills of Quantities is subject to remeasurement in order to ascertain the actual quantity executed for which payment will be made. All "Provisional" and other work liable to adjustment under this Contract shall left uncovered for a reasonable time to allow all measurements needed for such adjustment to be taken by the PROJECT MANAGER Immediately the work is ready for measuring, the Contractor shall give notice to the PROJECT MANAGER. If the Contractor makes default in these respects he shall if the PROJECT MANAGER so directs uncover the work to enable all measurements to be taken and afterwards reinstate at his own expense.	
B	**PROVISIONAL SUMS.** The term "Provisional Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7(i) of the Standard Method of Measurement.Such sums are net and no addition shall be made to them for profit.	
C	**ADJUSTMENT OF PROVISIONAL SUMS.** In the final account all Provisional Sums shall be deducted and the value of the work properly executed in respect of them upon the PROJECT MANAGER's order added to the Contract Sum. Such work shall be valued , but should any part of the work be executed by a Nominated Sub-Contractor, the value of such work or articles for the work to be supplied by a Nominated Supplier, the value of such work or articles shall be treated as a P.C. Sum and profit and attendance comparable to that contained in the priced Bills of Quantities for similar items added.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**PRIME COST (OR P.C.) SUMS.** The term "Prime Cost Sum" or "P.C. Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7 (ii) of the Standard Method of Measurement . Persons or firms nominated by the PROJECT MANAGER to execute work or to provide and fix materials or goods are described herein as Nominated Sub-Contractors.Persons or firms so nominated to supply goods or materials are described herein as Nominated Suppliers.	
B	**ADJUSTMENT OF P.C. SUMS.** In the final account all P.C. Sums shall be deducted and the amount properly expended upon the PROJECT MANAGER'S order in respect of each of them added to the Contract sum. The Contractor shall produce to the PROJECT MANAGER such quotations, invoices or bills, properly receipted, as may be necessary to show the actual details of the sums paid by the Contractor. Items of profit upon P.C. Sums shall be adjusted in the final account pro-rata to the amount paid. Items of "attendance" (as previously described) following P.C. Sums shall be adjusted pro-rata to the physical extent of the work executed (not pro-rata to the amount paid) and this shall apply even though the Contractor's priced Bill shows a percentage in the rate column in respect of them. Should the Contractor be permitted to tender and his tender be accepted of any work for which a P.C. Sum is included in these Bill of Quantities profit and attendance will be allowed at the same rate as it would be if the work were executed by a Nominated Sub-Contractor.	
C	**NOMINATED SUB-CONTRACTORS** When any work is ordered by the PROJECT MANAGER to be executed by nominated sub-contractors, the Contractor shall enter into sub-contracts and shall thereafter be responsible for such sub-contractors in every respect. Unless otherwise described the Contractor is to provide for such Sub-Contractors any or all of the facilities described in these Preliminaries. The Contractor should price for these with the nominated Sub-contract Contractor's work concerned in the P.C. Sums under the description "add for Attendance".	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**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 instances, profit relative to the P.C. Sum the priced Bills of Quantities will be adjusted as described for P.C. Sums and allowed.	
B	**ATTENDANCE UPON OTHER 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 use of his ordinary scaffolding. The Contractor, however, shall not be required to erect any special scaffolding for them. The Contractor shall perform such cutting away for and making good after the work of such tradesmen or persons as may be ordered by the PROJECT MANAGER and the work will be measured and paid for to the extent executed at rates provided in these Bills.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
	OFFICE FOR THE PROJECT MANAGER	
A	The Contractor shall provide, erect and maintain where directed on site and afterwards dismantle the site office of the type noted in the Particular Preliminaries, complete with Furniture. He shall also provide a strong metal trunk complete with strong hasp and staple fastening and two keys. He shall provide, erect and maintain a lock-up type water or bucket closet for the sole use of the PROJECT MANAGER including making temporary connections to the drain where applicable to the satisfaction of Government and shall provide services of cleaner and pay all conservancy charges and keep both office and closet in a clean and sanitary condition from commencement to the completion of the works and dismantle and make good disturbed surfaces. The office and closet shall be completed before the Contractor is permitted to commence the works. The Contractor shall make available on the Site as and when required by the "PROJECT MANAGER" a modern and accurate level together with levelling staff, ranging rods and 50 metre metallic or linen tape.	
B	**WATER AND ELECTRICITY SUPPLY FOR THE WORKS** The Contractor shall provide at his own risk and cost all necessary water, electric light and power required for use in the works. The Contractor must make his own arrangements for connection to the nearest suitable water main and for metering the water used. He must also provide temporary tanks and meters as required at his own cost and clear away when no longer required and make good on completion to the entire satisfaction of the PROJECT MANAGER . The Contractor shall pay all charges in connection herewith. No guarantee is given or implied that sufficient water will be available from mains and the Contractor must make his own arrangements for augmenting this supply at his own cost. Nominated Sub--contractors are to be made liable for the cost of any water or electric current used and for any installation provided especially for their own use.	
C	**SANITATION OF THE WORKS** The Sanitation of the works shall be arranged and maintained by the Contractor to the satisfaction of the Government and/or Local Authorities, Labour Department and the PROJECT MANAGER	
D	**SUPERVISION AND WORKING HOURS** The works shall be executed under the direction and to the entire satisfaction in all respects of the PROJECT MANAGER who shall at all times during normal working hours have access to the works and to the yards and workshops of the Contractor and sub-Contractors or other places where work is being prepared for the contract.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**PROTECTION OF THE WORKS.** Provide protection of the whole of the works contained in the Bills of Quantities,including casing , casing up, covering or such other means as may be necessary to avoid damage to the satisfaction of the PROJECT MANAGER and remove such protection when no longer required and make good any damage which may nevertheless have been done at completion free of cost to the Government.	
B	**WORKS TO BE DELIVERED UP CLEAN** Clean and flush all gutters, rainwater and waste pipes, manholes and drains, wash (except where such treatment might cause damage) and clean all floors, sanitary fittings,glass inside and outside and any other parts of the works and remove all marks,blemishes, stains and defects from joinery, fittings and decorated surfaces generally,polish door furniture and bright parts of metalwork and leave the whole of the buildings watertight, clean, perfect and fit for occupation to the approval of the PROJECT MANAGER	
C	**GENERAL SPECIFICATION.** For the full description of materials and workmanship, method of execution of the work and notes for pricing, the Contractor is referred to the Ministry of Roads and Public Works and Housing General Specification dated 1976 or any subsequent revision thereof which is issued as a separate document, and which shall be allowed in all respects unless it conflicts with the General Preliminaries, Trade Preambles or other items in these Bills of Quantities.	
D	**TRAINING LEVY** The Contractor's attention is drawn to legal notice No. 237 of October, 1971, which requires payment by the Contractor of a Training Levy at the rate of 1/4 % of the Contract sum on all contracts of more than Kshs. 50,000.00 in value.	
E	**MATERIALS ON SITE** All materials for incorporation in the works must be stored on or adjacent to the site before payment is effected unless specifically exempted by the PROJECT MANAGER. This includes the materials of the Main Contractor, Nominated Sub-Contractors and Nominated Suppliers.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**ALTERATIONS TO BILLS, PRICING, ETC.** Any unauthorised alteration or qualification made to the text of the Bills of Quantities may cause the Tender to be disqualified and will in any case be ignored. The Contractor shall be deemed to have made allowance in his prices generally to cover any items against which no price has been inserted in the priced Bills of Quantities.All items of measured work shall be priced in detail and the Tenders containing Lump Sums to cover trades or groups of work must be broken down to show the price of each item before they will be accepted.	
B	**MATERIALS ARISING FROM EXCAVATIONS** Materials of any kind obtained from the excavations shall be the property of the Government. Unless otherwise provided for in the particular preliminaries. Such materials shall only be used in the works, in substitution of materials which the Contractor would otherwise have had to supply with the written permission of the PROJECT MANAGER Should such permission be given, the Contractor shall make due allowance for the value of the materials so used at a price to be agreed.	
C	**PREVENTION OF ACCIDENT, DAMAGE OR LOSS** The Contractor is notified that these works are to be carried out on a restricted site where the client is going on with other normal activities. The Contractor is instructed to take reasonable care in the execution of the works as to prevent accidents, damage or loss and disruption of normal activities being carried out by the Client. The Contractor shall allow in his rates any expense he deems necessary by taking such care within the site.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**GOVERNMENT ACTS REGARDING WORKPEOPLE ETC.** Allow for complying with all Government Acts, Orders and Regulations in connection with the employment of Labour and other matters related to the execution of the works. In particular the Contractor's attention is drawn to the provisions of the Factory Act 1950 and his tender must include for all costs arising or resulting from compliance with any Act, Order or Regulation relating to Insurances, pensions and holidays for workpeople or so the safety, health and welfare of the workpeople. The Contractor must make himself fully acquainted with current Acts and Regulations,including Police Regulations regarding the movement, housing, security and control of labour, labour camps , passes for transport, etc. It is most important that the Contractor, before tendering, shall obtain from the relevant Authority the fullest information regarding all such regulations and/or restrictions which may affect the information regarding all such regulations and/or restrictions which may affect the organisation of the works, supply and control of labour, etc., and allow accordingly in his tender. No claim in respect of want of knowledge in this connection will be entertained.	
B	**BLASTING OPERATIONS** Blasting will only be allowed with the express permission of the PROJECT MANAGER in writing. All blasting operations shall be carried out at the Contractor's sole risk and cost in accordance with any Government regulations in force for the time being, and any special regulations laid down by the PROJECT MANAGER governing the use and storage of explosives.	
C	**SIGNBOARD** Allow for providing, erecting, maintaining throughout the course of the Contract and afterwards clearing away a signboard as designed, specified and approved by the Project Manager.	
	Total carried to collection	

ITEM	DESCRIPTION	AMOUNT
	COLLECTION	
	Brought Forward From Page GP/1	
	Brought Forward From Page GP/2	
	Brought Forward From Page GP/3	
	Brought Forward From Page GP/4	
	Brought Forward From Page GP/5	
	Brought Forward From Page GP/6	
	Brought Forward From Page GP/7	
	Brought Forward From Page GP/8	
	Brought Forward From Page GP/9	
	Brought Forward From Page GP/10	
	Brought Forward From Page GP/11	
	Brought Forward From Page GP/12	
	Brought Forward From Page GP/13	
	Brought Forward From Page GP/14	
	Brought Forward From Page GP/15	
	TOTAL GENERAL PRELIMINARIES CARRIED TO GRAND SUMMARY	

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	DOWNTAKINGS (PROVISIONAL)				
A	Carefully dismantle existing aluminium glass partitioning approximately 50 metres long, 2.1 metres high; make good adjacent surfaces to receive new partitioning; store arising material as directed.		Item		
	Total Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	PARTITIONS				
	GYPSUM BOARDS AND ALUMINIUM PARTITIONS				
A	12mm thick gypsum boards partition screwed on and including 50 x 50 x 1.2mm thick top aluminium frame screwed onto concrete beams, 50 x 50 x 1.2mm thick middle frame and 50 x 50 x 1.2mm thick bottom aluminium frame screwed onto concrete floor and 50 x 50 x 1.2 mm thick vertical frames at 600mm c/c.	463	SM		
	Aluminium frames grey powder coated				
B	100 x 50mm frame rail plugged and screwed to existing concrete floor	258	LM		
C	Ditto transome frame screwed to position	129	LM		
D	20 x 20 mm aluminium beading	1073	LM		
E	20 x 20 mm glazing beads	429	LM		
F	20mm rubber strips	429	LM		
G	6mm thick clear sheet glass fanlights onto doors	30	SM		
	Total Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	DOORS				
	Hardwood Doors				
A	50mm thick panelled door overall size 900 x 2100mm high to Architect's schedule	14	NO		
	Wrot Mahogany or other equal and approved :-				
B	100mm x 50mm Frame with two labours plugged and screwed to concrete slab	84	LM		
C	175mm x 75mm transome with two labours plugged	84	LM		
D	45 x 38mm architrave	168	LM		
E	25mm diameter quadrant	168	LM		
F	25mm diameter glass timber beading	84	LM		
G	5mm thick clear sheet glass fanlight onto doors	84	SM		
	Ironmongery				
	Supply and fix the following ironmongery from 'UNION' or other equal and approved				
H	Overhead door closer as union No. 7724 H GLD	28	NO.		
J	3- lever mortice lock with scroll brass handles	28	NO.		
K	100mm pressed brass butt hinges	42	PRS		
L	Oval brass door stopper including plugging onto concrete with screws NO. DS 01 PB	28	NO.		
M	25 x 16mm mild steel door cramps 250mm long once bent one end drilled and screwed to wood	168	NO.		
N	830 x 200 x 2mm Thick aluminium kick plate	28	NO		
P	Aluminium push and pull handles	0	PRS		
	Total Doors Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	WINDOWS BLINDS				
	Window Blinds				
A	Supply and fix quality venetian vertical blinds average 2.5metres high; (measured horizontally); in approved colour and quality; complete with brass rail and operating gear to Approval	64	LM		
	Curtains & blinds to PM's approval				
B	Supply and fix 2400mm high fabric curtains complete with blinds	8	LM		
C	Heavy duty Ornamental bronze curtain track with corbel brackets for and including 20mm anodized bronze curtain rail for 3 separate curtains - blinds, main etc	8	LM		
	Total Window Blinds Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	FINISHES				
	Timber coping				
A	60 x 25mm thick decorative MDF coping stained to Architect's approval	30	LM		
	Floors Finishes				
	Beds or Backings				
	Screed; cement and sand (1:3)				
B	32mm thick coat backings; wood floated to receive floor tiles (m/s) to concrete base; to floors level; internal	20	SM		
	The contractor shall supply samples of all finishes for approval by the client before application				
	Tile, slab or block finishings				
	Approved granitto tiles; local regular or other approved pattern; bedding and jointing in cement sand (1:40 mortar; grouting with matching cement				
C	10mm thick; butt joints both ways ; to cement base (m/s); to floors level; internal	20	SM		
D	100 mm thick skirting; straight junction with wall and floor finish.	15	LM		
	Ceramic floor Tiles				
E	600 x 600 x 10 mm ceramic tiles; approved colour bedded and jointed in cement grout to floors	15	SM		
F	100 x 10mm tile skirting ditto	17	LM		
	Cement and sand (1:4) backing				
G	15 mm thick to receive coloured glazed wall tiles	30	SM		
	Total Carried to Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Coloured glazed ceramic wall tiles bedding and jointing in cement and sand (1:3) mortar and flush pointed with white cement:				
A	6mm thick tiles	30	SM		
B	10 x 100mm decorative border tile ditto	15	LM		
	Ceiling Finishes				
C	Matt finish ; suspended mineral fibreboards accoustic ceilings comprising of carriers, panels suspension hangers, flush jointing	356	SM		
D	Suspended gypsum ceiling in decorative moulds and bulkheads fixed on and including metal gridwork,to Arcitect's specifications)	119	SM		
E	100mm wide x 8mm thick moulded cornices to match ceiling	237	LM		
	Fitted carpeting				
	15mm thick approved executive heavy duty carpet with and including blanket underlay and standard underfelt complete with fixing clips, metal grippers, approved adhesive; all fixed in accordance with the manufacturer's instructions				
F	To floors; over 300mm wide; internal	50	SM		
	Total Carried to Collection				
	COLLECTION B/f from page 5 B/d from Above				
	Total Finishes Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	FURNITURE FITTINGS				
	Ultra morden Counters & Worktops (HDF boards and Granite tops)				
A	Supply and assemble 3000 x 600 x 1250 mm high counters with granite tops in reception areas including partitions, frame, doors and shelving,iron mongery to Architect's approval	1	NO		
B	Supply and assemble 1500 x 450 x 800 mm kitchen cabinet with and including granite tops partitions, frame, doors and shelving,iron mongery to Architect's approval	1	NO		
C	Supply and fix mahogany wall panelling including all necessary framings	0	SM		
D	Supply and fix heavy duty SS wall hook to Architect's Approval	30	NO.		
E	Allow a sum for perspex signage in "SRC" Logo to Architect's specification and Approval	1	NO.		
	Total Furniture Fittings Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	PAINTING & DECORATION				
	Prepare and apply one coat aluminium primer before fixing: to backing of wood				
A	Surfaces over 100mm but not exceeding 200mm girth	252	LM		
B	Surfaces over 200 but not exceeding 300mm	42	LM		
	Prepare, knot , prime and apply three coats 2 PAC polyurethane varnish to :-				
C	General timber surfaces	30	SM		
D	Surfaces over 100 but not exceeding 200mm	420	LM		
E	Surfaces over 200 but not exceeding 300mm	168	LM		
	Sand, stain, prepare and apply three coats clear polyurathane varnish to timber surfaces of window boards				
F	Ditto 200-300mm girth	50	LM		
	Prepare and apply one undercoat and two coats silk vinyl paint				
G	Gypsum partitions surfaces	926	SM		
	Prepare and apply two coats of premium quality vinyl matt paint to ;-				
H	Walls, Columns	1422	SM		
	Prepare and apply three coats first grade plastic emulsion paint to:				
J	Surfaces of gypsum ceiling	119	SM		
K	Prepare and apply two coats of gloss oil paint onto metallic surfaces of windows	165	SM		
L	Prepare and apply three coats of textured paint onto plastered wall surfaces to Architect's specifications	100	SM		
	Total Painting & Decoration Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	SUMMARY				
1	Downtakings B/F from Page 1				
2	Partitions B/F from Page 3				
3	Doors B/F from Page 4				
4	Window Blinds B/F from Page 5				
5	Finishes B/F from Page 6				
6	Furniture Fittings B/F from Page 7				
7	Painting & Decoration B/F from Page 8				
	TOTAL 6TH FLOOR PHASE 2 BUILDER'S WORK TO GRAND SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	PARTITIONS				
	GYPSUM BOARDS AND ALUMINIUM PARTITIONS				
A	12mm thick gypsum boards partition screwed on and including 50 x 50 x 1.2mm thick top aluminium frame screwed onto concrete beams, 50 x 50 x 1.2mm thick middle frame and 50 x 50 x 1.2mm thick bottom aluminium frame screwed onto concrete floor and 50 x 50 x 1.2 mm thick vertical frames at 600mm c/c.	427	SM		
	Aluminium frames grey powder coated				
B	100 x 50mm frame rail plugged and screwed to existing concrete floor	198	LM		
C	Ditto transome frame screwed to position	99	LM		
D	20 x 20 mm aluminium beading	825	LM		
E	20 x 20 mm glazing beads	330	LM		
F	20mm rubber strips	330	LM		
G	6mm thick clear sheet glass fanlights onto doors	30	SM		
	Total Carried to Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	DOORS				
	Hardwood Doors				
A	50mm thick panelled door overall size 900 x 2100mm high to Architect's schedule	18	NO		
	Wrot Mahogany or other equal and approved :-				
B	100mm x 50mm Frame with two labours plugged and screwed to concrete slab	108	LM		
C	175mm x 75mm transome with two labours plugged	108	LM		
D	45 x 38mm architrave	216	LM		
E	25mm diameter quadrant	216	LM		
F	25mm diameter glass timber beading	108	LM		
G	5mm thick clear sheet glass fanlight onto doors	108	SM		
	Ironmongery				
	Supply and fix the following ironmongery from 'UNION' or other equal and approved				
H	Overhead door closer as union No. 7724 H GLD	36	NO.		
J	3- lever mortice lock with scroll brass handles	36	NO.		
K	100mm pressed brass butt hinges	54.0	PRS		
L	Oval brass door stopper including plugging onto concrete with screws NO. DS 01 PB	36	NO.		
M	25 x 16mm mild steel door cramps 250mm long once bent one end drilled and screwed to wood	216	NO.		
N	830 x 200 x 2mm Thick aluminium kick plate	36	NO		
P	Aluminium push and pull handles	5	PRS		
	Total Doors Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	FINISHES				
	Timber coping				
A	60 x 25mm thick decorative MDF coping stained to Architect's approval	30	LM		
	Ceiling Finishes				
B	Matt finish ; suspended mineral fibreboards accoustic ceilings comprising of carriers, panels suspension hangers, flush jointing	356	SM		
C	Suspended gypsum ceiling in decorative moulds and bulkheads fixed on and including metal gridwork,to Arcitect's specifications)	119	SM		
D	100mm wide x 8mm thick moulded cornices to match ceiling	237	LM		
	Total Finishes Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	FURNITURE FITTINGS				
	Ultra morden Counters & Worktops (HDF boards and Granite tops)				
A	Supply and assemble 3000 x 450 x 800 mm kitchen cabinet with and including granite tops partitions, frame, doors and shelving,iron mongery to Architect's approval	1	NO		
B	Supply and fix mahogany wall panelling including all necessary framings	5	SM		
C	Supply and fix heavy duty SS wall hook to Architect's Approval	20	NO.		
D	*Supply and fix coloured perspex signage in ''SRC'' Logo to Architect's Approval*	*1*	*NO.*		
	Total Furniture Fittings Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	PAINTING & DECORATION				
	Prepare and apply one coat aluminium primer before fixing: to backing of wood				
A	Surfaces over 100mm but not exceeding 200mm girth	324	LM		
B	Surfaces over 200 but not exceeding 300mm	54	LM		
	Prepare, knot , prime and apply three coats 2 PAC polyurethane varnish to :-				
C	General timber surfaces	30	SM		
D	Surfaces over 100 but not exceeding 200mm	540	LM		
E	Surfaces over 200 but not exceeding 300mm	216	LM		
	Sand, stain, prepare and apply three coats clear polyurathane varnish to timber surfaces of window boards				
F	Ditto 200-300mm girth	50	LM		
	Prepare and apply one undercoat and two coats silk vinyl paint				
G	Gypsum partitions surfaces	854	SM		
	Prepare and apply two coats of premium quality vinyl matt paint to ;-				
H	Walls and columns	569	SM		
	Prepare and apply three coats first grade plastic emulsion paint to:				
J	Surfaces of gypsum ceiling	119	SM		
K	Prepare and apply two coats of gloss oil paint onto metallic surfaces of windows	165	SM		
L	Prepare and apply three coats of textured paint onto plastered wall surfaces to Architect's specifications	100	SM		
	Total Painting & Decoration Carried to Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	SUMMARY				
1	Partitions B/F from Page 1				
2	Doors B/F from Page 2				
3	Finishes B/F from Page 3				
4	Furniture Fittings B/F from Page 4				
5	Painting & Decoration B/F from Page 5				
	TOTAL 3RD FLOOR PHASE 2 BUILDER'S WORK TO GRAND SUMMARY				

BUILDER'S WORK

REPUBLIC OF KENYA

SALARIES AND REMUNERATION COMMISSION

PROPOSED PARTITIONING OF OFFICES FOR SALARIES AND REMUNERATION COMMISSION ON 3RD AND 6TH FLOORS, WILLIAMSON HOUSE, 4th NGONG AVENUE, UPPER HILL, NAIROBI.

W.P. ITEM NO. D110 / NB / NB / 1801 – JOB NO. 10402 A

SPECIFICATIONS AND BILLS OF QUANTITIES

FOR

SANITARY FITTINGS, INTERNAL PLUMBING, INTERNAL DRAINAGE AND PORTABLE FIRE FIGHTING INSTALLATIONS WORKS.

CHIEF ARCHITECT
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 30743-00100
NAIROBI.

CHIEF ENGINEER (ELECTRICAL)
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 41191-00100
NAIROBI.

CHIEF QUANTITY SURVEYOR
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 30743-00100
NAIROBI.

CHIEF ENGINEER [MECHANICAL(BS)]
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 41191-00100
NAIROBI.

CHIEF ENGINEER (STRUCTURAL)
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 30743-00100
NAIROBI.

CLIENT
THE CHIEF EXECUTIVE OFFICER
SALARIES AND REMUNERATION
COMMISSION
P.O. BOX 43126 - 001000
NAIROBI

MAY, 2021

VOL. 8

TABLE OF CONTENTS

TITLE	PAGE
Contents	(i)
Definitions	(ii)
Special Notes.....	(iii)
SECTION A: General Mechanical Specifications…….....	D/1-D/4
SECTION B: Particular specifications for water storage tanks and booster pumps	E1-E/6
SECTION C: Particular specifications for plumbing and drainage…...…	F/1-F/9
SECTION D: Particular specifications for portable fire extinguishers, boosted hose reel system, hose reel and fire hydrant installations……	G/1 - G/6
SECTION E: Specifications for pipe and associated accessories……	H/1-H/3
SECTION F: Specifications for Rain Water Harvesting	I/1- I/4
SECTION G: Bills of Quantities.....	J/1- J/27
SECTION H: Technical Schedule of Items to be supplied.....	K/1-K-2
SECTION I: Schedule of Drawings.....	L/I

DEFINITIONS

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

The Employer:	Kenya Deposits Insurance Corporation
Represented by:	The Chief Executive Officer, Salaries and Remuneration Commission P.O. BOX 43126-00100 NAIROBI
Project Manager:	Works Secretary Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Architect:	Chief Architect Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Engineer:	Chief Engineer [Mechanical (BS)] Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 41191 - 00100 NAIROBI
Electrical Engineer:	Chief Engineer (Electrical) Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 41191 - 00100 NAIROBI
Quantity Surveyor:	Chief Quantity Surveyor Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Structural Engineer:	Chief Engineer (Structural) Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Main Contractor:	The firm appointed to carry out the Supply, Delivery, Installation, Testing and Commissioning of Sanitary Fittings, Internal Plumbing, Internal Drainage and Portable Fire Fighting Installations Works.
Site:	**Salaries and Remuneration Commission Offices, Williamson House, 4th Ngong Avenue, Upper Hill, Nairobi.**

SPECIAL NOTES FOR ALL TENDERERS:

1. These notes shall form part of these specifications and conditions.

IMPORTANT:

2. **The contractor will be required to ensure there's no interference with supply of services to resident organizations. The contractor will be required to take all precaution and care so that no damage will occur to the existing installations on site. The contractor is also advised to secure all the necessary insurance policies as he will be solely held responsible for any damages to the existing system, injuries to persons resulting from his activities and/or interference with normal operations of the building that may result from his negligence, actions or otherwise.**

3. The tenderer is required to check the number of pages in this document and should any be found to be missing or the figures indistinct, he must inform the Engineer at once and have the same rectified. Should the tenderer be in doubt about the precise meaning of any item, word or figures, or for any reason whatsoever observe any apparent omission of words or figures, he must inform the Engineer in order that the correct meaning may be decided upon before the date for the submission of the tenders.

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

5. The tenderer shall not alter or otherwise qualify the text of this specification. Any alteration or qualification made without authority will be ignored and the text of the specification as printed will be adhered to.

6. The tenderer shall be deemed to have made allowances in his unit prices generally to cover items of preliminaries or additions to Prime Cost Sums or other items, if those have not been priced against the respective items.

7. The tenderer's price shall include all government taxes including duties, V.A.T. etc. No claims whatsoever will be allowed in respect of duties, VAT etc. if the tenderer fails to include them in his unit prices. It is also to be noted that VAT will be included in the unit rates and NOT worked out as a percentage of the total.

8. In no case will any expenses incurred by the tenderer in preparation of this tender be reimbursed.

9. The copyright of this specification is vested in the Engineers and no part thereof may be reproduced without their express permission, given in writing.

10. The specifications must be priced in Kenya Currency i.e. shillings and cents.

11. All the 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.

12. 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 Board of Kenya to avoid disqualification

Signed (As in Tender) ..... Date/Stamp .....

SECTION A:

GENERAL MECHANICAL SPECIFICATIONS

SECTION A

GENERAL MECHANICAL SPECIFICATION

CLAUSE	DESCRIPTION	PAGE
2.01	GENERAL	A-1
2.02	QUALITY OF MATERIALS	A -1
2.03	REGULATIONS AND STANDARDS	A -1
2.04	ELECTRICAL REQUIREMENTS	A -1
2.05	TRANSPORT AND STORAGE	A -2
2.06	SITE SUPERVISION	A -2
2.07	INSTALLATION	A -2
2.08	TESTING	A -2
2.09	COLOR CODING	A -4
2.10	WELDING	A -4

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 Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.
b) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
c) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
e) The Local Council By-laws.
f) The Electricity Supply Authority By-laws.
g) Local Authority By-laws.
h) The Kenya Building Code Regulations.
i) The Kenya Bureau of Standards

2.04 **Electrical Requirements**

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

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

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

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

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

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

2.05 **Transport and Storage**

All plant and equipment shall, during transportation be suitably packed, crated and protected to 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 weeks' 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 B

PARTICULAR SPECIFICATIONS
FOR
WATER STORAGE TANKS AND BOOSTER PUMPS

PARTICULAR SPECIFICATION FOR THE DESIGN SUPPLY AND ERECTION OF WATER STORAGE TANKS AND BOOSTER PUMPS

1.00 DESCRIPTION OF SITE

The contractor is deemed to have visited the site and if unable to locate it or its details apply to the Principal Secretary, State Department of Public Works, Ngong Road, Nairobi.

No claims will be allowed for the traveling or other expenses, which may be incurred by the sub-contractor's works. However, the sub-contractor may allow that he may have to, during contract time, do part of the works and therefore three visits may be catered for.

1.01 SCOPE OF CONTRACT

The work to be carried out under, this sub-contract comprises the designs, manufacture, supply, delivery, erection, together with testing and commissioning of water tanks as here-in specified and shown on the contract drawings.

All work shall be performed in straightforward manner by competent workmen under skilled supervision to the entire satisfaction of the project manager.

1.02 COMPLIANCE WITH REGULATIONS.

The sub-contractor shall comply in all respects to the provisional and regulations of the By-laws of the Local Authority, Kenya Building Code, as 449 Part B5 1964. BS 4211, CP2 chapters V part 1 and 2 MOPW Structural steel work specification (1973) code of practice for design and construction of buildings and structures in Relation to Earthquake (1972) wherever applicable to the contract works.

The State Department of Public Works are responsible for the design of the foundation subject to giving approval of the sub-contractor's design of the tower and due allowance should be given for this work to be carried out in sub-contractor programmed of works. The main contractor is responsible for the construction of the foundation in accordance to approved designs.

1.03 STRUCTURAL DRAWINGS AND CALCULATIONS

2 No. copies of general arrangement and fabrication drawings properly dimensioned and detailed showing the whole tower and its accessories together with **2 No. copies** of the structural calculations complying with all the relevant BS and CP are to be submitted for approval prior to the commencement of the work.

The calculation is to indicate the maximum downward and upward loads on the foundations for the Ministry of Roads and Public Works Structural Department to design the foundation.

2.00 STEEL WATER TANKS

a) The tanks shall be pressed steel sectional tanks complying in all respects to BS 1564 Types 1 or 2. The jointing materials shall be non-toxic and non-insulable to water and the tank cover shall be joined throughout the tank top ensuring that the joint is both water proof and dust proof.

b) Cover framing and members shall be designed to withstand supper-imposed loading complying with the requirement complying with the requirements of CP2 Chapter V part 1 and BS 149 Part 2.

c) All internal stays are to be provided as required by the tank manufacture and the Sub-contractor shall be responsible for ensuring the stays are adequate in number and position and properly tightened. These are to be manufactured from steel to BS 4360, Grade 43 A.

d) All Bolts, nuts and washers used in the construction should comply with BS 4190. The contractor to allow in his pricing, for a complete set of spanners, spare bolts and Washers for maintenance purposes.

e) Access manhole with hinged cover together with a filtered vent outlet shall be installed.

f) The Sub-contractor is to notify the Project Manager of the type of panel he is proposing to use and the manufacturer who is to be approved.

g) The inflow and outflow connection shall be as shown on the drawing.

h) The outflow supply pipe shall be at least 50mm above the tank bottom while the inflow pipe shall be 200mm below the tank rim. The overflow pipe shall be about 1000mm long, away from the tank. The drain pipe shall be at the lowest part of the tank.

a) water level indicator
b) cover and manhole
c) internal ladder
d) external ladder

The Structural Department will give details of foundations and R.C walls for the low-level tank.

The base is to be cast by the Main Contractor unless otherwise instructed by the Project Manager.

2.01 HIGH LEVEL TANK

Tank Capacity: **1000Litres**
Preferred Dimensions:
1750 mm in x 1050mm x 750mm high
Height from ground level to the underside of the tank will be 9 Metres
The tank to be support on roof space.
Tank to be supplied with:
1. inflow connection of 40 mm diameter pipe
2. outflow connection of 40 mm diameter pipe
3. washout pipe of 40 mm diameter pipe
4. overflow pipe 40 mm diameter pipe
5. cover and manhole
6. secure it not to fall when empty

2.03 PIPEWORK

The sub-contractor shall supply and fix all pipe work and fitting up to ground level as detailed on the drawing or in this specification. Al pipe work shall be adequately supported and secured to the tank structure. The washout pipe will have a bend leading to a reasonable place where the drainage will not interfere with the structure.

The inflow outflow and washout pipes shall be fixed against the tower structure so as to facilitate fixing and good support.

The following pipework shall be used depending on the condition: -

(a) Medium Grade Galvanized steel and must conform with BS 1987 1967 class 'B'
(b) PP-R pipe work to be manufactured in accordance with the current European standards i.e DIN 8077 and DIN 8078 for PN 20 tubing, with metallic joints to DIN 8076, joints and fittings for tubing to DIN 16962.

The sub-contractor shall provide high pressure ball valve capable of coping with the maximum area's local water supply pressure.

2.04 Access Ladder

Internal ladder shall be supplied for the tank and shall be fixed adjacent at the manhole but easily removable for cleaning the inside of the tank (i.e. hooked connection).

The tanks shall be provided with an external ladder leading to the manhole and complying to BS 4211. The stringers shall be parallel, minimum width 15 inches apart and of flat bar of minimum dimensions 1½" by 2/8 inches. The rugs shall be of round bars not less than ¾ inches diameter and the distance between centers shall be 9 – 10 inches. The external ladder shall be fitted with safety hoofs made to conform with BS 4211.

2.05 Platform

The tower is to have a periphery walkway at tank level having minimum width of 600mm clear between the edge of the tank and the inside of the protective safety handrail. The platform is to be provided with a steel chequered place floor of similar approved and to be completely sealed so as not to allow anybody or items such as bolts and spanners to fall on persons on the ground.

All loading for the design of such platform are to be provided in the structural calculations.

2.06 Painting

The tank shall be painted inside with one coat of bituminous non-toxic paint (or any other equivalent and approved) and on the outside with coat of primer before erection. After erection, the tank inside shall be painted with two coats of aluminium paint. The other structures shall be cleaned and painted one coat lead oxide or red lead before erection and two coats of aluminium paints after erection.

All the painting shall be approved by the Engineer.

2.07 Erection

The sub-contractor shall erect the tank complete, on foundation prepared and designed by others and with all necessary pipes, ladders, tower etc. as listed herein and shown on the drawing.

The main contractor shall prepare the foundation to the sub-contractor's and State Department of Public Works Structural Department's details. The main contractor shall also concrete or grount in the HD bolts to the sub-contractor's requirements.

3.0. Booster pumps

Two sets of pumps will be provided:

1. 2 No. electrically operated pumps capable of pumping 2.5 cubic metres per hour of water against 20 meters static head shall be installed.

Each of the set of pumps shall be directly driven by a three-phase motor, the pump motor being mounted on a common base.

Pump casing shall be manufactured from good quality cat iron and impellers, shafts and other material in contract with water shall be of corrosion resistant metal. The pumps shall be suitable for pumping filtered water treated for human consumption.

The motor shall be completed protected against possible damage due to entry of water, dust etc. they shall be fitted with glands for the entry of PVC armored cables with overall PVC sheath. The completed cable connection to the motor terminal box shall be proof against ingress of water or dust.

The pump shall be mounted on concrete plinth which shall be constructed by the main contractor in accordance with specifications form the sub-contractor.

Holes for holding down bolts shall be left in concrete and after the concrete has cured the pumps shall be placed in position and bolts grounded into position. A grout shall be floated under pump motor base to ensure an even surface for the pump to rest upon.

4.0 Electrical works

It shall be the responsibility of the sub-contractor to provide all electrical wiring between all items of his sub-contract works to ensure the correct functioning of his equipment. The sub-contractor's electric works shall start from nearest electrical isolator.

5.0 Control panel

The sub-contractor shall provide an electric control panel and shall be responsible for its fixing and satisfactory operation. The panel shall be fabricated from minimum thickness. 1.2mm steel sheet and finished grey stoved enamel.

The panel shall be wall mounted with a removable hinged front access panel. Motor control switch gear shall be of approved type. The panel shall have an integral isolator.

Pump changeover shall be automatic alternating after each duty cycle. A green 'running' red 'trip' lamp shall be provided for each pump. The control system (float switches etc) shall be energized when a pump is started.

The motor system shall be wired so that t hey operate only automatically as called for by the switches except that starter push button shall be connected so as to enable the pumps to be started and run and cease to run when the push button is allowed to its normal position.

An emergency stop button shall be located adjacent to each pump.

The level regulator shall be wired and set in such a manner that the duty pumps shall be called to start when the high-level tank is full.

The electrode in the low-level tank shall override instructions form high level regulator and stop when the water is approximately 600mm high.

Where a three-phase motor is used, a single phasing protector shall be provided if the motor does not have one.

A phase failure relay shall be installed in 3 phase – operated pumps.

6.0 Testing

Testing shall be done by filling the tank with water after erection. The water will be from the local supply and the main contractor shall apply from the Authority for connection.

In cases where water is already on site and being used by the client, the contractor will make necessary arrangements and reimburse the client amount equivalent to volume of water used.

Testing shall be witnessed by the Project Manager or his representative.

7.0 Guarantee

The sub-contractor shall guarantee the tanks against leaks, and the tower for a period of (12) months form the testing date. Any damage incurred due to bad workmanship shall be made good by the contractor.

8.0 SCHEDULES

Introduction

The tenderer shall complete all schedules. The schedules shall be read in conjunction with the specification. The GRAND TOTAL of prices in the main summary of prices schedule shall be deemed to have been included in another part of section.

Note: -

The list of recommended initial spare parts prices is to be submitted separately on tenderer's own paper. The spares prices are not to be included in the GRAND TOTAL or prices as the spares are an extra item only to be purchased if and when convenient to the Government of Kenya.

All prices shall be in Kenya shillings and shall be inclusive of all taxes and duties current at the time of tendering.

SECTION C

PARTICULAR SPECIFICATIONS
FOR
PLUMBING AND DRAINAGE

PARTICULAR PLUMBING AND DRAINAGE SPECIFICATIONS

CLAUSE No.	DESCRIPTION	PAGE
3.1	General……	C-1
3.2	Materials and standards…….	C -1
3.2.1	Pipework and Fittings……...	C -1
3.2.2	Valves…….....	C -2
3.2.3	Waste Fitment Traps……	C -3
3.2.4	Pipe Supports……...	C -3
3.2.5	Sanitary Appliances……...	C -6
3.2.6	Pipe Sleeves……..	C -6
3.3	Installation…….....	C -5
3.3.1	General……	C -5
3.3.2	Above Ground Installation……...	C -5
3.4	Testing Inspection……	C -6
3.4.1	Site Tests – Pipework Systems……..	C -6
3.4.2	Site Test – Performance……	C -7
3.5	Sterilisation of Hot and Cold Water System……..	C -7

PARTICULAR SPECIFICATIONS FOR PLUMBING AND DRAINAGE

3.1 GENERAL

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

3.2 MATERIALS AND STANDARDS

3.2.1 Pipework and Fittings

Pipework materials are to be used as follows:

a) **Galvanized Steel Pipework**

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

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

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

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

b) **Copper Tubing**

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

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

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

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

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

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

Jointing

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

Testing

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

d) **A.B.S. Waste System**

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

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

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

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

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

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

e) **PVC Soil System**

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

Pipes and fittings shall be in accordance with relevant British Standards, including B.S. 4514 and fixed to the manufacturer's instructions and B.S. 5572.

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

Connections to WC pans shall be effected by the use of a WC connector, gasket and cover, fixed to suit pan outlet.
Suitable supporting brackets and pipe clips shall be provided at maximum of one metre centres.

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

3.2.2 **Valves**

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

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

b) Gate Valves

All gate valves 80mm nominal bore and above, other than those required for fitting to buried water mains shall be of cast iron construction, in accordance with the requirements of B.S. 3464. All gate valves required for fitting to buried water mains shall be of cast iron construction in accordance with the requirements of B.S.1218.
All gate valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S. 1952.
The pressure classification of all valves shall depend upon the pressure conditions pertaining to the site of works.

c) Globe Valves

All globe valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S.3061.
The pressure classification of all globe valves shall depend upon the pressure conditions pertaining to the site of works.

3.2.3 **Waste Fitment Traps**

a) Standard and Deep Seal P & S Traps

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

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

b) Anti-Syphon Traps

Where anti-syphon traps are specified, these shall be similar or equal to the range of traps manufactured by Greenwood and Hughes Limited, Deacon Works Littles Hampton, Sussex, England.
The trade name for traps manufactured by this company is 'Grevak'.

3.2.4 **Pipe Supports**

a) General

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

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

Consideration shall be given, when designing supports, to the maintenance of desired pipe falls and the restraining of pipe movements to a longitudinal axial direction only.
The Sub-contractor shall supply and install all steelwork forming part of the pipe support assemblies and shall be responsible for making good damage to builders work associated with the pipe support installation.
The Sub-contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection works commence.

b) Steel and Copper Pipes and Tubes

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

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

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

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

c) Expansion Joints and Anchors

Where practicable, cold pipework systems shall be arranged with sufficient bends and changes of direction to absorb pipe expansion providing that the pipe stresses are contained within the working limits prescribed in the relevant B.S. specification.
Where piping anchors are supplied, they shall be fixed to the main structure only. Details of all anchor design proposals shall be submitted to the Engineer for approval before erection commences.
The Sub-contractor when arranging his piping shall ensure that no expansion movements are transmitted directly to connections and flanges on pumps or other items of plant.
The Sub-contractor shall supply flexible joints to prevent vibrations and other movements being transmitted from pumps to piping systems or vice versa.

3.2.5 **Sanitary Appliances**

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

3.2.6 **Pipe Sleeves**

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

3.3 **INSTALLATION**

3.3.1 **General**

Installation of all pipework, valves, fittings and equipment shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The Sub-contractor shall be responsible to the Main Contractor for ensuring that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

3.3.2 **Above Ground Installation**

a) Water Services

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

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

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

Valves and other user equipment shall be installed with adequate access for operation and maintenance. Where valves and other operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach from a small step ladder, extension spindles with floor or wall pedestals shall be provided.

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

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

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

The test pressure shall be maintained by the pump for about one hour and if there is any leakage, it shall be measured by the quantity of water pumped into the main in that time. A general leakage of 4.5 litres per 25mm of diameter, per 1.6 kilometres per 24 hours per 30 metres head, may be considered reasonable but any visible individual leak shall be repaired.

b) Sanitary Services

Soil, waste and vent pipe system shall be installed in accordance with the best standard of modern practice as described in B.S. 5572 to the approval of the Engineer.
The Sub-contractor shall be responsible for ensuring that all ground waste fittings are discharged to a gully trap before passing to the sewer via a manhole.
The Sub-contractor shall provide all necessary rodding and inspection facilities within the draining system in positions where easy accessibility is available.
Where a branch requires rodding facilities in a position to which normal access is unobtainable, then that branch shall be extended so as to provide a suitable purpose made rodding eye in the nearest adjacent wall or floor to which easy access is available.
The vent stacks shall terminate above roof level and where stack passes through roof, a weather skirt shall be provided. The Sub-contractor shall be responsible for sealing the roof after installation of the stacks.
The open end of each stack shall be fitted with a plastic coated or galvanised steel wire guard.
Access for rodding and testing shall be provided at the foot of each stack.

c) Sanitary Appliances

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

3.4 **TESTING AND INSPECTION**

3.4.1 **Site Tests – Pipework Systems**

a) Above Ground Internal Water Services Installation

All water service pipe system installed above ground shall be tested hydraulically for a period of one hour to not less than one and half times to design working pressure.
If preferred, the Sub-contractor may test the pipelines in sections. Any such section found to be satisfactory need not be the subject of a further test when system has been completed, unless specifically requested by the Engineer.
During the test, each branch and joint shall be examined carefully for leaks and any defects revealed shall be made good by the Sub-contractor and the section re-tested.

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

b) Above Ground Soil Waste and Ventilation System

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

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

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

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

3.4.2 **Site Test – Performance**

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

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

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

i) Apply a coating of suitable filler until the canvas weave disappears and allow to dry.

ii) Apply two coats of an approved paint and finish in suitable gloss enamel to colors approved by the Engineer.

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

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

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

Pressure gauges should be recalibrated before the tests.

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

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

3.5 STERILISATION OF COLD WATER SYSTEM

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

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

PART D

PARTICULAR SPECIFICATIONS FOR PORTABLE FIRE EXTINGUISHER BOOSTED HOSE REEL SYSTEM, HOSE REEL, AND FIRE HYDRANT INSTALLATIONS

PART D

PARTICULAR SPECIFICATION FOR PORTABLE FIRE EXTINGUISHER BOOSTED HOSE REEL SYSTEM, HOSE REEL, AND FIRE HYDRANT INSTALLATIONS

CLAUSE No.	DESCRIPTION	PAGE
4.1	General…….....	D-1
4.2	Scope of Works……..……	D -1
4.3	Water/Co_2 Extinguishers…..……..	D -1
4.4	Portable Carbon Dioxide Fire Extinguishers…….....	D -1
4.5	Dry Chemical Powder Fire Extinguishers……	D -2
4.6	Air Foam Fire Extinguishers……...	D -3
4.7	Fire Blanket……..……...	D -3
4.8	Boosted Hose Reel System……	D -3 to D -6

PARTICULAR SPECIFICATIONS FOR PORTABLE FIRE EXTINGUISHER AND HOSE REEL INSTALLATIONS

4.1 GENERAL

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

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

4.2 SCOPE OF WORKS

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

4.3 WATER/CO2 EXTINGUISHERS

These shall be 9-litre water filled CO2 cartridge operated portable fire extinguishers and shall comply with B.S. 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.

4.4 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

4.5 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.

4.6 AIR FOAM FIRE EXTINGUISHER

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. 5423 with the following specifications: -

Cylinder: to B.S. 1449

Necking: to be 76mm outside diameter steel EN 3A $2^3/_4$ X 8TPI female thread**.**
Head cap: to be plastic moulding acetyl resin.
CO_2 Cylinder: to be 75gm P.V.C coated.
Internal Finish: to be polythene lining on phosphate coating.
External finish: to be phosphated - One coat primer paint and one coat stove enamel B.S. 381 C.

4.7 FIRE BLANKET

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

4.8 BOOSTED HOSE REEL SYSTEM

4.8.1 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 to the 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.

4.8.2 Hose Reel Pumps

The fire hose reel pumps shall consist of a duplicate set of multi-line centrifugal pumps from approved manufacturers. The pumps shall be capable of delivering 2.27 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.

4.8.3 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 following facilities:

(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.

4.8.4 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-galvanised cabinet recessed on the wall.
The hose reels shall be installed at 1.5 metres centre above the finished floor level in locations shown in the contract drawings.

4.8.5 Pipe Work

The pipe work for the hose reel installation shall be galvanised wrought steel tubing heavy grade Class C 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.

4.8.6 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.

4.8.7 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.

4.8.8 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

4.8.9 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.

4.8.10 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.

4.8.11 Finish Painting

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

4.8.12 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.

4.8.13 Instruction Period

The Sub-contractor shall allow in his contract sum for instructing of the use of the equipment 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.

4.8.14 Signage-Fire Instruction /Fire Exit

4.8.14.1 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.

4.8.14.2 Fire Exit Sign

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

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

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

4.8.14.3 Hose Reel Label

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

1. Lettering IN RED COLOUR of not less than 50mm in height.
2. A pendant sign bearing words, 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.

SECTION E:

SPECIFICATION FOR PIPES AND ASSOCIATED ACCESSOIRES

SECTION E:

GENERAL SPECIFICATION FOR PIPES AND ASSOCIATED ACCESSOIRES

Polypropylene Pipes –Random copolymer (PP-R) Type 3

PP-R pipework shall be manufactured in accordance with ISO 15874-1 or manufactured in accordance with DIN 8077 and DIN 8078.

Jointing

The method of jointing to be employed shall be that of fusion welding using the pipe and manufacturer's approved equipment.
And fittings to be in accordance DIN 16962.
The threaded connections shall conform to BS EN 10226-1 or ISO 7-1.
Dimensions and quality of PP-R Pipes shall be as follows:

Nominal Diameter	Approx. Wall Thickness (Minimum and Maximum)				Inner Diameter (mm)	
	SDR 7.4		SDR 6		SDR 7.4	SDR 6
	PN 16		PN 20		PN 16	PN 20
DN (OD)	Min	Max	Min	Max		
20	2.80	3.30	3.40	4.00	13.90	12.60
25	3.50	4.10	4.20	4.90	17.40	15.90
32	4.40	5.10	5.40	6.20	22.50	20.40
40	5.50	6.30	6.70	7.60	28.20	25.70
50	6.90	7.80	8.30	9.40	35.30	32.30
63	8.60	9.70	10.50	11.80	44.70	40.70
75	10.30	11.60	12.50	14.00	53.10	48.50
90	12.30	13.80	15.00	16.70	63.90	58.30
110	15.10	16.90	18.30	20.40	78.00	71.30
125	17.10	19.10	20.80	23.10	88.80	81.10
140	19.20	21.40	23.30	25.90	99.40	90.80
160	21.90	24.30	26.60	29.50	113.80	103.90

Fusion guideline shall be as follows:

Pipe Diameter(mm)	Minimum wall thickness (mm)	Insert depth (mm)	Heating time (sec)	Jointing time (sec)	Cooling time (sec)
20	3, 4	14	6	4	2
25	4, 2	16	7	4	3
32	5, 4	18	8	6	4
40	6, 7	20	12	6	4
50	8, 4	23	18	6	5
63	10, 5	26	25	8	6
75	12, 5	28	30	8	8
90	15, 0	31	40	10	8
110	18, 4	33	50	10	8

Galvanised Mild Steel Pipe Work and Associated Accessories

Galvanized steel pipework up to 65mm nominal bore shall be manufactured in accordance with KS 06.366, EN 10255, Class B/Medium, with tapered pipe threads in accordance with BS EN 10226-1 or ISO 7-1.

All fittings shall be made of galvanised malleable iron and manufactured in accordance with KS 06-885:1995 or EN 10255.

Galvanized steel pipe work from 80mm nominal bore up to 150mm nominal bore shall be manufactured to comply in all respects with the specification for 65mm pipe, except that screwed and bolted flanges shall replace unions and couplings for the jointing of pipes to valves and other items of plant.

Specifications for galvanized mild steel pipe work to be as follows:

Nominal bore		Outside diameter	Thickness		Mass	
		Medium/ Heavy	Medium	Heavy	Medium	Heavy
in	mm	mm	mm	mm	kg/m	kg/m
1/4	8	13.90	2.30	2.90	0.641	0.765
3/8	10	17.40	2.30	2.90	0.839	1.020
1/2	15	21.70	2.60	3.20	1.210	1.440
3/4	20	27.20	2.60	3.20	1.560	1.870
1	25	34.20	3.20	4.00	2.410	2.940
1 1/4	32	42.90	3.20	4.00	3.100	3.800
1 1/2	40	48.80	3.20	4.00	3.570	4.380
2	50	60.80	3.60	4.50	5.030	6.190
2 1/2	65	76.60	3.60	4.50	6.430	7.930
3	80	89.50	4.00	5.00	8.370	10.300
4	100	114.90	4.50	5.40	12.200	14.500
5	125	140.60	5.00	5.40	16.600	17.900
6	150	166.10	5.00	5.40	19.700	21.300

Poly-vinyl Chloride (CPVC) Pipes and Fittings

All CPVC pressure pipes and fittings shall be as manufactured in accordance with ASTM F 441/F441M or DIN 8079/8080 or EN ISO 15877, KS06-478-2:1993 (B.S. 3505: 1968).

Jointing

The method of jointing to be employed shall be that of solvent welding, using the pipe and manufacturer's approved cement. Seal ring joint shall be introduced where it is necessary to accommodate thermal expansion. This shall be in accordance to ASTM F438 and ASTMF439

The threaded connections shall conform to ASTM F437 or BS EN 10226-1 or ISO 7-1.

The specification for chlorinated polyvinyl chloride (CPVC) pipe made for water distribution shall be as follows:

ASTM F441/F441M

Nominal Size	**Mean Outside Diameter (mm)**		**WALL THICKNESS (MM) & PRESSURE RATING (PSI)**							
			Schedule 40				**Schedule 80**			
inch	**Min**	**Max**	**Min**	**Max**	**PSI**		**Min**	**Max**	**PSI**	
					23ºC	**82ºC**			**23ºC**	**82ºC**
1/2	21.20	21.20	2.77	3.28	600	150	3.73	4.24	850	210
3/4	26.60	26.60	2.87	3.28	480	120	3.91	4.42	690	170
1	33.27	33.27	3.38	3.89	450	110	4.55	5.08	630	155
11/4	42.07	42.07	3.56	4.06	370	90	4.85	5.44	520	130
11/2	48.15	48.15	3.68	4.19	330	80	5.08	5.69	470	155
2	60.15	60.15	3.91	4.42	280	70	5.54	6.20	400	100
21/2	72.82	72.82	5.91	5.77	300	75	7.01	7.85	420	105
3	88.70	88.70	5.49	6.15	260	65	7.85	8.53	370	90
4	114.07	114.07	6.02	6.73	220	55	8.56	9.58	320	80
6	168.02	168.02	7.11	7.97	180	45	10.97	12.29	280	70
8	218.62	218.62	8.18	9.17	160	40	12.7	14.22	250	60

DIN 8079/8080

Nominal Size	**Mean Outside Diameter (mm)**		**WALL THICKNESS (MM) & PRESSURE RATING (BAR)**			
			SDR 13.6		**SDR 11**	
mm	**Min**	**Max**	**(16 Bar)/PN 16**		**(20 Bar)/PN 20**	
			Min	**Max**	**Min**	**Max**
20	20.0	20.2	1.5	1.9	1.9	2.3
25	25.0	54.2	1.9	2.3	2.3	2.8
32	32.0	32.2	2.4	2.9	2.9	3.4
40	40.0	40.2	3.0	3.5	3.7	4.3
50	50.0	50.2	3.7	4.3	4.6	5.3
63	63.0	63.2	4.7	5.4	5.8	6.6
75	75.0	75.3	5.6	6.4	6.8	7.7
90	90.0	90.3	6.7	7.6	8.2	9.3
110	110.0	110.3	8.1	9.2	10.0	11.2
125	125.0	125.3	9.2	10.4	11.4	12.8
140	140.0	140.4	10.3	11.6	12.7	14.2
160	160.0	160.4	11.8	13.2	14.6	16.3

The pipe to be made out high quality material with high impact resistance, chemical resistance, good thermal qualities, low flame spread and low smoke generation.

SECTION F:

PARTICULAR SPECIFICATION

FOR

RAIN WATER HARVESTING

2.01 Rainwater
Water which falls from the sky.

2.02 Rainwater Harvesting
The collection, trapping, conveyance and storage of rain water.

2.03 Catchment Surface
The roof of a building or an open-sided barn used for purpose of trapping and collection of rainwater.

20.4 Gutters
Channels all round the edge of a sloping roof to collect and transport rainwater.

2.05 Downspouts
Conduits/pipelines that carry the water from the gutters down to the storage tank.

2.06 First-Flushing Diverters
A diversion valve, placed along the downspout, that routes the first flow of water from the catchment surface away from the storage tank.

2.07 Leaf screen
A coarse mesh placed along the gutter or the downspout that prevent the passage of debris to the storage tank.

2.08 Filter
A device with a chamber filled with a filter media installed to remove finer pollutants (debris and dirt),that may have passed through the coarse leaf screen.

2.09Storage facility.
Tanks constructed and installed for storing the harvested rainwater

3.00 DESIGN OVERVIEW of key components(Source;-CIBSE *Knowledge Series On Reclaimed Water*).

3.01 Storage Tank
The sizing of storage tanks requires assessment of the actual volume of water available and the likely demand for its use within the building.
The maximum amount of rainwater retrievable each year may be calculated from the equation:
Yr =Ac x Rm x Cr x F
Where
Yr is the annual rainwater yield (litre/year)
Ac is the collection area(m2).The plan area, rather than the slope area,available for rainwater collection.
Rm is the average annual rainfall (mm).The average annual rainfall for the particular location. Can be read in the Meteorological Weather book.
Cr is the run-off co-efficient; the percentage of water actually coming off the roof/paved area after allowing for evaporation, and absorption by the materials.See table 1 below;-
F is the fractional collector efficiency; the percentage of water captured by rainwater collection filters. Typically between80-90% but can be confirmed from the manufacturer.

Table 1;-Run-off co-efficients,Cr

Catchment Area	Run-off Co-efficient
Guttering around pitched roof;	
-slate tiles	0.8-0.9
-concrete tiles	0.75-0.8
Guttering around flat roof	0.4-0.5
Permeable paving;	
-concrete blocks with wide joints	0.5-0.7
-gravel covered	0.15-0.3

3.02 Gutters,Downspouts etc

The sizing of gutters, gutter boxes, gutter outlets and downpipes/downspouts shall be as outlined for rainwater systems in the Plumbing Engineering Services Design Guide, Section C.
However the following table, Table 2, gives an idea about the diameter of pipe required for draining out rainwater based on rainfall intensity and roof area;-

Table2;-Sizing Of Rainwater Pipe For Roof Drainage(source; National Building Code-USA)

Diameter of Pipe(millimeter)	Average rate of rainfall in mm/H(millimeters per hour)					
	50	75	100	125	150	200
50	13.4	8.9	6.6	5.3	4.4	3.3
65	24.1	16.0	12.0	9.6	8.0	6.0
75	40.8	27.0	20.4	16.3	13.6	10.2
100	85.4	57.0	42.7	34.2	28.5	21.3
125	-	-	80.5	64.3	53.5	40.0
150	-	-	-	-	83.6	62.7

4.00 SPECIFICATIONS
4.01 Catchment Surface

As water quality is a function of the type of roof material, beside climatic conditions and the surrounding environment it is important that the catchment area material be well selected.

Suitable roofing shall be of either of the following materials;-

i)Metal;- To be either aluminium/zinc alloy-coated sheet steel(.
Coating with epoxy paint acceptable), galvanized iron sheet (SWG 20 to 22) or corrugated sheets

ii)Clay/Concrete tiles.
Will contribute 10% loss of water due to texture,inefficient flow or evaporation.To reduce this the roof to be coated with a sealant or painted.This shall also prevent bacterial growth.

iii)Composite or Asphalt Shingle.
Not suitable for portable water.May be used for irrigation water.

iv)Other Materials;- these include wood Shingle,tar,gravel etc.

4.02 Gutters
These shall be continuous or seamless. For portable water, lead shall not be used as the slightly acidic rain water could dissolve lead and thus contaminate the water supply.
The gutters to be half-round PVC,Vinyl,Seamless aluminium or galvanized steel and complete with brackets ,straps and other hardware necessary to fasten the gutters to the fascia.
Other materials for gutters include bamboo or betel trunks cut vertically or other locally available materials mostly used in rural traditional systems.

4.03 Downspouts
The materials for these pipes to be compatible with materials used for the gutters as described above.

4.04 First-Flushing Diverters
This shall be constructed from approved material and act as a diversion valve. Shall route the first flow of water from the catchments surface away from the storage tank.Each shall be capable of diverting a minimum of 10 gallons for every 1000 square feet of collection surface.

4.05 Leaf screen
To remove debris that gather on the catchment, a leaf screed shall be incorporated in the system along the gutter or in the downsprout.This shall be a coarse mesh screen of approved non-corrosive material.To be in PVC,stainless steel,or galvanized steel.
Alternatively, a funnel-type downspout filter made of PVC or galvanized steel fitted with a stainless steel or brass screen should be installed.

4.06 Roof Washers
To be placed just ahead of the storage tank.To be capable of filtering small debris for portable systems.
To consist of a tank of approximate capacity 30-50 gallons with leaf strainers and a filter

4.07 Filter
For portable water the filter to be capable of removing particles of size 3 micron.A wide range of Filters from the simplest to complicated ones are available in the market.Selection shall depend on the size and complexity of the system.

4.08 Storage facility.

Location

Tanks to be located as close to supply as possible to reduce the distance water is conveyed.
To be either at ground level or beneath ground or partly beneath ground, but must be fully accessible for cleaning, disinfecting and servicing of the internal.
To be placed on a stable,level bed/base.

Constrution

The tank to be opaque, either upon purchase or painted later, to inhibit algae growth. The shape to be either cylindrical,rectangular or square.
The tank to be vented to prevent the build-up of gases.
The cover to be strong and secure to minimize the risk of accidents.
Underground level tank should be raised slightly above ground level to prevent the ingress of surrounding dirt or vegetation.

Material

For portable water the tank shall be of either of the following materials;-
i) Reinforced cement concrete,
The concrete to be either in situ or prefabricated.For portable system,the tank to be plastered with a high-quality approved material

ii)ferrocement masonry,
The concrete,sand and mortar to be applied under pressure from a gun over the formwork..

iii)plastic(polypropylene)
To mostly be installed above ground. Specially reinforced tanks will be necessary for buried installation.

iv) metal(galvanized iron).
To be made from galvanized sheet metal or corrugated galvanized steel dipped in hot zinc for corrosion resistance.
For portable use the inside to be lined with an approved food-grade liner (e.g. polyethylene or PVC, or coated with an approved epoxy paint.

v) Fiberglass and wood tanks.
These must be lined with a food-grade liner to store portable water.

vi)Rain barrel/drum.
This to be used for simple rain water installations

SECTION F:

BILLS OF QUANTITIES

AND

SCHEDULE OF UNIT RATES

SECTION F:

BILLS OF QUANTITIES AND SCHEDULE OF UNIT RATES

CONTENTS

CLAUSE No.		PAGE
5.01	GENERAL NOTES TO TENDERERS……	F-1
5.02	STATEMENT OF COMPLIANCE……	F -2
5.03	BILLS OF QUANTITIES ……	F -3 to F -15
5.04	SUMMARY PAGE……	F -16 – F 17
5.05	SCHEDULE OF UNIT RATES……	F -18

5.01 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, **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 descriptions 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** 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**.

   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.

5.02 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: …….……

5.03 BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against item of preliminaries in the sub-contractor's Bills of Quantities and specification. These Bills are designated as Bill 1 in this Section. Where the sub-contractor fails to insert his price in any item he shall be deemed to have made adequate provision for this on various items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

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

a. Preliminaries – Bill 1

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

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
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				
29	1.39				
30	Storage of Materials clause 1.41				
	Initial Maintenance clause 1.42				
SUB-TOTAL CARRIED TO PAGE……. F-6					

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
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- 17)				
37	Supervision by Engineer and Site Meetings Clause 1.67	1	Item		
38	Allow for profit and Attendance for the				
39	above				
40	Sum for Clerk of Works on site				
41	Amendment to Scope of Sub-contract Works Clause 1.68				
42	Contractor Obligation and Employers Obligation clause 1.69(see appendix page C- 18)				
	Any other preliminaries;				
	Subtotal above				
	Sub-total brought forward from page…… F-4				
	Sub-total brought forward from page……. . F-5				
TOTAL FOR BILL NO. 1- PRELIMINARIES CARRIED FORWARD TO PRICE MAIN SUMMARY PAGE…….…… J-27					

PROPOSED PARTITIONING OF OFFICES FOR SALARIES AND REMUNERATION COMMISSION AT WILLIAMSON HOUSE, 4th NGONG AVENUE, UPPER HILL, NAIROBI. -PLUMBING AND DRAINAGE

Bill No. 2: Sanitary Fittings, Internal Plumbing and Drainage for Third Floor

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
1)	**SANITARY APPLIANCES**				
	Supply, deliver, install, test and commission the following sanitary appliances complete with all the accessories including all connections to the services, waste, jointing to water supply overflows, supports and all plugging and screwing to walls and floors.				
	(i) All sanitary fittings shall be in approved colour.				
	(ii) The Model and Ref No. indicated is only a guide to the type and quality of fittings.				
	(iii) Equivalent and Approved models may be acceptable.				
	Water Closet (WC) Suite				
A	Close-coupled WC suite ('S' or 'P'-trap) in approved colour complete with horizontal outlet to BS 3402 with 7.5 litre valveless low level ceramic cistern and fittings including siphon, 15mm diameter side inlet ball valve, 20mm diameter side overflow, plastic flush bend, dual flush system, inlet connection, chrome-plated lever and heavy plastic seat and cover with metal top fixed (chrome plated) hinges. . All to be as Duravit D-Code (Horizontal outlet) CAT No. 2111090000 water closet or equal and approved.	4	No.		
	Toilet Roll Holder				
B	Toilet roll holder in Chrome as DALI BM70 or approved equivalent.	4	No.		
	Toilet Brush and Holder				
A	Wall mounted toilet brush holder and brush of approved colour as GROHE "Atrio accessories Tier:G5 Prestige" Model- 40 314 toilet brush set or approved equivalent.	3	No.		
	Robe Hook				
B	Robe hook in Satin Aluminium to be mounted by concealed screws to wall wedges. To be as Twyfords Spectrum 2000 accessories or equal and approved.	3	No.		
	Urinal Bowls				
C	Ceramic urinal bowl complete with 40mm heavy duty plastic bottle trap and 40mm diameter chrome plated outlet with grating firmly fixed on the wall with chrome plated screws. The fittings shall be as Roca or equal and approved.	2	No		
	Total Carried Forward to Next Page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from Previous Page				
D	**Urinal Bowl Divisions** Ceramic urinal bowl divisions separating the above described urinal bowls fixed firmly on the wall. The fittings shall be as Roca or equal and approved.	1	No		
E	**Urinal Bowl Flush Valves** 32mm urinal bowl flush valve for the above urinal bowls complete with, back entry with integral vacuum breaker, non-hold-open features and non-return valve, inlet control stop and wall plate comprising flush valve, bent chrome plated flush pipe and rubber pipe connector. The flush valve to be push button type. The fittings shall be as 'Docol' or equal and approved.	2	No		
D	**<u>Countertop Wash Hand Basin</u>** White countertop ceramic wash hand basin with single taphole. Prefered dimension: 545 x 435mm x 200mm. Basin to be as "**Duravit, D-Code #0337540000**". Other accessories to include; chrome plated slotted waste **#005024 10 92**, chrome basin siphon **#005026 00 00**, overflow clip and fixings.	4	No.		
H	**Mirror for WHBs** 6mm thick polished plate glass silver backed mirror with bevelled edges, size 610 x 610mm, Plugged and screwed to wall with 4No. chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam.	4	No.		
A	**Tissue Dispensing Unit** Stainless steel satin finish flat sheets tissue dispensing unit with a 400 sheets capacity. The unit to have a one piece body with a frontal window to indicate when empty and to be lockable. The dispensing unit to be as '**Mediclinics, DT0106CS**'	2	No.		
B	**Soap Dispenser** Wall mounted soap dispenser with a capacity of about one litre having a press action soap release mechanism complete with fixing screws. Allow for initial soap supply. As Starmix or approved equivalent.	2	No		
	Total Carried Forward to Next Page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from Previous Page				
A	**Hand Driers** Automatic hand drier in white colour, operating on an infra-red automatic sensing system with heating element safety cut-out complete with a 30 seconds safety timer, plastic rawl plugs and fixing screws. The hand drier to have a heating capacity of 2.1kw and performance flow rate of 135cfm (3.82m3/min) and to be of size 270x264x143mm deep It shall have a noise level below 72.5 dBA at 1.5m. It shall be as Medclinic or approved equivalent.	2	No		
B	**Kitchen Sink** Single Bowl Single Drain (SBSD) stainless steel kitchen sink as "**ASL**" complete with chrome plated bottle trap. Sink to come complete with wall mounted heavy duty hot & cold kitchen sink mixer with swivel overarm outlet, star handles as "**Tapis**" waste strainers, waste corks with chain stays.	1	No.		
C	**Dhobi Sink** Heavy duty stainless steel sink of size 675 x 485 x 300mm deep in 16 SWG as manufactured by ASL 131or approved equivalent suitable for mounting on counter, complete with 1 No. 15mm diameter chrome plated back inlet bib tap Cobra ref 107EC CP, 40mm diameter chrome plated bottle trap and chain waste fitting & plug.	2	No.		
	Total Carried Forward to Next Page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from Previous Page				
2)	**<u>INTERNAL PLUMBING</u>**				
	PPR Pipes				
	Supply, deliver and install Polypropylene Random (PP-R) 20 pipework to DIN 8077 with joints, couplings, reducers, tees, adaptors, pipe fixing clips etc all to DIN 16962 and DIN 16928 .Pipe jointing shall be by polyfusion or use of electric coupling. Where pipework is not chased proper anchoring using approved fixtures shall be done. No pipework shall be left exposed to the sun. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints, support raceways, isolating sheaths, elastic materials, expansion arms and bends, crossovers, couplings, clippings, connectors, joints etc. as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	Pipe work-PPR PIPES				
A	25mm diameter pipework	18	Lm		
B	32mm diameter pipework	6	Lm		
	Bends				
D	25mm diameter bend	10	No.		
E	32mm diameter bend	1	No.		
	Tees				
G	25mm equal tee	10	No.		
H	32mm equal tee	2	No.		
I	32x25mm unequal tee	2	No.		
J	50mm equal tee	1	No.		
	Reducers				
K	25 x 20mm diameter reducer	4	No.		
L	32 x 25mm diameter reducer	2	No.		
M	25 x 15mm diameter brass threaded reducer	10	No.		
	Total Carried Forward to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from previous page				
	Flexible Tubing				
A	15mm diameter x 300mm long flexible connectors complete with integral chrome plated angle valve as Cobra or equal and approved.	22	No.		
	Threaded Brass Coupling				
B	25mm threaded brass coupling	12	No.		
C	32mm threaded brass coupling	8	No.		
	Valves				
D	25mm gate valve	2	No.		
	Unions				
E	25mm diameter pipe union	4	No.		
	Total Carried Forward to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from previous page				
3)	**<u>FOUL WATER INTERNAL DRAINAGE</u>**				
	Supply ,deliver and install the following UPVC, MUPVC, soil and waste systems respectively to B.S 5255 with fittings fixed to Manufactures Printed instructions and manufactured by reputable manufacturers. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	MuPVC and uPVC Waste and Soil pipework				
B	100mm diameter heavy gauge grey UPVC pipe	12	Lm		
C	50mm diameter waste pipe	12	Lm		
D	40mm diameter waste pipe	6	Lm		
E	32mm diameter waste pipe	18	Lm		
	Bends				
H	100mm diameter bend with access	9	No.		
I	50mm diameter sweep bend	2	No.		
J	40mm diameter sweep bend	2	No.		
K	32mm diameter sweep bend	2	No.		
	Tees				
L	50mm diameter sweep tee	4	No.		
M	40mm diameter sweep tee	5	No.		
	Access Caps				
N	100mm diameter access cap	4	No.		
O	50mm diameter access cap	2	No.		
P	40mm diameter access cap	1	No.		
Q	32mm diameter access cap	2	No.		
	Total Carried Forward to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from previous page				
	WC Connectors				
A	100mm diameter WC connector	4	No.		
	Traps				
B	100 x 50mm diameter floor trap and grating	2	No.		
	Testing and Commissioning				
K	Allow for Testing and Commissioning of all Sanitary Fittings, Internal Plumbing and Drainage and Water Reticulation Instllations to the satisfction of the Engineer	1	Item		
	Total Sanitary Fittings, Internal Plumbing and Drainage for Third Floor Carried Forward to Collection Page F - 27				

Bill No. 3: Sanitary Fittings, Internal Plumbing and Drainage for Sixth Floor (Executive Wing)					
Item	**Description**	**Qty**	**Unit**	**Rate (Kshs)**	**Amount (Kshs)**
1)	**SANITARY APPLIANCES** Supply, deliver, install, test and commission the following sanitary appliances complete with all the accessories including all connections to the services, waste, jointing to water supply overflows, supports and all plugging and screwing to walls and floors. (i) All sanitary fittings shall be in approved colour. (ii) The Model and Ref No. indicated is only a guide to the type and quality of fittings. (iii) Equivalent and Approved models may be acceptable.				
A	**Ambulant facility - Disabled** Disabled Facility comprising of: **a. Water Closet Suite** Back to wall floor mounted water closet pan comprising: - a floor mounted white ceramic WC pan 380mm x 450mm with horizontal outlet and chrome fasteners as **'Duravit, D-Code #2108090000'** - soft closing sturdy white seat and seat cover with stainless steel hinges as **'Duravit, D-Code #0067390000'**. Concealed cistern with a dual flush(2x6) system comprising: - concealed tank as **'Geberit, Sigma #109.304.00.5'** - dual flush actuator plate as **'Geberit, Sigma20 #115.778.KH.1'**. **b. Wash Hand Basin** White wall mounted ceramic wash hand basin with single taphole. Prefered dimension: 450 x 350mm x 145mm. Basin to be as "**Duravit, D-Code #07054500002**". Other accessories to include; chrome plated slotted waste, basin siphon **#08571700002**, overflow clip and fixings. **c. Hinged Support Items** Hinged support rail **with toilet roll holder** made of stainless steel with satin finish with suitable fixings for securing to solid wall. As '**Mediclinics, BG0800CS**'. **d. Horizontal Grab Rail** 2 No. 610mm horizontal grab rails in stainless steel with satin finsh as '**Mediclinics, BR0600CS**' **e. Vertical Grab Rail** 3 No. 455mm vertical grab rails in stainless steel with satin finsh as '**Mediclinics, BR0400CS**'	1	Set		
	Total Carried Forward to next Page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from Previous Page				
	Ambulant facility - Disabled - Cnt'd				
	e) Toilet Roll Holder Toilet roll holder in Chrome as DALI BM70 or approved equivalent.	1	No.		
	f) Toilet Brush and Holder Wall mounted toilet brush holder and brush of approved colour as GROHE "Atrio accessories Tier:G5 Prestige" Model- 40 314 toilet brush set or approved equivalent.	1	No.		
	g) Tissue Dispensing Unit Stainless steel satin finish flat sheets tissue dispensing unit with a 400 sheets capacity. The unit to have a one piece body with a frontal window to indicate when empty and to be lockable. The dispensing unit to be as '**Mediclinics, DT0106CS**'	1	No.		
	h) Soap Dispenser - Electronic (Motion sensor activated) Electronic/infra-red liquid soap dispenser with a 1ml/pump delivery and a 0.8L capacity. The dispenser to be wall mounted 200mm above counter and to have an aluminium body with content viewer. Dispenser to come with operating batteries and a replacement set. Dispenser to be as '**Mediclinics, DJ0160AS**' or equal and approved.	1	No.		
A	**Water Closet (WC) Suite** Close-coupled WC suite ('S' or 'P'-trap) in approved colour complete with horizontal outlet to BS 3402 with 7.5 litre valveless low level ceramic cistern and fittings including siphon, 15mm diameter side inlet ball valve, 20mm diameter side overflow, plastic flush bend, dual flush system, inlet connection, chrome-plated lever and heavy plastic seat and cover with metal top fixed (chrome plated) hinges. . All to be as Duravit D-Code (Horizontal outlet) CAT No. 2111090000 water closet or equal and approved.	7	No.		
B	**Toilet Roll Holder** Toilet roll holder in Chrome as DALI BM70 or approved equivalent.	7	No.		
	Total Carried Forward to Next Page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from Previous Page				
A	**Toilet Brush and Holder** Wall mounted toilet brush holder and brush of approved colour as GROHE "Atrio accessories Tier:G5 Prestige" Model- 40 314 toilet brush set or approved equivalent.	7	No.		
B	**Robe Hook** Robe hook in Satin Aluminium to be mounted by concealed screws to wall wedges. To be as Twyfords Spectrum 2000 accessories or equal and approved.	7	No.		
C	**Urinal Bowls** Ceramic urinal bowl complete with 40mm heavy duty plastic bottle trap and 40mm diameter chrome plated outlet with grating firmly fixed on the wall with chrome plated screws. The fittings shall be as Roca or equal and approved.	2	No		
D	**Urinal Bowl Divisions** Ceramic urinal bowl divisions separating the above described urinal bowls fixed firmly on the wall. The fittings shall be as Roca or equal and approved.	1	No		
E	**Urinal Bowl Flush Valves** 32mm urinal bowl flush valve for the above urinal bowls complete with, back entry with integral vacuum breaker, non-hold-open features and non-return valve, inlet control stop and wall plate comprising flush valve, bent chrome plated flush pipe and rubber pipe connector. The flush valve to be push button type. The fittings shall be as 'Docol' or equal and approved.	2	No		
F	**Wash hand basin (WHB)** Countertop Wash hand basin size 635 x 500mm with one tap hole, 32mm diameter chrome plated chain waste, chain stay hole, chrome plated mixer tap as Cobra model and heavy duty plastic bottle trap (32mm 'P' trap) with 75mm seal. To be of Duravit D-Code countertops washhand basin or equal and approved.	6	No.		
H	**Mirror for WHBs** 6mm thick polished plate glass silver backed mirror with bevelled edges, size 610 x 610mm, Plugged and screwed to wall with 4No. chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam.	6	No.		
	Total Carried Forward to Next Page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from Previous Page				
A	**Tissue Dispensing Unit** Stainless steel satin finish flat sheets tissue dispensing unit with a 400 sheets capacity. The unit to have a one piece body with a frontal window to indicate when empty and to be lockable. The dispensing unit to be as '**Mediclinics, DT0106CS**'	3	No.		
B	**Soap Dispenser** Wall mounted soap dispenser with a capacity of about one litre having a press action soap release mechanism complete with fixing screws. Allow for initial soap supply. As Starmix or approved equivalent.	3	No		
C	**Hand Driers** Automatic hand drier in white colour, operating on an infra-red automatic sensing system with heating element safety cut-out complete with a 30 seconds safety timer, plastic rawl plugs and fixing screws. The hand drier to have a heating capacity of 2.1kw and performance flow rate of 135cfm (3.82m3/min) and to be of size 270x264x143mm deep It shall have a noise level below 72.5 dBA at 1.5m. It shall be as Medclinic or approved equivalent.	3	No		
D	**Flexible Tubing** 15mm diameter x 300mm long flexible connectors complete with integral chrome plated angle valve as Cobra or equal and approved.	10	No.		
	Total Carried Forward to Next Page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from Previous Page				
2)	**<u>INTERNAL PLUMBING</u>**				
	PPR Pipes				
	Supply, deliver and install Polypropylene Random (PP-R) 20 pipework to DIN 8077 with joints, couplings, reducers, tees, adaptors, pipe fixing clips etc all to DIN 16962 and DIN 16928 .Pipe jointing shall be by polyfusion or use of electric coupling. Where pipework is not chased proper anchoring using approved fixtures shall be done. No pipework shall be left exposed to the sun. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints, support raceways, isolating sheaths, elastic materials, expansion arms and bends, crossovers, couplings, clippings, connectors, joints etc. as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	Pipe work-PPR PIPES				
A	25mm diameter pipework	18	Lm		
B	32mm diameter pipework	12	Lm		
	Bends				
D	25mm diameter bend	5	No.		
E	32mm diameter bend	4	No.		
	Tees				
G	25mm equal tee	10	No.		
H	32mm equal tee	4	No.		
I	32x25mm unequal tee	3	No.		
J	50mm equal tee	2	No.		
	Reducers				
K	25 x 20mm diameter reducer	8	No.		
L	32 x 25mm diameter reducer	2	No.		
	Total Carried Forward to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from previous page				
K	25 x 15mm diameter brass threaded reducer	8	No.		
L	50 x 25mm diameter reducer	1	No.		
M	50 x 32mm diameter reducer	1	No.		
	Valves				
N	25mm gate valve	3	No.		
O	32mm gate valve	1	No.		
	Unions				
P	25mm diameter pipe union	2	No.		
Q	32mm diameter pipe union	2	No.		
	Total Carried Forward to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from previous page				
3)	**<u>FOUL WATER INTERNAL DRAINAGE</u>**				
	Supply ,deliver and install the following UPVC, MUPVC, soil and waste systems respectively to B.S 5255 with fittings fixed to Manufactures Printed instructions and manufactured by reputable manufacturers. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	MuPVC and uPVC Waste and Soil pipework				
B	100mm diameter heavy gauge grey UPVC pipe	18	Lm		
C	50mm diameter waste pipe	6	Lm		
E	32mm diameter waste pipe	12	Lm		
E					
	Bends				
H	100mm diameter bend with access	4	No.		
I	50mm diameter sweep bend	4	No.		
K	32mm diameter sweep bend	6	No.		
	Tees				
L	50mm diameter sweep tee	2	No.		
	Access Caps				
N	100mm diameter access cap	7	No.		
O	50mm diameter access cap	2	No.		
Q	32mm diameter access cap	2	No.		
	Total Carried Forward to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from previous page				
	WC Connectors				
A	100mm diameter WC connector	7	No.		
	Traps				
B	100 x 50mm diameter floor trap and grating	4	No.		
	Testing and Commissioning				
E	Allow for Testing and Commissioning of all Sanitary Fittings, Internal Plumbing and Drainage Instllations to the satisfction of the Engineer	1	Item		
	Total Sanitary Fittings, Internal Plumbing and Drainage for Sixth Floor (Executive Wing) Carried Forward to Collection Page F - 27				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
4)	**Portable Fire Protection Installation Works**				
	Water Fire Extinguisher				
A	9 litres water portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		
	Carbon Dioxide Gas Fire Extinguisher				
B	9 litres carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		
	DCP Fire Extinguisher				
C	Dry Chemical Powder fire extinguisher complete with initial charge and mounting brackets.	2	No		
	Fire Blanket				
D	1200x1800mm fibreglass fire blanket to BS. 6575	1	No.		
	Manual Bell				
E	Manual Bell	2	No		
	Fire Portables cabinet				
F	Allow for fire cabinets 300x800x600mm for the above extinguishers to engineers approval	2	No		
	Fire Notices				
G	Allow for fire signage for the hose reel system, fire exits,fire instructions as directed by engineer	2	No		
	Testing and Commissioning				
H	Allow for Testing and Commissioning of all Fire Protection Instllations to the satisfction of the Engineer	1	Item		
	Total Sanitary Fittings, Internal Plumbing and Drainage and Fire Protection for Sixth Floor (Executive Wing) Carried Forward to Collection Page F - 27				

Bill No 5: Project Stationery for Plumbing and Drainage and Fire Protection Installation Works,

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	The tenderer shall price for the following requirements. These shall then be delivered, upon their first demand to the office of the Chief Engineer Mechanical (BS) immediately after the award to the successful bidder				
A	White photocopying paper A/4 80g/m2	Ream	20		
B	Letter head quality paper, size A4, 80g/cm^3, Green, 500 sheets	Ream	20		
C	Letter head quality paper, Blue, 500 Sheets as Classic or Conqueror or approved equivalent.	Ream	20		
D	HP Leserjet Print Cartridge serial 5A No. CE505A	No.	5		
E	1 Terabyte External portable hard drive as Tansend or approved equivalent	No.	4		
Total Project Stationery Carried Forward to Collection Page F - 27					

COLLECTION PAGE FOR SANITARY FITTINGS, INTERNAL PLUMBING AND DRAINAGE AND FIRE PROTECTION THIRD AND SIXTH FLOORS

Item	Description	Amount (Ksh)
1		
2	Total for Sanitary Fittings, Plumbing and Drainage Installation Works for Third Floor C/F from page F - 10	
3	Total for Sanitary Fittings, Plumbing and Drainage and Fire Protection Installation Works for Sixth Floor (Executive Wing) C/F from page F - 66	
4	Total for Fire Protection Installation Works for Third and Sixth Floor (Executive Wing) C/F from page F - 22	
5	Total for Project Stationery B/F from page F - 23	
5	**Contigency provision for the above works**	**250,000.00**
	Totals for Sanitary Fittings, Internal Plumbing and Drainage and Fire Protection Installation Works for External Ablution Block and New Office Block Carried Forward to Main Summary Page	

Amount in words

……..……..

Tenderer's Name and Stamp

……..……..……..

……..……..……..

Address ……...……...……..……

……...……...……

Period To Execute The Works ……..……..……...……..

Telephone No ……..……..……..……

Mobile Phone No. ……..……...……. …….

Tenderer's V.A.T No ……..……

Tenderer's P.I.N No ……..……...……. …….

Tenderer's Signature …… Date……..……...……

Witness Signature …….. Date……..……...……

SCHEDULE OF UNIT RATES

ITEM	DESCRIPTION	UNIT	RATE (KShs)
1.	Plastic water storage tank 5000 litres capacity	No.	
2.	Squatting water closet pan	No.	
3.	Pedestal wash handbasin	No.	
4.	Undersink water heater.	No.	
5.	Standard 1mx1mx 6mm thick galvanized pressed steel tank plates	No.	
6.	Low level water closet	No.	
7.	Excavation of black cotton soil not exceeding 1000mm deep and average of 750mm	LM	
8.	Countertop 'Duravit Caro' wash hand basin	No.	
9.	Wc Flush Valves.	No.	
10.	25mm diameter HDPE pipe	LM.	
11.	32mm ditto	LM.	
12.	40mm ditto	LM.	
13.	25mm diameter HDPE bend	No.	
14.	32mm ditto	No.	
15.	40mm ditto	No.	
16.	25mm diameter HDPE tee	No.	
17.	32mm ditto	No.	
18.	40mm ditto	No.	
19.	100mm diameter air release valve	No.	

SECTION G:

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

CONTENTS

CLAUSE No.		PAGE
1.	GENERAL NOTES TO THE TENDERER…….	G-1
2.	TECHNICAL SCHEDULE…….	G-2

TECHNICAL SCHEDULE

1. General Notes to the Tenderer

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

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

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

TECHNICAL SCHEDULE

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).

ITEM	DESCRIPTION	MANUFACTURER	COUNTRY OF ORIGIN	REMARKS (Catalogue No. etc.)
1.	Water Closet			
2.	Kitchen sink			
3.	Wash hand basins			
4.	Mirrors			
5.	Water/CO2 extinguisher			
6.	4.5Kg CO2 fire extinguisher			
7.	PPR pipes and fittings			
8.	UPVC grey class B pipe			
9.	MUPVC grey waste pipe and fittings			
10.	Gate valves			
11.	Plastic water tank			
12.	Hand driers			
13.	Water booster pump set			
14.	Disabled unit			
15.	Instant shower heater			
16.				
17.				

SECTION H:

DRAWING SCHEDULE

CONTENTS

CLAUSE No.		PAGE
1.	DRAWING SCHEDULE…….	H-1

DRAWING SCHEDULE:

As shall be provided during project implementation.

REPUBLIC OF KENYA

SALARIES AND REMUNERATION COMMISSION

PROPOSED PARTITIONING OF OFFICES FOR SALARIES AND REMUNERATION COMMISSION ON 3RD AND 6TH FLOORS, WILLIAMSON HOUSE, 4th NGONG AVENUE, UPPER HILL, NAIROBI.

W.P. ITEM NO. D110 / NB / NB / 1801 – JOB NO. 10402 A

SPECIFICATIONS AND BILLS OF QUANTITIES

FOR
AIR CONITIONING AND MECANICAL VENTILATION INSTALLATION WORKS.

CHIEF ARCHITECT
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 30743-00100
NAIROBI.

CHIEF ENGINEER (ELECTRICAL)
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 41191-00100
NAIROBI.

CHIEF QUANTITY SURVEYOR
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 30743-00100
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CHIEF ENGINEER [MECHANICAL(BS)]
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
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P.O.BOX 41191-00100
NAIROBI.

CHIEF ENGINEER (STRUCTURAL)
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 30743-00100
NAIROBI.

CLIENT
THE CHIEF EXECUTIVE OFFICER
SALARIES AND REMUNERATION
COMMISSION
P.O. BOX 43126 - 001000
NAIROBI

MAY, 2021

VOLUME 10

TABLE OF CONTENTS

TITLE	PAGE
Contents	(i)
Definitions	(ii)
Special Notes.....	(iii)
SECTION D: General Mechanical Specifications…….....	A/1-D/4
SECTION E: Particular Specifications for Mechanical Ventilation and Air conditioning Systems ……..……	B/1-B/4
SECTION F: Bills of Quantities and Schedule of Unit Rates	C/1- C/17
SECTION G: Technical Schedule of Items to be supplied.....	D/1-D-2
SECTION H: Schedule of Drawings.....	E/I

DEFINITIONS

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

The Employer:	Kenya Deposits Insurance Corporation
Represented by:	The Chief Executive Officer, Kenya Deposits Insurance Corporation P.O. BOX 45983-00100 NAIROBI
Project Manager:	Works Secretary Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Architect:	Chief Architect Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Engineer:	Chief Engineer [Mechanical (BS)] Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 41191 - 00100 NAIROBI
Electrical Engineer:	Chief Engineer (Electrical) Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 41191 - 00100 NAIROBI
Quantity Surveyor:	Chief Quantity Surveyor Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Structural Engineer:	Chief Engineer (Structural) Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Main Contractor:	The firm appointed to carry out the Supply, Delivery, Installation, Testing and Commissioning of Mechanical Ventilation – Air Curtains and Wind Cyclones Installation Works.
Site:	**Salaries and Remuneration Commission Offices, Williamson House, 4th Ngong Avenue, Upper Hill, Nairobi.**

SPECIAL NOTES FOR ALL TENDERERS:

1. These notes shall form part of these specifications and conditions.

IMPORTANT:

2. **The contractor will be required to ensure there's no interference with supply of services to resident organizations. The contractor will be required to take all precaution and care so that no damage will occur to the existing installations on site. The contractor is also advised to secure all the necessary insurance policies as he will be solely held responsible for any damages to the existing system, injuries to persons resulting from his activities and/or interference with normal operations of the building that may result from his negligence, actions or otherwise.**

3. The tenderer is required to check the number of pages in this document and should any be found to be missing or the figures indistinct, he must inform the Engineer at once and have the same rectified. Should the tenderer be in doubt about the precise meaning of any item, word or figures, or for any reason whatsoever observe any apparent omission of words or figures, he must inform the Engineer in order that the correct meaning may be decided upon before the date for the submission of the tenders.

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

5. The tenderer shall not alter or otherwise qualify the text of this specification. Any alteration or qualification made without authority will be ignored and the text of the specification as printed will be adhered to.

6. The tenderer shall be deemed to have made allowances in his unit prices generally to cover items of preliminaries or additions to Prime Cost Sums or other items, if those have not been priced against the respective items.

7. The tenderer's price shall include all government taxes including duties, V.A.T. etc. No claims whatsoever will be allowed in respect of duties, VAT etc. if the tenderer fails to include them in his unit prices. It is also to be noted that VAT will be included in the unit rates and NOT worked out as a percentage of the total.

8. In no case will any expenses incurred by the tenderer in preparation of this tender be reimbursed.

9. The copyright of this specification is vested in the Engineers and no part thereof may be reproduced without their express permission, given in writing.

10. The specifications must be priced in Kenya Currency i.e. shillings and cents.

11. All the 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.

12. 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 Board of Kenya to avoid disqualification

Signed (As in Tender) ..... Date/Stamp .....

SECTION D:

GENERAL MECHANICAL SPECIFICATIONS

SECTION A

GENERAL MECHANICAL SPECIFICATION

CLAUSE	DESCRIPTION	PAGE
2.01	GENERAL	A-1
2.02	QUALITY OF MATERIALS	A -1
2.03	REGULATIONS AND STANDARDS	A -1
2.04	ELECTRICAL REQUIREMENTS	A -1
2.05	TRANSPORT AND STORAGE	A -2
2.06	SITE SUPERVISION	A -2
2.07	INSTALLATION	A -2
2.08	TESTING	A -2
2.09	COLOR CODING	A -4
2.10	WELDING	A -4

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 Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.
b) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
c) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
e) The Local Council By-laws.
f) The Electricity Supply Authority By-laws.
g) Local Authority By-laws.
h) The Kenya Building Code Regulations.
i) The Kenya Bureau of Standards

2.04 **Electrical Requirements**

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

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

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

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

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

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

2.05 **Transport and Storage**

All plant and equipment shall, during transportation be suitably packed, crated and protected to 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 weeks' 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.

Code: M/GS/07

SECTION B:

PARTICULAR SPECIFICATIONS FOR MECHANICAL VENTILATION AND AIR CONDITIONING SYSTEMS

GENERAL SPECIFICATION FOR MECHANICAL VENTILATION INSTALLATIONS

CONTENT **PAGE**

1.0	**SCOPE OF WORK**	**B3**
2.0	**SYSTEM COMPONENTS**	**B 3**
3.0	**DRAWINGS**	**B 3**
4.0	**MATERIALS AND WORKMANSHIP GENERALLY**	**B 3**
5.0	**DUCTWORK GENERALLY**	**B 4**
5.1	**Ductwork**	**B 4**
5.2	**Rectangular ductwork**	**B 4**
6.0	**BRACKETS AND SUPPORTS**	**B 5**
7.0	**JOINTS**	**B 6**
7.1	**Flexible Joints**	**B 6**
7.2	**Flexible Connections.**	**B 6**
8.0	**FINISH PAINTING**	**B 7**
9.0	**AIR INTAKES AND OUTLETS**	**B 7**
10.0	**FANS**	**B 7**
10.1	**General**	**B 7**
10.2	**Axial Flow Fans**	**B 8**
11.0	**DAMPERS**	**B 8**
11.1	**General**	**B 8**
11.2	**Butterfly dampers**	**B 9**
11.3	**Bifurcating dampers**	**B 9**
11.4	**Multi-leaf dampers**	
11.5	**Damper Quadrants and Operating Handles**	
11.6	**Self-closing dampers**	
11.7	**Sliding Dampers**	**B 9**
11.8	**Iris type dampers.**	**B 10**
12.0	**GRILLES**	**B 10**
12.1	**Supply & Return Registers**	**B 10**
12.2	**Extract grilles**	**B 10**
12.3	**Fresh Air Grilles**	**B 10**
12.4	**Diffusers**	**B 10**
12.5	**Louvres**	**B 10**

13.0 ATTENUATORS ---------- B 10
13.1 General ---------- F 10
13.2 Rectangular Attenuators ---------- B 11
13.3 Circular Attenuators ---------- B 11
13.4 Acoustic Lining ---------- B 11

14.0 INSTRUMENTS ---------- B 11
14.1 General ---------- B 11
14.2 System Static Pressure Gauge ---------- B 11

15.0 VIBRATION, NOISE AND SOUND INSULATION ---------- B 12
15.1 Anti-Vibration Mountings ---------- B 12
15.2 Noise ---------- B 12

16.0 THERMAL INSULATION ---------- B 12
16.1 General Description ---------- B 12
16.2 **Ductwork In Plant Room ---------- B 12**
16.3 Ductwork External to plant Rooms ---------- B 13

17.0 ELECTRICAL EQUIPMENT AND WIRING ---------- B 13
17.1 Scopes ---------- B 13
17.2 General ---------- B 13
17.3 Electrical Motors ---------- B 13

18.0 INSPECTION, COMMISSION AND TESTING ---------- B 14
18.1 General ---------- B 14
18.2 Testing ---------- B 14
18.2.1 Site Tests ---------- B 14
18.2.2 Site Tests-Fans ---------- B 14
18.2.3 Completion Of Works – Balancing And Commissioning ---------- B 14

19.0 CONTROL SYSTEM ---------- B -15

20.0 NOISE AND SOUND CONTROL ---------- B 15

21.0 OPERATING AND MAINTAINANCE INSTRUCTION ---------- B 16

22.0 SPARE PARTS ---------- B 16

GENERAL SPECIFICATION FOR MECHANICAL VENTILATION INSTALLATIONS

1.0 SCOPE OF WORK

The scope of the works comprises Installation, Testing, and Commissioning of Mechanical Ventilation and Air Conditioning systems in accordance with Specifications and drawings.

All the necessary elements and details for complete system are to be included. Excluded from the specifications are the following:-

- All concrete works
- All block work
- Electrical wiring, isolators and switch boards, except internal wiring for control system from a local isolator.

2.0 SYSTEM COMPONENTS

Dimensions and capacities of ducts and fans are calculated and based on a specific requirements of air, and on an assumed resistance through grilles, silencers etc. However the installer shall be responsible for the correct functioning of the system. Subsequently it is therefore his duty to size the systems' components with consideration to his offered equipment.

3.0 DRAWINGS

The Engineer's drawings show the main layout and principles for the Ventilation and Air Conditioning Systems. If need for further detailing is required in order to carry out the work, working drawings and details shall be produced for approval by the Engineer before the work is executed.

In preparation of the working drawings are care should be taken to coordinate the Ventilation and Air Conditioning works with other services involved and avoid any interference with these.

4.0 MATERIALS AND WORKMANSHIP GENERALLY

In the specification, equipment is generally described according to capacities and a given standard in order to aid in identification of the particular equipment to satisfy specifications. The equipment selected shall be of reputable manufacture with adequate Back-Up service.

If the Engineer finds it necessary, samples of the materials will be submitted for approval before placing an order. The Engineer shall reject any materials which he finds to be of unsatisfactory quality.

Works shall be carried out by competent workmen under experienced supervision.
The Engineer shall have the authority to have any substandard work or equipment redone and/ or equipment replaced.

5.0 DUCTWORK GENERALLY

5.1 Ductwork

All seams, joints and connections to plant shall be so made as to reduced air leakage to a minimum. Internal roughness and obstructions to airflow will not be accepted. Sharp edges or corners on the outside of ductwork, flanges, supports, etc will not be accepted. Any part of galvanized ductwork where the galvanizing is damaged during manufacture or erection shall be painted with two coats of aluminum, zinc or other corrosion – ressisting paint to the approval of the Engineer.

Where ducts pass through roofs (and external walls where applicable) these shall be fitted with angle flanges and weather cravats to ensure a weather-proof fitting to the building structure.

Connections to equipment shall be made with angle flanged joints. Ductwork which may have to be moved to enable plant to be removed shall incorporate angle flanged joints. For long duct runs, angle flanged joints shall be included at intervals to facilitate any subsequent alternations.

Bends and offsets shall have a minimum throat radius equal to the width of the duct. Where short radius elbows are indicated or agreed by the Engineer as necessary due to site limitations the dimensions and internal vane (s) shall be in accordance with HVCA publication DW/121.

Ductwork shall be constructed by galvanized, cold rolled, close annealed patent flattened sheets. Tests ho
les shall be provided in branch ducts from grilles and there shall be three or four tests holes on side of duct according to duct depth at each test position. At branch positions there shall be one test hole. Air tight swivel type metal covers shall be fitted over the test holes in such a manner that they shall be readily removed as required.

5.2 Rectangular ductwork

Construction of ductwork shall be as per the following Guidelines:

- Up to 300mm longer side – 22 S.W.G.
- over 300mm and up to 460mm longer size – 20 S.W.G.
- over 460mm and up to 900mm longer side 18 S.W.G (stiffening to be 25mm x 25mm x 3mm. M.S angle at slip joints at 180mm spacing)

- Over 900mm and up to 1370mm. longer side 16 S.W.G. (stiffening to be 30mm x 30mm x 3mm M.S angle at 900mm spacing).

- Over 1370mm longer side – 14 S.W.G. (Stiffening to be 40mm x 40mm x 5mm M.S angle at 900mm. spacing).

Ductwork constructed from 22 and 20 S.W.G sheet shall have folded locked seams and ductwork constructed from 18, 16 and 14 S.W.G. sheets shall have riveted seam with 8 S.W.G rivets at 2" pitch.

Joints for ductwork having a side greater in width than 610mm shall be flanged by means of 30mm x 30mm x 3mm mild steel angles.

Mild steel used as flanges or stiffeners shall be riveted to the ductwork, with 8 S.W.G rivets at 2" pitch. The joint faces of flanges shall be drilled for 10mm bolts at 75mm pitch.

Air tight access doors shall be provided on the ductwork wherever indicated on the drawings. The access doors, of sufficiently heavy construction to avoid distortion, complete with handles, shall be secured by brass wing nuts screwed into studs provided, on galvanized mild steel stiffening frames riveted, or bolted to the ductwork. The access doors shall be provided with felt or rubber gaskets to ensure that when closed they are perfectly tight.

The ductwork shall be installed with all joints air tight and adequately stiffened and braced shall have the largest radius possible with a minimum throat radius of one diameter if possible. Square or miter elbows will only be allowed where shown on the drawings. Turning vanes shall be fitted in square or miter elbows.

Transformer pieces except where situated on fan suction shall be constructed so that the angle on any side does not exceed 15° to the axis of the duct where possible.

Branch ducts shall enter main ducts expansion sections where possible. Where branch ducts occur, at taper or transformation pieces, the length of such pieces in the main duct shall be symmetrical about the axis of the branch.

6. BRACKETS AND SUPPORTS

Supports and brackets for ductworks shall be made adjustable for height, spaced to ensure support and where practicable shall be fitted at each joint of the ductwork. Vertical ductwork shall be supported at each floor level, horizontal ducts at intervals not exceeding 2280mm and adjacent to fans, canvas joints and other equipment. All members of supports in contact with metal ductwork shall be galvanized after fabrication.

Socketed joints shall have a minimum overlap of 50mm in the direction of flow. The joint shall be made with an approved type jointing compound with bolts or rivets at centres not exceeding 50mm. wherever access cannot be made for riveting or bolting self tapping screw of the shortest length which will give a satisfactory joint shall be used in lieu of the rivets or bolts, on size or diameters up to 530mm. All slip joints on circular ductwork are to have a spigot carefully swaged damper leaves shall be multi leaf type. The quadrants shall be of robust construction and securely fixed to the ductwork. The leaves shall be linked with a connecting rod and the ends of the spindle shall be housed in bearings. Dampers are to indicate the full and closed positions and are to be marked and then locked after air Volume has been set.

7.0 JOINTS

7.1 Flexible Joints

Flexible joints shall be provided on fan inlet and outlet connections and elsewhere on the ductwork where indicated. They shall be over the full cross-sectional area of the mating fan inlet or outlet section. The ends of the duct and fan connections shall be in line.

Flexible joints shall consist of, or be protected by, material having a fire penetrating time of at least fifteen minutes when tested in accordance with BS 476 Part 1 Section 3. The material shall be of the glass fibre cloth type, canvas or other approved material. The width of joints from metal edge to metal edge shall not be less than 80mm and more than 250mm.

All flexible joints other than fan inlet connections shall be between flanged ends. The flexible material flange shall be backed by an angle or flat iron flange and the flexible joint flat iron bar used with fan inlets shall not be less than 5mm thick.

7.2 Flexible Connections.

Where flexible connections are indicated or required between rigid ductwork and particular components or items of equipment, the internal diameter of the flexible duct shall be equal to the external diameter of the rigid ductwork and of the spigot type. The use of flexible duct between rigid sections of sheet metal ductwork to change direction or plane will not be permitted except where indicated or expressly authorized by the Engineer.

The flexible duct shall have a liner a cover of tough tea-resistant fabric equal in durability and flexibility to glass fibre shall be impregnated and coated with plastics. It shall be reinforced with a bonded galvanized spring steel wire helix or glass fibre cord or equal and shall be bonded to cover to ensure regular convolutions.

Alternatively the flexible duct shall consist of flexible corrugated metal tubing of stainless steel, aluminium, tinplated steel or aluminium coated steel. The metal may be lined on the inside or the outside or both with plastics materials.

The joints to rigid spigots shall be sealed with a brush coat of pipe jointing paste or mastic compound. Ducts up to 150mm diameter shall be secured with a worm drive type hose clip complying with BS 3628. Ducts over 150mm diameter shall be secured with band clip.

The frictional resistance to air flow per unit length of the flexible duct shall not exceed 50% more than the frictional resistance per unit length of galvanized steel ducts of equivalent diameter. The radius ratio R/D for bends shall not be less than 2, where R is the centre line radius and D is the diameter of the flexible duct.

Flexible ducts shall be suitable for an operating temperature range of 18oC to 120oC and shall comply with BS 476 Part 1, Section 2, Clause 7 (Clause 1; surface of very low flame spread).

8.0 FINISH PAINTING

Upon completion of the installation and after all tests have been carried out to the satisfactory of the Engineer, the plant, equipment, supports, etc. shall be examined and all priming coats damaged during erection made good.

Any plant or equipment, ductwork, etc., which is to be insulated, shall have had the priming paint protection made good before the application of the insulation. After the above procedures have been carried out to the satisfaction of the Project Manager, the various surface shall be given the necessary preparation as recommended by the paint and insulation manufacturers and finish painted in colours to be agreed between the Sub-Contractor and Project Manager, at a later date.
For the purposed of the Specification, however, it shall be deemed that the sub-contractor's tender price was based on the identification requirements for the various services detailed in Code of Practice DW/161 Identification of Ductwork as published by the H.V.A.

9.0 AIR INTAKES AND OUTLETS

Unless otherwise indicated fixed louvers on external walls will be fitted at air intake and outlet positions. A galvanized steel wire mesh screen of 20mm diamond mesh and at 2mm diameter wire and complete with a frame of galvanized steel rod with securing lugs or of flat iron shall also be fitted on the inner side of the louvers.

10.0 FANS

10.1 General

Fans shall capable of giving the specified performance when tested in accordance with BS 848. Although estimated values of the resistance to airflow of items of equipment may be indicated, this does not relieve the Contractor to the responsibility for providing fans capable of delivering the required air volume flow through the system.

The make and design of fans shall be approved by the Engineer and evidence supporting noise levels and fan efficiencies shall be provided. Where fans are supplied with noise attenuations, full details of the attenuations shall be given.

Belt driven fans shall be fitted with pulleys suitable for V-belts; pulleys of the taper lock type may be used for drivers up to 30KW output. Alternatively, and in any case above 30KW output, pulleys shall be secured to the fan and the motor shafts by keys fitted into machined keyways. Pulleys shall be keyed to the fan shaft in the overhung position. Keys shall be easily accessible so that they can be withdrawn or tightened and they shall be accurately fitted so that the gib head does not protrude beyond the end of the shaft.

Machined bolts, nuts and washers only shall be used for the assembly of fans; all bearing surfaces for the heads of bolts or washers shall be count faced. Holding down bolts for fans and meters shall be square section under the head or be fitted with snugs to prevent them tuning in the fan base plate when the nuts are tightened.

Any fan which is too large or too heavy for safe manhandling shall provided with eyebolts or other lifting facilities to enable mechanical lifting equipment to be used.

10.2 Axial Flow Fans

Axial flow fans shall be of either the single stage type or the multi-stage contra-rotating type with each impeller mounted on an independent motor. Casings shall be rigidly constructed of mild steel stiffened and braced to obviate drumming and vibration. Cast iron of fabricated steel feet shall be provided where necessary for bolting to the base or supports. Inlet and outlet ducts shall terminate in flanged rings for easy removal. The length of the fan (s) and motors(s) shall also terminate in flanges in order that the complete section may be removed without disturbing adjacent ductwork. Electrical connections to the motor(s) shall be through an external terminal box secured to the casing. Impellers shall be of steel or aluminium, the blades shall be secured to the hub or the blades and the hub shall be formed in one piece. The hub shall be keyed to a substantial mild steel shaft and the whole statically balanced. Blades shall be of aerofoil section. Shafts shall be carried in two bearings which may be ball roller or sleeve type. Lubricators shall be extended to the outside of the casing.

Where axial flow fans are driven by a motor external to the casing the requirements for pulleys and for V-belt drives and guards shall be met. Unless otherwise indicated a guard is not required for any part of a drive which is within the fan casing. An access door of adequate size shall be provided.

Where axial flow fans of the bifurcated type are indicated the motors shall be out of the air stream. Motors may be placed between the two halves of the casing in the external air or may be placed within the fan casing provided that effective ventilation is given to the motor. Where hot gases or vapours are beings handled the motor and the bearings shall be suitable for operation at the temperature they may experience.

11.0 DAMPERS

11.1 General

Sufficient dampers shall be provided to regulate and balance the system. Dampers on grills or diffusers shall be used for fine or secondary control. All dampers shall be sufficiently rigid to prevent fluttering. Unless otherwise indicated, the air leakage past dampers in the fully-closed position shall not exceed 5% of maximum design air flow in the duct. All duct dampers except fire dampers and self-closing flaps shall be fitted with locking devices and position indicators. Dampers shall be generally in accordance with the appropriate HVCA Specification.

Each Primary control damper shall be fitted with a non-corrodible label stating the
actual air flow in M3/S and the cross-sectional area. Alternatively, these figures shall be painted in a visible position on the adjoining ductwork or insulation. The position of a damper as set after final regulation and balancing be indelibly marked on the damper quadrant

11.2 Butterfly dampers

Butterfly dampers shall each consist of two plates edge seamed, and of the same thickness of material as that from which the associated duct is made, and rigidly fixed to each side of a mild steel operating spindle, the ends of which shall be turned and housed in non-ferrous bearings.

11.3 Bifurcating dampers

Bifurcating dampers shall be of 2mm thick sheet for sizes up to 450mm square. For larger sizes, the thickness shall be as indicated. Damper plates shall be rigidly fixed to square section mild steel spindles the ends of which shall be turned and housed in non-ferrous bearings.

11.4 Multi-leaf dampers

Multi – leaf dampers shall consist of two plates of material of the same thickness as the associated duct and rigidly fixed to each side of an operating spindle, the ends of which shall be housed in brass, nylon, oil impregnated sintered metal, PTFE impregnated or ball bearings. The ends of the spindles shall be linked such that one movement of the operating handled shall move each leaf an equal amount. An inspection door shall be provided adjacent to each multi-leaf damper.
On low velocity systems only, multi-leaf damper blades may be of a single plate, at least 1.6mm thick and suitably stiffened, and the blade linkages may be within the duct. Those dampers shall have bearings and inspection doors as specified above.

11.5 Damper Quadrants and Operating Handles

Quadrants and Operating handles shall be of die-cast aluminium with the words ”OPEN” and “SHUT” cast on the Quadrants. Quadrants shall be securely fixed to the damper spindles and shall be close-fitting in the quadrants hubs to prevent any damper movement when the damper levers are locked.

11.6 Self-closing dampers

Self-closing dampers shall be designed so as to present the minimum of resistance to airflow under running conditions, to take up a firm, non-fluctuating position under running conditions and to give a tight shut-off when closed. They shall incorporate rubber stops to prevent rattling and to give a tight shut-off when closed. They shall incorporate rubber stops to prevent rattling.

11.7 Sliding Dampers

Sliding dampers shall be provided only where indicated. They shall be of 2mm. thick sheet steel for size up to 450mm square. For larger sizes the thickness shall be as indicated. They shall run in guides lined with felt.

11.8 Iris type dampers.

Iris type dampers may be used in ducting up to 600mm, dia. Or 450mm square. The control shall be on the outside of the damper. The design shall be such that the leaves of the damper can be easily moved for adjustment.

12.0 GRILLES

12.1 Supply & Return Registers

Supply registers shall be manufactured from high grade, extruded Aluminium sections with lacquered finish and fixing shall be 32mm with bevelled edges.

The registers shall have a front set of blades parallel to the long dimension, of rear set of blades parallel to the short dimension, the blades being at 17mm centres and individually adjustable with opposed blade dampers.

12.2 Extract grilles

Extract grilles shall be similar to the Supply Registers described above with the exception that they have only one set of blades parallel to the long dimension.

12.3 Fresh Air Grilles

These shall be manufactured from sheet steel with steel fixing flanges and shall be galvanized after manufacture. An insect screen shall be fixed downstream.

12.4 Diffusers

These shall be manufactured from high grade extruded sections with lacquered finish, bevelled flanges and removable core. Fixing shall be by self-tapping screws through the duct into neck of the diffuser.

12.5 Louvres

Discharge and Fresh air Intake louvres shall be manufactured from mild steel and be galvanized after manufacture. A screen shall be fixed to the back of the louvers.

13.0 ATTENUATORS

13.1 General

Purpose made attenuators and sound absorbing material shall be designed to air flow, have adequate strength and cohesion to resist erosion by air flow and do not produce dust. They shall be free of odour and proof against rot, damp and vermin and shall comply with the requirements as to fire and smoke hazards. Adhesives shall be compatible with the sound absorbent material and should preferably be non-flammable.

Where sound absorbent material and /or special attenuators are indicated they shall either reduce the sound level in the space, due to the equipment, to the specified value or shall give the specified sound level attenuation over the specified range of frequencies. Purpose made attenuators shall be tested in accordance with HVRA Laboratory Report No. 55 (Code for the measurement of the performance of unit silencers). The insertion loss and generated noise level for each octave band and the pressure loss of the silencer shall be stated.
Attenuators shall be suitable for internal air pressure of 100N/m2, air stream temperatures of up to 40oc and free from air stream erosion for velocities up to 25m/s. The mineral wool lining shall be rot, vermin and fire-proof. Attenuator casing shall be pre-galvanized sheet steel with galvanized pre-drilled flanges.

13.2 Rectangular Attenuators

These shall be rectangular in section with splitters forming air passages in parallel. The mineral wool lining shall be resin bonded.

13.3 Circular Attenuators

Circular section attenuators will have a central pod. The mineral wool lining shall be retained by expanded steel. The end flanges shall be match drilled to suit the fan which they are fixed to.

13.4 Acoustic lining

Where indicated on the contract drawings, the ductwork shall be acoustically lined. The lining shall consist of resin bonded mineral wool 25mm, thick fixed to the ductwork by a suitable adhesive.

14.0 INSTRUMENTS

14.1 General

The instruments, gauges etc, detailed in this section shall be provided in addition to those associated with specific items of plate and detailed elsewhere, they shall be mounted in accessible positions and shall be easily read.

14.2 System Static Pressure Gauge

A system static pressure gauge shall be provided for the system. It shall consist of a small inclined manometer gauge similar to a filter gauge. The edge of the gauge shall be connected to the system and the other end shall be left open to the plant room but where fluctuation of the static pressure in the plant room may occur the gauge shall be connected across the main fan. Such fluctuations may be caused by wind pressure affecting large open air intakes to the plant room.

15.0 VIBRATION, NOISE AND SOUND INSULATION

15.1 Anti-Vibration Mountings

Fans, compressors, motors and any other vibration-inducing equipment shall be isolated from the building structure by anti-vibration mountings which shall be compressed machinery cork, spring or rubber dampers or rubber/metal bearers as indicated.

15.2 Noise

The noise produced by the installation in the spaces served, in any adjacent buildings and in the open air surrounding plant rooms shall be kept as low as possible. This shall be specially considered in the selection of fan motors, grilles and the internal finish and arrangements of extraction ducting.

Noise level information for fans based on octave analysis data, shall be stated. The reference level and the testing technique shall be stated.

The sound level in the spaces served, due to the equipment shall comply with the recommended design criteria given in the IHVE Guide (Table 13.1 of 1965 Edition). The maximum sound pressure level due to ventilation system must not exceed value mentioned below measured by a reference value of $2 \times 10 \times 10^{-5}$ N/m^2 transferred to a logarithmic scale, and measured at any point 1.5 meters above the floor and 1.0 meters from the walls.

The maximum sound pressure level measured at any point 4 metres from the extract point must not exceed 55dB.

The maximum sound pressure level measured at any point 4 metres from fans must not exceed 60dB.

16.0 THERMAL INSULATION

16.1 General Description

All heated, cooled, and recirculated air ductwork shall be insulated.

Insulation shall be of 25mm thick expanded polystyrene sheet, or spray applied polyurethane foam to a uniform thickness of 25mm. Polystyrene shall be fixed so that the edges butt closely without gap and the insulation shall overlap at corners by the thickness of the insulation. The sheet shall be fixed by means of a suitable adhesive and plastic impingement pines attached to the ductwork.

16.2 Ductwork In Plant Room

The insulation described above in Clause 5.1 above shall be finished by the application of a 15mm thick layer of hard setting finish. Insulation shall bevelled thick to angle of 45o at all connecting flanges, access hatches and all other places where operation or maintenance is likely to cause the breaking of the insulation.

The insulation shall then be given a vapour sealing by the application of two coats of anti-condensation paint.

16.3 Ductwork External to plant Rooms

The insulation described in Clause 5.1 above shall finish by the application of two coats of bitumastic.

17.0 ELECTRICAL EQUIPMENT AND WIRING

17.1 Scopes

The responsibility for electrical equipment and wiring shall be as defined as below-:

An on-off starter shall be provided and placed in the appropriate position for connection of the fans required for the installation and within a time agreed with the Engineer fully detailed wiring diagrams for all connections to them shall be availed.

The Installer shall be responsible for the accuracy of all wiring diagrams provided by him and for the correct internal wiring of all pre-wired equipment supplied. The Installer shall reimburse the full cost of abortive or remedial work arising from any error in these aspects.

17.2 General

Unless otherwise indicated all electrical equipment and installation shall be suitable for use in ambient temperatures up to 40°C and relative humidities up to 90%. For tropical climates, electrical equipment shall be suitable for use in the temperature and humidity as indicated; it shall be proof against atmospheric corrosion, including that of saline air where relevant, and materials shall not be susceptible to mould growth or attack by termite and similar hazards.

17.3 Electrical Motors

Electrical motors shall comply with BS 170 2048 or with BS 2613 and BS 3979 as appropriate. All motors shall have Class E insulation (BS2757) and can be continuously rated.

They shall be screen protected (BS2817) unless otherwise indicated. Under all normal conditions without being overloaded. All motors larger than 0.75kw output shall be three phase, for motors above 15kw output the type of motor and method of starting shall be such as to limit the starting and run-up currents to three times the rated full load current unless otherwise indicated. No motor shall run faster than 25 rev/s unless otherwise indicated.

18.0 INSPECTION, COMMISSION AND TESTING

18.1 General

Unless otherwise indicated tests shall be carried out in accordance with the appropriate BS or CP. Test certificates for works tests, site tests and tests required by BS shall be submitted in duplicate to the Engineer.

18.2 Testing

Where an individual inspection or tests take place at outside the site of the works representatives of the Engineer will be required to be present.

Unless otherwise indicated the contract shall include the cost of all tests, necessary instruments, plant supervision and labour both at work and on site. The accuracy of the instruments shall be demonstrated where so directed by the Engineer.

The site test shall be of at least six hours duration. Any defects or workmanship, materials and performance maladjustments or other irregularities which become apparent during the tests shall be rectified by the supplier at his expense and the tests shall be repeated at his expense to the satisfaction of the Engineer.

The Supplier/Installer's representative present at the site tests shall be fully conversant with the operation of the thermostatic controls and shall be expected to explain the operation and safety controls forming part of the installation to the employer's representatives.

18.2.1 Site Tests

The Installer shall supply all instruments and equipment necessary to carry out site tests and shall arrange with other parties for the testing of associated equipment which may affect the performance of the plants installed under these works.

18.2.2 Site Tests-Fans

All fans shall be charged with suitable lubricant and shall be tested upon completion of the auxiliary system erection to ascertain that the performance of each fan complies with the requirements of the specification.

18.2.3 Completion of Works – Balancing and Commissioning

Following the site tests and prior to handover, Mechanical Ventilation or Air-Conditioning systems shall be balanced by means of grills, dampers and other special controls installed so to give the required air flow rates and where applicable the required temperatures, pressures and humidity conditions in all areas served by the said systems.

The complete system shall be balanced and commissioned as a whole. Sectional balancing and commissioning on any part of the system where this excludes final complete system balancing and commissioning shall not be accepted.

Test volumes within ducts shall be within +5% of the design volumes, and volumes at grills and diffusers shall be within +10% of the design volumes.

When the system has been balanced to the satisfaction of the project manager, it shall be run under complete automatic control for 72 hours continuous operation to ascertain any faults in operation before acceptance and handover. Any faults discovered during this time shall be corrected and another test or tests of 72 hours duration shall be carried out to ensure satisfactory operation, all at the expense of the Supplier/Installer..

During this phase, particular attention shall be paid to:

- The maintenance of cleanliness of all plant and extraction systems during construction and ensuring that extraction systems are cleaned through as part of commissioning.

- The protection of plant, particularly sensitive or fragile items, from the activities of other trades during construction and from dirt and mal operation during commissioning.

- The protection of electrical of electrical equipment from damp during construction and commissioning.

19.0 CONTROL SYSTEM

Particular attention shall be paid to the following features:

- Satisfactory operation of any automatic or manually operated sequence to be used in the event of fire.

- Safety in the event of failure and of sudden resumption of electricity supply.

- Satisfactory operation of safety interlocks designed for the protection of personnel, such as those associated with the high voltage electrically operated plant.

The following items shall be checked and/or tested and recorded on the site Test Certificate:-

- Set devised value of all control devices

- Satisfactory operation of equipment protection devices.

- Satisfactory operation of all sequencing operations and alternate working selections and automatic or manual change-over of duplicate plant.

20.0 NOISE AND SOUND CONTROL

Sound level reading shall be taken with a simple sound level meter using the 'A' scale weighting network. The spaces in which readings shall be taken shall be as agreed with the Engineer but will in general be the following:-

- Plant rooms
- Occupied rooms adjacent to plant rooms
- Outside plant rooms facing air intakes and exhaust to assess possible nuisance to

adjacent accommodation. If the adjacent accommodation is private residential building

- tests may be required at night.
- In the space served by the first grille or diffuser after a fan outlet.
- In any space where, by the addition of special silencing material or techniques of by classification of use, a low level of noise is clearly required.

Alternatively, sound level reading shall be taken using a sound analyzer to give an octave band analysis of the ground spectrum and to pinpoint the frequency values of peak sound levels. The spaces in which readings shall be taken shall be as agreed with the Engineer but will in general be as detailed in paragraph above.

21.0 OPERATING AND MAINTAINANCE INSTRUCTION

The Supplier/Installer shall demonstrate and explain the plant and the method of starting, running and stopping to such staff as the Engineer shall nominate.
He shall provide three sets of operating and maintenance instructions which shall be enclosed in durable covers. The operating and maintenance instructions shall include;-

- A brief outline of the operation of the plant.
- Instructions on how to start and stop the plant, noting any safety and / or sequencing arrangements.
- Details of required maintenance with suggested frequency of action
- Details of all lubricating oils and greases required and filter replacement
- Details of each item of plant including the name and address of the manufacturer, type and model, serial number, duty and rating.

The operating and maintenance instructions shall be handed to the Engineer not later than at the end of the commissioning period.

22.0 SPARE PARTS

The Installer shall submit a priced list of any extra materials which he recommends should be purchased for the Ventilating and Air Conditioning Plants and all associated equipment and control gear and extras not supplied as standard. He shall be required to give a guarantee that he will hold sufficient running stock of spare parts for the maintenance of the equipment.

SECTION C:

BILLS OF QUANTITIES

AND

SCHEDULE OF UNIT RATES

SECTION C:

BILLS OF QUANTITIES AND SCHEDULE OF UNIT RATES

CONTENTS

CLAUSE No.		PAGE
5.01	GENERAL NOTES TO TENDERERS……	C-1
5.02	STATEMENT OF COMPLIANCE……	C -2
5.03	BILLS OF QUANTITIES ……	C -3 to C -15
5.04	SUMMARY PAGE……	C -16
5.05	SCHEDULE OF UNIT RATES……	C -17

5.01 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, **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 descriptions 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** 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**.

   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.

5.02 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: ……..……

5.03 BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against item of preliminaries in the sub-contractor's Bills of Quantities and specification. These Bills are designated as Bill 1 in this Section. Where the sub-contractor fails to insert his price in any item he shall be deemed to have made adequate provision for this on various items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

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

a. Preliminaries – Bill 1

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

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
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				
29	1.39				
30	Storage of Materials clause 1.41				
	Initial Maintenance clause 1.42				
SUB-TOTAL CARRIED TO PAGE……. C-6					

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
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- 17)				
37	Supervision by Engineer and Site Meetings Clause 1.67	1	Item		
38	Allow for profit and Attendance for the				
39	above				
40	Sum for Clerk of Works on site				
41	Amendment to Scope of Sub-contract Works Clause 1.68				
42	Contractor Obligation and Employers Obligation clause 1.69(see appendix page C- 18)				
	Any other preliminaries;				
	Subtotal above				
	Sub-total brought forward from page…… C-4				
	Sub-total brought forward from page……. . C-5				
TOTAL FOR BILL NO. 1- PRELIMINARIES CARRIED FORWARD TO PRICE MAIN SUMMARY PAGE…….…… C-12					

PROPOSED PARTITIONING OF OFFICES FOR SALARIES AND REMUNERATION COMMISSION AT WILLIAMSON HOUSE, 4th NGONG AVENUE, UPPER HILL, NAIROBI.

BILL NO. 2 - AIR CONDITIONING AND MECHANICAL VENTILATION.

Item	Description	Unit	Qty	Rate Kshs	Cost Kshs
	COMMISSIONERS' AND CEO'S OFFICES				
	Split Air Conditioner:				
A	**Indoor Unit** Supply, deliver, install, test and commisioning of a four way cassete(single split) type ceiling mounted air-conditioning indoor unit with the following parameters:- - Cooling capacity 4.5kw -Air Flow Rate: 7.4m^3/min - A wireless remote control - Operating on R134a refrigerant or any other non ozone depleting refrigerant. - Thermostat to control room temperature - Electrostatic air filter - Ceiling mounting kit - Sound pressure level of 45db(A) - Fan speed control The indoor unit tobe as **LG** or equal and approved model	No.	8		
B	**Outdoor Unit** Wall mounted outdoor unit capable of supplying three indoor units at the same time as described in item 'A' above. It shall be mounted on the external wall and be provided with purpose made protective steel angle iron frame complete with anti vibration mountings.The entire system shall be able to start automatically after power failure with a 3 minute delay. The complete unit to be as **LG** or equal and approved model.	No.	3		
C	Insulated refrigerant pipework.	M	80		
D	25mm dia. PVC condensate discharge pipe work.	M	40		
E	Power protection unit as Solatek or equal and approved.	No.	8		
F	Allow for sealing and making good of all openings and any other builders work associated with the installation.	Item	1		
G	Allow for all electrical works including wiring and switches from the local isolator	Item	1		
	Sub-total C/F to the next page				

Item	Description	Unit	Qty	Rate Kshs	Cost Kshs
	CHAIRMAN'S OFFICE **Split Air Conditioner:**				
	Total brought down from previous page				
A	**Indoor Unit** Supply, deliver, install, test and commisioning of a four way cassete(single split) type ceiling mounted air-conditioning indoor unit with the following parameters:- - Cooling capacity 4.5kw -Air Flow Rate: 7.4m^3/min - A wireless remote control - Operating on R134a refrigerant or any other non ozone depleting refrigerant. - Thermostat to control room temperature - Electrostatic air filter - Ceiling mounting kit - Sound pressure level of 45db(A) - Fan speed control The indoor unit tobe as **LG** or equal and approved model	No.	1		
B	**Outdoor Unit** Wall mounted outdoor unit capable of supplying one indoor unit at the same time as described in item 'A' above. It shall be mounted on the external wall and be provided with purpose made protective steel angle iron frame complete with anti vibration mountings.The entire system shall be able to start automatically after power failure with a 3 minute delay. The complete unit to be as **LG** or equal and approved model.	No.	1		
C	Insulated refrigerant pipework.	M	15		
D	25mm dia. PVC condensate discharge pipe work.	M	10		
E	Power protection unit as Solatek or equal and approved.	No.	1		
F	Allow for sealing and making good of all openings and any other builders work associated with the installation.	Item	1		
G	Allow for all electrical works including wiring and switches from the local isolator	Item	1		
	Sub-total C/F to the next page				

Item	Description	Unit	Qty	Rate Kshs	Cost Kshs
	BOARD ROOM **Split Air Conditioner:** **Total brought down from previous page**				
A	**Indoor Unit** Supply, deliver, install, test and commisioning of a four way cassete(single split) type ceiling mounted air-conditioning indoor unit with the following parameters:- - Cooling capacity 6.9kw -Air Flow Rate: 7.5m^3/min - A wireless remote control - Operating on R134a refrigerant or any other non ozone depleting refrigerant. - Thermostat to control room temperature - Electrostatic air filter - Ceiling mounting kit - Sound pressure level of 45db(A) - Fan speed control The indoor unit tobe as **LG** or equal and approved model	No.	1		
B	**Outdoor Unit** Wall mounted outdoor unit capable of supplying one indoor unit at the same time as described in item 'A' above. It shall be mounted on the external wall and be provided with purpose made protective steel angle iron frame complete with anti vibration mountings.The entire system shall be able to start automatically after power failure with a 3 minute delay. The complete unit to be as **LG** or equal and approved model.	No.	1		
C	Insulated refrigerant pipework.	M	15		
D	25mm dia. PVC condensate discharge pipe work.	M	10		
E	Power protection unit as Solatek or equal and approved.	No.	1		
F	Allow for sealing and making good of all openings and any other builders work associated with the installation.	Item	1		
G	Allow for all electrical works including wiring and switches from the local isolator	Item	1		
	Total Air conditioning C/F to the Summary Page G - 10				

SUMMARY PAGE

ITEM	DESCRIPTION		AMOUNT (Kshs)
1	Preliminaries B/F from Page G-6		
2	Total for air conditioning and mechanical ventilation B/F from page G - 9		
3	Contigency sum		**300,000.00**
	Total for Air Condtioning and Mechanical Ventilation C/F to Main Summary (Vol. 1)		

Amount in words: **Kenya Shillings Three Million, Three Hundred Only**

……..……..

Tenderer's Name and Stamp
……..……..……..
Address ……..……..……..……
……..……..……
Period To Execute The Works ……..……..……..

Telephone No ……..……..……..

Mobile Phone No. ……..……..……. …….

Tenderer's V.A.T No ……..……..……

Tenderer's P.I.N No ……..……..……. …….

Tenderer's Signature …… Date……..……..……

Witness Signature …….. Date……..……..……

SCHEDULE OF UNIT RATES

ITEM	DESCRIPTION	UNIT	RATE (KShs)
1.	Duct inline extract fan capable of a volume flow rate of 0.25 m3/sec against a pressure drop of 200 N/m. Fan shall be centrifugal flow fan with flexible connections and anti vibrations mountings. As "Expelair", "XID 150" running at 2553rpm or equal and approved.	No.	
2.	Duct inline extract fan capable of a volume flow rate of 0.15 m3/sec against a pressure drop of 200 N/m. Fan shall be centrifugal flow fan connected to flexible duct. As "Expelair", "XID 100" running at 2553rpm or equal and approved.	No.	
3.	Flexible Ductwork 100mm diameter glass fibre fabric on a PVC coated duct work. Duct to have close pitch steel wire helix reinforcement.	SM.	

SECTION D:

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

CONTENTS

CLAUSE No.		PAGE
1.	GENERAL NOTES TO THE TENDERER…….	D-1
2.	TECHNICAL SCHEDULE…….	D-2

TECHNICAL SCHEDULE

1. General Notes to the Tenderer

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

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

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

TECHNICAL SCHEDULE

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).

ITEM	DESCRIPTION	MANUFACTURER	COUNTRY OF ORIGIN	REMARKS (Catalogue No. etc.)
1.	Air curtains			
2.	Wind ventilator cyclone			

SECTION E:

DRAWING SCHEDULE

CONTENTS

CLAUSE No.		PAGE
1.	DRAWING SCHEDULE…….	E-1

DRAWING SCHEDULE:

As shall be provided during project implementation.

REPUBLIC OF KENYA

SALARIES AND REMUNERATION COMMISSION

PROPOSED PARTITIONING OF OFFICES FOR SALARIES AND REMUNERATION COMMISSION ON 3RD AND 6TH FLOORS, WILLIAMSON HOUSE, 4th NGONG AVENUE, UPPER HILL, NAIROBI.

W.P. ITEM NO. D110 / NB / NB / 1801 – JOB NO. 10402 A

SPECIFICATIONS AND BILLS OF QUANTITIES

FOR

SERVER ROOM PRECISION ENVIRONMENT CONTROL AND FIRE SUPPRESSION INSTALLATION WORKS.

CHIEF ARCHITECT
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 30743-00100
NAIROBI.

CHIEF ENGINEER (ELECTRICAL)
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 41191-00100
NAIROBI.

CHIEF QUANTITY SURVEYOR
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 30743-00100
NAIROBI.

CHIEF ENGINEER [MECHANICAL(BS)]
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 41191-00100
NAIROBI.

CHIEF ENGINEER (STRUCTURAL)
MINISTRY OF TRANSPORT,
INFRASTRUCTURE, HOUSING, URBAN
DEVELOPMENT AND PUBLIC WORKS
P.O.BOX 30743-00100
NAIROBI.

CLIENT
THE CHIEF EXECUTIVE OFFICER
SALARIES AND REMUNERATION
COMMISSION
P.O. BOX 43126 - 001000
NAIROBI

MAY, 2021

VOLUME 9

TABLE OF CONTENTS

TITLE	PAGE
Contents	(i)
Definitions	(ii)
Special Notes.....	(iii)
SECTION A: General Mechanical Specifications…….....	A/1-A/4
SECTION B: Particular Specifications for Server Room Mechanical Cooling **……**	B/1-B/4
SECTION C: Particular Specifications for Fire protection using Inert Gas Fire Suppression System ……..…	C/1 - C/16
SECTION D: Bills of Quantities.....	D/1- D/12
SECTION E: Technical Schedule of Items to be supplied.....	E/1-E-2
SECTION F: Schedule of Drawings.....	F/I

DEFINITIONS

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

The Employer:	Salaries and Remuneration Commission
Represented by:	The Chief Executive Officer, Salaries and Remuneration Commission P.O. BOX 43126-00100 NAIROBI
Project Manager:	Works Secretary Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Architect:	Chief Architect Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Engineer:	Chief Engineer [Mechanical (BS)] Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 41191 - 00100 NAIROBI
Electrical Engineer:	Chief Engineer (Electrical) Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 41191 - 00100 NAIROBI
Quantity Surveyor:	Chief Quantity Surveyor Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Structural Engineer:	Chief Engineer (Structural) Ministry of Transport, Infrastructure, Housing & Urban Development and Public Works P.O. Box 30743-00100 NAIROBI
Main Contractor:	The firm appointed to carry out the Supply, Delivery, Installation, Testing and Commissioning of Server Room Precision Environment Control and Fire Suppression Installation Works.
Site:	**Salaries and Remuneration Commission Offices, Williamson House, 4th Ngong Avenue, Upper Hill, Nairobi.**

SPECIAL NOTES FOR ALL TENDERERS:

1. These notes shall form part of these specifications and conditions.

IMPORTANT:

2. **The contractor will be required to ensure there's no interference with supply of services to resident organizations. The contractor will be required to take all precaution and care so that no damage will occur to the existing installations on site. The contractor is also advised to secure all the necessary insurance policies as he will be solely held responsible for any damages to the existing system, injuries to persons resulting from his activities and/or interference with normal operations of the building that may result from his negligence, actions or otherwise.**

3. The tenderer is required to check the number of pages in this document and should any be found to be missing or the figures indistinct, he must inform the Engineer at once and have the same rectified. Should the tenderer be in doubt about the precise meaning of any item, word or figures, or for any reason whatsoever observe any apparent omission of words or figures, he must inform the Engineer in order that the correct meaning may be decided upon before the date for the submission of the tenders.

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

5. The tenderer shall not alter or otherwise qualify the text of this specification. Any alteration or qualification made without authority will be ignored and the text of the specification as printed will be adhered to.

6. The tenderer shall be deemed to have made allowances in his unit prices generally to cover items of preliminaries or additions to Prime Cost Sums or other items, if those have not been priced against the respective items.

7. The tenderer's price shall include all government taxes including duties, V.A.T. etc. No claims whatsoever will be allowed in respect of duties, VAT etc. if the tenderer fails to include them in his unit prices. It is also to be noted that VAT will be included in the unit rates and NOT worked out as a percentage of the total.

8. In no case will any expenses incurred by the tenderer in preparation of this tender be reimbursed.

9. The copyright of this specification is vested in the Engineers and no part thereof may be reproduced without their express permission, given in writing.

10. The specifications must be priced in Kenya Currency i.e. shillings and cents.

11. All the 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.

12. 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 Board of Kenya to avoid disqualification

Signed (As in Tender) ..... Date/Stamp .....

SECTION A:

GENERAL MECHANICAL SPECIFICATIONS

SECTION A

GENERAL MECHANICAL SPECIFICATION

CLAUSE	DESCRIPTION	PAGE
2.01	GENERAL	A-1
2.02	QUALITY OF MATERIALS	A -1
2.03	REGULATIONS AND STANDARDS	A -1
2.04	ELECTRICAL REQUIREMENTS	A -1
2.05	TRANSPORT AND STORAGE	A -2
2.06	SITE SUPERVISION	A -2
2.07	INSTALLATION	A -2
2.08	TESTING	A -2
2.09	COLOR CODING	A -4
2.10	WELDING	A -4

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 Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.
b) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
c) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
e) The Local Council By-laws.
f) The Electricity Supply Authority By-laws.
g) Local Authority By-laws.
h) The Kenya Building Code Regulations.
i) The Kenya Bureau of Standards

2.04 **Electrical Requirements**

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

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

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

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

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

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

2.05 **Transport and Storage**

All plant and equipment shall, during transportation be suitably packed, crated and protected to 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 weeks' 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 B:

PARTICULAR SPECIFICATIONS FOR SERVER ROOM MECHANICAL COOLING

PARTICULAR SPECIFICATIONS FOR A PRECISION ENVIRONMENTAL CONTROL SYSTEM

1.1 SUMMARY

These specifications describe requirements for a mission critical environmental control system. The system shall be designed to control temperature and humidity conditions in room containing electronic equipment with good insulation and vapour barrier. The contractor shall supply equipment that is fully compatible with the heat dissipation requirements of the room.

1.2 DESIGN REQUIREMENTS

The precision control system shall be a self-contained factory assembled unit with horizontal flow air delivery. The system shall have a total cooling capacity of between 100% and 110% of the sensible cooling capacity. The sensible cooling capacity is 22 kW based on an entering air-dry bulb temperature of 25.2 degrees Celsius and a relative humidity of 37%. The net capacities shall include losses due to fan motor heat.

1.3 SUBMITTALS

Submittals shall be provided with the tender documents and shall include: single-line diagrams; dimensional, electrical and capacity data; piping and electrical connection drawings.

2.0 PRODUCT

2.1 CABINET AND FRAME CONSTRUCTION

The exterior panels shall be of galvanised steel coated with epoxy baked paint to protect against corrosion. They shall be insulated with (0.68kg) density fibre insulation.

The cabinet shall be designed so that all components are easily accessible for service and maintenance. The following shall be mounted near the edge of the unit compressor, condensate pump and canister humidifier.

The modular baffle segments shall be easily reconfigurable to redirect flow.

2.2 COOLING SYSTEM

The unit to have double refrigeration circuit and each circuit shall include a liquid filter drier, a refrigerant sight glass with moisture indicator, an electronic expansion valve and a liquid line solenoid valve. The indoor evaporator refrigerant piping shall be spun shut with a nitrogen holding charge. A field relief of the Schroeder valve shall indicate a leak free system.

The evaporator coil shall be constructed of copper tubes and hydrophilic coated aluminium fins. The hydrophilic coating provides superior water carryover resistance. Two stainless steel condensate drain pans and allow for cooling in six stages and one dehumidifier stage.

The compressor shall be scroll-type with variable capacity operation from 20-100%: commonly known as digital scroll. The compressor solenoid valve shall unload the compressor to provide variable capacity operation. The compressor shall have a

suction gas cooled motor, vibration isolators, internal thermal overloads, manual reset high pressure switch, rotalock service valves, low pressure and high pressure transducer, crankcase heater, internal centrifugal oil pump and an operating speed of 3500 rpm at 50 Hz. The compressor shall be removable and serviceable from the rear of the unit.

The system shall be designed for use with R134a refrigerant which meets NEMA clean air act for phase out of HCFC refrigerants.

2.3 FAN SECTION

The unit shall be equipped with three plug fans: direct driven centrifugal fans with backward curved blades and electronically commutated DC motors; commonly referred to as EC plug fans. The fan speed shall be variable and automatically regulated by an iCOM control through all modes of operation. Each of the fans to have a dedicated motor and speed controller which provides a level of redundancy. The three impellers shall be made of steel and balanced. The EC plug fans shall be collectively capable of handling 1.5 cubic metres per second. The fan assembly should be accessed easily by removing the door panel, unscrew the counter sunk screws that retain inlet ring in position, remove door divider assembly, disconnect fan loop from electrical control panel then remove bolts that hold the fan support, slide fan assembly towards the front unit and be able to lift out the fan assembly. The fans shall be located to pass air through the filters and fitted slab-coil to ensure even air distribution and maximum coil performance.

2.4 LOCKING DISCONNECT SWITCH

A manual disconnect switch shall be mounted in the electrical panel and be capable of disrupting the flow of power to the unit. The electric panel compartment can only be accessed with the switch in the “off” position. It shall be conveniently located behind the iCOM display door for quick access.

2.5 FILTRATION

The filter channel shall be an integral part of the system located within the cabinet and serviceable by sliding each filter through the right hand door of the unit.

2.6 STEAM GENERATING CANNISTER HUMIDIFIER

A canister type steam generating humidifier shall be factory installed in the cooling unit and operated by the iCOM control system. It should be complete with disposable cylinder, all supply and drain valves, steam distributor and electronic controls. The need to change the canister is indicated on the iCOM display. The system shall automatically fill and drain as well as maintain the required water level based on conductivity. An air gap within the humidifier assembly shall prevent backflow of the humidifier supply water. The humidifier capacity shall be 3 kg/hr. the humidifier canister shall be easily removable from the cabinet for service and maintenance.

2.7 CONTROLS

The unit to be equipped with a controller allowing connection to displays, I/O expansion modules, field boards and all the relevant temperature and pressure sensors.

The control unit shall be factory set for intelligent control which uses “fuzzy logic” and “expert system” methods. The control unit shall be microprocessor based with a front monitor display panel and control keys for user inputs mounted in an ergonomic aesthetically pleasing housing.

The internal unit component control shall include the following:

- Compressor short cycle control to prevent compressor short-cycling and needless compressor wear.
- System auto restart
- Sequential load activation
- Econ-O coil flush cycles
- Predictive dew point controls to calculate the moisture content in the room and prevents unnecessary humidification and dehumidification cycles by responding to changes in dew point temperature.

The control unit shall be compatible with remote monitoring and control devices. Options available are BMS interfaces via MODbus, Jbus BACNet, Pofibus and SNMP.
The display and housing shall be viewable and the controls menu driven. These are as listed:

1. Unit On/Off
2. Maintenance
3. Alarm log
4. Input / Output
5. Clock
6. Set point
7. User: allows the user to adjust user related parameters such as high and low alarm limits and temperature bands
8. Manufacturer : allows the user to enter the manufacturer menu and adjust various manufacturer related parameters such as unit configuration and timing settings

2.8 RACK TEMPERATURE SENSORS

The unit shall be provided with the temperature sensors that consist of a vented case with temperature probes. The sensors shall provide real-time, direct feedback to the cooling unit to optimise the amount of cooling and airflow provided. The sensors data shall be available to remote BMS and monitoring systems. The sensor network shall consist of CAN wire leaving the cooling unit and connecting to a sensor.

2.9 COMMUNICATION INTERFACES

The remote shutdown terminal shall provide the customer with a location to remotely shut down the unit.

The common alarm contact shall provide the customer with a set of normally open contacts for remote indication of unit alarms.

The humidifier lockout shall include the necessary relays to disable the humidifier from an external 24 volt signal.

2.10 HEAT REJECTION

The out-door air cooled condenser shall be constructed of galvanised sheet steel coated with epoxy baked powder paint. It shall have a large surface area coil ideally positioned to optimize air flow and heat transfer, manufactured from refrigeration quality copper tube with mechanically bonded aluminium fins arranged for horizontal air discharge. The condenser shall balance the heat rejection of the compressor at 25 degrees Celsius ambient temperature.

The fan and motor assembly to be of axial flow with low noise sickle type blades and bell mouth. The external rotor AC motor shall allow the use of a low power output, single phase and speed controllable motor to power the fan.
The motor shall have inbuilt thermal overload protection and the assembly to be supplied complete with a finger guard for protection.
All electrical components shall be rated for all year round outdoor use.
The air cooled compressor shall have a 240 volt, single phase 50 Hz power supply.

2.11 ACCESS FLOOR SYSTEM

The floor shall have tiles of which 60 % of the area will have ones that are perforated. They need to support the load of the machine that is supplied. The desired floor height for the false floor should be between 300 mm to 700 mm.

2.12 Climatic Conditions

The following climatic conditions apply at the site and all the materials and equipment used shall be suitable for these conditions:

CLIMATIC CONDITIONS	**NAIROBI, KABETE OBSERVATORY**
Dry Bulb Temperature	25.2˚C
Dew Point Temperature	9.2˚C
Relative Humidity	37%
Altitude	1820M ASL
Longitude	36˚ 45’ E
Latitude	01˚ 16’ S

The amount quoted shall include for all materials and items not particularly called for in this specification but which are necessary for the completion and satisfactory functioning of the works.

SECTION C:

PARTICULAR SPECIFICATIONS FOR FIRE PROTECTION

USING INERT GAS

FIRE SUPPRESSION SYSTEM

INERT GAS FIRE SUPPRESSION SYSTEM

5.1 General

This specification are for fire suppression using an Inert Gas to extinguish fires in the **Server Room** section housing data processing equipment where valuable documents exist, all as specified herein and as shown on contract drawings. It shall be the responsibility of the bidder to confirm all the necessary dimensions that will ensure the system performs satisfactorily. The gas shall be stored under pressure in liquefied form inside cylinders and piped to fire protected areas. Each Inert gas system in a given zone shall be supplied complete with its control unit that shall receive the signal from smoke detector or break glass and automatically release the gas after switching off the Ventilation system and sounding an alarm bell. The fire detection system in all areas where Inert gas pipe is not installed shall be supplied and installed by the Electrical Contractor but the Contractor shall liase with him and extend detection signal outputs into the Master Alarm Control Panel in the desired office as will be instructed by the Engineer.

5.1.1 The Design and installation shall be made in accordance with these specifications, drawings, all applicable National Fire Protection Association Standards and the requirements of the local authority having jurisdiction.

5.1.2 The fire suppression systems shall be designed by competent personnel who are trained and authorized by the equipment manufacturer for design of total flooding Inert gas systems and the integrated detection systems.

Working Drawings shall be in sufficient detail to indicate the type, size, and arrangement of component materials and devices; and the dimensions needed for installations and correlation with other materials and equipment.

All Working Drawings shall be submitted for review and approval prior to installation.

5.1.3 The Contractor shall furnish detailed literature outlining the operation, recharge and service of the system. Maintenance procedures for the owner shall be outlined. In addition, the contractor shall furnish the equipment manufacturer's recommended spare parts lists with information regarding availability and ordering instructions.

5.1.4. The contractor shall utilize an equipment manufacturer that will provide a 12-month warranty against false discharges when all conditions of the equipment manufacturer are fulfilled for this type of warranty. Details of this warranty be furnished upon request.

5.2 SYSTEM ARRANGEMENT

5.2.1. The Inert gas fire suppression system shall be of the engineered, permanently piped, fixed nozzle type with all pertinent components of the same manufacturer. **The system shall have one common bank of cylinders to discharge into the room at a time through the use of selector valves.** All agent storage containers shall be centrally located as vertical, freestanding cylinders with wall mounted retaining brackets. Where multiple cylinders are required for the same hazard, a common manifold should be employed.

Manifolded cylinders shall employ a flexible discharge hose to facilitate installation and system maintenance. Each cylinder on a manifold shall also include an agent check valve installed to the manifold inlet.

5.2.2 Detection system shall be of the engineered type, suitable for direct interface with the Inert gas fire suppression system. All pertinent components shall be of the same manufacturer or approved for use with the control/release panel.

Detection network shall be cross-zoned or counting zone for positive and accurate response to fire condition.`

For each hazard, both Ionization and Photoelectric type smoke detectors shall be used to provide automatic input to the control panel.

In addition, manual pull station(s) shall be provided for the direct electric release of the used Inert gas Fire Suppression System.

The sequence of operation for the control panel shall be as follows: -

i) Activation and annunciations of general alarms.

ii) Activation of shutdown and / or startup of auxiliary function.

iii) Activation and annunciation of the time delay

iv) Release of agent.

Alarm bells shall be used for general alarm for visual/ audible signal of system discharge.

An adjustable time delay shall be used prior to Argon release (with) manual abort capability.

5.3 DESIGN PARAMETERS

5.3.1 Design application method is total flooding of the Inert gas and it shall be based upon the enclosure being sufficiently tight against agent leakage with all ventilation shut down and / or fire dampered or provide for static air condition upon discharge.

Inert gas quantity calculations shall be determined from dimension furnished on the construction drawings and in this specification for a **design concentration** defined by AS ISO 14520 -2009 **of 39.9%** and **0.721 kg/m^3** flooding factor at the minimum anticipated **hazard temperature of 18 ^{0} C**.

Calculation for the maximum design concentration shall be based upon maximum anticipated hazard temperature of _____ ^{0} F (_____22.2___ ^{0} C).

When applicable, agent quantity shall be adjusted for:

i) Altitudes of more than (915m) above sea level.

ii) Non-flooded false ceiling volume.

iii) Multiple hazards from a common agent supply.

iv) Manufacturer standard tanks and fill increments

v) Duct volume for HVAC system.

5.3.2 The system shall be designed to discharge the calculated agent quantity in a nominal 60-second period.

5.3.3 Nozzle spacing shall be in accordance with the listed approved coverage for each nozzle type. In all cases, the need for additional nozzle shall be considered based upon site conditions and manufacturer's recommendations.

5.3.4 Hydraulic calculations for each system shall be used upon two-phase flow equations for unbalanced systems as defined by NFPA –2001 regardless if a single nozzle or balanced piping network is used.

Computerized verification of hydraulic calculations shall be submitted for Inert gas system and include the following data as a minimum.

a) Quantity of Agent per Nozzle.

b) Type of Nozzle.

c) Pressure at Nozzle (bar)

d) Nozzle Body Nominal Size (mm).

e) Nozzle Drill Size (64'/inch).

f) Number and size of Tanks.

g) Tank Fill Weight.

h) Tank Filling Density.

i) Total Agent Weight.

j) Pipe Size per Pipe Section.

k) Pipe schedule Per Pipe Section.

l) Number, Size and Type of Fitting Per Pipe Section

m) Actual Length per Pipe Section (m).

n) Equivalent Length per Section (m).

o) Elevation Change per Pipe Section (m).

p) Piping Volume (m^3).

q) Discharge Time (sec).

r) Percent of Agent in Pipe.

s) Pressure at Start of Network (bar)

t) Pressure Available at the Start and End of Each Pipe Section (bar).

u) Density at the Start and End of Pipe Section (kg/m^3).

v) Flow rate Per Pipe Section (litres/sec.).

w) Pressure Drop Per Pipe Section (N/m^2)

x) Y and Z Factors at the Start and End of Each Pipe Section.

5.3.5 The contractor shall provide data to indicate the free venting area required per NFPA-2001 for each hazard volume.

5.3.6 DESIGN PARAMETERS – DETECTION

5.3.6.1 The design of the detection/control system shall be based on a clean, vibration free, electrical non-hazardous environment

5.3.6.2 As a minimum detector spacing, shall be based upon NFPA recommended practices for ceiling construction, air flow and manufacturer recommendations.

At least one smoke detector of each type (ionization and photoelectric) shall be used in each protected area.

Where multiple detectors are sued, detection shall alternate such that ionization are adjacent to photoelectric.

5.3.6.3 Unless otherwise stated on the drawings manual pull station(s) shall be located at all points of aggress from the protected area.

Unless otherwise stated on the drawings at least one alarm device shall be located within the protected area for the general alarm function.

Battery capacity shall be sufficient to permit normal non-alarm condition for 24 hours with subsequent general alarm for 5 minutes after loss of primary line power.

5.3.7 EQUIPMENT AND MATERIAL

5.3.7.1 General

All materials and equipment furnished by the contractor shall be of new, unused, and undamaged condition in strict accordance with the requirement of this section. Equipment shall be required to meet the following standards; **ISO 14520, UNE 23575, NFPA 2001 AND CEA 4008.**

Where items are specified to a nationally recognized standard of manufacture, any component meeting this standard will be considered equal.

Manufacturer's equipment other than as specified shall be bid as an alternate with the base as an alternate with the base bid furnished as specified.

All equipment's and materials shall only be used for their intended application, in locations for which they were designed, and installed in accordance with the manufacturer's instructions and /or recognized standard trade practice.

5.3.7.2. Pipe Material

The inert gas fire system piping shall be of non –combustible materials having physical and chemical characteristics such that its integrity under stress can be predicted with reliability.

Materials other than listed below, such as stainless steel or nonferrous piping or tubing may be used if the materials satisfy the applicable requirements of NFPA-2001.

As a minimum, piping materials shall be black galvanized seamless steel pipe conforming To BS specifications and **capable of 65 bar operating pressure (ASTM Grade A-106B)**. Under no conditions shall ordinary cast iron pipe, steel pipe or non- metallic pipe be used.

Inert gas fire system piping joints shall be suitable for the design conditions and shall be selected with consideration of joint tightness and mechanical strength.

As a minimum, fittings shall be black galvanized ANSI 300lb. Class malleable iron, ASTM A-197, m ANSI 300lb. Class ductile iron, ASTM A-395; or steel ASTM A-234.

Ordinary cast iron fittings shall not be permitted. Piping shall be installed accordance with good commercial practice to the appropriate codes, **securely supported** with Listed hangers, and arranged with close attention to the design layout since deviations may alter the design flow performance as hydraulically calculated.

All Piping must be reamed, blown clear, and swabbed with appropriate solvent to remove mill varnish and cutting oils before assembly. The piping shall also be finished off with two coats of red paint after testing.

Multi- outlet fittings other than tees shall not be permitted.

Assembly of all joints shall conform to the appropriate standards. Threaded pipe joints shall utilize Teflon tape applied to male thread s only.

5.3.7.3 Agent Storage Tank

Inert gas fire storage containers shall be of high strength alloy steel construction in accordance with NFPA 2001 finished in (baked red enamel) (red epoxy) paint.

Tank assemblies shall be filled with an Inert gas pressurized to 300 bars at (21 ^{0}C).

Filling of the tank assembly shall be by a factory authorized U.L listed filing station. Initial filling and recharge shall be done in accordance with the manufacturer's established procedures and shall not require replacements components for normal service.

The size and fill weights of all cylinders shall le based-on computer verified system design requirements and shall be of the following nominal sizes:

i) 80 litres with a nominal 33.2kg tank assembly shall be equipped with an internal liquid level-measuring rod, marked in ¼-inch increments to allow direct reading of the liquid level and conversation to the weight of Inert gas within the tank.

Tank assembles shall be vertical, freestanding modules employing suitable wall mounted retaining brackets. Tank assemblies shall be listed or approved to perform in the temperature range of – 650F to 1300F (-540°C to 540°C).

Aluminum **nameplates** indicating manufacturer's name and part number, agent fill weight, total charged weight date of fill, and U.L. Listed fill station case shall be permanently bonded to each tank.

Each tank assembly shall have the means to accommodate lifting devices to facilitate weighing removal and replacing.

Tank assembly shall include a low-pressure switch that operates at approximately 225 (1551kpa) to facilitate continuous supervisions of tank pressure.

5.3.7.4 Tank Valve

Agent storage tank assemblies shall include an integral, high flow valve assembly connected to the tank by a machined thread and sealed by an 0-ring.

Valve outlet sizes shall be based on the nominal tank capacity with a one-inch size for 18, 33, 54 and 72-pound assemblies, and three inch for 600-pound assemblies.

The valve design shall be of the differential pressure type, which utilizes tank pressure to seal the valve assembly. The valve shall be compatible with separate, removable, stackable type actuators for electric, pneumatic, and/or manual actuation.

Operation of the valve by the stackable type actuator shall be such actuation. Operation of the valve by the stackable type actuator shall be such that pressure is relieved from the upper chamber of the valve causing the valve to open. Valves shall be forged brass construction with an O-ring sealed brass spool incorporating the main elastomeric seal surface.

The valve assembly shall include recessed pressure gauge 0 to 250 bar, overpressure safety relief disc assembly, normally pressurized connection port for an optional low-pressure switch, normally unpressurized connection port used as pneumatic source for a salve cylinder valve actuation, and brass shipping caps on exposed thread connection.

When pneumatically operated main/reserve systems are used, pilot valves shall be equipped with actuation isolators.

All 3-inch valve assemblies shall be equipped with a removable pressure gauge feature. This gauge shall be capable of being removed from the valve assembly when the tank is pressurized.

5.3.7.5 Tanks Brackets

Each Inert gas tank shall be furnished with a stainless steel, two-part, strap type retaining bracket designed for installation with standard 1 5/8 n continuous slotted channel.

5.3.7.6 Valve Actuators

The gas valve actuators shall be of brass construction stackable design, with swivel connections to allow removal of actuators for maintenance or testing.

Operation of actuators neither shall nor require replacement of components.

No electro-explosive devices may be used to actuate the valve assembly.

Electric actuators shall be of the **continuous duty solenoid type** with a maximum power requirement of 7 watts for 24VDC operation.

Pneumatic actuators shall be designed to operate from either Inert gas tank pressure with appropriate interconnections or by nitrogen pressure from a separate listed or approved source.

Manual override actuators shall be designed to attach to electric actuator or directly to the valve assembly and permit manual operation of the pilot Inert gas tank assembly. This actuator shall incorporate a detent action with a red phenolic palm bottom and safety ring pin.

Where actuation hose (s) are required stainless steel, braid covered types shall be used.

5.3.7.7 Discharge Hose/Check Valve

When manifolding, all tank assemblies shall include a flexible discharge hose and check valve for connection to manifold inlet.

Nominal 1 and 2 inch hosed shall be elastometric with standard NPT male threads and be compatible with the manufacturer's check valve.

Nominal three inch hosed shall be braided stainless construction and incorporate and integral check valve providing a 1 ½-inch height adjustment to compensate for the height variance between cylinder and manifold connection.

A swivel connection at valve outlet shall be provided on all tank installation to facilitate removal for service and testing.

5.3.7.9 Discharge Nozzles

Gas discharge nozzles shall be of one-piece (brass) construction sized to provide flow rates in accordance with system design hydraulics.

Orifice (s) shall be machined in the nozzle body to provide a horizontal discharge in 90^{0}, 180^{0}, or 360^{0} patterns based upon the approved coverage arrangements. Separate, interchangeable orifice plates are not acceptable.

Nozzles shall be permanently marked with the manufacturer's part number, number of orifice and orifice code. The nozzle shall be threaded directly to the discharge piping without the use of special adaptors.

5.3.7.10 Warning Signs

Etched aluminium Warning Signs shall be provided at all Entrance and Exits of the protected area.

Entrance sign shall read: "WARNING \DO NOT ENTER ROOM WHEN ALARM SOUNDS, **INERT GAS** BEING RELEASED."

Exit sign shall read: "WHEN ALARM SOUNDS, VACATE AT ONCE, **INERT GAS** BEING RELEASED..."

5.3.8 EQUIPEMENT AND MATERIAL –ELECTRICAL

5.3.8.1 General Materials

All electrical trunkings and conduits shall be employed in accordance with applicable codes and intended use and contain only those electrical circuits associated with the fire detection and control system and shall not contain any circuit that is unrelated to the system.

Unless specifically provided otherwise in each case, all conductors shall be enclosed in steel conduit, rigid or thin walled as conditions dictate, except in computer room where they shall be PVC conduit concealed in building fabrics electrically hazardous classification shall be observed and any equipment for materials installed shall be must meet or exceed the requirements of service.

All wiring shall be of the proper size to conduct the circuit current shall not smaller than No.18 AWG unless otherwise specified for a given purpose. Wire that has scrapes nicks, gouges, or crushed insulation shall not be used.

The use of aluminum wire is strictly prohibited.

Splicing of circuits shall be kept to a minimum and are only to be found in an electrical device suited for the purpose.

Wire spliced together shall have the same colour insulation. Wire splices shall be made with appropriate devices suited for the purposes.

All wire terminations shall be made with crimp terminals unless the device at the termination is designed for bare wire termination.

All electrical circuits shall be numerically tagged with suitable devices at its terminating point and/ or splice. All circuits' numbers shall correspond with the installation drawings.

The use of coloured wires is encouraged. White coloured wire shall be used exclusively for the identification of the neutral conductor of an alternating current circuit.

Green coloured wire shall be used exclusively for the identification of the earth ground conductor of an AC and DC circuit.

5.3.8.2 Control Panels – General

All control panels shall be F.M approved and be utilized with listed or approved operating devices shall be capable of the following features:

i) Ground Fault Indication

ii) Supervised Detection Circuits (s).

iii) Supervised Alarm Circuit

iv) Supervised Release Circuit

v) Supervised Manual Pull Circuit

vi) Supervised Line Power Circuit

vii) Alarm Overrides Trouble Logic.

viii) Battery Standby

ix) Front Panel Indicating Lamps

x) Key Lock Steel Enclosure

xi) Programmable Time Delay

xii) Programmable Detection Logic

xiii) Prioritized Trouble Logic

xiv) Solid State Integrated circuitry

5.3.8.3 Control Panel – Dual Zone Unit

In addition to the general requirements foe control panels, dual zone control units shall meet the requirements of this section.

The control unit shall consist of power supply, programmable zone actuation, five supervised circuits and six auxiliary relays.

The internal power supply shall operate from 240V 50Hz A.C power supply.

The control unit shall provide provisions for housing its own set of “on-line” float charged emergency batteries within the enclosure.;

The control unit shall provide two supervised detection (input circuits) programmable for:

i) Independent Zoning

ii) Priority Zoning

iii) Cross-Zoning

A supervised dedicated manual pull circuit designated for immediate operation of the release circuit shall be provided.

Abort function (if used) shall be programmed foe (immediate Release) (timed release) after abort.

A programmable time delay of 0.60 seconds in 5 seconds increments shall be provided between verification of a fire situation and suppression system release.

A fused polarity reversing, 1 amp, 24VDC supervised dedicated release circuit for use with approved fire suppression system releasing devices shall be provided.

Battery supervision shall be provided for condition and placement of the batteries.

An auxiliary trouble circuit for supervision of other normally closed accessory devices shall be provided.

Six plugs in relays shall be provided for auxiliary function. Each of the following actions shall cause one of the six relays to transfer.

i) System Discharge

ii) Zone 1 Alarm

iii) Zone 2 Alarm

iv) Pre-Discharge Alarms

v) General Alarm

vi) System Trouble

LED indicators shall be provided on the front door to annunciate the following conditions:

i) Power – (Green)

ii) System Trouble - (Red)

iii) Zone 1 Alarm – (Red)

iv) Zone 2 Alarm – (Red)

v) Pre-Discharge Alarm – (Red)

vi) System Fired – (Red)

A prioritized LED troubleshooting code shall be provided in Oder to restore the control unit to normal condition as quickly as possible.

The control unit shall be housed in steel cabinet of approved type with conduit knockouts in a (red) (beige) enamel finish.

The door shall have a continuous hinge a 180 ^{0} swing. Wiring connections shall be screw terminal blocks.

A trim ring shall be supplied for semi-flush installations. When two dual zone control units are required, they shall be available in a single enclosure, if this feature simplifies the installation and system arrangement.

The control unit shall be F.M Approved as an alarm/releasing control unit

5.3.8.4 Smoke Detector - Ionization

Ionization type smoke detector shall be dual chamber type and compatible with the control unit. The detector shall have an LED in its base, which is illuminated in a steady "on" mode when in alarm. Reset of the detector shall be performed by the control unit reset se\witch.

The design of the ionization detector compensating circuits shall provide stable operation with regard to minor changes in temperature, humidity, and atmosphere conditions.

The sensitivity voltage shall be factory set as per U.L 268. A special locking screw shall be provided to lock the head to the base; the head to base connection shall be by use of bifurcated contracts. Terminal connections to the base shall be of the screw type.

Where specifically identified on the contract drawings, detector vases shall incorporate a relay with Form C contacts rated at 1 amp 120 VAC or 28VDC for remote LED alarm annunciation of the detector. The detector shall be F.M Approved.

5.3.8.5 Smoke Detector - Photoelectric

Photoelectric detector shall be a solid-state sensing chamber unit providing stable operations (sensitivity) and compatible with the control unit. The detector shall utilize a light sensing photodiode and a pulse signal processor to measure the density of the combustion products within the sensing chamber. The detector head shall have a stainless-steel mesh to prevent foreign objects from entering the sensing chamber.

The sensitivity voltage shall be factory set.

A special locking screw shall be provided to lock the head to the base. The head to base connection shall be by use of bifurcated contacts. Terminal connections to the base shall be of the screw type.

Where specifically identified on the contract drawings, detector bases shall incorporate a relay with Form C contacts rated at 1-amp 120VAC or 28VDC for remote LED alarm annunciation of thee detector.

The detector shall be U.L. Listed or F.M Approved.

5.3.8.6 Alarm Bells

The vibrating Alarm Bell shall be approved for use with the listed control unit. The polarized alarm bell shall be rated at 24VDC and draw no more than .063 amps and shall contain a series diode foe use in supervised systems.

It shall have a dB level of 86 – 90 at 3 metres.

The bell shall be constructed of high-quality materials to ensure reliability and long life and have a baked red enamel finish.

The device shall be F.M Approved.

5.3.8.7 **Manual Pull Stations (Fire man's switch)**

The Manual Pull Station shall be provided for the release (electrical) of the Inert gas in case of an emergency. The unit shall be contained within a metal body having a (single) (double) pole switch.

[The device shall be that approved by Fire Authority.]

5.3.8.8 Abort Switch

The abort switch shall be used where an investigation delay is desired between detection and actuation of the Inert Gas System.

This switch shall be a momentary contact "dead-man" type switch requiring constant pressure to transfer one set of normally open and one set of normally closed contacts on each contacts on each contact block. Clear operating instruction shall be provided at the abort switch.

The terminal connections shall be of the screw type.

The device shall be U.L listed of F.M Approved for a delay switch.

5.3.8.9 Pressure Switch

This pneumatically actuated switch shall be used to give positive identification of release of Inert gas in the piping system.

The switch shall have one set of normally open and one set of normally closed contacts.

5.3.8.10Selector Switch – Key Operated

The key operated selector switch shall be approved for use with the listed control unit and provide an electrical means of transferring the release circuit signal to the inert gas system from the main supply to the reserve supply.

The switch contracts shall provide a set of normally open and normally closed contacts.

5.4 SYSTEM INSPECTION AND TESTING

The completed installation shall be inspected by authorized personnel and shall include a full operational test of all components per the equipment's manufacturer recommendation including agent discharge.

This shall be done in the presence of the owner's representative and other insuring authority having jurisdiction.

All mechanical and electrical components shall be tested according to the manufacturer's recommended procedure to verify system integrity.

An inspection shall be provided by the contractor. Inspection shall include a complete checkout of the electronic system, and certification of weight and cylinder pressure. A written report shall be filed with the owner.

Two copies of drawings shall be provided by the Contractor indicating the installed details. All routing or piping and electrical conduit and accessories shall be noted.

Equipment, Installation and Maintenance Manuals shall be provided in additions to the as-built drawings.

Prior to final acceptance, the contractor shall provide operational training in all concepts of this system to the owner's key personnel.

Training shall consist of -

i) System Control Unit Operation

ii) Trouble Procedures

iii) Abort Procedures

iv) Emergency Procedures

v) Safety Requirements

vi) A functional test shall be completed prior to the concentration test consisting of detection, release alarm, accessories related to system, control unit, and a review of the tanks, piping, fittings, hangers and cylinder pressure.

Concentration test shall be provided under the supervision of the contractor's authorized personnel in the presence of the owner's representative, local authorities and any other insuring authority.

Equipment manufacturer and the Inert gas supplier shall recommend inert gas test procedures.

The contractor shall provide a 3-chart thermal conductivity gas analyzer capable of automatically recording three sampling points. Concentration recording shall continue until authorities are satisfied with hazard integrity or 10 minutes have elapsed.

The sampling points shall be located at strategic areas but no higher than the highest combustible contents. If the tests results indicate that the design concentration was not achieved and/or held, the contractor shall determine the cause of failure.

After determination of cause, the system should be recharged and again placed in operation. The contractor shall only be responsible to retest based on equipment failure.

SECTION D:

BILLS OF QUANTITIES

AND

SCHEDULE OF UNIT RATES

SECTION G:

BILLS OF QUANTITIES AND SCHEDULE OF UNIT RATES

CONTENTS

CLAUSE No.		PAGE
5.01	GENERAL NOTES TO TENDERERS……	D-1
5.02	STATEMENT OF COMPLIANCE……	D -2
5.03	BILLS OF QUANTITIES ……	D -3 to D -15
5.04	SUMMARY PAGE……	D -16 – D -17
5.05	SCHEDULE OF UNIT RATES……	D -18

5.01 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, **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 descriptions 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** 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**.

   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.

5.02 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: …….……

5.03 BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against item of preliminaries in the sub-contractor's Bills of Quantities and specification. These Bills are designated as Bill 1 in this Section. Where the sub-contractor fails to insert his price in any item he shall be deemed to have made adequate provision for this on various items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

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

a. Preliminaries – Bill 1

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

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
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				
29	1.39				
30	Storage of Materials clause 1.41				
	Initial Maintenance clause 1.42				
SUB-TOTAL CARRIED TO PAGE……. G-6					

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
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- 17)				
37	Supervision by Engineer and Site Meetings Clause 1.67	1	Item		
38	Allow for profit and Attendance for the above				
39	Sum for Clerk of Works on site				
40	Amendment to Scope of Sub-contract Works Clause 1.68				
41	Contractor Obligation and Employers Obligation clause 1.69(see appendix page C- 18)				
42	Any other preliminaries;				
	Subtotal above				
	Sub-total brought forward from page…… D-4				
	Sub-total brought forward from page……. . D-5				
TOTAL FOR BILL NO. 1- PRELIMINARIES CARRIED FORWARD TO PRICE MAIN SUMMARY PAGE…….…… D-12					

PROPOSED PARTITIONING OF OFFICES FOR SALARIES AND REMUNERATION COMMISSION AT WILLIAMSON HOUSE, 4th NGONG AVENUE, UPPER HILL, NAIROBI - SERVER ROOM/DATA CENTRE COOLING AND FIRE SUPPRESSION					
A	**PRECISON ENVIRONMENTAL CONTROL SYSTEM FOR SERVER ROOM/DATA CENTRE**				
ITEM	**DESCRIPTION**	**UNIT**	**QTY**	**RATE**	**AMOUNT (Kshs)**
1	The system chosen is to maintain temperature conditions in a room containing electronic equipment. The equipment shall have characteristics that make it fully compatible with heat dissipation requirements of the room **Indoor Unit** Supply, deliver, install, test and commisioning of a four way cassete(single split) type ceiling mounted air-conditioning indoor unit with the following parameters:- - Cooling capacity 7.3kw -Air Flow Rate: 10.5m^3/min - A wireless remote control - Operating on R134a refrigerant or any other non ozone depleting refrigerant. - Thermostat to control room temperature - Electrostatic air filter - Ceiling mounting kit - Sound pressure level of 45db(A) - Fan speed control The indoor unit tobe as **LG** or equal and approved model	No.	1		
2	**Outdoor Unit** Wall mounted outdoor unit capable of supplying five indoor units at the same time described in item 'A' above. It shall be mounted on the external wall and be provided with purpose made protective steel angle iron frame complete with anti vibration mountings.The entire system shall be able to start automatically after power failure with a 3 minute delay. The complete unit to be as **LG** or equal and approved model.	No.	1		
	Total Carried Forward to Next Page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total Brought Forward from Previous Page				
1	Insulated refrigerant pipework.	M	15	1,000.00	
2	25mm dia. PVC condensate discharge pipe work.	M	20	1,000.00	
3	Power protection unit as Solatek or equal and approved.	No.	1	5,000.00	
4	Allow for sealing and making good of all openings and any other builders work associated with the installation.	Item	1	5,000.00	
5	Allow for all electrical works including wiring and switches from the local isolator	Item	1	15,000.00	
6	**Access door** **Floor panels**	No.	1	300,000.00	
7	Raised floor panels that will provide functions such as air conduction and load bearing capacity. It should also provide for flexible installations. It is required to abrassion-resistant and non-magmetic. It should be of dimensions 600x600mm, panel thickness between 40-60mm, point load of 10000N and to be complete with pedestal and all joining materials	SM	10	20,000.00	
	TOTAL FOR AIRCONDITIONING SYSTEM C/F TO COLLECTION PAGE G - 12				

INERT GAS SUPPRESSION SYSTEM					
ITEM	**DESCRIPTION**	**UNIT**	**QTY**	**RATE**	**AMOUNT in Kshs**
B	**FIRE DETECTION AND CONTROL**				
1	3 Zone - single area fire extibnuguishant control panel c/w charger and standby battery	No.	1		
2	GSM communication module	No.	1		
3	Optical; smoke sensors	No.	8		
4	24V dc first stage alarm bell	No.	1		
5	24V dc second stage release sounder/strobe	No.	1		
6	Power shutdown relay	No.	1		
7	A/C shut down relay	No.	1		
8	Magentic door minitor switch	No.	1		
9	Gas isolate abort switch	No.	1		
10	Fire resistant cables installation and accessories	Lot	1		
	TOTAL FOR DETECTION AND CONTROL C/F TO COLLECTION PAGE G - 12				

C	**SUPPRESSION SYSTEM - ARGONITE GAS**				
1	Cylinder 80L assembly filled 300 bar	No.	2		
2	Label for C60 cylinder identificataion	Kg.	2		
3	Discharge hose 3/4" BSP 90 Degrees one end	No.	1		
4	Manual/Electric release unit for C60 N.C	No.	1		
5	Contact pressure gauge unit	No.	1		
6	Hi-flex hose 1/4" for actuation line	No.	1		
7	Pneumatic Y actuator	No.	1		
8	Leak valve for actuation line	No.	1		
9	Manifold for single row	No.	1		
10	Bracket for manifold 1 row 200mm	No.	1		
11	Copper bundy tube foer pressure switch	No.	1		
12	Union 1/4" BSPT x 8mm OD copper tube	No.	1		
13	Pressure operated switch	No.	1		
14	End cover white PVC 34 x 40mm	No.	1		
15	Discharge nozzle assembly	No.	2		
16	Warning notice door entry	No.	1		
17	Warning notice gas release point	No.	1		
18	Pressure vent	No.	1		
19	Discharge pipework	Lot.	1		
	TOTAL FOR SUPPRESSION SYSTEM C/F TO COLLECTION PAGE G - 12				

D	**VERY EARLY SMOKE DEECTION APPARATUS (VESDA)**				
1	**Very early smoke detection apparatus (VESDA)** Very early smoke detection apparatus **(VESDA)**	Item	1		
TOTAL FORVERY EARLY SMOKE DEECTION APPARATUS (VESDA) C/F TO COLLECTION PAGE G - 12					

COLLECTION PAGE FOR SERVER ROOM/DATA CENTRE ENVIRONMENT CONTROL SYSTEM AND FIRE SEPPRESSION

Item	Description	Amount (Ksh)
(i)	Total for Preliminaries	
A	Total for Precision Cooling System B/F from Page D - 8	
B	Total for Fire Detection and Control B/F from Page D - 9	
C	Total for Fire Suppression System B/F from Page D - 10	
D	Total for Very early smoke detection apparatus (VESDA) B/F from Page D - 11	
E	Testing and commissioning of all Installations works to the satisfaction of the Engineer	
F	**Contigency provision for the above works**	**400,000.00**
	Total for Server Room Precision Environment Control and Fire Suppression Works C/F to Main Summary Page	

Amount in words: **Kenya Shillings Four Million Only**

……..……..

Tenderer's Name and Stamp
……..……..……...
……..……..……..

Address ……...……...……..……
……...……...……

Period To Execute The Works ……..……..……....……..

Telephone No ….……..……..……

Mobile Phone No. ….……...……. …….

Tenderer's V.A.T No ….……..……

Tenderer's P.I.N No ….……...……. ……

Tenderer's Signature …… Date……..……...……

Witness Signature …….. Date……..……..……

SCHEDULE OF UNIT RATES

ITEM	DESCRIPTION	UNIT	RATE (KShs)
1.	An AC unit having a horizontal air distribution like CyberRow. It should have front and rear service access with a C7000 controller for controlling and monitoring the air conditioning system. The refrigerant circuit of the AC module to consist of an evaporator, an expansion valve, a scroll compressor and an external air-cooled condenser. The AC unit and the external condenser to be linked by means of a closed refrigerant circuit.Pedestal wash handbasin	No.	
2.	Raised floor panels that will provide functions such as air conduction and load bearing capacity. It should also provide for flexible installations. It is required to abrassion-resistant and non-magmetic. It should be of dimensions 600x600mm, panel thickness between 40-60mm, point load of 10000N and to be complete with pedestal and all joining materialsLow level water closet	SM.	
3.	20mm diameter copper pipe	LM.	
4.	20mm ditto	LM.	
5.	32mm ditto	LM.	
6.	40mm ditto	LM.	
7.	25mm copper bend	No.	
8.	25mm ditto	No.	
9.	32mm ditto	No.	
10.	40mm ditto	No.	
11.	25mm copper tee	No.	
12.	25mm ditto	No.	
13.	32mm ditto	No.	
14.	40mm ditto	No.	

SECTION E:

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

CONTENTS

CLAUSE No.		PAGE
1.	GENERAL NOTES TO THE TENDERER…….	E-1
2.	TECHNICAL SCHEDULE…….	E-2

TECHNICAL SCHEDULE

1. General Notes to the Tenderer

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

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

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

TECHNICAL SCHEDULE

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).

ITEM	DESCRIPTION	MANUFACTURER	COUNTRY OF ORIGIN	REMARKS (Catalogue No. etc.)
1.	Indoor unit			
2.	Outdoor unit			
3.	Fire detection and control system			
4.	Very early smoke detection apparatus			
.				

SECTION F:

DRAWING SCHEDULE

CONTENTS

CLAUSE No.		PAGE
1.	DRAWING SCHEDULE…….	F-1

DRAWING SCHEDULE:

As shall be provided during project implementation.

PROPOSED OFFICE PARTITIONING OF SALARIES AND REMUNERATION COMMISSION (SRC) OFFICES AT WILLIAMSON HOUSE NAIROBI – PHASE 2 & 3

W.P. ITEM NO. D110 NB/NB/1801 JOB NO. 10402B

ELECTRICAL INSTALLATION WORKS

TENDER SPECIFICATIONS & BILLS OF

QUANTITIES FOR SUPPLY, INSTALLATION,

TESTING AND COMMISSIONING OF

ELECTRICAL INSTALLATION WORKS

TABLE OF CONTENTS

TITLE	PAGE
Contents.....	i)
SECTION A: Instructions to Tenderers.....	NONE
SECTION B: General Specifications of Materials and Works.....	B-1/B-19
SECTION C: Schedule of Contract Drawings.....	C-1
SECTION D: Particular Specifications of Materials and Works.....	D-1
SECTION E: Schedule of Unit Rates.....	E-1/E2
SECTION F: Bills of Quantities.....	F-1/F-9
SECTION G: Technical Schedule of Items to be supplied.....	G-1/G-2
SECTION H: Schedule of Light Fittings.....	H-1
SECTION I: Standard Forms.....	I-1/I-5

SECTION B

GENERAL SPECIFICATIONS

OF

MATERIALS AND WORKS

GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

2.1 General

2.2 Standard of Materials

2.3 Workmanship

2.4 Procurement of Materials

2.5 Shop Drawings

2.6 Record Drawings

2.7 Regulations and Standards

2.8 Setting out Works

2.9 Position of Electrical Plant and Apparatus

2.10 M.C.B Distribution Panels and Consumer Units

2.11 Fused Switchgear and Isolators

2.12 Conduits and Conduit Runs

2.13 Conduit Boxes and Accessories

2.14 Labels

2.15 Earthing

2.16 Cables and Flexible Cords

2.17 Armoured PVC Insulated and Sheathed Cables

2.18 Cable Supports; Markers and Tiles

2.19 PVC Insulated Cables

2.20 Heat Resisting Cables

2.21 Flexible Cords

2.22 Cable Ends and phase Colours

2.23 Cable Insulation Colours

2.24 Sub-circuit Wiring

2.25 Space Factor

2.26 Insulation

2.27 Lighting Switches

2.28 Sockets and Switched sockets

2.29 Fused Spur Boxes

2.30 Cooker Outlets

2.31 Connectors

2.32 Lamp holders

2.33 Lamps

2.34 lighting Fittings Street Lighting Lanterns

2.35 Position of Points and Switches

2.36 Street/Security Lighting Columns

2.37 Timing Control Switch

2.38 Wiring System for Street Lighting

2.39 Metal control Pillar

2.40 Current Operated Earth leakage circuit breaker

2.41 MV Switchboard

2.42 Steel Conduits and Steel Trunking

2.43 Testing on Site

2.1 GENERAL

This specification is to be read in conjunction with the drawings which are issued with it. Bills of quantities shall be the basis of all additions and omissions during the progress of the works.

2.2 STANDARD OF MATERIALS

Where the material and equipment are specifically described and named in the Specification followed by approved equal, they are so named or described for the purpose of establishing a standard to which the sub-contractor shall adhere.

Should the Sub-contractor install any material not specified herein before receiving approval from the proper authorities, the Engineer shall direct the Sub-contractor to remove the material in question immediately. The fact that this material has been installed shall have no bearing or influence on the decision by the Engineer.

All materials condemned by the Engineer as not approved for use, are to be removed from the premises and suitable materials delivered and installed in their place at the expense of the Sub-contractor. All materials required for the works shall be new and the best of the respective kind and shall be of a uniform pattern.

2.3 WORKMANSHIP

The workmanship and method of installation shall conform to the best standard practice. All work shall be performed by a skilled tradesman and to the satisfaction of the Engineer. Helpers shall have qualified supervision.

Any work that does not in the opinion of the Engineer conform to the best standard practice will be removed and reinstated at the Sub-contractor's expense.

Permits, Certificates or Licenses must be held by all tradesmen for the type of work; in which they are involved where such permits, certificates or licenses exist under Government legislation.

2.4 PROCUREMENT OF MATERIALS

The sub-contractor is advised that no assistance can be given in the procurement or allotment of any materials or products to be used in and necessary for the construction and completion of the work.

Sub-contractors are warned that they must make their own arrangements for the supply of materials and/or products specified or required.

2.5 SHOP DRAWINGS

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

2.6 RECORD DRAWINGS

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

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

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

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

2.7 REGULATIONS AND STANDARDS

All work executed by the Sub-contractor shall comply with the current edition of the "Regulations" for the Electrical Equipment of Buildings, issued by the Institution of Electrical Engineers, and with the Regulations of the Local Electricity Authority.

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

2.8 SETTING OUT WORK

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

2.9 POSITIONS OF ELECTRICAL PLANT AND APPARATUS

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

2.10 MCB DISTRIBUTION PANELS AND CONSUMER UNITS

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

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

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

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

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

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

2.11 FUSED SWITCHGEAR AND ISOLATORS

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

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

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

Isolators shall be load breaking/fault making isolators.

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

2.12 CONDUITS AND CONDUIT RUNS

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

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

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

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

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

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

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

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

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

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

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

2.13 CONDUIT BOXES AND ACCESSORIES

All conduit outlets and junction boxes are to be either malleable iron and of standard circular pattern of the appropriate type to suit saddles being used or super high impact PVC manufactured to KS 04 – 179 : 1983.

Small circular pattern boxes are to be used with conduits up to and including 25mm outside diameter. Rectangular pattern adaptable boxes are to be used for conduits of 32mm outside diameter and larger. For drawing in of cables in exposed runs of conduit, standard pattern through boxes are to be used:

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

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

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

2.14 LABELS

Labels fitted to switches and fuse boards; -

(i) Shall be Ivorine engraved black on white.

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

(iii) Shall be indicated on switches: -
- a) Reference number of switch
- b) Special current rating
- c) Item of equipment controlled

(iv) Shall indicate on MCB panels
- a) Reference number
- b) Type of board, i.e.; lighting, sockets, etc.
- c) Size of cable supplying panel
- d) where to isolate feeder cable

(v) Shall be generally not less than 75mm x 50mm.

2.15 EARTHING

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

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

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

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

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

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

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

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

(viii) Earth plates will not be permitted

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

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

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

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

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

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

2.16 CABLES AND FLEXIBLE CORDS

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

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

The successful Sub-Contractor will, at the Engineers discretion be required to submit samples of cables for the Engineers approval; the Engineer reserves the right to call for the cables of an alternative manufacture without any extra cost being incurred.

P.V.C. insulated cables shall be 500/1000 volt grade. No cables smaller than 1.5mm² shall be used unless otherwise specified. The installation and the finish of cables shall be as detailed in later clauses. The colour of cables shall conform to the details stated in the "Cable Braid and insulation Colours" Clause.

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

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

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

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

2.18 CABLE SUPPORTS, MARKERS AND TILES

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

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

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

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

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

Cables are to be kept clear of all pipe work and the Sub-contractor shall work in close liaison with other services Sub-contractors.

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

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

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

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

2.19 PVC INSULATED CABLES

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

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

2.20 HEAT RESISTING CABLES

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

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

2.21 FLEXIBLE CORDS

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

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

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

2.22 CABLE ENDS AND PHASE COLOURS

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

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

2.23 CABLE INSULATION COLOURS

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

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

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

2.24 SUB-CIRCUIT WIRING

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

Lighting circuits P.V.C. cable.

(i) 1.5mm² for all lighting circuits indicated on the drawing.

Power circuits P.V.C cable (minimum sizes).

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

(iii) 2.5mm² for one 15Amp socket.

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

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

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

2.25 SPACE FACTOR

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

2.26 INSULATION

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

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

2.27 LIGHTING SWITCHES

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

2.28 SOCKETS AND SWITCHED SOCKETS

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

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

2.29 FUSED SPUR BOXES

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

2.30 COOKER OUTLETS

These shall be flush mounted with 13-A switched socket outlet and neon indicator Lamps.

The cooker control units shall be as manufactured by "M.K. Electrical Company Ltd", or other approved equal KS 04 – 247: 1988

2.31 CONNECTORS

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

2.32 LAMPHOLDERS

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

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

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

2.33 LAMPS

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

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

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

2.34 LIGHTING FITTINGS AND STREET LIGHTING LANTERNS

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

All fittings and pendants shall be fixed to the conduit boxes with brass R/H screws. These to be in line with metal finish of fittings. The lighting fittings are detailed for the purpose of establishing a high standard of finish and under no circumstances will substitute fittings be permitted.

In case of rectangular shaped ceiling fittings, the extreme ends of the fittings shall be secured to suitable support in addition to the central conduit box fittings. Supports shall be provided and fixed by the Sub-Contractor.

The whole of the metal work of each lighting fittings shall be effectively bonded to earth. In the case of ball and/or knuckle joints short lengths of flexible cable shall be provided, bonded to the metal work on either side of the joints. If the above provisions are not made by the manufacturers -, the Sub-contractor shall include cost of additional work necessary in his tender. See "Flexible Cords" clause for details of internal wiring of lighting fittings.

Minimum size of internal wiring shall be 20/0.20mm (23/0067). Each lighting fitting shall be provided with number type and size of lamps as detailed on the drawings. It is to be noted that some fittings are suspended as shown on the drawings.

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

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

2.35 POSITIONS OF POINTS AND SWITCHES

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

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

2.36 STREET/SECURITY OUTDOOR LIGHTING COLUMNS:

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

2.37 TIMING CONTROL SWITCH

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

2.38 WIRING SYSTEM FOR STREET LIGHTING

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

2.39 METAL CONTROL PILLAR

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

2.40 CURRENT OPERATED EARTH LEAKAGE CIRCUIT BREAKER

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

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

2.41 M.V. SWITCHBOARD AND SWITCHGEAR

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

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

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

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

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

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

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

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

Mounting arrangements shall be such that individual complete fuse switches may be disconnected and withdrawn when necessary without extensive dismantling work.

When switches are arranged in their formation all necessary horizontal and vertical barriers shall be provided to ensure segregation from adjacent units. Means of locking the switch in the "OFF" position shall be provided.

2.42 STEEL CONDUITS AND STEEL TRUNKING

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

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

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

All trunking fittings (i.e. Bends, tees, etc) shall leave the main through completely clear of obstructions and continuously open except through walls and floors at which points suitable fire resisting barriers shall be provided as may be necessary. The inner edge of bends and tees shall be chamfered where cables larger than 35mm² are employed.

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

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

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

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

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

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

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

Conduit and trunking shall be mechanically and electrically continuous. Conduit shall be tightly screwed between the various lengths so that they butt at the socketed joints. The internal edges of conduit and all fittings shall be smooth, free from burrs and other defects.

Oil and any other insulating substance shall be removed from the screw threads; where conduits terminate in fuse-gear, distribution boards, adaptable boxes, non-spouted switchboxes, etc., they shall, unless otherwise stated, be connected thereto by means of smooth bore male brass bushes, compression washers and sockets. All exposed threads and abrasions shall be painted using an oil paint for black enameled tubing and galvanizing paint for galvanised tubing immediately after the conduits are erected. All bends and sets shall be made cold without altering the section of the conduit.

The inner radius of the bed shall not be less than four (4) times the outside diameter of the conduit. Not more than two right angle bends will be permitted without the inter-position of a draw-in-box. Where straight runs of conduit are installed, draw-in-boxes shall be provided at distances not exceeding 15mm. No tees, elbows, sleeves, either of inspection or solid type, will be permitted.

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

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

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

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

All adaptable boxes and lids of the same size shall be interchangeable.
Boxes used on surface work are to be tapped or drilled to line up with the conduit fixed in distance type saddles allowing clearance between the conduit and wall without the need for setting the conduit.

Where used in conjunction with mineral insulated copper sheathed cable, galvanized boxes shall be used and painted after erection.

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

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

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

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

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

2.43 TESTING ON SITE

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

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

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

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

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

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

(g) The Sub-contractor shall generally attend on other contractors employed on the project and carry out such electrical tests as may be necessary.

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

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

APPENDIX TO GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

The electrical sub-contractor shall comply with the following: -

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

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

SECTION C

SCHEDULE OF CONTRACT DRAWINGS

SCHEDULE OF CONTRACT DRAWINGS

DRAWING NO.	DRAWING TITLE
As shall be issued by the Engineer	

NOTE:

Tenderers are advised to inspect the electrical drawings at the office of the **Chief Engineer (Electrical) – Ministry of Transport, Infrastructure, Housing, Urban Development & Public Works, State Department for Public Works**, at Chief Engineer's (Electrical) office, Hill Plaza Building, Community area, Nairobi along Ngong road, during normal working hours.

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

SECTION D

PARTICULAR SPECIFICATIONS

OF

MATERIALS AND WORKS

PARTICULAR SPECIFICATIONS

1.00 SITE LOCATION

The site of the proposed works is at **Williamson Plaza, Community Area, Nairobi County.**

2.00 SCOPE OF WORKS

The works to be carried out under this sub-contract comprise supply, installation, testing and commissioning of the following: -

a) **Electrical Works**

This shall include trunking, conduiting, cabling, fittings and accessories.

3.00 MATERIALS FOR THE WORKS

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

4.00 BROCHURES FOR FIRE ALARM PANEL & ANY ELECTRICAL EQUIPMENT AND FITTINGS

For consideration and qualification tenderers shall, at their own cost, provide coloured manufacturer's brochures detailing technical literature and specifications where applicable.

5.00 MINIMUM SPECIFICATIONS FOR LED LIGHTING FITTINGS

i. Power Factor: ≥ 0.9
ii. Operating Frequency Range:45 – 55Hz
iii. Operating Voltage Range: 130 – 300Vac
iv. Operating Hours: ≥ 50,000Hrs
v. Correlated Colour Temperature (CCT): ≥ 6500K
vi. Total Harmonic Distortion: < 15%
vii. Efficiency ≥ 90lm/W

Bidders must provide Technical Brochures to assess their technical compliance with these specifications

SECTION E

SCHEDULE OF UNIT RATES

SCHEDULE OF UNIT RATES

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

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

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

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

5. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all all taxes applicable at the time of tender.

SCHEDULE OF UNIT RATES

ITEM	DESCRIPTION	QTY/UNIT	RATE(KSHS)
1.	6-way 125A TPN distribution board surface mounted complete with 125 A TP integral isolator and lockable cover and all accessories excluding MCBs as Schneider or approved equivalent	1No.	
2.	8-way 125A TPN distribution board surface mounted complete with 125 A TP integral isolator and lockable cover and all accessories excluding MCBs as Schneider or approved equivalent	1 No.	
3.	4 core 16mm2 insulated and sheathed copper cable complete with all the necessary accessories	1 Metre	
4.	1 core 25mm2 insulated copper cable complete with all the necessary accessories	1 Metre.	
5.	1 core 35mm2 insulated copper cable complete with all the necessary accessories	1Metre	

SECTION F

BILLS OF QUANTITIES

BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS

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

The Bills of Quantities are divided generally into three sections:

(a) Preliminaries – Bill No.1

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

(b) Installation Items – 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 1.0 5 of the section C.

(c) Summary

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

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

SPECIAL NOTES TO THE BILLS OF QUANTITIES

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

2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes applicable at the time of tender.

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

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

   Should the sub-contractor install any material not specified here-in before receiving **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 **MAIN Summary Page**.

6. Tenderers must enclose, together with their submitted tenders, detailed coloured manufacturer's Brochures detailing Technical Literature and specifications on all the equipment they intend to offer.

BOQ FOR ELECTRICAL INSTALLATION WORKS					
	Schedule 1: Sixth Floor Works				
ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
1.00	Carefully, remove, store and arrange for handing over to client of the existing electrical fittings and accessories	1	Item		
	<u>Supply, install, test and commission the following complete as specified.</u>				
2.00	CABLING & CONSUMER UNIT				
2.01	2x16mm sq pvc insulated copper cables + 1x10mm sq ECC PVC insulated copper cable drawn in 50mm p.v.c/HG conduits attached to the concrete wall using saddles and complete with all the necessary accessories from the clean power DB at fifth floor right wing to the duct of sixth floor left wing as East African Cables or equal and approved equivalent	40	LM		
2.02	9-way surface mounted Consumer Unit complete with 100A 2P integral isolator and lockable cover and all accessories excluding MCBs as Schneider EZ9ECU09F100 or approved equivalent for clean power	1	No		
2.03	The following MCBs as Schneider or approved equivalent				
	i)10A SP MCB	5	No		
	ii)20A SP MCB	7	No		
	iii) 32A SP MCCB	9	No		
	iv) 45A SP MCCB	1	No		
3.00	POWER				
3.01	Ring Mains Power points wired using 2.5mm2 x 3 single core copper conductor cables concealed in trunking with all accessories but without the socket outlets	32	No		
3.02	Ring Mains Power points wired using 2.5mm2 x 3 single core copper conductor cables drawn in 25mm diameter p.v.c/HG conduits concealed in concrete with all accessories but without the socket outlets	2	No		
3.03	Twin Socket outlets for clean power, being 13A x 240V red moulded plate and flush mounted S.P.N socket outlets complete with screwless front plate as MK or equal and approved equivalent	17	No		
3.04	Twin Socket outlets for raw power, being 13A x 240V white moulded plate and flush mounted S.P.N socket outlets complete with screwless front plate as MK or equal and approved equivalent	17	No		
3.05	Twin power socket outlets mounting plates for mounting on the trunking (200X50mm) To be powder coated and white in colour,	32	No		
3.06	Ditto but for mounting single data outlet plates	32	No		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
	Total Brought Forward from Previous Page				
3.07	Factory manufactured corner rectangular skirting metallic trunking Type B of dimensions 200X50mm two compartments with all accessories including bends and covers. Trunking to be powder coated and white in colour.	157	LM		
3.08	300mmx50mm perforated galvanised cable tray complete with mounting brackets, bends and all other accessories	40	LM		
3.09	Automatic Hand drier circuit completely wired in 3×4.0mm2 PVC CU cables drawn in 25mm Ø HG PVC conduits concealed in concrete but without the hand drier.	3	No		
3.10	Outdoor Air Conditioners' power point, completely wired in 3×6.0mm2 PVC CU cables drawn in 25mm Ø HG PVC conduits concealed in ceiling but without the AC.	3	No		
3.11	Outdoor Air Conditioners's power point, completely wired in 3×4.0mm2 PVC CU cables drawn in 25mm Ø HG PVC conduits concealed in ceiling but without the AC.	1	No		
3.12	20A DP Switch as Crabtree or approved equivalent	12	No		
3.13	20A DP Single phase isolator switch as Crabtree or approved equivalent	4	No		
3.14	Cooker Power Point comprising of 3x6mm2 PVC SC Copper cables drawn in concealed 25mm Ø HG PVC conduits complete with all accessories	1	No		
3.15	45A DP Cooker Control Unit with 13A integral socket Outlet and pilot lamp marked 'As per Application' for item above as MK, MEM or approved equivalent	1	No		
3.16	Cooker Connection unit for flush mounting and wired from cooker control unit.	1	No		
4.00	LIGHTING				
4.01	Lighting point wired in 3×1.5 mm2 single core PVC cables drawn in 20mm diameter PVC heavy gauge conduits concealed in concrete/ceiling but excluding the light fitting itself.				
	i) One way switching	49	No		
	ii) Two way switching	15	No		
	iii) Intermediate switching	1	No		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
	Total Brought Forward from Previous Page				
4.02	LIGHTING FITTINGS				
	a) Type 1	46	No		
	b) Type 2	4	No		
	c) Type 3	10	No		
	d) Type 4	2	No		
	e) Type 5	3	No		
4.03	Lighting switches being 6Ax240V white moulded plate and flush mounted S.P.N Switches complete with screwless front plate and as MK or equal and approved equivalent				
	i) One Gang One Way	2	No		
	ii) One Gang Two Way	4	No		
	iii) Two Gang one Way	1	No		
	iii) Two Gang Two Way	7	No		
	iv) One Gang Intermediate	1	No		
	iv) Three Gang one Way	1	No		
4.04	Lighting switches being 6Ax240V white architrave S.P.N Switches complete with screwless front plate and as MK or equal and approved equivalent				
	i) One Gang One Way	2	No		
	iii) Two Gang one Way	7	No		
5.00	**FIRE ALARM SYSTEM**				
5.01	Addressable one loop fire alarm panel flush mounted on wall with 72-hour standby battery, complete with all accessories and as Menvier or approved equivalent.	1	No		
5.02	Smoke detector point wired using fire resistant 2x1.5mm2 PVC copper cables drawn in 20 mm dia PVC heavy gauge conduits but without the smoke detector	19	No		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
	Total Brought Forward from Previous Page				
5.03	Addressable Photoelectric Smoke Detector as Menvier or Approved Equivalent	19	No		
5.04	Addressable Fire alarm manual call point wiring done using fire resistant 2x1.5mm2 PVC copper cables drawn in 20 mm dia PVC heavy gauge conduits but without the manual call point.	2	No		
5.05	Addressable Manual Fire Alarm 'Break Glass' call points as MENVIER or approved equivalent.	2	No		
5.06	Addressable Electronic Fire Alarm sounder point wired using fire resistant 2x1.5mm2 PVC copper cables drawn in 20 mm dia PVC heavy gauge conduits but without the Fire alarm sounder	2	No		
5.07	Addressable Electronic Fire Alarm sounder complete with Red Flashing beacon (Visual alarm) as MENVIER or approved equivalent	2	No		
5.08	Supply and install emergency exit point wiring done using fire resistant 2x1.5mm2 PVC copper cables drawn in 20 mm dia PVC heavy gauge conduits but without the manual call point.	2	No		
5.09	Self-contained single sided EXIT sign with 8W LED lamp for non-maintained emergency lighting for 3 hour duration as thorn or equal and approved equivalent	2	No		
6.00	**TELEVISION POINTS**				
6.01	TV outlet point wired in 75 Ohms screened Coaxial TV Cables drawn in concealed 20mm dia PVC heavy gauge conduits and linked to the antena	10	No		
6.02	TV Outlet plate with polished brass finish as MK or approved equivalent	10	No		
	Total for Sixth Floor carried forward to collection page				

Schedule 2: Third Floor Works					
ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
	<u>Supply, install, test and commission the following complete as specified.</u>				
1.00	LIGHTING POINTS				
1.01	Lighting point wired in 3×1.5 mm2 single core PVC cables drawn in 20mm diameter PVC heavy gauge conduits concealed in concrete/ceiling but excluding the light fitting itself.				
	i) One way switching	10	No		
	ii) Two way switching	1	No		
1.02	Provide for changing the existing 53No. lighting fittings from surface mounted to recessed on the new ceiling	1	Lot		
2.00	SWITCHES				
2.01	Lighting switches being 6Ax240V white architrave switches S.P.N Switches complete with screwless front plate and as MK or equal and approved equivalent				
	i) One Gang One Way	10	No		
	ii) One Gang Two Way	2	No		
3.00	POWER POINTS				
3.01	Ring Mains Power points at meeting room wired using 2.5mm2 x 3 single core copper conductor cables concealed in trunking with all accessories but without the socket outlets	3	No		
3.02	Twin Socket outlets for clean power, being 13A x 240V red moulded plate and flush mounted S.P.N socket outlets complete with screwless front plate as MK or equal and approved equivalent	1	No		
3.03	Twin Socket outlets for raw power, being 13A x 240V white moulded plate and flush mounted S.P.N socket outlets complete with screwless front plate as MK or equal and approved equivalent	2	No		
3.04	Twin power socket outlets mounting plates for mounting on the trunking (200X50mm) To be powder coated and white in colour,	3	No		
3.05	Factory manufactured corner rectangular skirting metallic trunking Type B of dimensions 200X50mm two compartments with all accessories including bends and covers. Trunking to be powder coated and white in colour.	8	LM		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
	Total Brought Forward from Previous Page				
4.00	**FIRE ALARM SYSTEM**				
4.01	Smoke detector point wired using fire resistant 2x1.5mm2 PVC copper cables drawn in 20 mm dia PVC heavy gauge conduits but without the smoke detector	11	No		
4.02	Addressable Photoelectric Smoke Detector as Menvier or Approved Equivalent	11	No		
4.03	Provide for changing the 5No.smoke detectors from surface mounted to recessed on the new ceiling	1	Lot		
	Total for Third Floor carried forward to collection page				

Schedule 3: Sixth Floor Exe Wing and Fifth Floor Electrical Works					
ITEM	**DESCRIPTION**	**QTY**	**UNIT**	**RATE**	**TOTAL**
1.00	Carefully, remove, store and arrange for handing over to client of the existing power electrical fittings and accessories	1	Item		
	<u>Supply, install, test and commission the following complete as specified.</u>				
2.00	**Cabling & Consumer Unit**				
2.01	2x16mm sq pvc insulated copper cables + 1x10mm sq ECC PVC insulated copper cable drawn in 50mm p.v.c/HG conduits attached to the concrete wall using saddles and complete with all the necessary accessories from the clean power DB at fifth floor right wing to clean power CU at fifth floor and Sixth floor executive wing	30	LM		
2.02	9-way surface mounted Consumer Unit complete with 100A 2P integral isolator and lockable cover and all accessories excluding MCBs as Schneider EZ9ECU06F100 or approved equivalent for clean power	2	No		
2.03	The following MCBs as Schneider or approved equivalent				
	i)32A SP MCB	10	No		
	ii) Blanking Plates	7	No		
3.00	**POWER**				
3.01	Ring Mains Power points wired using 2.5mm2 x 3 single core copper conductor cables concealed in trunking with all accessories but without the socket outlets	73	No		
3.02	Twin Socket outlets for clean power, being 13A x 240V red moulded plate and flush mounted S.P.N socket outlets complete with screwless front plate as MK or equal and approved equivalent	36	No		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
	Total Brought Forward from Previous Page				
3.03	Twin Socket outlets for raw power, being 13A x 240V white moulded plate and flush mounted S.P.N socket outlets complete with screwless front plate as MK or equal and approved equivalent	37	No		
3.04	Twin power socket outlets mounting plates for mounting on the trunking (200X50mm) To be powder coated and white in colour,	73	No		
3.05	Ditto but for mounting single data outlet plates	66	No		
3.06	Factory manufactured corner rectangular skirting metallic trunking Type B of dimensions 200X50mm two compartments with all accessories including bends and covers. Trunking to be powder coated and white in colour.	198	LM		
3.07	300mmx50mm perforated galvanised cable tray complete with mounting brackets, bends and all other accessories	60	LM		
3.08	Twin white moulded and flush mounted blanking plates for covering holes complete with screwless front plate as MK or equal and approved equivalent	50	No		
3.09	Twin white moulded and flush mounted blanking plates for covering holes complete with screwless front plate as MK or equal and approved equivalent	50	No		
	Total Carried Forward to Next Page				

COLLECTION PAGE		
Item	Description	Amount (KShs)
1	Schedule 1: Sixth Floor Electrical Works	
2	Schedule 2: Third Floor Electrical Works	
3	Schedule 3: Sixth Floor Exe Wing and Fifth Floor Electrical Works	
4	Price for 3 sets of as working drawings	
5	Price for 3 sets of as installed drawings	
6	Allow for electrical works testing and submitting Test Results. Attach Printed Results and soft copy	
7	Allow a contingency sum to be expended at the discretion of the Electrical Engineer	200,000
	GRAND TOTAL CARRIED FORWARD TO MAIN SUMMARY PAGE	

Amount of tender in words:

Kenya Shillings……

……

Domestic Subcontractor's Signature and Stamp……

Address……

Date……

Witness: Name and Signature……

Address……

Date ……

SECTION G

TECHNICAL SCHEDULE

OF

ITEMS TO BE SUPPLIED

TECHNICAL SCHEDULE

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

2. The filling of this schedule forms part of Technical Evaluation of the tenders, and bidders shall therefore be required to indicate the type/make and country of origin of all the materials and equipment they intend to offer to the employer in this schedule.

3. This schedule shall form part of the technical evaluation criterion, and tenderers are therefore advised to complete the schedule as they shall be considered responsive.

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

(To be completed by the Tenderer)

ITEM	DESCRIPTION	TYPE/MAKE	MODEL	COUNTRY OF ORIGIN
1	LED Light Fittings			
2	Lighting Switches			
3	Socket outlet plates			
4	Cables			
5	Trunking			
6	Cable Trays			
7	Manual fire break glass unit			
8	Consumer Unit			
9	Cooker			
10	MCB			
11	MCCB			
12	Cables			
13	PVC conduits			
14	Fire Alarm Panel			
15	Smoke/Heat detectors			
16	Fire Alarm Bells			
17	Fire Alarm Break Glass			
18	Fire Alarm Cables			

SECTION H

SCHEDULE OF LIGHT FITTINGS

SCHEDULE OF LIGHT FITTINGS	
Type 1	600mmX600mm, 40W, 3600lm, 0.9 minimum power factor, 6500k Daylight Full Window LED Panel Light, Office Compliant, complete with mounting and all other accessories and as RC091V LED36S/865 PSU W60L60 GM G2 Philips or approved equivalent
Type 2	Surface mounted 23W, 6500K Daylight, 0.9 minimum power factor, 30,000 Hours useful life, 2000 Lumens LED Downlight as DN027C 23W Philips or approved equivalent
Type 3	Daylight D-CO LED downlight with 3 x 3W LEDs, complete with 9W LED converter for direct mains connection, Suitable for ceiling thicknesses 1-22mm with a minimum void depth of 75mm, cut-out Ø80mm. Class III electrical. IP20, beam angle 60° as Thorn or approved equivalent.
Type 4	1200mm, 35Watts, 3700 lumens, 6500k Daylight, 0.9 minimum power factor LED Light Fitting as WT035C LED37/CW PSU GM CFW L1500 Philips or approved equivalent
Type 5	600mm, 21Watts, 2000 lumens, 6500k Daylight, 0.9 minimum power factor LED Light Fitting as Philips WT099C 2FT or approved equivalent

SECTION I

STANDARD FORMS

CONTENTS OF SECTION I

	TITLE	PAGE
1.	Key Personnel	I-1
2.	Schedule of Contracts completed in the last five (5) years	I-2
3.	Schedule of on-going projects	I-3
4.	Contractor's Equipment	I-4
5.	Details of Litigation or Arbitration Proceedings	I-5

NOTE:

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

2.0 Any tender returned with **Unfilled Standard Forms** shall be considered **Non-Responsive and shall automatically be disqualified.**

KEY PERSONNEL

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

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

I certify that the above information is correct.

……. …… ……

Title Signature Date

CONTRACTS COMPLETED IN THE LAST FIVE (5) YEARS

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

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

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

…… …… ……

Title Signature Date

SCHEDULE OF ON-GOING PROJECTS

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

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

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

…… …… ……

Title Signature Date

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

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

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

1. .....

2. .....

3. .....

4. .....

5. .....

6. .....

7. .....

8. .....

9. .....

10. .....

PROPOSED OFFICE PARTITIONING OF SALARIES AND REMUNERATION COMMISSION (SRC) OFFICES AT WILLIAMSON HOUSE NAIROBI - PHASE 2 & 3.

W.P. ITEM NO. D110 NB/NB/1801 JOB NO. 10402B

STRUCTURED CABLING WORKS

TENDER SPECIFICATIONS & BILLS OF

QUANTITIES FOR SUPPLY, INSTALLATION,

TESTING AND COMMISSIONING OF

STRUCTURED CABLING INSTALLATION WORKS

TABLE OF CONTENTS

TITLE	PAGE
Contents.....	i)
SECTION A: Instructions to Tenderers.....	NONE
SECTION B: General Specifications of Materials and Works.....	B-1/B-3
SECTION C: Schedule of Contract Drawings.....	C-1
SECTION D: Particular and Technical Specifications of Materials and Works.....	D-1/D-18
SECTION E: Schedule of Unit Rates.....	E-1/E-2
SECTION F: Bills of Quantities.....	F-1/F-5
SECTION G: Technical Schedule of Items to be supplied.....	G-1/G-2
SECTION H: Standard Forms.....	H-1/H-5

SECTION B

GENERAL SPECIFICATIONS

OF

MATERIALS AND WORKS

GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

1. General
2. Standard of Materials
3. Workmanship
4. Procurement of Materials
5. Record Drawings
6. Regulations and Standards
7. Setting out Works
8. Testing on Site

1. GENERAL

1.1. This specification is to be read in conjunction with any other information herein issued with it. Bills of quantities and schedule of unit rates shall be the basis of all additions and omissions during the progress of the works.

2. STANDARD OF MATERIALS

2.1. Where the material and equipment are specifically described and named in the Specification followed by approved equal, they are so named or described for the purpose of establishing a standard to which the contractor shall adhere.

2.2. Should the contractor install any material not specified herein before receiving approval from the proper authorities, the Engineer shall direct the contractor to remove the material in question immediately. The fact that this material has been installed shall have no bearing or influence on the decision by the Engineer.

2.3. All materials condemned by the Engineer as not approved for use, are to be removed from the premises and suitable materials delivered and installed in their place at the expense of the Contractor. All materials required for the works shall be from branded manufacturers, and shall be new and the best of the respective kind and shall be of a uniform pattern.

3. WORKMANSHIP

3.1. The workmanship and method of installation shall conform to the best standard practice. All work shall be performed by a skilled tradesman and to the satisfaction of the Engineer. Helpers shall have qualified supervision.

3.2. Any work that does not in the opinion of the Engineer conform to the best standard practice will be removed and reinstated at the contractor's expense.

3.3. Permits, Certificates or Licences must be held by all tradesmen for the type of work; in which they are involved where such permits, certificates or licences exist under Government legislation.

4. PROCUREMENT OF MATERIALS

4.1. The contractor is advised that no assistance can be given in the procurement or allotment of any materials or products to be used in and necessary for the construction and completion of the work.

4.2. Contractors are warned that they must make their own arrangements for the supply of materials and/or products specified or required.

5. RECORD DRAWINGS

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

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

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

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

6. REGULATIONS AND STANDARDS

6.1. All work executed by the contractor shall comply with the current edition of the "Regulations" for the Electrical Equipment of Buildings, issued by the Institution of Electrical Engineers, Electric Power Act, Kenya Bureau of Standards (KeBS), Institution of Electrical Engineers (I.E.E) Wiring Regulations, Current recommendation of CCITT and CCIR, and with the Regulations of the Local Electricity Authority and the Communications Authority of Kenya (CAK)

6.2. Where the sets of regulations appear to conflict, they shall be clarified with the Engineer.

7. SETTING OUT WORK

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

8. TESTING ON SITE

8.1. The contractor shall conduct during and at the completion of the installation and, if required, again at the expiration of the maintenance period, tests in accordance with the relevant section of the current edition of the Regulations for the electrical equipment of buildings issued by the I.E.E of Great Britain, the Government Electrical Specifications No. 1 and No.2, Electric Supply Company's By-Laws, Communications Authority of Kenya (CAK) requirements or any other supplementary Regulations as may be produced by the engineer.

8.2. Any faults, defects or omissions or faulty workmanship, incorrectly positioned or installed parts of the installation shall be rectified by the contractor at his own expense.

SECTION C

SCHEDULE OF CONTRACT DRAWINGS

SCHEDULE OF CONTRACT DRAWINGS

DRAWING NO.	DRAWING TITLE
As shall be issued by the Engineer	

NOTE:

Tenderers are advised to inspect the electrical drawings at the office of the **Chief Engineer (Electrical) – Ministry of Transport, Infrastructure, Housing, Urban Development & Public Works, State Department for Public Works**, at Chief Engineer's (Electrical) office, Hill Plaza Building, Community area, Nairobi along Ngong road, during normal working hours.

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

SECTION D

PARTICULAR AND TECHNICAL SPECIFICATIONS

OF

MATERIALS AND WORKS

PARTICULAR AND TECHNICAL SPECIFICATIONS OF MATERIALS AND WORKS FOR STRUCTURED CABLING WORKS

TELECOMMUNICATIONS DISTRIBUTION SYSTEM – STRUCTURED CABLING

A. GENERAL TECHNICAL SPECIFICATIONS

a. Section Includes: Equipment, materials, labor, and services to provide telephone and data distribution system including but not limited to:

1. Telephone and data cabling terminations
2. Optical fiber and terminations
3. Data/voice outlets
4. Terminal blocks/cross-connect systems
5. Equipment racks and cabinets
6. System testing
7. Documentation and submissions
8. Surface trunking, cable ladder
9. Core switch, edge switches

b. Provide all equipment, materials, labor, and services, not specifically mentioned or shown, which may be necessary to complete or perfect all parts of the installation. Ensure that they are in compliance with requirements stated or reasonably inferred by the contract documents.

1. REFERENCES

a. Design, manufacture, test, and install telecommunications cabling networks per manufacturer's requirements and in accordance with NFPA-70 (*National Electrical Code®*)/IEE Regulations, state codes, local codes, requirements of authorities having jurisdiction, and particularly the following standards: ANSI/NECA/BICSI-568 -- Standard for Installing Commercial Building Telecommunications Cabling ANSI/TIA/EIA Standards.

1) ANSI/TIA/EIA-568-B.1 -- *Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements*

2) ANSI/TIA/EIA-568-B.2 -- *Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted Pair Cabling Components*

3) ANSI/TIA/EIA-568-B.3 -- *Optical Fiber Cabling Components Standard*

4) ANSI/TIA/EIA-569-A -- *Commercial Building Standard for Telecommunications Pathways and Spaces*

5) ANSI/TIA/EIA-606(A) -- *The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings*

6) ANSI/TIA/EIA-607(A) -- *Commercial Building Grounding and Bonding Requirements for Telecommunications*

7) ANSI/TIA/EIA-526-7 -- *Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant*

8) ANSI/TIA/EIA-526-14A -- *Measurement of Optical Power Loss of Installed Multimode Fiber Cable Plant*

(9) ANSI/TIA/EIA-758(A) -- *Customer-Owned Outside Plant Telecommunications Cabling Standard*

(10) ISO/IEC 1101 *Amendment 2*

b. Local codes, rules, regulations, and ordinances governing the work, are as fully part of the specifications as if herein repeated or hereto attached. If the contractor should note items in the drawings or the specifications, construction of which would be code violations, promptly call them to the attention of the Project Manager in writing. Where the requirements of other sections of the specifications are more stringent than applicable codes, rules, regulations, and ordinances, the specifications shall apply.

1. PERMITS, FEES, AND CERTIFICATES OF APPROVAL

a. The Contractor to include the cost of application and pay for building permit.
b. As prerequisite to final acceptance, supply to the client certificates of inspection from an inspection agency acceptable to the owner and approved by local municipality and utility company serving the Project Manager.

2. SYSTEM DESCRIPTION

a. A telecommunications cabling system generally consists of one telecommunications outlet in each workstation, wall telephones in common and power socket outlet.

b. The typical work area consists of a single-gang plate with two standards compliant work area outlets.

c. One work area outlet consists of one (1) four-pair data Category 6 cable or above, installed from work area outlet to the data cabinet. Terminate data cables on modular patch panels located in the appropriate data cabinet.

d. One work area outlet consists of one (1) four-pair screened (ScTP) cable installed from work area outlet to the data termination rack in the cabinet. Terminate data cables on rack mounted modular patch panels.

2.1 Vertical/horizontal copper backbone cabling consists of multiple pair unshielded twisted-pair installed from the main cross-connect (MC) to the horizontal cross-connect (HC) and/or from the MC to the intermediate cross-connect (IC) to the HC.

2.2 Vertical/horizontal backbone cabling consists of 62.5/125 μm multimode optical fiber cable installed from the MC to the HC and/or from the MC to the IC to the HC.

2.3 Vertical/horizontal backbone cabling consists of 50/125 μm multimode optical fiber cable installed from the MC to the HC and/or from the MC to the IC to the HC. *Specification Note: State what this backbone will be utilized for. Examples are voice telecommunications service, premises switching equipment, data communications, etc.*

3. SUBMITTALS

a. Submit to the P.M shop drawings, product data (including cut sheets and catalog information), and samples required by the contract documents. Submit shop drawings, product data, and samples with such promptness and in such sequence as to cause no delay in the work or in the activities of separate contractors. The engineer will indicate approval of shop drawings, product data, and samples submitted to the engineer by stamping such submittals "APPROVED" with a stamp. Submitted shop drawings shall be initialed or signed by the contractor, showing the date and the contractor's legitimate firm name.

1) By submitting shop drawings, product data, and samples, the contractor represents that he or she has carefully reviewed and verified materials, quantities, field measurements, and field construction criteria related thereto. It also represents that the contractor has checked, coordinated, and verified that information contained within shop drawings, product data, and samples conform to the requirements of the work and of the contract documents. The engineer/designer remains responsible for the design concept expressed in the contract documents as defined herein.

2) The P.M approval of shop drawings, product data, and samples submitted by the contractor shall not relieve the contractor of responsibility for deviations from requirements of the contract documents, unless the contractor has specifically informed the engineer/designer in writing of such deviation at time of submittal, and the engineer/designer has given written approval of the specific deviation. The contractor shall continue to be responsible for deviations from requirements of the contract documents not specifically noted by the contractor in writing, and specifically approved by the engineer in writing.

3) The P.M approval of shop drawings, product data, and samples shall not relieve the contractor of responsibility for errors or omissions in such shop drawings, product data, and samples.

4) The P.M review and approval, or other appropriate action upon shop drawings, product data, and samples, is for the limited purpose of checking for conformance with information given and design concept expressed in the contract documents. The engineer's review of such submittals is not conducted for the purpose of determining accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the contractor as required by the contract documents.

The review shall not constitute approval of safety precautions or of construction means, methods, techniques, sequences, or procedures. The P.M approval of a specific item shall not indicate approval of an assembly of which the item is a component.

b. Shop drawings: Submit the following:

Coordinate with Part 2.

1) Backbone (riser) diagrams
2) System block diagram, indicating interconnection between system components and subsystems
3) Interface requirements, including connector types and pin-outs, to external systems and systems or components not supplied by the contractor
4) Fabrication drawings for custom-built equipment

c. Product Data -- Provide catalog cut sheets and information for the following:

Coordinate with Part 2.

1) Wire, cable, and optical fiber
2) Outlets, jacks, faceplates, and connectors
3) All metallic and nonmetallic raceways, including surface raceways, outlet boxes, and fittings
4) Terminal blocks and patch panels
5) Enclosures, racks, and equipment housings
6) Over-voltage protectors
7) Splice housings

d. Samples-- Submit samples as required by the Engineer.

e. Project record drawings:

1) Submit project record drawings at conclusion of the project and include:

(a) Approved shop drawings.
(b) Plan drawings indicating locations and identification of work area outlets, nodes, data cabinet rooms, and backbone (riser) cable runs.
(c) Cross-connect schedules including entrance point, main cross-connects, intermediate cross-connects, and horizontal cross-connects.
(d) Labeling and administration documentation.
(e) Warranty documents for equipment.
(f) Copper certification test result printouts and diskettes.
(g) Optical fiber power meter/light source test results.
(h) Operation and maintenance manuals:

4. QUALITY ASSURANCE

1.1 The contractor shall have worked satisfactorily for a minimum of five (5) years on systems of this type and size.

1.2 Upon request by the P.M, furnish a list of references with specific information regarding type of project and involvement in providing of equipment and systems.

1.3 Equipment and materials of the type for which there are independent standard testing requirements, listings, and labels, shall be listed and labeled by the independent testing laboratory.

1.4 Where equipment and materials have industry certification, labels, or standards (i.e., NEMA - National Electrical Manufacturers Association), this equipment shall be labeled as certified or complying with standards.

1.5 Material and equipment shall be new, and conform to grade, quality, and standards specified. Equipment and materials of the same type shall be a product of the same manufacturer throughout.

1.6 Subcontractors shall assume all rights and obligations toward the contractor that the contractor assumes toward the client and P.M.

5. WARRANTY

5.1 Unless otherwise specified, unconditionally guarantee in writing the materials, equipment, and workmanship for a period of not less than fifteen (15) years from date of commissioning of the project for active components.

5.2 Transfer manufacturer's warranties to the owner in addition to the General System Guarantee. Submit these warranties on each item in list form with shop drawings. Detail specific parts within equipment that are subject to separate conditional warranty. Warranty proprietary equipment and systems involved in this contract during the guarantee period. Final payment shall not relieve you of these obligations.

6. DELIVERY, STORAGE, AND HANDLING

6.1 Protect equipment during transit, storage, and handling to prevent damage, theft, soiling, and misalignment. Coordinate with the client for secure storage of equipment and materials. Do not store equipment where conditions fall outside manufacturer's recommendations for environmental conditions. Do not install damaged equipment; remove from site and replace damaged equipment with new equipment.

7. SEQUENCE AND SCHEDULING

7.1 Submit schedule for installation of equipment and cabling. Indicate delivery, installation, and testing for conformance to specific job completion dates. As a minimum, dates are to be provided for bid award, installation start date, completion of station cabling, completion of riser cabling, completion of testing and labeling, cutover, completion of the final punch list, start of demolition, owner acceptance, and demolition completion.

8. USE OF THE SITE

8.1 Access to building wherein the work is performed shall be as directed by the P.M. The client will occupy the premises during the entire period of construction for conducting his or her normal business operations. Cooperate with the client to minimize conflict and to facilitate the owner's operations.

Schedule necessary shutdowns of plant services with the main contractor, and obtain written permission from the client.

Proceed with the work without interfering with ordinary use of streets, aisles, passages, exits, and operations of the client.

PRODUCTS

1. MANUFACTURERS

Provide products of manufacturers as named in individual articles. Where no manufacturer is specified, provide products of manufacturers in compliance with requirements.

2. FABRICATION

Fabricate custom-made equipment with careful consideration given to aesthetic, technical, and functional aspects of equipment and its installation.

3. SUITABILITY

Provide products that are suitable for intended use, including, but not limited to environmental, regulatory, and electrical.

4. VOICE/DATA TELECOMMUNICATIONS SERVICE BACKBONE CABLE

a. Solid copper, 24 AWG, 100 Ω balanced twisted-pair (UTP) backbone cable, with mechanical and transmission performance specifications that meet or exceed ANSI/TIA/EIA-568-B.2

b. Multimode 62.5/125 μm diameter tight-buffered optical fiber, with fiber counts as indicated on drawings, with mechanical and transmission performance specifications that meet or exceed ANSI/TIA/EIA-568-B.3

5. VOICE TELECOMMUNICATIONS STATION CABLE

a. Solid copper, 24 AWG, 100 Ω balanced twisted-pair (UTP) Category 6A cables with four individually twisted-pairs, which meet or exceed the mechanical and transmission performance specifications in ANSI/TIA/EIA-568-B.2 up to 100 MHz.

6. DATA STATION CABLE (Copper)

a. Solid copper, 24 AWG, 100 Ω balanced twisted-pair (UTP) Category 6A cables with four individually twisted-pairs, which meet or exceed the mechanical and transmission performance specifications in ANSI/TIA/EIA-568-B.2 up to 100 MHz.

b. Solid copper, 24 AWG, 100 Ω balanced twisted-pair, screened (ScTP) cables with four individually twisted-pairs, which meet or exceed the mechanical and transmission performance specifications in ANSI/TIA/EIA-568-B.2 (Annex K) up to 100 MHz.

7. DATA STATION CABLE (Optical Fiber)

a. Multimode 62.5/125 μm diameter tight-buffered optical fiber, with the required number of fiber counts, with mechanical and transmission performance specifications that meet or exceed ANSI/TIA/EIA-568-B.3

8. UNDERGROUND TELECOMMUNICATIONS CABLE (Copper)

If you have copper cables installed outside between buildings, be certain to specify overvoltage protectors on both ends of the cable. See article, OVERVOLTAGE PROTECTORS.

Solid copper, 24 AWG 100 Ω balanced twisted-pair, gel-filled duct cable, in sizes as indicated on the drawings, which meet or exceed the mechanical and transmission performance specifications listed in ANSI/TIA/EIA-568-B.2 and ANSI/TIA/EIA-758(A).

9. UNDERGROUND TELECOMMUNICATIONS CABLE (Optical Fiber)

Singlemode 8.7 μm to 10 μm diameter, armored, gel-filled optical fiber, with number of usable fibers as shown on drawings, which meet or exceed the mechanical and transmission performance specifications listed in ANSI/TIA/EIA-568-B.3 and ANSI/TIA/EIA-758(A).

10. VOICE/DATA – COPPER & OPTICAL FIBER WORK AREA OUTLETS

Edit for items that will actually be used on the project.
Pick a color for the faceplate and each type of jack, or make them all one color.

Determine which pinning standard is to be used, T568A, T568B, or USOC. If not otherwise specified, specify T568A. Use either 10c with SC connectors or 10d (1) for ST connectors. SC connectors are preferred. Use ST connectors to match existing cable plant if required.

Single-gang mounting plate with two (2) openings containing the following devices:

a. Data Outlet - 8-pin modular, category 6A, unkeyed, black, pinned to either T568 (A or B) standards.

b. Optical Fiber Connectors – simplex ST - ST adapter.
Provide two optical fiber adapters for each faceplate

11. VOICE/DATA WORK AREA OUTLETS (Copper only)

Single-gang mounting plate with four (4) openings containing the following devices:
Data Outlet - 8-pin modular, Category 6A, unkeyed, black, pinned to either T568 (A or B) standards.

12. VOICE ONLY WORK AREA OUTLET

Single-gang faceplate with 8-pin modular, category 6A, unkeyed, ivory telephone jack, pinned to either T568 (A or B) standards

13. TERMINATION BLOCKS

For items that will actually be used on the project: Coordinate with MC, IC and HC layout drawing.

a. Product(s) as approved by the P.M: Wiring blocks are to be in following configurations:

1) List dimensional configurations

2) ER – List pairs categorized for PABX portion of ER and pairs field terminated for backbone and CO portion of ER

Provide wiring troughs between ER frame sections.

14. PATCH PANELS

Specification Note: Alter quantities to match job requirements.
19 in. rack mountable, 24-port 8-pin modular to insulation displacement connector (IDC) meeting Category 6A performance standards, and pinned to either T568 (A or B) standards. Typical examples of IDC connections are the 110, BIX, and Krone.

15. WALL MOUNTED OPTICAL FIBER PATCH PANELS

Specification Note: Alter quantities to match job requirements
Wall-mounted optical fiber termination panel with 12-fiber capacity, hinged door, cable strain relief, slack storage, and two 6-port SC or approved alternative connector panels with adapters and provisions for two splice trays.

16. RACK MOUNTED OPTICAL FIBER TERMINATION PANEL

Specification Note: Alter size to match job requirements. Coordinate with connector type.
19 in. rack mounted 72-port rack-mounted optical fiber termination panel with cable strain relief, grounding lugs, slack storage and three 12-port duplex SC or approved alternative connector panels with adapters and provisions for six (6) splice trays.

17. *SPLICE TRAYS*

Sized for single mode and multimode fibers, nonmetallic with clear plastic cover, 12-fiber splice capacity, compatible with splice enclosure and splicing method.

18. OPTICAL FIBER CONNECTORS

Ceramic tipped field installed 568SC connectors, which meet or exceed the performance specifications in ANSI/TIA/EIA-568-B.3. Various alternative field installed connector designs, which meet or exceed the performance specifications in ANSI/TIA/EIA-568-B.3 (Annex A).

19. OPTICAL FIBER JUMPERS

Dual 62.5/125-µm (*and/or single mode*) optical fiber jumper cable, 1 m long with 3.0 mm Duplex 568SC optical fiber connectors on each end.
Dual 62.5/125-µm (*and/or single mode*) optical fiber jumper cable, 1 m long with approved alternative duplex optical fiber connectors on each end.

20. OPTICAL FIBER PIGTAILS

62.5/125 µm (*and/or single mode*) optical fiber pigtail 1 m long with 3.0 mm single 568 SC optical fiber connectors on one end

21. OPEN FRAME EQUIPMENT RACK

Open frame, 19 in. equipment rack, 7 foot 6 in. overall height with flange base, mounting rails drilled front and back and tapped to EIA standards, and a front-rack mountable 10 outlet multiple outlet electrical strip or 42u enclosed glazed.

22. EQUIPMENT RACKS/CABINETS

Specification Note: Use 19 in. or change to 23 in. as required. If using wall-mounted racks or cabinets, add required specifications here. Add and delete features as required.
a. The 19 in. equipment rack shall have the following minimum requirements:

- 77 in. (44 rack spaces) of panel space
- Welded frame construction
- Locking front and rear doors
- Adjustable front and back equipment mounting rails drilled and tapped to EIA standards
- 10 position electrical outlet strip
- Removable side panels
- Top mounted, thermostatically controlled exhaust fan
- Smoked acrylic front door.

23. LISTED BUILDING ENTRANCE PROTECTORS

Use when copper cables are run outside of building.
Use appropriate protector modules.
Building entrance terminal utilizing a two (2) foot fuse link between the outside cable plant splice and the protector module with IDC type input and output terminals, 100-pair capacity and female mounting base, equipped with 230-volt solid state protector modules. Provide sufficient protector modules to completely populate all building entrance terminals.

24. SPLICE HOUSING

Use this or something else. Delete splice modules if used for optical fiber cables.

a. Encapsulated, re-enterable splice housing, sized as required with bonding straps, accessories, end caps and encapsulant as required
b. Splice modules (such as 710 series or MS^2) for use within splice housing

25. SPARES

Change quantities to suit job size. Edit to match that which is actually specified.

a. Furnish the following spare equipment and parts:

Terminal block connectors, if required
Test set cords, if required
Install one test cord set in each telecommunications closet
Five (5) percent of base bid quantity of each type of jack shall be provided
Five (5) percent of base bid quantity of each type of outlet

Five thousand (5000) ft of each type of station cable
One thousand (1000) ft of one-pair cross-connect wire for each telecommunications closet
One thousand (1000) ft of two-pair cross-connect wire for each telecommunications closet
Five (5) percent of base bid quantity of protector modules

EXECUTION

1. PRE-INSTALLATION SITE SURVEY

a. Prior to start of systems installation, meet at the project site with the P.M and representatives of trades performing related work to coordinate efforts. Review areas of potential interference and resolve conflicts before proceeding with the work. Facilitation with the Client will be necessary to plan the crucial scheduled completions of the equipment room and telecommunications closets.

b. Examine areas and conditions under which the system is to be installed. Do not proceed with the work until satisfactory conditions have been achieved.

2. HANDLING AND PROTECTION OF EQUIPMENT AND MATERIALS

a. Be responsible for safekeeping of your own, such as equipment and materials, on the job site. The client assumes no responsibility for protection of above named property against fire, theft, and environmental conditions.

3. PROTECTION OF OWNER'S FACILITIES

a. Effectively protect the client's facilities, equipment, and materials from dust, dirt, and damage during construction.

b. Remove protection at completion of the work.

4. INSTALLATION

Receive, check, unload, handle, store, and adequately protect equipment and materials to be installed as part of the contract. Store in areas as directed by the owner's representative. Include delivery, unloading, setting in place, fastening to walls, floors, ceilings, or other structures where required, interconnecting wiring of system components, equipment alignment and adjustment, and other related work whether or not expressly defined herein.

Install materials and equipment in accordance with applicable standards, codes, requirements, and recommendations of national, state, and local authorities having jurisdiction, and *National Electrical Code®* (NEC) and with manufacturer's printed instructions.

Adhere to manufacturer's published specifications for pulling tension, minimum bend radii, and sidewall pressure when installing cables.

1) Where manufacturer does not provide bending radii information, minimum-bending radius shall be 15 times cable diameter. Arrange and mount equipment and materials in a manner acceptable to the P.M and the client.

e. Penetrations through floor and fire-rated walls shall utilize intermediate metallic conduit (IMC) or galvanized rigid conduit (GRC) sleeves and shall be fire stopped after installation and testing, utilizing a fire stopping assembly approved for that application.

f. Install station cabling to the nearest telecommunications room (TR), unless otherwise noted.

g. Installation shall conform to the following basic guidelines:
1) Use of approved wire, cable, and wiring devices
2) Neat and uncluttered wire termination

h. Attach cables to permanent structure with suitable attachments at intervals of 1200-1500mm. Support cables installed above removable ceilings.

i. Install adequate support structures for 10 foot of service slack at each TR.

j. Support riser cables every floor and at top of run with cable grips.
1) Limit number of four-pair data riser cables per grip to fifty (50)

k. Install cables in one continuous piece. Splices shall not be allowed except as indicated on the drawings or noted below:

l. Provide over voltage protection on both ends of cabling exposed to lightning or accidental contact with power conductors.

Specification Note: *Insert any other specific installation requirements here, such as hook and latch fasteners instead of cable ties, etc.*

5. GROUNDING

a. Grounding shall conform to ANSI/TIA/EIA 607(A) - *Commercial Building Grounding and Bonding Requirements for Telecommunications, National Electrical Code*®, ANSI/NECA/BICSI-568 and manufacturer's grounding requirements as minimum.

b. Bond and ground equipment racks, housings, messenger cables, and raceways.

c. Connect cabinets, racks, and frames to single-point ground which is connected to building ground system via #6 AWG green insulated copper grounding conductor.

6. LABELING

Use 6d if the type of termination block permits labels. Otherwise use 6e.
Use 6g if the owner does not have a standard for outlet numbering.
Use 6h if required. Alter time as requested.

Labeling shall conform to ANSI/TIA/EIA-606(A) standards. In addition, provide the following:

a. Label each outlet with permanent self-adhesive label with minimum 3/16 in. high characters.

b. Label each cable with permanent self-adhesive label with minimum, 1/8 in. high characters, in the following locations:

1) Inside receptacle box at the work area.
2) Behind the communication closet patch panel or punch block.

c. Use labels on face of data patch panels. Provide facility assignment records in a protective cover at each telecommunications closet location that is specific to the facilities terminated therein.

d. Use color-coded labels for each termination field that conforms to ANSI/TIA/EIA-606(A) standard color codes for termination blocks.

e. Mount termination blocks on color-coded backboards.

f. Labels shall be machine-printed. Hand-lettered labels shall not be acceptable.

g. Label cables, outlets, patch panels, and punch blocks with room number in which outlet is located, followed by a single letter suffix to indicate particular outlet within room, i.e., S2107A, S2107B. Indicate riser cables by an R then pair or cable number.

h. Mark up floor plans showing outlet locations, type, and cable marking of cables. Turn these drawings over to the owner two (2) weeks prior to move in to allow the owner's personnel to connect and test owner-provided equipment in a timely fashion.

i. Three (3) sets of as-built drawing shall be delivered to the owner within four (4) weeks of acceptance of project by the owner. A set of as-built drawings shall be provided to the owner in magnetic media form (3.5" floppy disks) and utilizing CAD software that is acceptable to the owner. The magnetic media shall be delivered to the owner within six (6) weeks of acceptance of project by owner.

7. TESTING

Testing shall conform to ANSI/TIA/EIA-568-B.1 standard. Testing shall be accomplished using level IIe or higher field testers.

Test each pair and shield of each cable for opens, shorts, grounds, and pair reversal. Correct grounded, and reversed pairs. Examine open and shorted pairs to determine if problem is caused by improper termination. If termination is proper, tag bad pairs at both ends and note on termination sheets.

1) Perform testing of copper cables with tester meeting ANSI/TIA/EIA-568-B.1 requirements.
2) If copper backbone cable contains more than one (1) percent bad pairs, remove and replace entire cable.

Use 2 or 3 as required.

3) If copper cables contain more than the following quantity of bad pairs, or if outer sheath damage is cause of bad pairs, remove and replace the entire cable:

CABLE SIZE	MAXIMUM BAD PAIRS
<100	1
101 to 300	1 – 3
301 to 600	3 – 6
>601	6

4) If horizontal cable contains bad conductors or shield, remove and replace cable.
Initially test optical cable with a light source and power meter utilizing procedures as stated in ANSI/TIA/EIA-526-14A: *OFSTP-14A Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant* and ANSI/TIA/EIA-526-7 *Measurement of Optical Power Loss of Installed Single mode Fiber Cable Plant*. Measured results shall be plus/minus 1 dB of submitted loss budget calculations. If loss figures are outside this range, test cable with optical time domain reflectometer to determine cause of variation. Correct improper splices and replace damaged cables at no charge to the owner.

1) Cables shall be tested at 850 and 1300 nm for multimode optical fiber cables. Cables shall be tested at 1310 and 1550 nm for single mode optical fibers.
2) Testing procedures shall utilize "Method B" – One jumper reference.
3) Bi-directional testing of optical fibers is required.

d. Perform optical time domain reflectometer (OTDR) testing on each fiber optic conductor. Measured results shall be plus/minus 1 dB of submitted loss budget calculations.
1) Submit printout for each cable tested.
2) Submit 3.5 in. disks with test results and program to view results.

e. Where any portion of system does not meet the specifications, correct deviation and repeat applicable testing at no additional cost.

FIELD QUALITY CONTROL

a. Employ job superintendent during the course of the installation to provide coordination of work of this specification and of other trades, and provide technical information when requested by other trades. This person shall maintain current RCDD® (Registered Communications Distribution Designer) registration and shall be responsible for quality control during installation, equipment set-up, and testing.

b. At least 30 percent of installation personnel shall be *BICSI Registered Telecommunications Installers*. Of that number, at least 15 percent shall be registered at the *Technician Level*, at least 40 percent shall be registered at the *Installer Level 2*, and the balance shall be registered at the *Installer Level 1*.
Specification Note: Use this or insert manufacturer's requirements for installer qualifications to meet extended warranty program requirements.
c. Installation personnel shall meet manufacturer's training and education requirements for implementation of extended warranty program.

B. PARTICULAR SPECIFICATIONS

PART 1
PARTICULAR SPECIFICATIONS FOR STRUCTURED CABLING WORKS

1.0 SITE LOCATION

The site of the proposed works is located at **Williamson Plaza – Nairobi County.**

2.0 DESCRIPTION OF THE PROJECT

The works to be carried out comprise the following;

i) Proposed supply, installation, testing and commissioning of a structured cabling system to cater for computer data points and telephone points.
ii) Configure and set up the structured cabling system to be used on LAN,
iii) Produce test result, warranty certification, reports and as installed drawings. The
iv) Supply, install telephone cables to interconnect the data cabinets to the IP-PABX to be located in the Server Room.

3.0 REGULATIONS

The contractor shall, in execution and completion of the works in the detailed design for which he is responsible, comply with the provisions of the following as necessary and relevant;

a) ISO/IEC, CCK, ATM CENELEC 11801
b) ANSI/EIA/TIA 56
c) Latest Edition of IEE Regulation
d) Kenya Bureau of Standards
e) Electric Power Act and Rules made there under.

4.0 WORKING DRAWINGS

The Contractor shall submit to the Project Manager working drawings for the proposed system for approval. The drawings will show the locations of and identifiers for all cable routing and terminations, telecommunication outlets/connectors. Location of core switch and Edge switches.

5.0 NETWORK CABINETS

a) To be located on each floor in designated rooms as indicated in the electrical drawings.
b) Must be metallic (appropriately sized as specified in the BQ) with a front clear glass, freestanding, complete with lock and key and the following accessories;

- Cable Management channel rack
- Cable support hooks
- Cable support rings and straps
- Cable duct cover
- Feed through cable panels
- Vented equipment shelving
- Blank filler panels
- Hinged wall mounted brackets
- Glass viewing window
- Colored Designation strips

- Management lock and key
- Cooling extractor fans
- Caster wheels
- Inbuilt 2-gang power socket outlet

c) Power to the cabinet shall be switched off from within the cabinets. Proper power socket cables to be supplied with the cabinet.

d) The cabinet for active devices shall conform to ANSI/TIA/EIA-568A specifications with forced cooling

6.0 ACTIVE CONTROL EQUIPMENTS AT THE NETWORK CORE (CORE SWITCH)

The active control equipment at the core should have the following features:

a) Up to 1 TBps of local stackable switching bandwidth.
b) Flexible downlink options with 1G Copper and Fiber as well as the densest Multigigabit links
c) Mix of Copper (1G up to 10G) and Fiber (1G up to 25G) supported in a single stack
d) Flexible and dense uplink offerings with 1G, Multigigabit, 10G, 25G, 40G and 100G in the form of fixed or modular uplinks
e) Based on UADP 2.5sec ASIC which adds line rate support for Crypto, including 100G IPSec
f) PoE capabilities with up to 384 ports of PoE per stack, PoE+, and high-density IEEE 802.3bt
g) Intelligent Power Management, providing power stacking among members for power redundancy.
h) Line-rate, hardware-based Flexible NetFlow (FNF), delivering flow collection of up to 128,000 flows with select models
i) IPv6 support in hardware, providing wire-rate forwarding for IPv6 networks
j) Dual-stack support for IPv4/IPv6 and dynamic hardware forwarding table allocations, for ease of IPv4-to-IPv6 migration
k) Support for both static and dynamic NAT and Port Address Translation (PAT)
l) IEEE 802.1ba AV Bridging (AVB) built in to provide a better audio and video experience through improved time synchronization and QoS
m) x86 CPU complex with 8-GB memory, and 16 GB of flash and external USB 3.0 SSD pluggable storage slot (delivering up to 240GB of storage with an option SSD drive) to host containers.

7.0 ACTIVE CONTROL EQUIPMENTS AT THE LAN EDGE

Active control equipment at the LAN Edge should have the following features:

a) Switching capacity of at least 56Gbps
b) Stacking bandwidth of at least 80Gbps
c) Atleast 16,000 MAC Addresses
d) Atleast 512 Total Switched Virtual Interfaces (SVIs)
e) Full Power over Ethernet Plus (PoE+) capability
f) Modular uplinks of 4x 1G fixed uplinks or more
g) Atleast 1 Virtual Networks
h) Atleast 2GB DRAM
i) Atleast 4Gb flash

8.0 NTU Specifications

Type:	HDSL
Max Data Transfer Rate:	2Mbps
Mode of Operation:	DCE
Connector:	DB37
Interface Cable:	DB37-DB15

9.0 NETWORK MANAGEMENT SYSTEM

Bidders must propose the manufacturers Network Management system for centralized configuration, maintenance and troubleshooting of active equipments. Third party standalone systems should not be offered as part of the solution. Features and functionalities of the system should include the following:

a) Should be compatible with Microsoft windows/Linux operating systems
b) Graphical User Interface for central Management and network viewing
c) Network discovery and inventory management
d) VLAN, multicast, security and load-balancing/fail over configuration
e) Downloading and saving of log file from the device flash memory
f) Centralized upgrade/backup and archiving of active devices
g) Export of network topology to JPEG or other standard formats.

10.0 CABLES

10.1) UTP CABLE

The UTP cable must be category 6A compliant UTP cable, with the following specifications;

a) 4-pair cables with 100-ohm impedance.
b) Compliant to standards such as TIA/EIA – 268-B. 2-1 and IEC 61156-5
c) Made of polyethylene insulation
d) Pulling force should support up to 50N/mm2
e) Low Smoke Zero Halogen outer sheath

10.2) OPTICAL FIBRE CABLE

The fibre cable must be 8 core multimode fibre with the following specifications: -

a) Cable size: 8 core.
b) Termination: SC Duplex connectors.
c) Graded Index: Nominal 62.5/125 micro. m

11.0 CAT 6A PATCH PANELS

The Contractor shall provide factory made patch panels, Cat 6A complete with cable management and front designation strips, 110 PCB mounted connectors and integral RJ mounted jack sockets.

12.0 FIBER PATCH PANELS

All Backbone Fiber links to individual floors should be terminated on Fiber Patch Panels. Connector interfaces should support ST, Sc simplex, Sc duplex, FC, LC or MT-RJ.

13.0 BACK BONE

Backbone cabling inclusive of switches and all necessary accessories shall be carried out in readiness for the termination of edge switches.
The Backbone cabling shall be flexible and allow for easy 'add on's' for future expansions. Hence enough capacity shall be allowed for future expansion.

14.0 EDGE/FLOOR SWITCHES

These shall be per floor/wing and have enough capacity for expansion

15.0 WIRELESS ACCESS POINT

The wireless access point shall have the following features:

- ✓ Concurrent dual-band radio support up to 1.3 Gbps on a 5.0-Ghz radio and 600 Mbps on a 2.4-Ghz radio.
- ✓ 3x3 MIMO with three spatial streams on both 5.0 GHz and 2.4 GHz
- ✓ Two-Gigabit Ethernet LAN interface with link aggregation (LAG) support
- ✓ Robust security, including WPA2, 802.1X with RADIUS secure authentication, and rogue access point detection
- ✓ 16 WAP571E access points per cluster
- ✓ 802.11ac Wave 1 Wi-Fi standard
- ✓ Support Plug and Play feature for mass deployments, when using FindIT network management platform
- ✓ Supports PoE capability

16.0 Uninterruptible Power Supply (UPS)

The UPS shall have the following features:

Max Configurable Power (Watts)	2.1kWatts / 3.0kVA
Output Voltage Distortion	Less than 5 %
Output Frequency (sync to mains)	50 Hz Sync to mains
Topology	Line interactive
Waveform type	Sine wave
Transfer Time	8 ms typical : 10 ms maximum
Input frequency	50/60 Hz +/- 3 Hz Auto-sensing
Input voltage range for main operations	180 - 287V
Battery type	Lead-acid battery
Typical recharge time	3hour(s)
Expected Battery Life (years)	Atleast 3 years
Interface Port(s)	USB
Control panel	Multifunction LCD status and control console
Audible Alarm	Distinctive low battery alarm : configurable delays

17.0 COMPLETION COMMISSIONING OF STRUCTURED CABLING WORKS

17.1 Upon completion of the installation, all cabling links must be tested for the following parameters, using Level Three testers: -

a) Category 6A Cable Tests

1. Wire Map
2. Length
3. Insertion Loss (Attenuation)
4. NEXT Loss
5. PSNEXT Loss
6. ELFEXT Loss, pair-to-pair
7. PSELFEXT Loss
8. Return Loss
9. ACR (Attenuation to crosstalk ratio)
10. PSACR
11. Propagation Delay
12. Delay Skew

b) Fibre Optic Cable Tests

1. Link attenuation (insertion loss)
2. Length

Any failing link must be diagnosed and corrected. The corrective action shall be followed with a new test to prove that the corrected link meets the performance requirements.

The results should be recorded in one or several measure books showing test results of the cable components. In addition, the measurements must be recorded on two soft copies (CD-ROM).

17.2 All components must be tested and a Completion Certificate issued stating the following:

a. Number of outlets
b. Type of cable
c. Date completed
d. Type of Warranty

In addition, an "as-built" package must be submitted with the following information

a. Updated floor plans
b. Wire/cable routing schematic
c. Facility assignment records
d. Horizontal cable test results
e. Fibre Backbone test results

18.0 Documentation

The contractor shall avail documentation (2 copies) detailing the layout and devices or components of the system and must include all information for maintenance technicians to run, service, extend or maintain the network. In particular, the documentation must be structured and contain the following:

a. Synopsis of the cabling (primary and secondary)
b. Charts of the distribution highlighting the details of the elements that have been installed
c. Detailed map of socket layout (2 Soft copies on CD-ROM should be availed)
d. Reports on measurements (2 Soft copies on CD-ROM should be availed)

The CD-ROMs provided shall include the software tools required to view, inspect and print any selection of test reports.

19.0 Warranty and Support

3.1 The Contractor will be required to give a per link warranty of at least fifteen (15) years for the structured cabling infrastructure and must provide a site certification certificate from the manufacturer of the cabling infrastructure not more than 30 days after completion of tests.

3.2 In the event of failure of the core switch, the contractor will be required to deliver any necessary parts on the next business day after determining that parts replacement is required, during the standard work week (8 hours a day, 5 days a week). This support will be carried out by a field engineer and will run for a period of Twenty Four months from the date of commissioning of the LAN.

3.3 The contractor will be required to provide a sixty months warranty on the edge switches from the date of commissioning of the LAN.

20.0 ADDITIONAL NOTES

Tenderers should take note of the following

a) The network should be capable of carrying data, voice and video. QOS should be considered as part of installation and configuration of the network.
b) All active LAN equipments should be from the same manufacturer for seamless integration, management and maintenance.
c) Each floor should have a telecommunication Closet to house the necessary structured cabling components and active equipments.

21.0 BROCHURES AND TECHNICAL LITERATURE

Tenderers **must** enclose together with their submitted bids brochures detailing technical Literature and specifications of the active components of the structured cabling system. The brochures shall be used to evaluate the suitability of these components.

Any bid submitted without the brochures shall be considered technically non-responsive, and may subsequently be disqualified.

SECTION E

SCHEDULE OF UNIT RATES

SCHEDULE OF UNIT RATES

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

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

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

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

5. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all all taxes applicable at the time of tender.

SCHEDULE OF UNIT RATES

(To be completed by the Tenderer)

ITEM	DESCRIPTION	QTY/UNIT	RATE(KSHS)
1.	48 port Cisco Core Switch, PoE and approved by engineer	1No.	
2.	48 port patch panel	1No.	
3.	6 core Single mode fiber cable	1Metre.	
4.	4 core Multi mode fiber cable	1Metre.	
5.	6 core Multi mode fiber cable	1Metre.	

SECTION F

BILLS OF QUANTITIES

BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS

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

The Bills of Quantities are divided generally into three sections:

(a) Preliminaries – Bill No.1

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

(b) Installation Items – 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 1.0 5 of the section C.

(c) Summary

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

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

SPECIAL NOTES TO THE BILLS OF QUANTITIES

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

2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all all taxes applicable at the time of tender.

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

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

   Should the sub-contractor install any material not specified here-in before receiving **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 **MAIN Summary Page.**

6. Tenderers must enclose, together with their submitted tenders, detailed coloured manufacturer's Brochures detailing Technical Literature and specifications on all the equipment they intend to offer e.g. Standby Battery and UPS, Data Switches, Routers and IP-PBX.

   The brochures are to be used to ascertain the suitability of the components offered by the bidders. Bidders not complying with this requirement shall be considered technically non-responsive and shall subsequently be disqualified.

BOQ FOR STRUCTURED CABLING					
	SCHEDULE 1: STRUCTURED CABLING				
ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
1.01	Carefully, remove, store and arrange for handing over to client of the existing Structured cabling fitting and accessories <u>Supply, install, test and commission the following complete as specified.</u>	1	Item		
1.02	3M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used at work stations.	99	No.		
1.03	RJ45 CAT6A UTP (Single) Data and voice faceplates complete with keystones and all other accessories as Siemon or approved equivalent	99	No.		
1.04	CAT6A UTP 4-Pair cable as Siemon or approved equivalent drawn in the trunkings to wire both the data and voice points	2670	LM		
1.05	42U wall mounted metal cabinet/ with glass door complete with fans, power outlet points, grounding kits and castors.	1	No		
1.06	22U wall mounted metal cabinet/ with glass door complete with fans, power outlet points, grounding kits and castors.	2	No		
1.07	Category 6A, shielded 48 Port Patch Panel and as Siemon or approved equivalent.	2	No		
1.08	Category 6A, shielded 24 Port Patch Panel and as Siemon or approved equivalent.	1	No		
1.09	1M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used in cabinet.	105	No.		
1.10	2U WM series rack mount cable managers	2	No.		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
	Total Brought Forward from Previous Page				
1.11	24 Port PoE Switch-IP Base edge switch as described in particular specifications and as Cisco 9200 series or approved equivalent complete with 10G uplink modules and all other necessary accessories.	5	No		
1.12	3kVA rack mount Uninterruptible Power Supply (UPS) as described in the particular specifications and as SMC3000RMI2U or approved equivalent	2	No		
1.13	Wireless Access Point as described in particular specification and as Cisco WAP571 Wireless-AC/N Premium Dual Radio Access Point with PoE or approved equivalent	12	No		
	BACKBONE CABLING				
1.14	Main fiber back bone distribution patch panel for both the incoming fiber cable and for reticulation. The panel is to be waterproof, complete with all accessories and as cisco, siemon or approved equivalent.	3	No		
1.15	SC-SC fibre patch cord Complete with connectors	10	No.		
1.16	SFP fibre modules as CISCO or approved equivalent	10	No.		
1.17	8 core Multi mode fiber cable	110	LM		
	Total for Structured Cabling carried forward to Collection Page				

COLLECTION PAGE		
Item	Description	Amount (KShs)
1	Schedule 1: Structured Cabling	
2	Price for 3 sets of working drawings	
3	Price for 3 sets of as installed drawings	
4	Provide for fibre cable testing, preparing and presenting warranty and documentation, cabling layout diagrams, indelible point labels and preparing and submitting individual test results (for each point and for all point to be submitted as a bound report). Attach printed results and soft copy	
5	Allow a contingency sum to be expended at the discretion of the Electrical Engineer	250,000
	GRAND TOTAL CARRIED FORWARD TO MAIN SUMMARY PAGE	

Amount of tender in words: Kenya Shillings……..,,,,……

……

Domestic Subcontractor's Signature and Stamp……,,,,,,,,,……

Address……,,,,….

Date……

Witness: Name and Signature……,,,,,,,,,,,,,,,……..

Address……,,,,,,,,,……

Date ……

SECTION G

TECHNICAL SCHEDULE

OF

ITEMS TO BE SUPPLIED

TECHNICAL SCHEDULE

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

2. The filling of this schedule forms part of Technical Evaluation of the tenders, and bidders shall therefore be required to indicate the type/make and country of origin of all the materials and equipment they intend to offer to the employer in this schedule.

3. Any bid returned with unfilled Technical Schedule shall be considered technically non-responsive, and the bidder shall automatically be disqualified.

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

(To be completed by the Tenderer as a Mandatory Requirement)

ITEM	DESCRIPTION	TYPE/MAKE	MODEL	COUNTRY OF ORIGIN
1	PoE Switches			
2	Patch panels			
3	Patch cords			
4	CAT 6A Cables			
5	Fibre Cable			
6	Cabinet			
7	Cable managers			
8	Faceplate			
9	3Kva UPS			
10	Wireless Access Point			

SECTION H

STANDARD FORMS

CONTENTS OF SECTION H

	TITLE	PAGE
1.	Key Personnel	H-1
2.	Schedule of Contracts completed in the last five (5) years	H-2
3.	Schedule of on-going projects	H-3
4.	Contractor's Equipment	H-4
5.	Details of Litigation or Arbitration Proceedings	H-5

NOTE:

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

2. Any tender returned with **unfilled Standard Forms** shall be considered **non-Responsive and shall automatically be disqualified.**

KEY PERSONNEL

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

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

I certify that the above information is correct.

…….. …… ……

Title Signature Date

CONTRACTS COMPLETED IN THE LAST FIVE (5) YEARS

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

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

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

…… …… ……

Title Signature Date

SCHEDULE OF ON-GOING PROJECTS

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

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

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

…… …… ……

Title Signature Date

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

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

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

1. .....

2. .....

3. .....

4. .....

5. .....

6. .....

7. .....

8. .....

9. .....

10. .....

PROVISIONAL SUMS

ITEM	DESCRIPTION	RATE	AMOUNT
	PROVISIONAL SUMS The following provisional items are to be measured on completion of the works and priced in accordance with prevailing market rates or deducted in whole if not required		
A	Provide a Provisional sum of Kshs. Two Hundred Thousand only for Builders Work in connection with specialists services	Sum	200,000.00
B	Allow a provisional sum of Kenya shillings Five Hundred Thousand only for office branding and Signage	Sum	500,000.00
C	Allow a provisional sum of Kenya shillings Two Million only for Contingencies	Sum	2,000,000.00
	Provisional Sums To Main Summary		2,700,000.00

PROPOSED PARTITIONING OF SALARIES AND REMUNERATION COMMISSION (SRC) OFFICES AT WILLIAMSON HOUSE-NAIROBI
PHASE 2

W.P. ITEM No. D110/NB/NB/1801 JOB NO.10402 B
MAIN SUMMARY

ITEM	DESCRIPTION	TENDERER'S AMOUNT	OFFICIAL USE ONLY
A	Particular Preliminaries From pg **PP/8**		
B	General Preliminaries From pg **GP/16**		
C	Builder's Work 6th Floor From pg **6BW/9**		
D	Builder's Work 3rd Floor completion From pg **3BW/6**		
E	Sanitary, Plumbing & Drainage From pg **F24**		
F	Air Conditioning & Mechanical Ventilation From pg **C10**		
G	Server Room Precision Environment Control & Fire Suppression Installation Works From pg		
H	Electrical Installation From pg **F7**		
J	Structured cabling, PABX & Acess Control Installation Works From page **F5**		
K	Provisional sums From Page **PS**		
	TOTAL CARRIED TO FORM OF TENDER (VAT Inclusive)		

Amount of tender in words: ……..

……

Tenderer Signature and stamp……

Date……

Witness: Name and signature……

Address……

Date……