BANKI KUU YA KENYA

CENTRAL BANK OF KENYA

Haile Selassie Avenue

P.O. Box 60000 - 00200 Nairobi Kenya

Telephone: 2861000/2863000

Fax 340192/250783

Email: supplies@centralbank.go.ke

TENDER DOCUMENT

TENDER FOR PROPOSED CONSTRUCTION OF ELDORET BRANCH FOR CENTRAL BANK OF KENYA

TENDER NO: CBK/072/2026-2027

CLOSING DATE: 23RD DECEMBER 2026 AT 10:30 A.M

C2: CBK - Official

TABLE OF CONTENTS

INVITATION TO TENDER v

PART I : TENDERING PROCEDURES

SECTION I - INSTRUCTIONS TO TENDERERS 1

A. GENERALPROVISIONS 1

1.0 Scope of tender 1
2.0 Fraud and corruption 1
3.0 Eligible tenderers 1
4.0 Eligible goods, equipment, and services 3
5.0 Tenderer's responsibilities 3

B. CONTENTS OF TENDER DOCUMENTS 4

6.0 Sections of Tender Document 4
7.0 Clarification of Tender Document, Site Visit, Pre-tender Meeting 4
8.0 Amendment of Tender Documents 5

C. PREPARATION OF TENDERS 5

9.0 Cost of Tendering 5
10.0 Language of Tender 5
11.0 Documents Comprising the Tender 5
12.0 Form of Tender and Schedules 6
13.0 Alternative Tenders 6
14.0 Tender Prices and Discounts 6
15.0 Currencies of Tender and Payment 6
16.0 Documents Comprising the Technical Proposal 7
17.0 Documents Establishing the Eligibility and Qualifications of The Tenderer 7
18.0 Period of Validity of Tenders 8
19.0 Tender Security 8
20.0 Format and Signing of Tender 9

D. SUBMISSION AND OPENING OF TENDERS 10

21.0 Sealing and Marking of Tenders 10
22.0 Deadline for Submission of Tenders 10
23.0 Late Tenders 10

C2: CBK - Official

24.0 Withdrawal, Substitution, and Modification of Tenders 10
25.0 Tender Opening 11

E. EVALUATION AND COMPARISON OF TENDERS 11

26.0 Confidentiality 11
27.0 Clarification of Tenders 12
29.0 Determination of Responsiveness 12
30.0 Non-material Non-conformities 12
31.0 Arithmetical Errors 13
33.0 Margin of Preference and Reservations 13
34.0 Nominated Subcontractors 13
35.0 Evaluation of Tenders 14
36.0 Comparison of tenders 14
37.0 Abnormally low tenders and abnormally high tenders 14
38.0 Unbalanced and/or front-loaded tenders 15
39.0 Qualifications of the tenderer 15
40.0 Lowest evaluated tender 16
41.0 Procuring entity's right to accept any tender, and to reject any or all tenders. 16

F. AWARD OF CONTRACT 16

42.0 Award criteria 16
43.0 Notice of intention to enter into a contract 16
44.0 Standstill Period 16
45.0 Debriefing By The Procuring Entity 16
46.0 Letter of Award 17
47.0 Signing of Contract 17
48.0 Performance Security 17
49.0 Publication of Procurement Contract 17
50.0 Procurement related Complaint and Administrative Review 18

G. SECTION II - TENDER DATA SHEET(TDS) 18-20

H. SECTION III - EVALUATION AND QUALIFICATION CRITERIA 21

1. General Provisions 21
2. Preliminary examination for Determination of Responsiveness 21
3. Tender Evaluation 21
4. Mandatory requirements 21-23
5. Technical Evaluation 24-26
6. Financial Evaluation 26
7. Recommendation 27
8. Multiple Contracts 27
9. Alternative Tenders 27
10. Margin of Preference 28
11. Post qualification and Contract ward 28

C2: CBK - Official

12. QUALIFICATION FORM 30-32

I. SECTION IV –TENDERING FORMS 33

1. FOREIGN TENDERERS 40% RULE 33
2. Form EQU: EQUIPMENT 34
3. FORM PER - 1: 35
4. FORM PER - 2: 36
5. TENDERERS QUALIFICATION WITHOUT PRE-QUALIFICATION 38-50

J. OTHER FORMS 51

1. FORM OF TENDER 51
   a) TENDERER'S ELIGIBILITY- CONFIDENTIALBUSINESS QUESTIONNAIRE 54
   b) CERTIFICATE OF INDEPENDENTTENDERDETERMINATION 57
   c) SELF-DECLARATION FORM - SELF DECLARATION OFTHETENDERER 58
   d) APPENDIX 1 - FRAUD AND CORRUPTION 59

2. FORM OF TENDER SECURITY – DEMAND BANKGUARANTEE 63
3. FORM OF TENDER SECURITY (INSURANCE GUARANTEE) 64
4. FORM OF TENDER-SECURING DECLARATION 65
5. APPENDIX TO TENDER 66

K. PART II : THE CONDITIONS OF CONTRACT AND CONTRACT

L. SECTION V - GENERAL CONDITIONS OFCONTRACT (GCC) 71

1. General Provisions 71
2. The Procuring Entity 77
3. The Engineer 78
4. The Contractor 80
5. Nominated Subcontractors 87
6. Staff and Labor. 88
7. Plant, Materials and Workmanship 91
8. Commencement, Delays and Suspension 93
9. Tests on Completion 97
10. Procuring Entity's Taking Over 97
11. Defects Liability 99
12. Measurement and Evaluation 101
13. Variations and Adjustments 102
14. Contract Price and Payment 106
15. Termination by Procuring Entity 112
16. Suspension and Termination by Contractor 114
17. Risk and Responsibility 115
18. Insurance 118
19. Force Majeure 120
20. Settlement of Claims and Disputes 123

M. Section IX - Special Conditions of Contract 127

N. SECTION X – CONTRACT FORMS 129

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD 130

FORM No. 2 –REQUEST FOR REVIEW 133

C2: CBK - Official

FORM No. 3 – LETTER OF AWARD 134
FORM No. 4 – CONTRACT AGREEMENT 135
FORM No. 5 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee] 136
FORM No. 6- PERFORMANCE SECURITY [Option 2 – Performance Bond] 137
FORM No. 7 – ADVANCE PAYMENT SECURITY 139
FORM No. 8 – RETENTION MONEY SECURITY 140
FORM No. 9 – BENEFICIAL OWNERSHIP DISCLOSURE FORM 141

O. PART III : BILLS OF QUANTITIES

1. Preambles, Specifications and Pricing Notes……...….1-94
2. Particular Preliminaries…….…….....1/1-1/12
3. General Preliminaries…….……...2/1-2/23
4. Main Building Summary M.B.S/1
5. Civil Works..... 12/1-12/29
6. Landscaping..... 13/1-13/7
7. Signage and Artwork 14/1-14/6
8. Dayworks and Schedule of Rates 15/1-15/5
9. Provisional Sums 16/1
10. Electrical Installations ELEC/1
11. Mechanical Installations MECH/1
12. Grand Summary..... GS/1

C2: CBK - Official

INVITATION TO TENDER (ITT) BY CENTRAL BANK OF KENYA

1. The Central Bank of Kenya invites sealed **TENDER FOR PROPOSED CONSTRUCTION OF ELDORET BRANCH FOR CENTRAL BANK OF KENYA, TENDER NO: CBK/072/2026-2027**

2. Tendering will be conducted under National Open Tender using a standardized tender document. Tendering is open to all qualified and interested Tenderers.
3. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours *09: 00AM to4:00PM* at the address: **The Head of Procurement, Tel: +254 20 2861000/2860000, 5th Floor, Central Bank of Kenya, Haile Selassie Avenue, Nairobi, Email: supplies@centralbank.go.ke** during normal working hours.

4. A complete set of tender document containing detailed information may be downloaded from the PPIP website: **www.tenders.go.ke OR Central Bank of Kenya website: www.centralbank.go.ke at no cost.** Bidders who download the tender document are advised to forward their particulars immediately using the **Email: supplies@centralbank.go.ke**. to facilitate any further clarification or addendum.
5. Prices quoted should be inclusive of all taxes and must be expressed in Kenya shillings and shall remain valid for a period of **210 days** from the closing date of the tender document.

6. All tender must be accompanied by a **Tender Security** of **KES 20,000,000** in the format provided in the tender document valid for **240 days** from the date of tender opening.
7. Completed tender documents are to be enclosed in plain sealed envelopes marked with tender reference number and be deposited in the **Green Tender Box No. 3** at the main entrance, ground floor of **Central Bank of Kenya along Haile Selassie Avenue,** or posted using the address **Head of Procurement, Central Bank of Kenya, P. O. Box 60000- 00200, Nairobi, Kenya, Haile Selassie Avenue** so as to be received on or **before 23rd December 2026 at 10:30am.** Electronic Tenders *will not* be permitted.
8. Tenders will be opened immediately after the deadline date and time specified above or any deadline date and time specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who will be required to have personal identification document National ID/Passport.
9. Late tenders will be rejected.
10. The addresses referred to above are:

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

The Director, General Services Department
Central Bank of Kenya, Head Office in Nairobi on Haile Selassie Avenue 5th Floor,
P. O. Box 60000 – 00200, Nairobi
Tel. No. 020 2860000, E-mail address: **supplies@centralbank.go.ke**.

B. Address for Submission of Tenders.
Central Bank of Kenya, Head Office in Nairobi, Ground
Haile Selassie Avenue
Green Tender Box No. 3 at the main entrance, ground floor
P. O. Box 60000 – 00200, Nairobi

C. Address for Opening of Tenders.
Central Bank of Kenya, Head Office in Nairobi, Senior Staff Canteen on 6th Floor

DEPUTY
DIRECTOR HEAD
OF PROCUREMENT

C2: CBK - Official

PART1: TENDERING PROCEDURES

C2: CBK - Official
C2: CBK - Official

SECTION I - INSTRUCTIONS TO TENDERERS A GENERAL PROVISIONS

1.0 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.

1.2 Throughout this tendering document:

a) The term "in writing" means communicated in written form (e.g. by mail, e-mail, fax, including if specified in the TDS, distributed or received through the electronic-procurement system used by the Procuring Entity) with proof of receipt;

b) if the context so requires, "singular" means "plural" and vice versa;

c) "Day" means calendar day, unless otherwise specified as "Business Day". A Business Day is any day that is an official working day of the Procuring Entity. It excludes official public holidays.

2.0 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 Tenderers shall permit and shall cause their agents (whether declared or not), subcontractors, sub-consultants, service providers, suppliers, and their personnel, to permit the Procuring Entity to inspect all accounts, records and other documents relating to any initial selection process, pre-qualification process, tender submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Procuring Entity.

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. 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 in formation that would in that respect give such firm any unfair competitive advantage over competing firms.

3.0 Eligible tenderers

3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.8, or an individual or any combination of such entities in the form of a joint venture (JV) under an existing agree mentor with the intent to enter in to such an agreement supported by a letter of intent. 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. 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. 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.

a) 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

C2: CBK Official

this tendering process, if the tenderer:

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

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

d) Has the same legal representative as another tenderer;

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

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

g) Any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as a consultant for Contract implementation;

h) 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;

i) Has a close business or personal relationship with senior management or professional staff of the Procuring Entity who has the ability to influence the bidding process and:

   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) May 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.

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

3.4 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. Members of a joint venture may not also make an individual tender, be a sub-contractor in a separate tender or be part of another joint venture for the purposes of the same Tender. A firm that is not a tenderer or a JV member may participate as a subcontractor in more than one tender.

3.5 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT3.9. 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 sub-contractors or sub-consultants for any part of the Contract including related Services.

3.6 A 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.

3.7 A Tenderer that is a state-owned enterprise or a public institution in Kenya may be eligible to tender and be awarded Contract(s) only if it is determined by the Procuring Entity to meet the following conditions, i.e. if it is:

i) A legal public entity of 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 enterprisetoenableitcompetewithfirmsintheprivatesectoronanequalbasis.

C2: CBK Official

3.8 Firms and individuals shall be ineligible if their countries of origin are:

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

(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.

C2: CBK Official

A tenderer shall provide such documentary evidence of eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

3.9 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, local sub-contracts and labor) from citizen 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 for this purpose in *"SECTIONI II - EVALUATION AND QUALIFICATION CRITERIA, Item 9"*.

3.10 Pursuant to the eligibility requirements of ITT 3.10, a tender is considered a foreign tenderer, If it is registered in Kenya and has less than 51 percent ownership by nationals of Kenya and if it does not subcontract to foreign firms or individuals more than 10 percent of the contract price, excluding provisional sums. JVs are considered as foreign tenderers if the individual member firms registered in Kenya have less 51 percent ownership by nationals of Kenya. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.

3.11 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.

3.12 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.

3.13 A Kenyan tenderer shall be eligible to tender if it provides evidence of having fulfilled his/her tax obligations by producing valid tax compliance certificate or tax exemption certificate issued by the Kenya Revenue Authority.

4.0 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 ineligible 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.

5.0 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 and inspect 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 beat 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 again stall 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 examination and inspection.

C2: CBK Official

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

6.0 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 10.

PART 1: Tendering Procedures
Section I – Instructions to Tenderers
Section II – Tender Data Sheet (TDS)
Section III- Evaluation and
Qualification Criteria Section IV –
Tendering Forms

PART 2: **Conditions of Contract and Contract Forms**
Section VIII - General Conditions (GCC)
Section IX - Special Conditions of Contract
Section X- Contract Forms

6.2 The Invitation to Tender Notice issued by the Procuring Entity is not part of the Contract documents. 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 a pre-arranged site visit and those of the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 10. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail.

6.3 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.

7.0 Clarification of Tender Document, Site Visit, Pre-tender Meeting

7.1 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 if provided for in accordance with ITT 7.2. 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 p**rior 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 7.4, including a description of the inquiry but without identifying its source. If so 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 following the procedure under ITT 8 and ITT 22.2.

7.2 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine and inspect the site(s) of the required contracts and obtain all information that may be necessary for preparing a tender. The costs of visiting the Site shall be at the Tenderer's own expense. The Procuring Entity shall specify in the **TDS** if a pre-arranged Site visit and or a pre-tender meeting will be held, when and where. The Tenderer's designated representative is invited to attend a pre-arranged site visit and a pre-tender meeting, as the case may be. The purpose of the site visit and the pre-tender meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

7.3 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.

7.4 Minutes of a pre-arranged site visit and those of the pre-tender meeting, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the

C2: CBK Official

meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents. Minutes shall not identify the source of the questions asked.

7.5 The Procuring Entity shall also promptly publish anonymized (*no names*) Minutes of the pre-arranged site visit and those of the pre-tender meeting at the web page identified in the **TDS**. Any modification to the Tender Documents that may become necessary as a result of the pre-arranged site visit and those of the pre-tender meeting 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. Non-attendance at the pre-arranged site visit and the pre-tender meeting will not be a cause for disqualification of a Tenderer.

8.0 Amendment of Tender Documents

8.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tender Documents by issuing addenda.

8.2 Any addendum issued shall be part of the Tender Documents and shall be communicated in writing to all who have obtained the Tender Documents from the Procuring Entity. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's website in accordance with ITT 7.5.

8.3 To give Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity should extend the dead line for the submission of Tenders, pursuant to ITT 22.2.

C. PREPARATION OF TENDERS

9. Cost of Tendering

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.

10.0 Language of Tender

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.

11.0 Documents Comprising the Tender

11.1 The Tender shall comprise the following:

a) Form of Tender prepared in accordance with ITT 12;
b) Schedules including priced Bill of Quantities, completed in accordance with ITT 12 and ITT 14;
c) Tender Security or Tender-Securing Declaration, in accordance with ITT 19.1;
d) Alternative Tender, if permissible, in accordance with ITT 13;
e) ***Authorization****:* written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordance with ITT20.3;
f) *Qualifications:* documentary evidence in accordance with ITT 17 establishing the Tenderer's qualifications to perform the Contract if its Tender is accepted;
g) *Conformity:* a technical proposal in accordance with ITT 16;
h) Any other document required in the **TDS.**

11.2 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 JV Agreement. Change of membership and conditions of the JV prior to contract signature will render the tender liable for disqualification.

C2: CBK Official

12.0 Form of Tender and Schedules

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

12.2 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.

13. Alternative Tenders

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

13.2 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.

13.3 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.

13.4 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.

14.0 Tender Prices and Discounts

14.1 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.

14.2 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.

14.3 The price to be quoted in the Form of Tender, in accordance with ITT 12.1, shall be the total price of the Tender, including any discounts offered.

14.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 12.1.

14.5 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.

14.6 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

C2: CBK - Official

the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITT 14.4, provided the Tenders for all lots (contracts) are opened at the same time. 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.

15.0 Currencies of Tender and Payment

15.1 The currency (ies) of the Tender and the currency (ies) of payments shall be the same**.**

15.2 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) A Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya (referred to as "the foreign currency requirements") shall (if so allowed in the **TDS**) indicate in the Appendix to Tender the percentage(s) of the Tender Price (excluding Provisional Sums), needed by the Tenderer for the payment of such foreign currency requirements, limited to no more than two foreign currencies.

b) The rates of exchange to be used by the Tenderer in arriving at the local currency equivalent and the percentage(s) mentioned in (a) above shall be specified by the Tenderer in the Appendix to Tender and shall be based on the exchange rate provided by the Central Bank of Kenya on the date 30 days prior to the actual date of tender opening. Such exchange rate shall apply for all foreign payments under the Contract.

15.3 Tenderers may be required by the Procuring Entity to justify, to the Procuring Entity's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Adjustment Data in the Appendix to Tender are reasonable, in which case a detailed breakdown of the foreign currency requirements shall be provided by Tenderers.

16.0 Documents Comprising the Technical Proposal

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.

17.0 Documents Establishing the Eligibility and Qualifications of the Tenderer

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

17.2 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.

17.3 If a margin of preference applies as specified in accordance with ITT 33.1, nation al tenderers, individually or in joint ventures, applying for eligibility for national preference shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 33.1.

17.4 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 particular 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.

17.5 The purpose of the information described **in ITT 17.4** 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.

17.6 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring

C2: CBK - Official

Entity may request in relation to owner ship and control which in formation on any changes to the information which was provided by the tenderer under ITT 6.4. 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.

17.7 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.

17.8 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.

17.9 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 pending the outcome of (iii),

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

17.10 If a tenderer submits information pursuant to these requirements that is in complete, in accurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 17.8 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 tender.

18.0 Period of Validity of Tenders

18.1. 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 22). A tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.

18.2 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 19, 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.

19.0 Tender Security

19.1 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.

19.2 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:

I) cash;

ii) a bank guarantee;

iii) a guarantee by an insurance company registered and licensed by the Insurance Regulatory

C2: CBK - Official

Authority listed by the Authority;

(iv) a guarantee issued by a financial institution approved and licensed by the Central Bank of Kenya, from a reputable source, and an eligible country.

19.3 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 18.2.

19.4 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.

19.5 If a Tender Security is specified pursuant to ITT 19.1, 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 non-responsive or a bidder declines to extend tender validity period.

19.6 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.

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

a) 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

b) if the successful Tenderer fails to: -

i) sign the Contract in accordance with ITT47; or

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

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

19.9 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.

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

20.0 Format and Signing of Tender

20.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 11 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 13, 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 origin a land the copies, the original shall prevail.

20.2 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.

20.3 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.

C2: CBK - Official

20.4 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 so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

20.5 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

21.0 Sealing and Marking of Tenders

21.1 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 13, 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.

21.2 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 misplaced or opened prematurely will not be accepted.

22.0 Deadline for Submission of Tenders

22.1 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**.

22.2 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.

23.0 Late Tenders

The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of tenders, in accordance with ITT 22. 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.

24.0 Withdrawal, Substitution, and Modification of Tenders

24.1 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 20.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the

C2: CBK - Official

respective written notice. All notices must be:

a) prepared and submitted in accordance with ITT 20 and ITT 21 (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 22.

24.2 Tenders requested to be withdrawn in accordance with ITT 24.1 shall be returned unopened to the Tenderers.

24.3 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.

25. Tender Opening

25.1 Except in the cases specified in ITT 23 and ITT 24.2, 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 22.1, shall be as specified in the **TDS.**

25.2 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.

25.3 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.

25.4 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.

25.5 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.

25.6 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 Bill of Quantities (to be decided on by the tender opening committee) are to be initialed by the members of the tender opening committee attending the opening.

25.7 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 23.1).

25.8 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;

C2: CBK - Official

c) any alternative Tenders;
d) the presence or absence of a Tender Security, if new as required;
e) number of pages of each tender document submitted.

25.9 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.

E. EVALUATION AND COMPARISON OF TENDERS

26. Confidentiality

26.1 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 43.

26.2 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.

26.3 Notwithstanding ITT 26.2, 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.

27.0 Clarification of Tenders

27.1 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 31.

27.2 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.

28.0 Deviations, Reservations, and Omissions

28.1 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.

29.0 Determination of Responsiveness

29.1 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 11.

29.2 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;

C2: CBK - Official

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;

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

29.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 16, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.

29.4 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.

30.0 Non-material Non-conformities

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

30.2 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 of time, to rectify non-material 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.

30.3 Provided that a tender is substantially responsive, the Procuring Entity shall rectify quantifiable non-material 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.**

31.0 Arithmetical Errors

31.1 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.

31.2 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, 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

31.3 Tenderers shall be notified of any error detected in their bid during the notification of award.

32.0 Conversion to Single Currency

For evaluation and comparison purposes, the currency (ies) of the Tender shall be converted in to a single currency as specified in the **TDS**.

33.0 Margin of Preference and Reservations

33.1 A margin of preference may be allowed only when the contract is open to international competitive tendering where foreign contractors are expected to participate in the tendering process and where the contract exceeds the value/threshold specified in the Regulations.

C2: CBK - Official

33.2 A margin of preference shall not be allowed unless it is specified so in the **TDS**.

33.3 Contracts procured on basis of international competitive tendering shall not be subject to reservations exclusive to specific groups as provided in ITT 33.4.

33.4 Where it is intended to reserve a contract to a specific group of businesses (these groups are Small and Medium Enterprises, Women Enterprises, Youth Enterprises and Enterprises of persons living with disability, as the case may be), and 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 or firms belonging to the specified group are eligible to tender. No tender shall be reserved to more than one group. If not so stated in the Invitation to Tender and in the Tender documents, the invitation to tender will be open to all interested tenderers.

34.0 Nominated Subcontractors

34.1 Unless otherwise stated in the **TDS,** the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected/nominated by the Procuring Entity. In case the Procuring Entity nominates a subcontractor, the subcontract agreement shall be signed by the Subcontractor and the Procuring Entity. The main contract shall specify the working arrangements between the main contractor and the nominated subcontractor.

34.2 Tenderers may propose sub-contracting 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.

34.3 Domestic 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 so by the Procuring Entity in the **TDS** a scan 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.

35. Evaluation of Tenders

35.1 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 Lowest Evaluated Tender in accordance with ITT 40.

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

a) Price adjustment in accordance with ITT 31.1 (iii); excluding provisional sums and contingencies, if any, but including Daywork items, where priced competitively;

b) price adjustment due to discounts offered in accordance with ITT 14.4;

c) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT 32;

d) price adjustment due to quantifiable non material non-conformities in accordance with ITT 30.3; and

e) any additional evaluation factors specified in the **TDS** and Section III, Evaluation and Qualification Criteria.

35.3 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.

35.4 Where the tender involves multiple lots or contracts, the tenderer will be allowed to tender for one or more lots (contracts). Each lot or contract will be evaluated in

C2: CBK - Official

accordance with ITT 35.2. The methodology to determine the lowest evaluated tenderer or tenderers base done lot (contract) or based on a combination of lots (contracts), will be specified in Section III, Evaluation and Qualification Criteria. In the case of multiple lots or contracts, tenderer will be required to prepare the Eligibility and Qualification Criteria Form for each Lot.

36.0 Comparison of tenders

The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 35.2 to determine the Tender that has the lowest evaluated cost.

37.0 Abnormally low tenders and abnormally high tenders

Abnormally Low Tenders

37.1 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.

37.2 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.

37.3 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.

Abnormally high tenders

37.4 An abnormally high tender 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.

37.5 In case of an abnormally high 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.

37.6 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.

C2: CBK - Official

38.0 Unbalanced and/ or front-loaded tenders

38.1 If in the Procuring Entity's opinion, the Tender that is evaluated as the lowest evaluated price is seriously unbalanced and/or frontloaded, 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.

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

a) accept the Tender;

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;

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

d) reject the Tender,

39.0 Qualifications of the tenderer

39.1 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.

39.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 17. 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 Sub-contractors if permitted in the Tender document), or any other firm(s) different from the Tenderer.

39.3 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.

40.0 Lowest evaluated tender

Having compared the evaluated prices of Tenders, the Procuring Entity shall determine the Lowest Evaluated Tender. The Lowest 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.

41.0 Procuring entity's right to accept any tender, and to reject any or all tenders.

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 there by incurring any liability to Tenderers. In case of annulment, all Tenders submitted and specifically, Tender securities, shall be promptly returned to the Tenderers.

C2: CBK - Official

F. AWARD OF CONTRACT

42.0 Award criteria

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

43.0 Notice of Intention to Enter into a Contract/Notification of Award

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) instruction son how to request a debriefing and/ or submit a complaint during the stand still period;

44.0 Stand still Period

44.1 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.

44.2 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.

45.0 Debriefing by the Procuring Entity

45.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 43, 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.

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

46.0 Letter of Award

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 with in 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 21 days of the date of the letter.

47.0 Signing of Contract

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

C2: CBK - Official

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

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

48.0 Performance Security

48.1 Within twenty-one (21) days of the receipt of the Letter of Award 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 38.2 (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.

48.2 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.

48.3 Performance security shall not be required for contracts estimated to cost less than the amount specified in the Regulations.

49.0 Publication of Procurement Contract

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 readout at Tender opening.

50.0 Procurement related Complaints and Administrative Review

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

50.2 A request for administrative review shall be made in the form provided under contract forms.

C2: CBK - Official

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.

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
A. General	
ITT 1.1	The name of the contract is **PROPOSED CONSTRUCTION OF ELDORET BRANCH FOR THE CENTRAL BANK OF KENYA (CBK)** The reference number of the Contract is **CBK/072/2026-2027**
ITT 2.4	The Information made available on competing firms is as follows: **SHALL NOT APPLY**
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: **TWO**
	As per Section 2.1
ITT 3.12	The invited tenderers shall be required to have valid registration by National Construction Authority in building works
B. Contents of Tender Document	
ITT 7.1	(i) The Tenderer will submit any request for clarifications in writing at the Address PROVIDED IN THE INVITATION TO TENDER to reach the Procuring Entity not later than 4 DAYS BEFORE OPENING DATE (ii) The Procuring Entity shall publish its response at the website PROVIDED IN THE INVITATION TO TENDER HEREIN.
ITT 7.2	(A) There shall be a pre-arranged pretender site visit: (B) Pre-Tender site visit and meeting **SHALL** take place on **17th December 2026 at 10.30 a.m.** at, **CBK Eldoret.**
ITT 7.3	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than **four (4) days to the date of submission of tenders.**
ITT 7.5	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender will be published is: **www.tenders.go.ke OR Central Bank of Kenya website: www.centralbank.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 **Central Bank of Kenya Tel: +254 20 2861000/2860000, 11th Floor, Extelcoms House, Central Bank of Kenya, Haile Selassie Avenue, Nairobi,** (2) Physical address for hand Courier Delivery to an office or Tender Box (City, Street, Building, Floor Number and Room) is **Central Bank of Kenya,** Head Office in Nairobi, Ground floor, Haile Selassie Avenue, **Green Tender Box No. 3** at the main entrance, ground floor, P. O. Box 60000 – 00200, Nairobi (3) **Postal Address Central Bank of Kenya Nairobi Head Office,** P. O. Box 60000 – 00200, Nairobi (4) Officer to be contacted: Deputy Director, Procurement Division, Tel. No. 020 286 3402, Email: **supplies @centralbank.go.ke**
C. Preparation of Tenders	

C2: CBK - Official

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 11.1 (h)	The Tenderer shall submit the following additional documents in its Tender: In addition to the original of the Tender, the number of copies is: **1 copy. The tender Documents to clearly marked "ORIGINAL TENDER" and "COPY OF TENDER," as appropriate.**
ITT 13.1	Alternative Tenders **SHALL NOT** be considered.
ITT 13.2	Alternative times for completion **SHALL NOT** be permitted. **Bidders will be required to state the completion time in the form of tender.**
ITT 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: **SUBSTRUCTURE AND SUPERSTRUCTURE. Tenderer to provide design calculations, technical specifications, breakdown of prices and proposed construction methodology. THERE SHOULD BE NO additional COST IMPLICATIONS to the client for alternative methods adopted by bidders. Rates given by bidders will be assumed to have factored the methods of construction proposed by the bidder.**
ITT 14.5	The prices quoted by the Tenderer shall be: **subject to fluctuations as provided by KNBS indices and PPADA guidelines**
ITT 15.2 (a)	Foreign currency requirements **not allowed. The tender shall be priced in Kenya Shillings only.**
ITT 18.1	The Tender validity period shall be **210 days.**
ITT 18.3	(a) The Number of days beyond the expiry of the initial tender validity period will be **30 days**. (b) The Tender price shall be adjusted by the following percentages of the tender price: (i) By **Nil %** of t*he local currency portion of the Contract price adjusted to reflect local inflation during the period of extension,* *and* *(ii) By* **Nil %** *the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension.*
ITT 19.1	Tender shall provide **a Tender Security.** The amount and currency of the Tender Security shall be **Kshs. 20,000,000.00 issued by a Commercial Bank or Microfinance Institution licensed and regulated by CBK or an Insurance Company approved by Public Procurement Regulatory Authority(PPRA)**
ITT 20.1	In addition to the original of the Tender, the number of copies is: **1 replica copy. The tender Documents to clearly marked "ORIGINAL TENDER" and "COPY OF TENDER," as appropriate.**
ITT 20.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: a written **Power of Attorney.**
D. Submission and Opening of Tenders	
ITT 22.1	For Tender submission purposes only, the Procuring Entity's address is: Attention: **Director, General Services Department** Physical Address: **Central Bank of Kenya, Head Office in Nairobi, Haile Selassie Avenue, CBK Building, Ground Floor** Tenderers ***shall not*** have the option of submitting their Tenders electronically.
ITT 25.1	The Tender opening shall take place at the time and the address for Opening of Tenders provided: **Central Bank of Kenya,** Head Office in Nairobi, Haile Selassie Avenue **Senior Staff Canteen on 6th Floor** Physical Address: **Central Bank of Kenya,** Head Office in Nairobi, Senior Staff Canteen, on

C2: CBK - Official

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	6th Floor on **23rd December 2026 at 10:30am** The electronic Tender opening procedures shall be: **NOT APPLICABLE**
ITT 25.1	If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures specified below: **NOT APPLICABLE**
E. Evaluation, and Comparison of Tenders	
ITT 30.3	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.
TT 32.1	The currency that shall be used for Tender evaluation and comparison purposes only to convert at the selling exchange rate all Tender prices expressed in various currencies into a single currency is: **Kenya Shillings** The source of exchange rate shall be: **Applicable CBK rates at the date of tender opening.**
ITT 33.2	A margin of preference **SHALL NOT** apply.
ITT 33.4	The invitation to tender is extended to the following group that qualify for Reservations **NOT APPLICABLE.**
ITT 34.1	At this time, the Procuring Entity **DOES NOT INTEND** to execute certain specific parts of the Works by subcontractors selected in advance.
ITT 34.2	Contractor's may propose subcontracting: Maximum percentage of subcontracting permitted is: **30%** of the total contract amount**.**
ITT 34.3	The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: **(a) Electrical and ICT Installations** **(b) Plumbing, Drainage and Fire-fighting Installations** **(c) Lifts Installations** **(d) Mechanical Ventilation Installations** 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 35.2 (e)	Additional requirements apply. These are detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria.
ITT 48.1	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 equivalent to 10% of the contract amount in form of a **bank guaranteed** issued by a commercial Bank or Microfinance Bank licensed and regulated by CBK and, any other documents required in the **TDS**, in accordance with the General Conditions of Contract, subject to ITT 40.2 (ii)), 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.
ITT 48.1	Other documents required in addition to the Performance Security upon award of the tender are: **(a) Acceptable Program of works/progress chart** **(b) Cashflow projections** **(c) Acceptable Insurances** **(d) The bidder before signing the contract should provide proof of registration with National Construction Authority (NCA) Category 1 (Building works) and an annual contractor's practicing license valid at the time of tendering.**

C2: CBK - Official

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 50.1	The procedures for making a Procurement-related Complaint are detailed in the "Notice of Intention to Award the Contract" herein and are also available from the 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 the quickest means available, that is either by hand delivery or email to: **For the attention: The Deputy Director, Procurement** **Division** **Title/position: The Deputy Director, Procurement** **Procuring Entity:** ***Central Bank of Kenya*** **Email address*: supplies@centralbank.go.ke*** In summary, a Procurement-related Complaint may challenge any of the following (among others): (i) the terms of the Tender Documents; and (ii) the Procuring Entity's decision to award the contract.

C2: CBK - Official

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1. GENERAL PROVISIONS

1.0 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. The Procuring Entity shall use **the Standard Tender Evaluation Document for Goods and Works** for evaluating Tenders.

1.1 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 the Procuring Entity.

1.2 EVALUATION AND CONTRACT AWARD CRITERIA

The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. 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. STAGE 1: PRELIMINARY EXAMINATION FOR DETERMINATION OF RESPONSIVENESS

The Procuring Entity will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other mandatory requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements provided for in the preliminary evaluation criteria outlined below. 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 non-responsive and will not be considered further.

The following evaluation criteria shall be applied not withstanding any other requirement in the tender documents.

1. Stage 1 - Preliminary Examination Parameters (Mandatory Requirements)
2. Stage 2 - Technical Evaluation on Qualification
3. Stage 3 - Financial Evaluation
4. Stage 4 – Due diligence
5. Stage 5 - Recommendation of award

2.1. PRELIMINARY EXAMINATION AND MANDATORY REQUIREMENTS PARAMETERS

The bidder (contractor) will be jointly evaluated together with his/her team of subcontractors for compliance with preliminary and mandatory requirements. The team must jointly meet all preliminary and mandatory requirements to proceed to technical evaluation.

For copies of original certificates to be accepted as valid, they MUST be certified by a commissioner of oaths. All standard forms must be notarized by a notary public. The Bidder MUST attach a valid registration and annual practicing license and the active email address of the commissioner of oaths and Notary Public he/she has used to certify the documents.

C2: CBK - Official

2.1.1 EVALUATION CRITERIA FOR THE MAIN CONTRACTOR

S/N	Mandatory Eligibility criteria	*Documents to be provided/completed*	*Tenderer's Compliance (YES or NO)*
MR 1	The **"original" and "replica copy**" of tender documents should be properly tape bound, sequentially serialized on all pages, all attachments and with a properly referenced table of contents.	Original and Replica Copy	
MR 2	Attach Registration/Incorporation Certificate. In case of a joint Venture, all parties must attach Registration/Incorporation Certificate.	Copy of Certificate of incorporation	
MR 3	Attach a valid copy of Business Permit from the respective county government. In case of a joint Venture, all parties must attach the business permits from respective county governments or respective countries.	Valid Business Permit	
MR 4	Attach a copy of CR12 or CR13 form issued within the last 12 months showing the list of directors /shareholding. In case of a joint Venture, all parties must submit a CR12/13	Valid CR12 or CR13	
MR 5	In case of a joint Venture, the bidder must attach an intent to enter into a joint venture, as well as Power of Attorney delegating authority to the signatory of the tender to commit the tenderer;	Appointing Letter of Power of Attorney	
MR 6	Bidders shall provide tax compliance certificate valid as at the date of tender closing issued by Kenya Revenue Authority. In case of a joint venture all parties must submit valid tax compliance certificates from Kenya Revenue Authority or its equivalent for foreign contractors.	Valid Certificate of Tax Compliance	
MR 7	The bidder shall provide proof in form of duly signed and certified audited accounts for three (3) years; 2025, 2024 and 2023 with a Minimum annual turnover of Kenya Shillings Three Billion (Kshs.3,000,000,000.00) only in each of the years. In the event of a joint venture, the Lead partner shall meet this requirement. A certified copy of the registration certificate and valid annual practicing certificate of the auditor/auditing firm carrying out the audit must be provided for each of the years under consideration.	Copy of Valid practicing License for each year.	
MR 8	The bidder shall submit all standard forms provided in this tender document; duly filled, signed, stamped and completed in the format provided. 1. Foreign Tenderers 40% Rule 2. Form EQU: Equipment 3. Form PER-1 4. Form ELI-1.1 5. Form ELI-1.2 6. Form CON-2 7. Form FIN-3.1 8. Form FIN-3.2 9. Form FIN-3.3 10. Form FIN-3.4 11. Form EXP-4.1 12. Form EXP-4.2(a) 13. Form EXP-4.2(b) 14. Form of Tender 15. Tenderer's eligibility: confidential business	Duly filled Forms	

C2: CBK - Official

	questionnaire 16. Certificate of independent tender determination 17. Self-declaration forms; SD1, SD2, Declaration and commitment to the code of ethics 18. Form of tender securing declaration		
MR 9	Bidder to show proof of availability of Cash in hand of Kshs. 50,000,000.00 (attach certified bank statements) or Credit lines of at least Kshs. 100,000,000.00 (attach a letter from a bank and Letter of authority to seek references from the Tenderer's bankers). In the event of a joint venture the Lead partner shall meet this requirement.	Certified bank statements or credit line and Letter of authority	
MR 10	Submit a tender security of Ksh. 20,000,000.00 (Ksh. Twenty Million) in the respective format provided in the form of a bank guarantee from a bank regulated by Central Bank of Kenya or Insurance Company approved by PPRA valid for a period of 240 days from the date of tender opening payable to Central Bank of Kenya.	Original tender security (bid bond)	
MR 11	Attach evidence from National Construction Authority of registration as a building works contractor category NCA 1. The bidder shall provide a valid registration certificate and a valid annual license	Valid building works contractor NCA 1 registration certificate and annual license	
MR 12	Provide a minimum number of three (3) building projects in Kenya completed in the last 15 years of value above Kenya Shillings Two Billion only (Ksh 2.0 billion) per project.	Bidders to provide construction contract agreements, recommendation letters from the Client and completion certificates for each of the projects.	
MR13	Completeness of tender: A complete Bills of Quantities in the format provided with each of the items in the Bills of Quantities in ALL sections fully priced, extended and carried forward to their respective summary pages in indelible INK or TYPED.	Bills of Quantities with all rates filled and extended to respective summaries.	
	Responsive or Not Responsive (R/NR)		

2.1.2. EVALUATION CRITERIA FOR THE SUB-CONTRACTORS

The Specialized Subcontractors who must meet the outlined requirements SMR1 to SMR7 are designated as follows:

a) Electrical Installations
b) Plumbing, Drainage and Fire-fighting Installations
c) Lifts Installations

S/N	**Mandatory Eligibility criteria**	*Documents to be provided/completed*	*Tenderer's Compliance (YES or NO)*
SMR 1	Attach Registration/Incorporation Certificate issued by the Registrar of Companies in Kenya.	Copy of Certificate of incorporation	
SMR 2	Attach a valid copy of Business Permit from the respective county government or respective country.	Valid Business Permit	
SMR 3	Attach a copy of CR12 or CR13 form issued within the last 12 months showing the list of directors /shareholding.	Valid CR12 or CR13	
SMR 4	Bidders shall provide tax compliance certificate valid as at the date of tender closing issued by Kenya Revenue Authority.	Valid Certificate of Tax Compliance	

C2: CBK - Official

SMR 5	Attach evidence from National Construction Authority of registration as a specialized works contractor **category NCA 1**. The bidder shall provide a valid registration certificate and a valid annual license	Valid building works contractor NCA 1 registration certificate and annual license	
SMR 6	Provide a minimum number of two (2) building projects in Kenya completed in the last 15 years of value above Kenya Shillings Fifty Million only (Kshs.50Million for the respective specialized works) per project.	Bidders to provide construction contract agreements and recommendation letters from the Client/ Contractor	
SMR 7	**For Electrical and Lift Sub-Contractors** Provide evidence of registration as an electrical works subcontractor by Energy and Petroleum Regulatory Authority (EPRA) valid as at the date of tender closing.	Valid EPRA electrical contractor license	
	Responsive or Not Responsive (R/NR)		

Bidders MUST note that, should ANY of their Sub-Contractors NOT meet any of the Sub-Contractors' Mandatory Criteria the Bidder will be disqualified together with his/her entire team of Sub-Contractors. Where the main contractor is also licensed to provide the specialized subcontract works, he/she must meet the requirements SMR1 to SMR7 outlined above.

Bidders **MUST** comply with all the preliminary and mandatory requirements to progress to the next evaluation stage. Those passing the mandatory requirements will be subjected to technical evaluation on qualification.

C2: CBK - Official

1. STAGE 2: TECHNICAL EVALUATION ON QUALIFICATION

Bidders passing the preliminary and mandatory examination will be subjected to evaluation on technical qualifications using the technical parameters below:

1. Bidders to ensure that ALL the conditions set out in each of the Evaluation Aspects are fully met for the Evaluation Aspect to be awarded marks.
2. For copies of original certificates to be accepted as valid, they need to be certified by a commissioner of oaths. The Bidder to attach a valid annual practicing license and the active email address of the commissioner of oaths he/she has used to certify the documents.
3. Only bidders who score 75% and above at the Technical Evaluation Stage will be subjected to Financial Evaluation.

Below are the technical evaluation criteria that each Bidder shall be evaluated against:

Item No.	**Qualification Subject**	**Qualification Requirement**	***For Procuring Entity's Use (Score)***
1	A. General Experience	**Tenderer's experience for the last ten (10) years.** Provide evidence that the tenderer has been operating in Kenya as an active building construction works Company for the last ten (10) years. Provide NCA registration certificate and annual license for each of the years. *Each qualifying year to score 0.5 marks, to a maximum of 10 years*	**5 Marks**
	B. Specific Experience; construction projects	Provide evidence of undertaking building projects in Kenya of value above Kenya Shillings Two Billion only (Ksh 2.0 billion) in the last 15 years. Bidders to provide construction contract agreements, recommendation letters from the Client and evidence of undertaking the project. *3 projects - 3 marks* *4 projects - 6 marks* *5 projects and above - 12 marks*	**12 Marks**
	C. Specific Experience; similar nature	Bidders experience in construction of high security building of value above Ksh. 1 billion. Provide recommendation letter and description on what makes the project a high security building. *Qualifying project scores 7 marks*	**7 marks**
2	A. Key Personnel; Technical	**Qualified, relevant Technical Staff** The tenderer to provide five (5) qualified and experienced technical staff with at least a Bachelor's degree from a recognized university in each of the following categories, who will be actively involved in the proposed project. Attach CV, academic and relevant professional certificates and a letter of consent by the expert that these documents have been willingly submitted for use for this tender. i. Civil and/or Structural Engineering ii. Electrical Engineering iii. Mechanical Engineering iv. Quantity Surveying v. Construction Management *Each qualifying technical staff to score 1 mark, to a maximum of 5 staff*	**5 Marks**
	B. Key Personnel; Project Management	**Qualified, relevant Management staff** The Bidder to provide at least three (3) Qualified Management/Administrative Staff with a Bachelor's degree from a recognized University in each of the	**3 Marks**

C2: CBK - Official

Item No.	Qualification Subject	Qualification Requirement	*For Procuring Entity's Use (Score)*
		following categories, who will be actively involved in the proposed project. Attach CV, academic and relevant professional certificates as applicable and a letter of consent by the expert that these documents have been willingly submitted for use for this tender. i. Commerce or Business Management/Administration/ procurement ii. Project Management or Construction Management iii. Human Resource Management *Each qualifying management staff to score 1 mark, to a maximum of 3 staff*	
	C. Key Personnel; Company Directors	**Qualifications of the Company Directors** The Bidder to provide evidence that at least one of the Company Director(s) have technical qualifications in a construction related field with a minimum Bachelor's degree from a recognized institution. Attach CV, academic and relevant professional certificates and a letter of consent by the director that these documents have been willingly submitted for use for this tender. *The qualifying director to score 2 marks.*	**2 Marks**
3	**Adequacy of Tools and Equipment**	Bidders to provide proof of ownership or leasing of relevant construction equipment and workshops to meet the following requirements: i. At least two site vehicles/trucks/tippers/excavators ii. At least two concrete mixers or batching plant of above 500litres capacity iii. At least one hoisting equipment/crane iv. At least one offsite yard v. At least one construction workshop *Each qualifying category listed to score 0.5 marks.*	**5 Marks**
4	**General Construction Methodology**	Bidders to give their general construction methodology which meets the minimum standards in the construction industry. The methodology must be practical, realistic and specific to the project.	**20 Marks**
5	**Proposed construction period for the project**	Bidders MUST submit their proposed construction period for the project which must be accompanied by a works programme and critical path analysis. The proposed works programme and critical path analysis must be practical, realistic and specific to the project.	**8 Marks**
6	**Bidder's social policy and framework**	The bidder to submit their proposed social policy and framework for the project.	**8 Marks**
7	**Bidder's security, risk and quality assurance**	The bidder to provide detailed proposed security, risk and quality assurance management plan for the project.	**7 marks**
8	**A. Evaluation of the Bidders' financial capability**	**Analysis of Audited Financial Statements** The Bidders to provide audited accounts for the last three (3) consecutive years from 2025, 2024 and 2023 indicating a current ratio of at least 1:5 for each year. *Each year with a ratio below 1.5:1- 0mark* *Each year with a ratio equal to or above 1.5:1- 2marks*	**6 Marks**
	B. Evidence of Financial Resources	The bidder to provide proof that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, independent of any contractual advance payment; sufficient to meet the construction cash flow requirements for the subject contract net of the bidder's other	**5 Marks**

C2: CBK - Official

Item No.	Qualification Subject	Qualification Requirement	*For Procuring Entity's Use (Score)*
		commitments. *i. Bidder has financial resources to finance the projected monthly cashflow for 3 months - 5 marks* *ii. Bidder has financial resources to finance the projected monthly cashflow for 2 months - 3 marks* *iii. Bidder has financial resources to finance the projected monthly cashflow for 1 months - 1 marks* *iv. Bidder has financial resources to finance the project less than the projected monthly cashflow - 0 marks*	
9	**Bidder's Insurance Policies.**	The Bidder to give copies of their current Insurance Policies. These should be valid as at the date of tender closing and should include any of the following: i. Workers insurance (WIBA) ii. Plant, machinery and equipment insurance iii. Public liability insurance iv. Employer's liability insurance *Each Insurance Policy category to score 1 mark to a maximum of 3 Policies.*	**3 Marks**
10	**Registration with relevant Contractor's associations.**	Copies of documentary evidence of registration with relevant Contractors' Associations in Kenya valid as at the date of tender closing. *Each body to score 1 mark to a maximum of 2 bodies*	**2 Marks**
11	**Bidder's participation in relevant training programs.**	The Bidder to provide evidence in form of copies of certified training certificates of undertaking regular staff training programs for capacity building within the construction industry. *No training to earn 0-mark, professional training programs by one entity to earn 1mark, professional training programs by various entities to earn 2marks*	**2 Marks**
TOTAL SCORE			**100 Marks**

Only Bidders who attain a minimum score of 75% and above in Technical Evaluation as per the criteria above shall be subjected to Financial Evaluation.

2. STAGE 3: FINANCIAL EVALUATION

Bidders who will be considered responsive at Stage 2- Technical Evaluation will be subjected to further evaluation of their financial bid. This will involve checking of arithmetic errors, analysis & consistency of rates and completeness of the financial bid and comparative analysis.

3. STAGE 4 –DUE DILIGENCE AND RECOMMENDATION FOR AWARD

The lowest evaluated bidder whose financial bid is competitive and consistent will be recommended for award after undertaking due diligence to verify the authenticity and compliance to the conditions of tender. The following parameters shall be considered:

a. Visitation of Bidder's project sites of relevant construction works presented for evaluation at Stage 1 and Stage 2.
b. Visitation of the Bidder's yard/ workshops/ storage facilities and Inspection of the Bidder's construction plant, machinery and equipment
c. Visitation of the Bidder's office

C2: CBK - Official

4. RECOMMENDATION OF AWARD

The lowest evaluated bidder subject to due diligence will be recommended for consideration of award of the tender.

Additional Information to Bidders

1. *Personnel*

The Tenderer will be required to engage **Qualified Technical Staff** in building works, electrical and plumbing works and in any other works described in the Bill of Quantities.

2. *Equipment*

The Tenderer to provide list of equipment required to execute the works and provide further details of proposed items of equipment using the relevant Form in Section IV.

5. TENDER EVALUATION (ITT 35)

Price evaluation: in addition to the criteria listed in ITT 35.2 (a) – (d) the following criteria shall apply:

(i) Alternative Completion Times, if permitted under ITT13.2, will be evaluated as follows: ……***NOT APPLICABLE***……

(ii) Alternative Technical Solutions for specified parts of the Works, if permitted under ITT 13.4, will be evaluated as follows:…… ***NOT APPLICABLE*** ……

(iii) Other Criteria; if permitted under ITT 35.2(j):…… ***NOT APPLICABLE***……

6. MULTIPLE CONTRACTS

Multiple contracts will be permitted in accordance with ITT 35.4. Tenderers are evaluated on basis of Lots and a 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 a contract for all won Lots, provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the won Lots. The tenderer will be awarded only the combinations for which the tenderer qualifies and the others will be considered for award to second lowest the tenderers.

OPTION2

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

C2: CBK - Official

7. ALTERNATIVE TENDERS (ITT 13.1)
Alternative Tenders (ITT 13.1)

An alternative if permitted under ITT 3.1, will be evaluated as follows: ***NOT APPLICABLE***

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. MARGIN OF PREFERENCE: *NOT APPLICABLE*

10.1. If the TDS so specifies, the Procuring Entity will grant a margin of preference of fifteen percent (15%) to be loaded on evaluated prices of the foreign tenderers, where the percentage of shareholding of Kenyan citizens is less than fifty- one percent (51%).

10.2. Contractors 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 particular contractor or group of contractors qualifies for a margin of preference.

10.3. After Tenders have been received and reviewed by the Procuring Entity, responsive Tenders shall be assessed to ascertain their percentage of shareholding of Kenyan citizens. Responsive tenders shall be classified into the following groups:

i) *Group A:* tenders offered by Kenyan Contractors and other Tenderers where Kenyan citizens hold shares of over fifty one percent (51%).

ii) *Group B:* tenders offered by foreign Contractors and other Tenderers where Kenyan citizens hold shares of less than fifty one percent (51%).

10.4. All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tender in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A is the lowest, it shall be selected for the award of contract. If a tender from Group B is the lowest, an amount equal to the percentage indicated in Item 6.1 of the respective tender price, including unconditional discounts and excluding provisional sums and the cost of day works, if any, shall be added to the evaluated price offered in each tender from Group B. All tenders shall then be compared using new prices with added prices to Group B and the lowest evaluated tender from Group A. If the tender from Group A is still the lowest tender, it shall be selected foraward. If not, the lowest evaluated tender from Group B based on the first evaluation price shall be selected.

9. Post qualification and Contract award (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 a broad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings

C2: CBK - Official

_____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 on going 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.

C2: CBK - Official

QUALIFICATION FORM*N/A

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 Kenya Revenue Authority in accordance with ITT 3.14.	Attachment	
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 3.7	Form of Tender	
5	State- owned Enterprise	Meets conditions of ITT 3.8	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	
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	Form FIN – 3.1, with attachments	

C2: CBK - Official

1 **Item No.**	2 **Qualification Subject**	3 **Qualification Requirement**	*4* ***Document To be Completed by Tenderer***	*5* ***For Procuring Entity's Use (Qualification met or Not Met)***
		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.		
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]*.	Form EXP – 4.1	
14	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]*	Form EXP 4.2(a)	

C2: CBK - Official

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)***
		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]*		

C2: CBK - Official

SECTION IV - TENDERING FORMS

QUALIFICATION FORMS

1. FOREIGN TENDERERS 40%RULE

Pursuant to ITT 3.9, a foreign tenderer must complete this form to demonstrate that the tender fulfils this condition.

ITEM	Description of Work Item	Describe location of Source	COST in K. shillings	Comments, if any
A	Local Labor			
1				
2				
3				
4				
5				
B	Sub contracts from Local sources			
1				
2				
3				
4				
5				
C	Local materials			
1				
2				
3				
4				
5				
D	Use of Local Plant and Equipment			
1				
2				
3				
4				
5				
E	Add any other items			
1				
2				
3				
4				
5				
6				
	TOTAL COST LOCAL CONTENT		XXXXX	
	PERCENTAGE OF CONTRACT PRICE			

C2: CBK - Official

2. 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 o Owned o Rented o Leased o 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	

C2: CBK - Official

3. 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*]

C2: CBK - Official

4. 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]*

C2: CBK - Official

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): _____

C2: CBK - Official

5. TENDERERS QUALIFICATION WITHOUT PREQUALIFICATION

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.

5.1 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 1. Establishing that the Tenderer is not under the supervision of the Procuring Entity 2. Included are the organizational chart and a list of Board of Directors

C2: CBK - Official

5.2 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 3.5. 2. Included are the organizational chart and a list of Board of Directors.

C2: CBK - Official

5.3 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 ☐ Contract(s) withdrawn 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			
☐ No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4.			

C2: CBK - Official

Year of dispute	**Amount in dispute (currency)**	**Contract Identification**	**Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)**
☐ Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.			
[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]*

Include details relating to potential bid-rigging practices such as previous occasions where tenders were withdrawn, joint bids with competitors, subcontracting work to unsuccessful tenderers, etc.

C2: CBK - Official

5.4 FORM FIN – 3.1:

Financial Situation and Performance

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

5.4.1. Financial Data

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					

*Refer to ITT 15 for the exchange rate

C2: CBK - Official

5.4.2 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		

5.4.3 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

[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.

C2: CBK - Official

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.

C2: CBK - Official

5.6 FORM FIN – 3.3:

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		

5.7 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					

C2: CBK - Official

5.8 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: _____	

C2: CBK - Official

5.9 FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

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

Similar Contract No.	**Information**			
Contract Identification				
Award date				
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:				
Address: Telephone/fax number E-mail:				

5.9 FORM EXP - 4.2(a)
Specific Construction and Contract Management Experience

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

Similar Contract No.	**Information**			
Contract Identification				
Award date				
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:				
Address: Telephone/fax number E-mail:				

C2: CBK - Official

5.9 FORM EXP - 4.2 (a) (cont.)

Specific Construction and Contract Management Experience (cont.)

Similar Contract No.	**Information**
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	

C2: CBK - Official

5.10 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-contractor ☐
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:				

[2] If applicable

C2: CBK - Official

	Information
Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III:	

2. Activity No. Two
3. ……

C2: CBK - Official

OTHER FORMS

6. FORM OF TENDER

(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022)

INSTRUCTIONS TO TENDERERS

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

ii) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address. Tenderers are reminded that this is a mandatory requirement.

iii) Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION FORMS OF THE TENDERER as listed under (xxii) below.

Date of this Tender submission:.....*[insert date (as day, month and year) of Tender submission]* **Tender Name and Identification**:.....*[insert identification]* **Alternative No.**:.....*[insert identification No if this is a Tender for an alternative]*

To: ..... *[Insert complete name of Procuring Entity]*

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[3] of Kenya Shillings [*[Amount in figures]* _____Kenya Shillings *[amount in words]*_____

   The above amount includes foreign currency[4] amount (s) of [*state figure or a percentage and currency*] [figures]_____[words] _____
   _____

2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Architect notice to commence, and to complete the whole of the Works comprised in the Contract within_____Weeks *[Insert period in words],* _____Weeks *[Insert period in figures].*

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

---

[3] *This sum should be carried forward from the Summary of the Bills of Quantities.*

[4] *The percentage quoted above should not include provisional sums, and not more than two foreign currencies are allowed.*

C2: CBK - Official

5. We, the under signed, 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

Option2, 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 sub-contractor, 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, Engineer, 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*

C2: CBK - Official

requirements of ITT3.8];

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 there of 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 here by certify that we have taken steps to ensure that no personacting for us or on our behalf engages in any type of Fraud and Corruption; and

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) **Beneficial Ownership Information:** We commit to provide to the procuring entity the Beneficial Ownership Information in conformity with the Beneficial Ownership Disclosure Form upon receipt of notification of intention to enter into a contract in the event we are the successful tenderer in this subject procurement proceeding.

xxii) We, the Tenderer, have duly completed, signed and stamped 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.

(a) 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*]

C2: CBK - Official

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.*

C2: CBK - Official

(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 _____

C2: CBK - Official

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			

(iii) 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.		

C2: CBK - Official

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
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.		

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)*

C2: CBK - Official

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 or experience;

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, which ever 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]

C2: CBK - Official

(c) SELF- DECLARATION FORMS

FORM SD1

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

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

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

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

……. …….
…… (Title)
(Signature) (Date)

Bidder Official Stamp

C2: CBK - Official

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

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

Bidder's Official Stamp

C2: CBK - Official

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 here by 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…….....

C2: CBK - Official

(d) APPENDIX 1 - FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

1. Purpose

1.1 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.

2. Requirements

2.1 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.

2.2 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 as set 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 in to, take part in any decision relating to the procurement or contract; and

   c) shall not be a subcontract or for the tender to whom was awarded contract, or a member of the group of tenderers 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

C2: CBK - Official

by the public entity shall be made good by the awarding officer. Etc.

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

C2: CBK - Official

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 is representation, 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; "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;
iv) "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 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.

---

[1]For the avoidance of doubt, a party's in eligibility 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

C2: CBK - Official

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 there of as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.*

C2: CBK - Official

FORM OF TENDER SECURITY-[Option 1–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 under Request for Tenders No._____("the ITT").

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

3. 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.

4. 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) thirty days after the end of the Tender Validity Period.

5. 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)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

C2: CBK - Official

FORMAT OF TENDER SECURITY [Option 2–Insurance Guarantee]

TENDER GUARANTEE No.: _____

1. Whereas …… [*Name of the tenderer]* (hereinafter called "the tenderer") has submitted its tender dated …… [*Date of submission of tender]* for the …… *[Name and/or description of the tender]* (hereinafter called "the Tender") for the execution of__under Request for Tenders No._____ _("the ITT").

2. KNOW ALL PEOPLE by these presents that WE …… of …… [**Name of Insurance Company**] having our registered office at …… (hereinafter called "the Guarantor"), are bound unto …….. [*Name of Procuring Entity*] (hereinafter called "the Procuring Entity") in the sum of …… (Currency and guarantee amount) for which payment well and truly to be made to the said Procuring Entity, the Guarantor binds itself, its successors and assigns, jointly and severally, firmly by these presents.

   Sealed with the Common Seal of the said Guarantor this ___day of _____ 20 __.

3. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Applicant:

   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 Tendering document.

   then the guarantee 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. 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.

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

_____	_____
[Date]	*[Signature of the Guarantor]*
_____	_____
[Witness]	*[Seal]*

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

C2: CBK - Official

FORM OF TENDER - SECURING DECLARATION

[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 orstamp

C2: CBK - Official

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*]

C2: CBK - Official

PART II - THE CONDITIONS OF CONTRACT AND CONTRACT

C2: CBK - Official

SECTION VIII - GENERAL CONDITIONS OF CONTRACT (GCC)

1. GENERALPROVISIONS

1.1 Definitions

In this Contract, except where context otherwise requires, the following terms shall be interpreted as indicated below. Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.

"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.

"Base Date" means a date 30 day prior to the submission of tenders.

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

"Completion Date" means the date of completion of the Works as certified by the Engineer.

"Contract Price" means the price defined in the contract and thereafter as adjusted in accordance with the provisions of the Contract.

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

"Contractor's Documents" means the calculations, computer programs and other software, progress reports, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.

"Contractor's Equipment" means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the remedying of any defects. However, Contractor's Equipment excludes Temporary Works, Procuring Entity's Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.

"Contractor's Personnel" means the Contractor's Representative and all personnel whom the Contractor utilizes on Site, who may include the staff, labor and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.

"Contractor's Representative" means the person named by the Contractor in the Contractor appointed from time to time by the Contractor who acts on behalf of the Contractor.

"Contractor" means the person(s) named as contractor in the Form of Tender accepted by the Procuring Entity.

"Cost" means expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

"Day" means a calendar day and **"year"** means 365 days.

"Dayworks" means Work inputs subject to payment on a time basis for labour and the associated materials and plant.

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

"Defects Liability Certificate" means the certificate issued by Architect upon correction of defects by the Contractor.

"Defects Liability Period" means the period named in the Special Conditions of Contract and calculated from the Completion Date, within which the contractor is liable for any defects that may develop in the handed over works.

"Defects Notification Period" means the period for notifying defects in the Works or a Section (as the case maybe) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], which extends over the days stated in the Special Conditions of Contract.

"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.

"Final Payment Certificate" means the payment certificate issued under Sub-Clause 14.13 [Issue of Final Payment Certificate].

"Final Statement" means the statement defined in Sub-Clause 14.11 [Application for Final Payment

Certificate]. **"Force Majeure"** is defined in Clause19 [Force Majeure].

"Foreign Currency" means a currency of another country (not Kenya) in which part (or all) of the Contract Price is payable, but not the Local Currency.

"Goods" means Contractor's Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.

"Interim Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment], other than the Final Payment Certificate.

"Laws" means all national legislation, statutes, ordinances, and regulations and by-laws of any legally constituted public authority.

"Letter of Acceptance" means the letter of formal acceptance of a tender, signed by Procuring Entity, including any annexed memoranda comprising agreements between and signed by both Parties.

"Local Currency" means the currency of Kenya.

"Materials" means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.

"Notice of Dissatisfaction" means the notice given by either Party to the other under Sub-Clause 20.3 indicating its dissatisfaction and intention to commence arbitration.

"Special Conditions of Contract" means the pages completed by the Procuring Entity entitled Special Conditions of Contract which constitute Part A of the Special Conditions.

"Party" means the Procuring Entity or the Contractor, as the context requires.

"Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment].

"Performance Certificate" means the certificate issued under Sub-Clause 11.9 [Performance Certificate].

"Performance Security" means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security].

"Permanent Works" means the permanent works to be executed by the Contractor under the Contract.

“Plant” means the apparatus, machinery and other equipment intended to form or forming part of the Permanent Works, including vehicles purchased for the Procuring Entity and relating to the construction or operation of the Works.

“Procuring Entity's Equipment” means the apparatus, machinery and vehicles (if any) made available by the Procuring Entity for the use of the Contract or in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Procuring Entity.

“Procuring Entity's Personnel” means the Engineer, the Engineer, the assistants and all other staff, labor and other employees of the Architect and of the Procuring Entity; and any other personnel notified to the Contractor, by the Procuring Entity or the Engineer, as Procuring Entity's Personnel.

“Procuring Entity” means the Entity named in the Special Conditions of Contract.

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

“Engineer” means the person appointed by the Procuring Entity to act as the Architect for the purposes of the Contract and named in the Special Conditions of Contract, or other person appointed from time to time by the Procuring Entity and notified to the Contractor. The “Engineer” shall mean the Project Consultant.

“Provisional Sum” means a sum (if any) which is specified in the Contract as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.5 [Provisional Sums].

“Retention Money” means the accumulated retention moneys which the Procuring Entity retains under Sub-Clause
14.3 [Application for Interim Payment Certificates] and pays under Sub-Clause 14.9 [Payment of Retention Money].

“Schedules” means the document(s) entitled schedules, completed by the Contractor and submitted with the Form of Tender, as included in the Contract.

“Section” means a part of the Works specified in the Special Conditions of Contract as a Section (if any)

“Site Investigation Reports” are those reports that may be included in the tendering documents which a ref actual and interpretative about the surface and sub-surface condition sat the Site.

“Site” means the places where the Permanent Works are to be executed, including storage and working areas, and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site.

“Specification” means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.

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

“Statement” means a statement submitted by the Contractor as part of an application, under Clause 14 [Contract Price and Payment], for a payment certificate.

“Subcontractor” means any person named in the Contract as a subcontractor, or any person appointed as a subcontractor, for a part of the Works.

“Taking-Over Certificate” means a certificate issued under Clause 10 [Procuring Entity's Taking Over].

"Temporary Works" means all temporary works of every kind (other than Contractor's Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.

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

"Tender" means the Form of Tender and all other documents which the Contractor submitted with the Form of Tender, as included in the Contract.

"Tests after Completion" means the tests (if any) which are specified in the Contract and which are carried out in accordance with the Specification after the Works or a Section (as the case may be) are taken over by the Procuring Entity.

"Tests on Completion" means the tests which are specified in the Contractor agreed by both Parties or instructed as a Variation, and which are carried out under Clause 9 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Procuring Entity.

"Time for Completion" means the time for completing the Works or a Section (as the case may be) as stated in the Special Conditions of Contract (with any extension calculated from the Commencement Date.

"Unforeseeable" means not reasonably foreseeable by an experienced contractor by the Base Date.

"Variation" means any change to the Works, which is instructed or approved as a variation under Clause 13 [Variations and Adjustments].

"Works" means the items the Procuring Entity requires the Contractor to undertake as defined in the Appendix to Conditions of Contract. **"Works" may** also mean the Permanent Works and the Temporary Works, or either of them as appropriate.

1.2 Interpretation

In the Contract, except where the context requires otherwise:

a) Words indicating one gender include all genders;
b) words indicating the singular also include the plural and words indicating the plural also include the singular;
c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing;
d) "written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record; and

The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

1.3 Communications

1.3.1 Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:

a) In writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Special Conditions of Contract; and
b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Special Conditions of Contract. However:

   i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and
   ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued.

1.3.2 Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed. When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Engineer, a copy shall be sent to the Architect or the other Party, as

the case may be.

1.4 Law and Language

1.4.1 The Contract shall be governed by the laws of **Kenya.**

1.4.2 The ruling language of the Contract shall be **English.**

1.5 Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

a) The Contract Agreement,
b) The Letter of Acceptance,
c) The Special Conditions – Part A,
d) the Special Conditions – Part B
e) the General Conditions of Contract
f) the Form of Tender,
g) the Specifications and Bills of Quantities
h) the Drawings, and
i) the Schedules and any other documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the Architect shall issue any necessary clarification or instruction.

1.6 Contract Agreement

The Parties shall enter into a Contract Agreement within 14 days after the Contractor receives the Contract Agreement, unless the Special Conditions establish otherwise. The Contract Agreement shall be based upon the form annexed to the Special Conditions. The costs of stamp duties and similar charges (if any) imposed by law in connection with entry into the Contract Agreement shall be borne by the Procuring Entity.

1.7 Assignment

The Contractor shall not assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, the contractor:

a) May as sign the whole or any part with the prior consent of the Procuring Entity, and
b) may, as security in favor of a bank or financial institution, assign its right to moneys due, or to become due, under the Contract.

1.8 Care and Supply of Documents

1.8.1 The Specifications and Drawings shall be in the custody and care of the Procuring Entity.Unless otherwise stated in the Contract, two copies of the Contract and of each subsequent Drawings and Bills of Quantities shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.

1.8.2 Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by the Procuring Entity. Unless otherwise stated in the Contract, the Contractor shall supply to the Architect two copies of each of the Contractor's Documents.

1.8.3 The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Specification, the Contractor's Documents (if any), the Drawings and Variations and other communications given under the Contract.The Procuring Entity's Personnel shall have the right of access to all these documents at all reasonable times.

1.8.4 If a Party becomes aware of an error or defect in a document which was prepared for use in executing the

Works, the Party shall promptly give notice to the other Party of such error or defect.

1.9 Timely provision of Drawings or Instructions

1.9.1 The Contractor shall give notice to the Architect whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and the nature and amount of the delay or disruption likely to be suffered if it is late.

1.9.2 If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Architect to issue the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any other associated costs accrued, which shall be included in the Contract Price.

1.9.3 After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

1.9.4 However, if and to the extent that the Architect failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, or costs accrued.

1.10 Procuring Entity's Use of Contractor's Documents

1.10.1 As agreed between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.

1.10.2 The Contractor shall be deemed (by signing the Contract) to give to the Procuring Entity a non-terminable transferable non-exclusive royalty-free license to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This license shall:

a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,
b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.

1.10.3 The Contractor's Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Procuring Entityf or purposes other than those permitted under Sub-Clause 1.10.2.

1.11 Contractor's Use of Procuring Entity's Documents

As agreed between the Parties, the Procuring Entity shall retain the copyright and other intellectual property rights in the Specification, the Drawings and other documents made by (or on behalf of) the Procuring Entity. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Procuring Entity's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.

1.12 Confidential Details

1.12.1 The Contractor's and the Procuring Entity's Personnel shall ensure confidentiality at all times. The confidentiality shall survive termination or completion of the contract. They shall disclose all such confidential and other information as may be reasonably required in order to verify compliance with the Contract and allow its proper implementation.

1.12.2 The Contractor's and the Procuring Entity's Personnel shall also treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Each of them shall not publish or disclose any particulars of the Works prepared by the other Party without the previous agreement of the other Party. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.

1.13 Compliance with Laws

The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated in the Special Conditions of Contract:

a) The Procuring Entity shall have obtained (or shall obtain) the planning, zoning, building permit or similar permission for the Permanent Works, and any other permissions described in the Specifications as having been (or to be) obtained by the Procuring Entity; and the Procuring Entity shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so; and

b) the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licenses and approvals, as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Procuring Entity harmless against and from the consequences of any failure to do so, unless the Contractor is impeded to accomplish these actions and shows evidence of its diligence.

1.14 Joint and Several Liability

If the Contractor constitutes (under applicable Laws) a joint venture, consortium or other unincorporated grouping of two or more persons:

a) These persons shall be deemed to be jointly and severally liable to the Procuring Entity for the performance of the Contract;
b) these persons shall notify the Procuring Entity of their leader who shall have authority to bind the Contractor and each of these persons; and
c) the Contractor shall not alter its composition or legal status without the prior consent of the Procuring Entity.

1.15 Inspections and Audit by the Procuring Entity

Pursuant to paragraph 2.2(e). of Appendix B to the General Conditions, the Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Public Procurement Regulatory Authority, Procuring Entity and/or persons appointed or designated by the Government of Kenya 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 Procuring Entity if requested by the Procuring Entity. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 15.6 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Procuring Entity's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of in eligibility pursuant to the Procuring Entity's prevailing sanctions procedures).

2. THE PROCURING ENTITY

2.1 Right of Access to the Site

2.1.1 The Procuring Entity shall give the Contractor right of access to, and possession of, all parts of the Site

within the time (or times) stated in the **Special Conditions of Contract.** The right and possession may not be exclusive to the Contractor. If, under the Contract, the Procuring Entity is required to give (to the Contractor) possession of any foundation, structure, plant or means of access, the Procuring Entity shall do so in the time and manner stated in the Specification. However, the Procuring Entity may withhold any such right or possession until the Performance Security has been received.

2.1.2 If no such time is stated in the Special Conditions of Contract, the Procuring Entity shall give the Contractor right of access to, and possession of, the Site within such times as required to enable the Contractor to proceed without disruption in accordance with the programme submitted under Sub-Clause 8.3 [Programme].

2.1.3 If the Contractor suffers delay and/or incurs Cost as a result of a failure by the Procuring Entity to give any such right or possession within such time, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

2.1.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

2.1.5 However, if and to the extent that the Procuring Entity's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.

2.2 Permits, Licenses or Approvals

2.2.1 The Procuring Entity shall provide, at the request of the Contractor, such reasonable assistance as to allow the Contractor to obtain properly:

a) Copies of the Laws of Kenya which are relevant to the Contract but are not readily available, and
b) any permits, licenses or approvals required by the Laws of Kenya:

i) which the Contractor is required to obtain under Sub-Clause 1.13 [Compliance with Laws],
ii) for the delivery of Goods, including clearance through customs,
and
iii) for the export of Contractor's Equipment when it is removed from the Site.

2.3 Procuring Entity's Personnel

The Procuring Entity shall be responsible for ensuring that the Procuring Entity's Personnel and the Procuring Entity's other contractor son the Site:

a) co-operate with the Contractor's efforts under Sub-Clause 4.6 [Co-operation], and

b) take actions similar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) of Sub-Clause 4.8 [Safety Procedures] and under Sub-Clause 4.18 [Protection of the Environment].

2.4 Procuring Entity's Financial Arrangements

The Procuring Entity shall make and maintain all necessary financial arrangements which will enable the Procuring Entity to pay the Contract Price punctually (as estimated at that time) in accordance with Clause14 [Contract Price and Payment].

3. THE ENGINEER

3.1 Architect Duties and Authority

3.1.1 The Procuring Entity shall appoint the Architect who shall carry out the duties as signed to him in the Contract. The Architect staff shall include suitably qualified Assistants and other professionals who are competent to carry out these duties. The Architect Name and Address shall be provided in the **Special Conditions of Contract.**

3.1.2 The Architect shall have no authority to amend the Contract.

3.1.3 The Architect May exercise the authority attributable to the Architect as specified in or necessarily to be implied from the Contract. If the Architect is required to obtain the approval of the Procuring Entity before exercising a specified authority, the requirements shall be as stated in the S**pecial Conditions of Contract**. The Procuring Entity shall promptly inform the Contractor of any change to the authority attributed to the Engineer.

3.1.4 However, whenever the Architect exercises a specified authority for which the Procuring Entity's approval is required, then (for the purposes of the Contract) the contractor shall require the Architect to provide evidence of such approval before complying with the instruction.

3.1.5 Except as otherwise stated in these Conditions:

a) Whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Architect shall be deemed to act for the Procuring Entity;

b) the Architect has no authority to relieve either Party of any duties, obligations or responsibilities under the Contract;

c) any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the Architect (including absence of disapproval) shall not relieve the Contractor from any responsibility he has under the Contract, including responsibility for errors, omissions, discrepancies and non-compliances; and

d) any act by the Architect in response to a Contractor's request shall be notified in writing to the Contractor within 14 days of receipt.

3.1.6 The following provisions shall apply:

The Architect shall obtain the specific approval of the Procuring Entity before taking action under the-following Sub-Clauses of these Conditions:

a) Sub-Clause 4.12: agreeing or determining an extension of time and/or additional cost.

b) Sub-Clause 13.1: instructing a Variation, except;

i) In an emergency situation as determined by the Engineer, or

ii) If such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the **Special Conditions of Contract.**

c) Sub-Clause 13.3: Approving a proposal for Variation submitted by the Contractor in accordance with Sub Clause 13.1 or 13.2.

d) Sub-Clause13.4: Specifying the amount payable in each of the applicable three currencies.

3.1.7 Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forth with comply, despite the absence of approval of the Procuring Entity, with any such instruction of the Engineer. The Architect shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Procuring Entity.

3.2 Delegation by the Engineer

3.2.1 The Architect may from time to time assign duties and delegate authority to assistants and may also revoke such assignment or delegation. These assistants may include a resident Engineer, and/or independent inspectors appointed to inspect and/ or test items of Plant and/or Materials. The assignment, delegation or revocation shall be in writing and shall not take effect until copies have been received by both Parties. However, unless otherwise agreed by both Parties, the Architect shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].

3.2.2 Each assistant, to whom duties have been assigned or authority has been delegated, shall only be authorized to issue instructions to the Contractor to the extent defined by the delegation. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by an assistant, in accordance with the delegation, shall have the same effect as though the act had been an act of the Engineer. However:

a) Any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Architect to reject the work, Plant or Materials;

b) If the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the Engineer, who shall promptly confirm, reverse or vary the determination or instruction.

3.3 Instructions of the Engineer

3.3.1 The Architect may issue to the Contractor (at any time) instructions and additional or modified Drawings which may be necessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under Clause 3.2.1.

3.3.2 The Contractor shall comply with the instructions given by the Architect or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the Architect or a delegated assistant:

a) Gives an oral instruction,

b) receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and

c) does not reply by issuing a written rejection and/or instruction within two working days after receiving the confirmation,

Then the confirmation shall constitute the written instruction of the Architect or delegated assistant (as the case may be).

3.4 Replacement of the Engineer

If the Procuring Entity intends to replace the Engineer, the Procuring Entity shall, in not less than 21 days before the intended date of replacement, give notice to the Contractor of the name, address and relevant experience of the intended person to replace the Engineer.

3.5 Determinations

3.5.1 Whenever these Conditions provide that the Architect shall proceed in accordance with this Sub-Clause3.5 to agree or determine any matter, the Architect shall consult with each Party in an endeavor to reach agreement. If agreement is not achieved, the Architect shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.

3.5.2 The Architect shall give notice to both Parties of each agree mentor determination, with supporting particulars, within 30 days from the receipt of the corresponding claim or request except when otherwise specified. Each Party shall give effect to each agreement or determination unless and until revised under

Clause 20 [Claims, Disputes and Arbitration].

4. THE CONTRACTOR

4.1 Contractor's General Obligations

4.1.1 The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Architect instructions, ands hall remedy any defects in the Works.

4.1.2 The Contractor shall provide the Plant and Contractor's Documents specified in the Contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.

4.1.3 All equipment, material, and services to be incorporated in or required for the Works shall have their origin in any eligible source country.

4.1.4 The Contractor shall be responsible for the adequacy, stability and safety of all Site operations and of all methods of construction. Except to the extent specified in the Contract, the Contractor (i) shall be responsible for all Contractor's Documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract, and (ii) shall not otherwise be responsible for the design or specification of the Permanent Works.

4.1.5 The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works. No significant alteration to these arrangements and methods shall be made without this having previously been notified to the Engineer.

4.1.6 If the Contract specifies that the Contractor shall design any part of the Permanent Works, then unless otherwise stated in the Special Conditions:

a) The Contractor shall submit to the Architect the Contractor's Documents for this part in accordance with the procedures specified in the Contract;

b) these Contractor's Documents shall be in accordance with the Specification and Drawings, shall be written in the language for communications defined in Sub-Clause 1.4 [Law and Language], and shall include additional information required by the Architect to add to the Drawings for co-ordination of each Party's designs;

c) the Contractor shall be responsible for this part and it shall, when the Works are completed, befit for such purposes for which the part is intended as are specified in the Contract; and

d) prior to the commencement of the Tests on Completion, the Contractor shall submit to the Architect the “as-built” documents and, if applicable, operation and maintenance manuals in accordance with the Specification and in sufficient detail for the Procuring Entity to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections] until these documents and manuals have been submitted to the Engineer.

4.2 Performance Security

4.2.1 The Contractor shall obtain (at his cost) a Performance Security for proper performance, in the amount stated in the **Special Conditions of Contract** and denominated in the currency (ies) of the Contract or in a freely convertible currency acceptable to the Procuring Entity. If an amount is not stated in the Special Conditions of Contract, this Sub-Clause shall not apply.

4.2.2 The Contractor shall deliver the Performance Security to the Procuring Entity within 30 days after receiving the Notification of Award and shall send a copy to the Engineer. The Performance Security shall be issued by a reputable bank selected by the Contractor and shall be in the form annexed to the Special Conditions, as stipulated by the Procuring Entity in the Special Conditions of Contract, or in another form approved by the Procuring Entity.

4.2.3 The Contractor shall ensure that the Performance Security is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects. If the terms of the Performance Security specify its expiry date, and the Contractor has not become entitled to receive the Performance Certificate by the date 30 days prior to the expiry date, the Contractor shall extend the validity of the

Performance Security until the Works have been completed and any defects have been remedied.

4.2.4 The Procuring Entity shall not make a claim under the Performance Security, except for amounts to which the Procuring Entity is entitled under the Contract.

4.2.5 The Procuring Entity shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the Performance Security to the extent to which the Procuring Entity was not entitled to make the claim.

4.2.6 The Procuring Entity shall return the Performance Security to the Contractor within 14 days after receiving a copy of the Taking-Over Certificate.

4.2.7 Without limitation to the provisions of the rest of this Sub-Clause, whenever the Architect determines an addition or a reduction to the Contract Price as a result of a change in cost and/ or legislation, or as a result of a Variation, amounting to more than 25 percent of the portion of the Contract Price payable in a specific currency, the Contractor shall at the Architect request promptly increase, or may decrease, as the case may be, the value of the Performance Security in that currency by an equal percentage.

4.3 Contractor's Representative

4.3.1 The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary to act on the Contractor's behalf under the Contract. The Contractor's Representative's Name and Address shall be provided in the **Special Conditions of Contract.**

4.3.2 Unless the Contractor's Representative **is named in the Contract**, the Contractor shall, prior to the Commencement Date, submit to the Architect for consent the name and particulars of the person the Contractor proposes to appoint as Contractor's Representative. If consent is withheld or subsequently revoked in terms of Sub-Clause 6.9 [Contractor's Personnel], or if the appointed person fails to act as Contractor's Representative, the Contractor shall similarly submit the name and particulars of another suitable person for such appointment.

4.3.3 The Contractor shall not, without the prior consent of the Engineer, revoke the appointment of the Contractor's Representative or appoint are placement.

4.3.4 The whole time of the Contractor's Representative shall be given to directing the Contractor's performance of the Contract. If the Contractor's Representative is to be temporarily absent from the Site during the execution of the Works, a suitable replacement person shall be appointed, subject to the Architect prior consent, and the Architect shall be notified accordingly.

4.3.5 The Contractor's Representative shall, on behalf of the Contractor, receive instructions under Sub-Clause 3.3 [Instructions of the Engineer].

4.3.6 The Contractor's Representative may delegate any powers, functions and authority to any competent person, and may at any time revoke the delegation. Any delegation or revocation shall not take effect until the Architect has received prior notice signed by the Contractor's Representative, naming the person and specifying the powers, functions and authority being delegated or revoked.

4.3.7 The Contractor's Representative shall be fluent in the language for communications defined in Sub-Clause1.4 [Law and Language]. If the Contractor's Representative's delegates are not fluent in the said language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.

4.4 Sub-contractors

4.4.1 The Contractor shall not subcontract the whole of the Works. The contractor may however subcontract the works as provided in Clause 34.2.

4.4.2 The Contractor shall be responsible for the acts or defaults of any Subcontractor, his agents or employees, as if they were the acts or defaults of the Contractor. Unless otherwise stated in the Special Conditions:

a) The Contractor shall not be required to obtain consent to suppliers solely of Materials, or to a

subcontract for which the Subcontractor is named in the Contract;

b) The prior consent of the Procuring Entity shall be obtained to other proposed Subcontractors;

c) the Contractor shall give the Procuring Entity not less than 14 days' notice of the intended date of the commencement of each Subcontractor's work, and of the commencement of such work on the Site; and

d) each subcontract shall include provisions which would entitle the Procuring Entity to require the subcontract to be assigned to the Procuring Entity under Sub-Clause 4.5 [Assignment of Benefit of Subcontract] (if or when applicable) or in the event of termination under Sub-Clause 15.2 [Termination by Procuring Entity].

4.4.3 The Contractor shall ensure that the requirements imposed on the Contractor by Sub-Clause 1.12 [Confidential Details] apply equally to each Subcontractor.

4.4.4 Where practicable, the Contractor shall give fair and reasonable opportunity for contractors from Kenya to be appointed as Subcontractors.

4.5 Assignment of Benefit of Subcontract

If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Engineer, prior to this date, instructs the Contractor to assign the benefit of such obligations to the Procuring Entity, then the Contractor shall do so. Unless otherwise stated in the assignment, the Contractor shall have no liability to the Procuring Entity for the work carried out by the Subcontractor after the assignment takes effect.

4.6 Co-operation

4.6.1 The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:

a) The Procuring Entity's Personnel,

b) Any other contractors employed by the Procuring Entity, and

c) The personnel of any legally constituted public authorities, who may be employed in the execution on or near the Site of any work not included in the Contract.

4.6.2 Any such instruction shall constitute a Variation if and to the extent that it causes the Contractor to suffer delays and/or to incur Unforeseeable Cost. Services for these personnel and other contractors may include the use of Contractor's Equipment, Temporary Works or access arrangements which are the responsibility of the Contractor.

4.6.3 If, under the Contract, the Procuring Entity is required to give to the Contractor possession of any foundation, structure, plant or means of access in accordance with Contractor's Documents, the Contractor shall submit such documents to the Architect in the time and manner stated in the Specification.

4.7 Setting Out of the Works

4.7.1 The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contractor notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works.

4.7.2 The Procuring Entity shall be responsible for any errors in these specified or notified items of reference, but the Contractor shall use reasonable efforts to verify their accuracy before they are used.

4.73 If the Contractor suffers delay and/or incurs Cost from executing work which was necessitated by an errorin these items of reference, and an experienced contractor could not reasonably have discovered such error and avoided this delay and/ or Cost, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such costs accrued, which shall be included in the Contract Price.

4.7.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent the error could not reasonably have been discovered, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this.

4.8 Safety Procedures

The Contractor shall:
a) Comply with all applicable safety regulations,
b) Take care for the safety of all persons entitled to be on the Site,
c) Use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,
d) provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 10 [Procuring Entity's Taking Over], and
e) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.

4.9 Quality Assurance

4.9.1 The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The system shall be in accordance with the details stated in the Contract. The Architect shall be entitled to audit any aspect of the system.

4.9.2 Details of all procedures and compliance documents shall be submitted to the Architect for information before each design and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor itself shall be apparent on the document itself.

Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.

4.10 Site Data

4.10.1 The Procuring Entity shall have made available to the Contractor for his information, prior to the Base Date, all relevant data in the Procuring Entity's possession on sub-surface and hydrological conditions at the Site, including environmental aspects. The Procuring Entity shall similarly make available to the Contractor all such data which come into the Procuring Entity's possession after the Base Date. The Contractor shall be responsible for interpreting all such data.

4.10.2 To the extent which was practicable (taking account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all relevant matters, including (without limitation):

a) The form and nature of the Site, including sub-surface conditions,
b) the hydrological and climatic conditions,
c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,
d) the Laws, procedures and labour practices of Kenya, and
e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.

4.11 Sufficiency of the Accepted Contract Amount

4.11.1 The Contractor shall be deemed to:

a) Have satisfied itself as to the correctness and sufficiency of the Accepted Contract Amount, and

b) Have based the Accepted Contract Amount on the data, interpretations, necessary information, inspections, examinations and satisfaction as to all relevant matters referred to in Sub-Clause 4.10 [Site Data].

4.11.2 Unless otherwise stated in the Contract, the Accepted Contract Amount covers all the Contractor's obligations under the Contract (including those under Provisional Sums, if any) and all things necessary for the proper execution and completion of the Works and the remedying of any defects.

4.12 Unforeseeable Physical Conditions

4.12.1 In this Sub-Clause, "physical conditions" means natural physical conditions and man-made and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions.

4.12.2 If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Architect as soon as practicable.

4.12.3 This notice shall describe the physical conditions, so that they can be inspected by the Architect and shall set out the reasons why the Contractor considers them to be Unforeseeable. The Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions which the Architect may give. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

4.12.4 If and to the extent that the Contractor encounters physical conditions which are Unforeseeable, gives such a notice, and suffers delay and/or incurs Cost due to these conditions, the Contractor shall be entitled subject to notice under Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any such Cost, which shall be included in the Contract Price.

4.12.5 Upon receiving such notice and inspecting and/or investigating these physical conditions, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent these physical conditions were Unforeseeable, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.

4.12.6 However, before additional Cost is finally agreed or determined under sub-paragraph (ii), the Architect may also review whether other physical conditions in similar parts of the Works (if any) were more favorable than could reasonably have been foreseen when the Contractor submitted the Tender. If and to the extent that these more favorable conditions were encountered, the Architect may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the reductions in Cost which were due to these conditions, which may be included (as deductions) in the Contract Price and Payment Certificates. However, the net effect of all adjustments under sub-paragraph (b) and all these reductions, for all the physical conditions encountered in similar parts of the Works, shall not result in a net reduction in the Contract Price.

4.12.7 The Architect shall take account of any evidence of the physical conditions foreseen by the Contract or

when submitting the Tender, which shall be made available by the Contractor, but shall not be bound by the Contractor's interpretation of any such evidence.

4.13 Rights of Way and Facilities

Unless otherwise specified in the Contract the Procuring Entity shall provide effective access to and possession of the Site including special and/or temporary rights-of-way which are necessary for the Works. The Contractor shall obtain, at his risk and cost, any additional rights of way or facilities outside the Site which he may require for the purposes of the Works.

4.14 Avoidance of Interference

4.14.1 The Contractor shall not interfere unnecessarily or improperly with:

a) The convenience of the public, or

b) The access to and use and occupation of all roads and foot paths, irrespective of whether they are public or in the possession of the Procuring Entity or of others.

4.14.2 The Contractor shall indemnify and hold the Procuring Entity harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from any such unnecessary or improper interference.

4.15 Access Route

4.15.1 The Contractor shall be deemed to have been satisfied as to the suitability and availability of access routes to the Site at Base Date. The Contractor shall use reasonable efforts to prevent any road or bridge from being damaged by the Contractor's traffic or by the Contractor's Personnel. These efforts shall include the proper use of appropriate vehicles and routes.

4.15.2 Except as otherwise stated in these Conditions:

a) The Contractor shall (as between the Parties) be responsible for any maintenance which may be required for his use of access routes;

b) the Contractor shall provide all necessary signs or directions along access routes, and shall obtain any permission which may be required from the relevant authorities for his use of routes, signs and directions;

c) the Procuring Entity shall not be responsible for any claims which may arise from the use or otherwise of any access route;

d) the Procuring Entity does not guarantee the suitability or availability of particular access routes; and

e) Costs due to non-suitability or non-availability, for the use required by the Contractor, of access routes shall be borne by the Contractor.

4.16 Transport of Goods

Unless otherwise stated in the Special Conditions:

a) the Contractor shall give the Architect not less than 21 days' notice of the date on which any Plant or a major item of other Goods will be delivered to the Site;

b) the Contractor shall be responsible for packing, loading, transporting, receiving, unloading, storing and protecting all Goods and other things required for the Works; and

c) the Contractor shall indemnify and hold the Procuring Entity harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from the transport of Goods and shall negotiate and pay all claims arising from their transport.

4.17 Contractor's Equipment

The Contractor shall be responsible for all Contractor's Equipment. When brought on to the Site, Contractor's Equipment shall be deemed to be exclusively intended for the execution of the Works. The

Contractor shall not remove from the Site any major items of Contractor's Equipment without the consent of the Engineer. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site.

4.18 Protection of the Environment

4.18.1 The contractor shall comply with the applicable environmental laws, regulations and policies.

4.18.2 The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.

4.18.3 The Contractors hall ensure that emissions, surfaced is charges and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.

4.19 Electricity, Water and Gas

4.19.1 The Contractor shall, except as stated below, be responsible for the provision of all power, water and other services he may require for his construction activities and to the extent defined in the Specifications, for the tests.

4.19.2 The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity, water, gas and other services as may be available on the Site and of which details and prices are given in the Specifications. The Contractor shall, at his risk and cost, provide any apparatus necessary for his use of these services and for measuring the quantities consumed.

4.19.3 The quantities consumed and the amounts due (at these prices) for such services shall be agreed or determined by the Architect in accordance with Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Procuring Entity.

4.20 Procuring Entity's Equipment and Free-Issue Materials

4.20.1 The Procuring Entity shall make the Procuring Entity's Equipment (if any) available for the use of the Contractor in the execution of the Works in accordance with the details, arrangements and prices stated in the Specification. Unless otherwise stated in the Specification:

a) The Procuring Entity shall be responsible for the Procuring Entity's Equipment, except that

b) the Contractor shall be responsible for each item of Procuring Entity's Equipment whilst any of the Contractor's Personnel is operating it, driving it, directing it or in possession or control of it.

4.20.1 The appropriate quantities and the amounts due (at such stated prices) for the use of Procuring Entity's Equipment shall be agreed or determined by the Architect in accordance with Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause3.5 [Determinations]. The Contractor shall pay these amounts to the Procuring Entity.

4.20.2 The Procuring Entity shall supply, free of charge, the “free-issue materials” (if any) in accordance with the details stated in the Specification. The Procuring Entity shall, at his risk and cost, provide these materials at the time and place specified in the Contract. The Contractor shall then visually inspect them and shall promptly give notice to the Architect of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Procuring Entity shall immediately rectify the notified shortage, defector default.

4.20.3 After this visual inspection, the free-issue materials shall come under the care, custody and control of the Contractor. The Contractor's obligations of inspection, care, custody and control shall not relieve the Procuring Entity of liability for any shortage, defect or default not apparent from a visual inspection.

4.21 Progress Reports

4.21.1 Unless otherwise stated in the Special Conditions, monthly progress reports shall be prepared by the Contractor and submitted to the Architect in six copies. The first report shall cover the period up to the end of the first calendar month following the Commencement Date. Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates.

4.21.2 Reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works. Each report shall include:

a) charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),
b) photographs showing the status of manufacture and of progress on the Site;
c) for the manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:
   i) commencement of manufacture,
   ii) Contractor's inspections,
   iii) tests, and
   iv) shipment and arrival at the Site;
d) the details described in Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment];
e) copies of quality assurance documents, test results and certificates of Materials;
f) list of notices given under Sub-Clause 2.5 [Procuring Entity's Claims] and notices given under Sub- Clause 20.1 [Contractor's Claims];
g) safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and
h) comparison so factual and planned progress, with details of any events or circumstances which may jeopardize the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

4.22 Security of the Site

Unless otherwise stated in the Special Conditions:

a) The Contractor shall be responsible for keeping unauthorized persons off the Site, and
b) authorized persons shall be limited to the Contractor's Personnel and the Procuring Entity's Personnel; and to any other personnel notified to the Contractor, by the Procuring Entity or the Engineer, as authorized personnel of the Procuring Entity's other contractors on the Site.

4.23 Contractor's Operations on Site

4.23.1 The Contractor shall confine his operations to the Site, and to any additional areas which may be obtained by the Contractor and agreed by the Architect as additional working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to keep them off adjacent land.

4.23.2 During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works which are no longer required.

4.23.3 Upon the issue of a Taking-Over Certificate, the Contractor shall clear away and remove, from that part of the Site and Works to which the Taking-Over Certificate refers, all Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works. The Contractor shall leave that part of

the Site and the Works in a clean and safe condition. However, the Contractor may retain on Site, during the Defects Notification Period, such Goods as are required for the Contractor to fulfil obligations under the Contract.

4.24 Fossils

4.24.1 All fossils, coins, articles of value or antiquity, and structures and other remains or items of geological or archaeological interest found on the Site shall be placed under the care and authority of the Procuring Entity. The Contractor shall take reasonable precautions to prevent Contractor's Personnel or other persons from removing or damaging any of these findings.

4.24.2 The Contractor shall, upon discovery of any such finding, promptly give notice to the Engineer, who shall issue instructions for dealing with it. If the Contractor suffers delay and/or incurs Cost from complying with the instructions, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub- Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost, which shall be included in the Contract Price.
After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

5. NOMINATED SUBCONTRACTORS

5.1 Definition of "nominated Subcontractor"

In this Contract, "nominated Subcontractor" means a Subcontractor:

a) Who is nominated by the Procuring Entity, or
b) Contractor has nominated as a Subcontractor subject to Sub-Clause 5.2 [Objection to Notification].

5.2 Objection to Nomination

The Contractor shall not be under any obligation to employ a nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Procuring Entity as soon as practicable, with supporting particulars. An objection shall be deemed reasonable if it arises from (among other things) any of the following matters, unless the Procuring Entity agrees in writing to indemnify the Contractor against and from the consequences of the matter:

a) there are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength;
b) the nominated Subcontractor does not accept to indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, his agents and employees; or
c) the nominated Subcontractor does not accept to enter into a subcontract which specifies that, for the subcontracted work (including design, if any), the nominated Subcontractor shall:
    i) undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge his obligations and liabilities under the Contract;
    ii) indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Subcontractor to perform these obligations or to fulfil these liabilities, and
    iii) be paid only if and when the Contractor has received from the Procuring Entity payments for sums due under the Subcontract referred to under Sub-Clause 5.3 [Payment to nominated Subcontractors].

5.3 Payments to nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts shown on the nominated Subcontractor's invoices approved by the Contractor which the Architect certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with sub-paragraph (b) of Sub-Clause 13.5 [Provisional Sums], except as stated in Sub-Clause 5.4 [Evidence of Payments].

5.4 Evidence of Payments

5.4.1 Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Architect may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

(a) Submits this reasonable evidence to the Engineer, or
(b) i) Satisfies the Architect in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and
ii) Submits to the Architect reasonable evidence that the nominated Subcontractor has been notified of the Contractor's entitlement, then the Procuring Entity may (at his sole discretion) pay, direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Procuring Entity, the amount which the nominated Subcontractor was directly paid by the Procuring Entity.

6. STAFF AND LABOR

6.1 Engagement of Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labor, local or otherwise, and for their payment, feeding, transport, and, when appropriate, housing. The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within Kenya.

6.2 Rates of Wages and Conditions of Labor

6.2.1 The Contractor shall pay rates of wages, and observe conditions of labor, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by Procuring Entity's whose trade or industry is similar to that of the Contractor.

6.2.2 The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in Kenya in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of Kenya for the time being in force, and the Contractor shall perform such duties in regard to such deductions there of as may be imposed on him by such Laws.

6.3 Persons in the Service of Procuring Entity

The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst the Procuring Entity's Personnel.

6.4 Labor Laws

The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, employment of children, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights. The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.

6.5 Working Hours

No work shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the **Special Conditions of Contract**, unless:

a) Otherwise stated in the Contract,
b) The Architect gives consent, or
c) The work is unavoidable, or necessary for the protection of life or property or for the safety of the

Works, in which case the Contractor shall immediately advise the Engineer, provided that work done outside the normal working hours shall be considered and paid for as overtime.

6.6 Facilities for Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities on site for the Contractor's Personnel. The Contractor shall also provide facilities for the Procuring Entity's Personnel as stated in the Specifications. The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.

6.7 Health and Safety

6.7.1 The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Procuring Entity's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

6.7.2 The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

6.7.3 The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Architect may reasonably require.

6.7.4 The Contractor shall conduct an awareness programme on HIV and other sexually transmitted diseases via an approved service provider and shall undertake such other measures taken to reduce the risk of the transfer of these diseases between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals.

6.8 Contractor's Superintendence

6.8.1 Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the work.

6.8.2 Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 1.4 [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.

6.9 Contractor's Personnel

6.9.1 The Contractor's Personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Contractors Key personnel shall be named in the Special Conditions of Contract. The Architect may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:

a) Persists in any misconduct or lack of care,
b) Carries out duties in competently or negligently,
c) fails to conform with any provisions of the Contract,
d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment, or
e) based on reasonable evidence, is determined to have engaged in Fraud and Corruption during the execution of the Works.

6.9.2 If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

6.10 Records of Contractor's Personnel and Equipment

The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.

6.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site.

6.12 Foreign Personnel

6.12.1 The Contractor shall not employ foreign personnel unless the contractor demonstrates that there are no Kenyans with the required skills.

6.12.2 The Contractor shall be responsible for the return of any foreign personnel to the place where they were recruited or to their domicile. In the event of the death in Kenya of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial.

6.13 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.

6.14 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

6.15 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of Kenya, onsite, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereof by Contractor's Personnel.

6.16 Prohibition of Forced or Compulsory Labour

The Contractor shall not employ forced labor, which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements.

6.17 Prohibition of Harmful Child Labor

The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Where the relevant labour laws of Kenya have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work.

6.18 Employment Records of Workers

The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment].

6.19 Workers' Organizations

The Contractor shall comply with the relevant labor laws that recognize workers' rights to form and to join workers' organizations of their choosing without interference.

6.20 Non-Discrimination and Equal Opportunity

The Contractor shall base the labour employment on the principle of equal opportunity and fair treatment and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employ mentor retirement, and discipline.

7. PLANT, MATERIALS AND WORKMANSHIP

7.1 Manner of Execution

The Contractor shall carry out the manufacture/assemble of plant, the production and manufacture of Materials, and all other execution of the Works:

a) In the manner (if any) specified in the Contract,
b) in a proper workman like and careful manner, in accordance with recognized good practice, and
c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract.

7.2 Samples

The Contractor shall submit the following samples of Materials, and relevant information, to the Architect for consent prior to using the Material sin or for the Works:

a) manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and
b) additional samples instructed by the Architect as a Variation.

Each sample shall be labeled as to origin and intended use in the Works.

7.3 Inspection

7.3.1 The Procuring Entity's Personnel shall at all reasonable times:

a) Have full access to all parts of the Site and to all places from which natural Materials are being obtained, and
b) during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials.

7.3.2 The Contractor shall give the Procuring Entity's Personnel full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.

7.3.3 The Contractor shall give notice to the Architect whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Architect shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to

the Contractor that the Architect does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Engineer, uncover the work and there after reinstate and make good, all at the Contractor's cost.

7.4 Testing

7.4.1 This Sub-Clause shall apply to all tests specified in the Contract.

7.4.2 Except as otherwise specified in the Contract, the Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labor, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently. The Contractor shall agree, with the Engineer, the time and place for the specified testing of any Plant, Materials and other parts of the Works.

7.4.3 The Architect may, under Clause 13 [Variations and Adjustments], vary the location or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not in accordance with the Contract, the cost of carrying out this Variation shall be borne by the Contractor, notwithstanding other provisions of the Contract.

7.4.4 The Architect shall give the Contractor not less than 24 hours' notice of the Architect intention to attend the tests. If the Architect does not attend at the time and place agreed, the Contractor may proceed with the tests, unless otherwise instructed by the Engineer, and the tests shall then be deemed to have been made in the Architect presence.

7.4.5 If the Contractor suffers delay and/ or incurs Cost from complying with these instructions or as a result of a delay for which the Procuring Entity is responsible, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

7.4.6 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

7.4.7 The Contractor shall promptly forward to the Architect duly certified reports of the tests. When the specified tests have been passed, the Architect shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Architect has not attended the tests, he shall be deemed to have accepted the readings as accurate.

7.5 Rejection

7.5.1 If, as a result of an examination, inspection, measurement or testing, any Plant, Materials or workmanship is found to be defective or otherwise not in accordance with the Contract, the Architect may reject the Plant, Materials or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item complies with the Contract.

7.5.2 If the Architect requires this Plant, Materials or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If the rejection and retesting cause the Procuring Entity to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay these costs to the Procuring Entity.

7.6 Remedial Work

7.6.1 Notwithstanding any previous test or certification, the Architect may instruct the Contractor to:

a) Remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,

b) remove and re-execute any other work which is not in accordance with the Contract, and

c) execute any work which is urgently required for the safety of the Works, whether because of an

accident, unforeseen able event or otherwise.

7.6.2 The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c).

7.6.3 If the Contractor fails to comply with the instruction, the Procuring Entity shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay to the Procuring Entity all costs arising from this failure.

7.6.4 If the contractor repeatedly delivers defective work, the Procuring Entity may consider termination in accordance with Clause 15.

7.7 Ownership of Plant and Materials

Except as otherwise provided in the Contract, each item of Plant and Materials shall become the property of the Procuring Entity at whichever is the earlier of the following times, free from liens and other encumbrances:

a) When it is incorporated in the Works;

b) when the Contractor is paid the corresponding value of the Plant and Materials under Sub-Clause 8.10 [Payment for Plant and Materials in Event of Suspension].

7.8 Royalties

Unless otherwise stated in the Specification, the Contractor shall pay all royalties, rents and other payments for:

a) Natural materials obtained from outside the Site, and

b) The disposal of material from demolitions and excavations and of other surplus material (whether natural or man-made), except to the extent that disposal are as within the Site are specified in the Contract.

8. COMMENCEMENT, DELAYS AND SUSPENSION

8.1 Commencement of Works

8.1.1 Except as otherwise specified in the Special Conditions of Contract, the Commencement Date shall be the date at which the following precedent condition shave all been fulfilled and the Architect notification recording the agreement of both Parties on such fulfilment and instructing to commence the Work is received by the Contractor:

a) Signature of the Contract Agreement by both Parties, and if required, approval of the Contract by relevant authorities of Kenya;

b) except if otherwise specified in the Special Conditions of Contract, effective access to and possession of the Site given to the Contractor together with such permission(s) under (a) of Sub-Clause 1.13 [Compliance with Laws] as required for the commencement of the Works.

c) Receipt by the Contractor of the Advance Payment under Sub-Clause 14.2 [Advance Payment] provided that the corresponding bank guarantee has been delivered by the Contractor.

8.1.2 If the said Architect instruction is not received by the Contractor within 180 days from his receipt of the Letter of Acceptance, the Contractor shall be entitled to terminate the Contract under Sub-Clause1 6.2 [Termination by Contractor].

8.1.3 The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date and shall then proceed with the Works with due expedition and without delay.

8.2 Time for Completion

The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion for the Works or Section (as the case may be), including:

a) Achieving the passing of the Tests on Completion, and

b) completing all work which is stated in the Contract as being required for the Works or Section to be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections].

8.3 Programme

8.3.1 The Contractor shall submit a detailed time programme to the Architect within 14 days after receiving the notice under Sub-Clause 8.1 [Commencement of Works]. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contractor's obligations. Each programme shall include:

a) The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing,

b) each of these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),

c) the sequence and timing of inspections and tests specified in the Contract, and

d) a supporting report which includes:

i) a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and

ii) details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage.

8.3.2 Unless the Engineer, within 14 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Procuring Entity's Personnel shall be entitled to rely upon the programme when planning their activities.

8.3.3 The Contractor shall promptly give notice to the Architect of specific probable future events or circumstances which may adversely affect the work, increase the Contract Price or delay the execution of the Works.

8.3.4 If, at any time, the Architect gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contractor to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Architect in accordance with this Sub-Clause.

8.4 Extension of Time for Completion

8.4.1 The Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of the Time for Completion if and to the extent that completion for the purposes of Sub-Clause 10.1 [Taking Over of the Works and Sections] is or will be delayed by any of the following causes:

a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 [Variation Procedure]) or other substantial change in the quantity of an item of work included in the Contract,

b) a cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,

c) exceptionally adverse climatic conditions,

d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions, or

e) any delay, impediment or prevention caused by or attributable to the Procuring Entity, the Procuring Entity's Personnel, or the Procuring Entity's other contractors.

8.4.2 If the Contractor considers itself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Architect in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Architect shall review previous determinations and may increase, but shall not decrease, the total extension of time.

8.5 Delays Caused by Authorities

If the following conditions apply, namely:

a) The Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities in Kenya,

b) These authorities delay or disrupt the Contractor's work, and

c) the delay or disruption was Unforeseeable, then this delay or disruption will be considered as a cause of delay under sub-paragraph (b) of Sub-Clause 8.4 [Extension of Time for Completion].

8.6 Rate of Progress

8.6.1 If, at any time:

a) Actual progress is too slow to complete within the Time for Completion, and/or

b) Progress has fallen (or will fall) behind the current programme under Sub-Clause 8.3 [Programme], other than as a result of a cause listed in Sub-Clause 8.4 [Extension of Time for Completion], then the Architect may instruct the Contractor to submit, under Sub-Clause 8.3 [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion.

8.6.2 Unless the Architect notifies otherwise, the Contractor shall adopt these revised methods, which may require increases in the working hours and/or in the numbers of Contractor's Personnel and/or Goods, at the risk and cost of the Contractor. If these revised methods cause the Procuring Entity to incur additional costs, the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay these costs to the Procuring Entity, in addition to delay damages (if any) under Sub-Clause 8.7 below.

8.6.3 Additional costs of revised methods including acceleration measures, instructed by the Architect to reduce delays resulting from causes listed under Sub-Clause 8.4 [Extension of Time for Completion] shall be paid by the Procuring Entity, without generating, however, any other additional payment benefit to the Contractor.

8.7 Delay Damages

8.7.1 If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay delay damages to the Procuring Entity for this default. These delay damages shall be the sum stated in the **Special Conditions of Contract**, which shall be paid for everyday which shall elapse between the relevant Time for Completion and the date stated in the taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Special Conditions of Contract.

8.7.2 These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under Sub-Clause 15.2 [Termination by Procuring Entity] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

8.8 Suspension of Work

8.8.1 The Architect may at any time instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works against any deterioration, loss or damage.

8.8.2 The Architect may also notify the cause for the suspension. If and to the extent that the cause is notified and is the responsibility of the Contractor, the following Sub-Clauses 8.9, 8.10 and 8.11 shall not apply.

8.9 Consequences of Suspension

8.9.1 If the Contractor suffers delay and/or incurs Cost from complying with the Architect instructions under Sub- Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) Payment of any such Cost, which shall be included in the Contract Price.

8.9.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause3.5 [Determinations] to agree or determine these matters.

8.9.3 The Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with Sub-Clause 8.8 [Suspension of Work].

8.10 Payment for Plant and Materials in Event of Suspension

The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/ or Materials which have not been delivered to Site, if:

a) The work on Plant or delivery of Plant and/ or Materials has been suspended for more than 30 days, and

b) the Contractor has marked the Plant and/or Materials as the Procuring Entity's property in accordance with the Architect instructions.

8.11 Prolonged Suspension

If the suspension under Sub-Clause 8.8 [Suspension of Work] has continued for more than 84 days, the Contractor may request the Architect permission to proceed. If the Architect does not give permission within 30 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 13 [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub-Clause 16.2 [Termination by Contractor].

8.12 Resumption of Work

After the permission or instruction to proceed is given, the Contractor and the Architect shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension after receiving from the Architect an instruction to this effect under Clause 13 [Variations and Adjustments].

9. TESTS ON COMPLETION

9.1 Contractor's Obligations

9.1.1 The Contractor shall carry out the Tests on Completion in accordance with this Clause and Sub-Clause 7.4 [Testing], after providing the documents in accordance with sub-paragraph (d) of Sub-Clause 4.1 [Contractor's General Obligations].

9.1.2 The Contractor shall give to the Architect not less than 21 days' notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Architect shall instruct.

9.1.3 In considering the results of the Tests on Completion, the Architect shall make allowances for the effect of any use of the Works by the Procuring Entity on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed any Tests on Completion, the Contractor shall submit a certified report of the results of these Tests to the Engineer.

9.2 Delayed Tests

9.2.1 If the Tests on Completion are being unduly delayed by the Procuring Entity, Sub-Clause 7.4 [Testing] (fifth paragraph) and/ or Sub-Clause 10.3 [Interference with Tests on Completion] shall be applicable.

9.2.2 If the Tests on Completion are being unduly delayed by the Contractor, the Architect may by notice require the Contractor to carry out the Tests within 21 days after receiving the notice. The Contractor shall carry out the Tests on such day or days within that period as the Contractor may fix and of which he shall give notice to the Engineer.

9.2.3 If the Contractor fails to carry out the Tests on Completion within the period of 21 days, the Procuring Entity's Personnel may proceed with the Test sat the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted as accurate.

9.3 Retesting of related works

If the Works, or a Section, fail to pass the Tests on Completion, Sub-Clause 7.5 [Rejection] shall apply, and the Architect or the Contractor may require the failed Tests, and Tests on Completion on any related work, to be repeated under the same terms and conditions.

9.4 Failure to Pass Tests on Completion

9.4.1 If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 9.3 [Retesting], the Architect shall be entitled to:

a) Order further repetition of Tests on Completion under Sub-Clause 9.3; or

b) if the failure deprives the Procuring Entity of substantially the whole benefit of the Works or Section, reject the Works or Section (as the case may be), in which event the Procuring Entity shall have the same remedies as are provided in sub-paragraph (c) of Sub-Clause1 1.4 [Failure to Remedy Defects].

10. PROCURING ENTITY'S TAKING OVER

10.1 Taking Over of the Works and Sections

10.1.1 Except as stated in Sub-Clause 9.4 [Failure to Pass Tests on Completion], the Works shall be taken over by the Procuring Entity when (i) the Works have been completed in accordance with the Contract, including the matters described in Sub-Clause 8.2 [Time for Completion] and except as allowed in sub-paragraph (a) below, and (ii) a Taking-Over Certificate for the Works has been issued, or is deemed to have been issued in accordance with this Sub-Clause.

10.1.2 The Contractor may apply by notice to the Architect for a Taking-Over Certificate not earlier than 14 days before the Works will, in the Contractor's opinion, be complete and ready for taking over. If the Works are divided into Sections, the Contract or may similarly apply for a Taking-Over Certificate for each Section.

10.1.3 The Architect shall, within 30 days after receiving the Contractor's application:

a) Issue the Taking-Over Certificate to the Contract or, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor outstanding work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or

b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice under this Sub-Clause.

10.1.4 If the Architect fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 30 days, and if the Works or Section (as the case may be) are substantially in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on the last day of that period.

10.2 Taking Over of Parts of the Works

10.2.1 The Architect may, at the sole discretion of the Procuring Entity, issue a Taking-Over Certificate for any part of the Permanent Works.

10.2.2 The Procuring Entity shall not use any part of the Works (other than as a temporary measure which is either specified in the Contract or agreed by both Parties) unless and until the Architect has issued a Taking-Over Certificate for this part. However, if the Procuring Entity does use any part of the Works before the Taking-Over Certificate is issued:

a) The part which is used shall be deemed to have been taken over as from the date on which it is used,

b) the Contractor shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the Procuring Entity, and

c) if requested by the Contractor, the Architect shall issue a Taking-Over Certificate for this part.

10.2.3 After the Architect has issued a Taking-Over Certificate for a part of the Works, the Contractor shall be given the earliest opportunity to take such steps as may be necessary to carry out any outstanding Tests on Completion. The Contractor shall carry out these Tests on Completion as soon as practicable before the expiry date of the relevant Defects Notification Period.

10.2.4 If the Contractor incurs Cost as a result of the Procuring Entity taking over and/or using a part of the Works, other than such use as is specified in the Contractor agreed by the Contractor, the Contractor shall (i) give notice to the Architect and (ii) be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to payment of any such accrued costs, which shall be included in the Contract Price. After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this accrued cost.

10.2.5 If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages thereafter for completion of the remainder of the Works shall be reduced. Similarly, the delay damages for the remainder of the Section (if any) in which this part is included shall also be reduced. For any period of delay after the date stated in this Taking-Over Certificate, the proportional reduction in these delay damages shall be calculated as the proportion which the value of the part so certified bears to the value of the Works or Section (as the case may be) as a whole. The Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these proportions. The provisions of this paragraph shall only apply to the daily rate of delay damages under Sub-Clause 8.7 [Delay Damages] and shall not affect the maximum amount of these damages.

10.3 Interference with Tests on Completion

10.3.1 If the Contractor is prevented, for more than 14 days, from carrying out the Tests on Completion by a cause for which the Procuring Entity is responsible, the Procuring Entity shall be deemed to have taken over the Works or Section (as the case may be) on the date when the Tests on Completion would otherwise have been completed.

10.3.2 The Architect shall then issue a Taking-Over Certificate accordingly, and the Contractor shall carry out the Tests on Completion as soon as practicable, before the expiry date of the Defects Notification Period. The Architect shall require the Tests on Completion to be carried out by giving 14 days' notice and in accordance with the relevant provisions of the Contract.

10.3.3 If the Contractor suffers delay and/or incurs Cost as a result of this delay in carrying out the Tests on Completion, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any such accrued costs, which shall be included in the Contract Price.

10.3.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

10.4 Surfaces Requiring Reinstatement

Except as otherwise stated in a Taking-Over Certificate, a certificate for a Section or part of the Works shall not be deemed to certify completion of any ground or other surfaces requiring reinstatement.

11. DEFECTS LIABILITY

11.1 Completion of Outstanding Work and Remedying Defects

11.1.1 In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fair wear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable thereafter, the Contractor shall:

a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and

b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Procuring Entity on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be).

11.1.2 If a defect appears or damage occurs, the Contractor shall be notified accordingly by the Engineer.

11.2 Cost of Remedying Defects

11.2.1 All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:

a) Any design for which the Contractor is responsible,

b) Plant, Materials or workmanship not being in accordance with the Contract, or

c) Failure by the Contractor to comply with any other obligation.

11.2.2 If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Procuring Entity, and Sub-Clause 13.3 [Variation Procedure] shall apply.

11.3 Extension of Defects Notification Period

11.3.1 The Procuring Entity shall be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or by reason of damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.

11.3.2 If delivery and/ or erection of Plant and/ or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/ or Materials would otherwise have expired.

11.4 Failure to Remedy Defects

11.4.1 If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by the Engineer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date.

11.4.2 If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under Sub-Clause 11.2[Cost of Remedying Defects], the Procuring Entity may (at his option):

(a) Carry out the work itself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay to the Procuring Entity the costs reasonably incurred by the Procuring Entity in remedying the defect or damage;

(b) Require the Architect to agree or determine a reasonable reduction in the Contract Price in accordance with Sub-Clause 3.5 [Determinations]; or

(c) if the defect or damage deprives the Procuring Entity of substantially the whole benefit of the Works or any major part of the Works, terminate the Contract as a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contractor otherwise, the Procuring Entity shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.

11.5 Removal of Defective Work

If the defector damage cannot be remedied expeditiously on the Site and the Procuring Entity gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.

11.6 Further Tests

11.6.1 If the work of remedying of any defector damage may affect the performance of the Works, the Architect may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 14 days after the defect or damage is remedied.

11.6.2 These tests shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under Sub-Clause 11.2 [Cost of Remedying Defects], for the cost of the remedial work.

11.7 Right of Access

Until the Completion Certificate has been issued, the Contractor shall have such right of access to the Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Procuring Entity's reasonable security restrictions.

11.8 Contractor to Search

The Contractor shall, if required by the Engineer, search for the cause of any defect on parts of the works that have already accepted, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Architect in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.

11.9 Completion Certificate

11.9.1 Performance of the Contractor's obligations shall not be considered to have been completed until the Architect has issued the Completion Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.

11.9.2 The Architect shall issue the Completion Certificate within 30days after the latest of the expiry dates of the Defects Liability Period, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Completion Certificate shall be issued to the Procuring Entity.

11.9.3 Only the Completion Certificate shall be deemed to constitute acceptance of the Works.

11.10 Unfulfilled Obligations

After the Completion Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.

11.11 Clearance of Site

11.11.1 Upon receiving the Completion Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.

11.11.2 If all these items have not been removed within 30 days after receipt by the Contractor of the Completion Certificate, the Procuring Entity may sell or otherwise dispose of any remaining items. The Procuring Entity shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.

11.11.3 Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Procuring Entity's costs, the Contractor shall pay the outstanding balance to the Procuring Entity.

12. MEASUREMENT AND EVALUATION

12.1 Works to be Measured

12.1.1 The Works shall be measured, and valued for payment, in accordance with this Clause. The Contractor shall show in each application under Sub-Clauses 14.3 [Application for Interim Payment Certificates], 14.10 [Statement on Completion] and 14.11 [Application for Final Payment Certificate] the quantities and other particulars detailing the amounts which he considers to be entitled under the Contract.

12.1.2 Whenever the Architect requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:

a) promptly either attend or send another qualified representative to assist the Architect in making the measurement, and
b) supply any particulars requested by the Engineer.

12.1.3 If the Contractor fails to attend or send a representative, the measurement made by the Architect shall be accepted as accurate.

12.1.4 Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agree to the records with the Engineer, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.

12.1.5 If the Contractor examines and disagrees with the records, and/ or does not sign them as agreed, then the Contractor shall give notice to the Architect of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Architect shall review the records and either confirm or vary them and certify the payment of the undisputed part. If the Contractor does not so give notice to the Architect within 14 days after being requested to examine the records, they shall be accepted as accurate.

12.2 Method of Measurement

Except as otherwise stated in the Contract:

a) Measurement shall be made of the net actual quantity of each item of the Permanent Works, and
b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.

12.3 Evaluation

12.3.1 Except as otherwise stated in the Contract, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of work done by evaluating each item of work, applying the measurement agreed or determined in accordance with the above Sub-Clauses 12.1 and 12.2 and the appropriate rate or price for the item.

12.3.2 For each item of work, the appropriate rate or price for the item shall be the rate or price specified for such item in the Contractor, if there is no such item, specified for similar work.

12.3.3 Any item of work included in the Bill of Quantities for which no rate or price was specified shall be

considered as included in other rates and prices in the Bill of Quantities and will not be paid for separately.

12.3.4 However, for a new item of work, a new rate or price shall be appropriate for such item of work if:

a) The work is instructed under Clause13 [Variations and Adjustments],

b) no rate or price is specified in the Contract for this item, and

c) no specified rate or price is appropriate because the item of work is not of similar character, or is not executed under similar conditions, as any item in the Contract.

12.3.5 Each new rate or price shall be derived from any relevant rates or prices in the Contract. If no rates or prices are relevant for the new item of work, it shall be derived from the reasonable Cost of executing such work, prevailing market rates, together with profit, taking account of any other relevant matters.

12.3.6 Until such time as an appropriate rate or price is agreed or determined, the Architect shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.

12.3.7 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*.

12.4 Omissions

Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:

a) The Contractor will incur (or has incurred) cost which, if the work had not been omitted, would have been deemed to be covered by a sum forming part of the Accepted Contract Amount;

b) The omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and

c) this cost is not deemed to be included in the evaluation of any substituted work; then the Contractor shall give notice to the Architect accordingly, with supporting particulars. Upon receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.

13. VARIATIONS AND ADJUSTMENTS

13.1 Right to Vary

13.1.1 Variations may be initiated by the Architect at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal. No Variation instructed by the Architect under this Clause shall in any way vitiate or in validate the Contract.

13.1.2 The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Architect stating (with supporting particulars) that (i) the Contractor cannot readily obtain the Goods required for the Variation, or (ii) such Variation triggers a substantial change in the sequence or progress of the Works. Upon receiving this notice, the Architect shall cancel, confirm or vary the instruction.

13.1.3 Each Variation may include:

a) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation),

b) changes to the quality and other characteristics of any item of work,

c) changes to the levels, positions and/ or dimensions of any part of the Works,

d) omission of any work unless it is to be carried out by others,

e) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or

f) changes to the sequence or timing of the execution of the Works.

13.1.4 The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Architect instructs after obtaining approval of the Procuring Entity.

13.2. Variation Order Procedure

13.2.1 Prior to any Variation Order under Sub-Clause 13.1.4 the Architect shall notify the Contractor of the nature and form of such variation. As soon as possible after having received such notice, the Contractor shall submit to the Engineer:

a) A description of work, if any, to be performed and a programme for its execution, and
b) the Contractor's proposals for any necessary modifications to the Programme according to Sub-Clause 8.3 or to any of the Contractor's obligations under the Contract, and
c) the Contractor's proposals for adjustment to the Contract Price.

Following the receipt of the Contractor's submission the Architect shall, after due consultation with the Employer and the Contractor, decide as soon as possible whether or not the variation shall be carried out. If the Architect decides that the variation shall be carried out, he shall issue a Variation Order clearly identified as such in accordance with the Contractor's submission or as modified by agreement.

If the Architect and the Contractor are unable to agree the adjustment of the Contract Price, the provisions of Sub-Clause 13.2.2 shall apply.

13.2.2 Disagreement on Adjustment of the Contract Price

If the Contractor and the Architecture unable to agree on the adjustment of the Contract Price, the adjustment shall be determined in accordance with the rates specified in the Bills of Quantities or Schedule of Daywork Prices. If the rates contained in the Bills of Quantities or Dayworks Prices are not directly applicable to the specific work in question, suitable rates shall be established by the Architect reflecting the level of pricing in the Dayworks Prices. Where rates are not contained in the said Prices, the amount shall be such as is in all the circumstances reasonable, reflecting a market price. Due account shall be taken of any over-or under-recovery of overheads by the Contractor in consequence of the variation. The Contractor shall also be entitled to be paid:

a) The cost of any partial execution of the Works rendered useless by any such variation,
b) The cost of making necessary alterations to Plant already manufactured or in the course of manufacture or of any work done that has to be altered in consequence of such a variation,
c) any additional costs incurred by the Contractor by the disruption of the progress of the Works as detailed in the Programme, and
d) the net effect of the Contractor's finance costs, including interest, caused by the variation.

The Architect shall on this basis determine the rates or prices to enable on-account payment to be included in certificates of payment.

13.2.3 Contractor to Proceed

On receipt of a Variation Order, the Contractor shall forth with proceed to carry out the variation and be bound to these Conditions in so doing as if such variation was stated in the Contract. The work shall not be delayed pending the granting of an extension of the Time for Completion or an adjustment to the Contract Price under Sub-Clause31.3.

13.3 Value Engineering

13.3.1 The Contractor may, at anytime, submit to the Architect written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Procuring Entity of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the Procuring Entity of the completed Works, or
(iv) otherwise be of benefit to the Procuring Entity.

13.3.2 The proposal shall be prepared at the cost of the Contractor and shall include the items listed in Sub-Clause 13.3 [Variation Procedure].

13.2.3 If a proposal, which is approved by the Engineer, includes a change in the design of part of the Permanent Works, then unless otherwise agreed by both Parties:

a) The Contractor shall design this part,

b) sub-paragraphs (a) to (d) of Sub-Clause 4.1 [Contractor's General Obligations] shall apply, and

c) if this change results in a reduction in the contract value of this part, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine a fee, which shall be included in the Contract Price. This fee shall behalf (50%) of the difference between the following amounts:

i) such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause
13.8 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost], and

ii) the reduction (if any) in the value to the Procuring Entity of the varied works, taking account of any improvement in quality, anticipated life or operational efficiencies.

13.3.4 However, if the amount established in item 13.2.3 (c) (i) is less than amount established in item 13.2.3 (c (ii), there shall not be a fee. However, if the if the amount established in item 13.2.3 (c) (i) is more than amount established in item 13.2.3 (c (ii), it shall result in a price variation to the Procuring Entity.

13.4 Variation Procedure for Value Engineering proposal

13.4.1 If the Architect requests a proposal, prior to instructing a Variation, the Contractor shall respond in writing a s soon as practicable, either by giving reasons why he cannot comply (if this is the case) or by submitting:

a) A description of the proposed work to be performed and a programme for its execution,

b) the Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 8.3 [Programme] and to the Time for Completion, and

c) the Contractor's proposal for evaluation of the Variation.

13.4.2 The Architect shall, as soon as practicable after receiving such proposal (under Sub-Clause 13.2 [Value Project Engineering] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst awaiting a response.

13.4.3 Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Architect to the Contractor, who shall acknowledge receipt.

13.4.4 Each Variation shall be evaluated in accordance with Clause 12 [Measurement and Evaluation], unless the Architect instructs or approves otherwise in accordance with this Clause.

13.5 Payment in Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.

13.6 Provisional Sums

13.6.1 Each Provisional Sum shall only be used, in whole or in part, in accordance with the Architect instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include only such amounts, for the work, supplies or services to which the Provisional Sum relates, as the Architect shall have instructed. For each Provisional Sum, the Architect May instruct:

a) Work to be executed (including Plant, Materials or services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or

b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]) or otherwise; and for which there shall be included in the Contract Price:

i) The actual amounts paid (or due to be paid) by the Contractor, and

ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in **the Special Conditions of Contract** shall be applied.

13.6.2 The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation.

13.7 Dayworks

13.7.1 For work of a minor or incidental nature, the Architect may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply. If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.

13.7.2 Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.

13.7.3 Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall deliver each day to the Architect accurate statements induplicate which shall include the following details of the resources used in executing the previous day's work:

a) The names, occupations and time of Contractor's Personnel,
b) the identification, type and time of Contractor's Equipment and Temporary Works, and
c) the quantities and types of Plant and Materials used.

13.7.4 One copy of each statement will, if correct, or when agreed, be signed by the Architect and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Engineer, prior to their inclusion in the next Statement under Sub-Clause 14.3 [Application for Interim Payment Certificates].

13.8 Adjustments for Changes in Legislation

13.8.1 The Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of Kenya (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract.

13.8.2 If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost, which shall be included in the Contract Price.

13.8.3 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

13.8.4 Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause 13.8 [Adjustments for Changes in Cost].

13.9 Adjustments for Changes in Cost

13.9.1 In this Sub-Clause, “table of adjustment data” means the completed table of adjustment data for local and foreign currencies included in the Schedules. If there is no such table of adjustment data, this Sub-Clause shall not apply.

13.9.2 If this Sub-Clause applies, the amounts payable to the Contractor shall be adjusted for rises or falls in the cost of labor, Goods and other inputs to the Works, by the addition or deduction of the amounts determined by the formulae prescribed in this Sub-Clause. To the extent that full compensation for any rise or fall in Costs is not covered by the provisions of this or other Clauses, the Accepted Contract Amount shall be deemed to have included a mounts to cover the contingency of other rises and falls in costs.

13.9.3 The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae for each of the currencies in which the Contract Price is payable. No adjustment is to be applied to work valued on the basis of Cost or current prices. The formulae shall be of the following general type:

Price Adjustment Formula

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 **specified in the SCC,** representing then on 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 **Io** is the index prevailing 30 days before Bid opening for inputs payable.

NOTE: The sum of the two coefficients A and B 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 nonadjustable components. The sum of the adjustments for each currency are added to the Contract Price.

13.9.4 The cost indices or reference prices stated in the table of adjustment data shall be used. If their source is in doubt, it shall be determined by the Engineer. Forth is purpose, reference shall be made to the values of the indices at stated dates (quoted in the fourth and fifth columns respectively of the table) for the purposes of clarification of the source; although these dates (and thus these values) may not correspond to the base cost indices.

13.9.5 In cases where the "currency of index" is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the Central Bank of Kenya, of this relevant currency on the above date for which the index is required to be applicable.

13.9.6 Until such time as each current cost index is available, the Architect shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.

13.9.7 If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices there after shall be made using either (i) each index or price applicable on the date 49 days prior to the expiry of the Time for Completion of the Works, or (ii) the current index or price, whichever is more favorable to the Procuring Entity.

13.9.8 The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or in applicable, as a result of Variations.

14. CONTRACT PRICE AND PAYMENT

14.1 The Contract Price

14.1.1 Unless otherwise stated in the Special Conditions:

a) The value of the payment certificate shall be agreed or determined under Sub-Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract;

b) the Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 13.7 [Adjustments for Changes in Legislation];

c) any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities and are not to be taken as the actual and correct quantities:

   i) of the Works which the Contractor is required to execute, or

   ii) for the purposes of Clause12 [Measurement and Evaluation]; and

d) the Contractor shall submit to the Engineer, within 30 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules. The Architect may take account of the break down when preparing Payment Certificates but shall not be bound by it.

14.1.2 Notwithstanding the provisions of subparagraph (b), Contractor's Equipment, including essential spare parts there for, imported by the Contractor for the sole purpose of executing the Contract shall not be exempt from the payment of import duties and taxes upon importation.

14.2 Advance Payment

14.2.1 The Procuring Entity shall make an advance payment, as an interest-free loan for mobilization and cashflow support, when the Contractor submits a guarantee in accordance with this Clause. The total advance payment, the number and timing of instalments (if more than one), and the applicable currencies and proportions, shall be as stated in the **Special Conditions of Contract.**

14.2.2 Unless and until the Procuring Entity receives this guarantee, or if the total advance payment is not stated in the Special Conditions of Contract, this Sub-Clause shall not apply.

14.2.3 The Architect shall deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate for the advance payment or its first instalment after receiving a Statement (under Sub-Clause 14.3 [Application for Interim Payment Certificates]) and after the Procuring Entity receives (i) the Performance Security in accordance with Sub-Clause 4.2 [Performance Security] and (ii) a guarantee in amounts and currencies equal to the advance payment. This guarantee shall be issued by a reputable bank or financial institutions elected by the Contractor and shall be in the form annexed to the Special Conditions or in another form approved by the Procuring Entity.

14.2.4 The Contractor shall ensure that the guarantee is valid and enforceable until the advance payment has been repaid, but its amount shall be progressively reduced by the amount repaid by the Contractor as indicated in the Payment Certificates. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 30 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment has been repaid.

14.2.5 Unless stated otherwise in **the Special Conditions of Contract**, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Architect in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:

a) Deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount less Provisional Sums; and

b) deductions shall be made at the amortization rate stated in the **Special Conditions of Contract** of the amount of each Interim Payment Certificate (excluding the advance payment and deductions for its repayments as well as deductions for retention money) in the currencies and proportions of the advance payment until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.

14.2.6 If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 15 [Termination by Procuring Entity], Clause 16 [Suspension and Termination by Contractor] or Clause 19 [Force Majeure] (as the case may be), the whole of the balance then outstanding shall immediately become due and in case of termination under Clause 15 [Termination by Procuring Entity], except for Sub-Clause 14.2.7 [Procuring Entity's Entitlement to Termination for Convenience], payable by the Contractor to the Procuring Entity.

14.3 Application for Interim Payment Certificates

14.3.1 The Contractor shall submit a Statement (in number of copies indicated in the **Special Conditions of Contract**) to the Architect after the end of each month, in a form approved by the Engineer, showing in detail the amounts to which the Contractor considers itself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause4.21 [Progress Reports].

14.3.2 The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below);

b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];

c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in **the Special Conditions of Contract** to the total of the above amounts, until the amount so retained by the Procuring Entity reaches the limit of Retention Money (if any) stated **in the Special Conditions of Contract**;

d) any amounts to be added for the advance payment and (if more than one instalment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment];

e) any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works];

f) any other additions or deductions which may have become due under the Contractor otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and

g) the deduction of amounts certified in all previous Payment Certificates.

14.4 Schedule of Payments

14.4.1 If the Contract includes a schedule of payments specifying the instalments in which the Contract Price will be paid, then unless otherwise stated in this schedule:

a) The instalments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates];

b) Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and

c) If these instalments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less or more than that on which this schedule of payments was based, then the Architect may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised instalments, which shall take account of the extent to which progress is less or more than that on which the instalments were previously based.

14.4.2 If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.

14.5 Plant and Materials intended for the Works

14.5.1 If this Sub-Clause applies, Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3, (i) an amount for Plant and Materials which have been sent to the Site for incorporation in the Permanent Works, and (ii) a reduction when the contract value of such Plant and Materials is included as part of the Permanent Works under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates].

14.5.2 If the lists referred to in sub-paragraphs (b)(i) or (c)(i) below are not included in the Schedules, this Sub-Clause shall not apply.

14.5.3 The Architect shall determine and certify each addition if the following conditions are satisfied:

a) The Contractor has:
   i) kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection, and
   (ii) submitted statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence;

   and either:

b) the relevant Plant and Materials:
   i) are those listed in the Schedules for payment when shipped,
   ii) have been shipped to Kenya, enroute to the Site, in accordance with the Contract; and
   iii) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Architect together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Procuring Entity in amounts and currencies equal to the amount due under this Sub-Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration; or

c) the relevant Plant and Materials:
   i) are those listed in the Schedules for payment when delivered to the Site, and
   ii) have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration and appear to be in accordance with the Contract.

14.5.4 The additional amount to be certified shall be the equivalent of eighty percent (80%) of the Architect determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials.

14.5.5 The currencies for this additional amount shall be the same as those in which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the relevant Plant and Materials.

14.6 Issue of Interim Payment Certificates

14.6.1 No amount will be certified or paid until the Procuring Entity has received and approved the Performance Security. Thereafter, the Architect shall, within 30 days after receiving a Statement and supporting documents, deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate which shall state the amount which the Architect fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Architect on the Statement if any.

14.6.2 However, prior to issuing the Taking-Over Certificate for the Works, the Architect shall not be bound to issue an Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated **in the Special Conditions**

of Contract. In this event, the Architect shall give notice to the Contractor accordingly.

14.6.3 An Interim Payment Certificate shall not be withheld for any other reason, although:

a) if anything supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or

b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

4.6.4 The Architect may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Architect acceptance, approval, consent or satisfaction.

14.7 Payment

14.7.1 The Procuring Entity shall pay to the Contractor:

a) The advance payment shall be paid within 60 days after signing of the contract by both parties or within 60 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub- Clause 14.2 [Advance Payment], whichever is later;

b) The amount certified in each Interim Payment Certificate within 60 days after the Architect Issues Interim Payment Certificate; and

c) the amount certified in the Final Payment Certificate within 60 days after the Procuring Entity Issues Interim Payment Certificate; or after determination of any disputed amount shown in the Final Statement in accordance with Sub-Clause 16.2 [Termination by Contractor].

14.7.2 Payment of the amount due in each currency shall be made into the bank account, nominated by the Contractor, in the payment country (forth is currency) specified in the Contract.

14.8 Delayed Payment

14.8.1 If the Contractor does not receive payment in accordance with Sub-Clause 14.7 [Payment], the Contractor shall be entitled to receive financing charges (simple interest) monthly on the amount unpaid during the period of delay. This period shall be deemed to commence on the date for payment specified in Sub-Clause 14.7 [Payment], irrespective (in the case of its sub-paragraph (b) of the date on which any Interim Payment Certificate is issued.

14.8.2 These financing charges shall be calculated at the annual rate of three percentage points above the mean rate of the Central Bank in Kenya of the currency of payment, or if not available, the interbank offered rate, and shall be paid in such currency.

14.8.3 The Contractor shall be entitled to this payment without formal notice and certification, and without prejudice to any other right or remedy.

14.9 Payment of Retention Money

14.9.1 When the Taking-Over Certificate has been issued for the Works, the first half of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate is issued for a Section or part of the Works, a proportion of the Retention Money shall be certified and paid. This proportion shall behalf (50%) of the proportion calculated by dividing the estimated contract value of the Section or part, by the estimated final Contract Price.

14.9.2 Promptly after the latest of the expiry dates of the Defects Liability Periods, the outstanding balance of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate was issued for a Section, a proportion of the second half of the Retention Money shall be

certified and paid promptly after the expiry date of the Defects Notification Period for the Section. This proportion shall behalf (50%) of the proportion calculated by dividing the estimated contract value of the Section by the estimated final Contract Price.

14.9.3 However, if any work remains to be executed under Clause 11 [Defects Liability], the Architects hall be entitled to withhold certification of the estimated cost of this work until it has been executed.

14.9.4 When calculating these proportions, no account shall be taken of any adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause13.8 [Adjustments for Changes in Cost].

14.9.5 Unless otherwise stated in the Special Conditions, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a Retention Money Security guarantee, in the form annexed to the Special Conditions or in another form approved by the Procuring Entity and issued by a reputable bank or financial institution selected by the Contractor, for the second half of the Retention Money.

14.9.6 The Procuring Entity shall return the Retention Money Security guarantee to the Contractor within 14 days after receiving a copy of the Completion Certificate.

14.10 Statement at Completion

14.10.1 Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Architect three copies of a Statement at completion with supporting documents, in accordance with Sub- Clause 14.3 [Application for Interim Payment Certificates], showing:

a) the value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works,
b) any further sums which the Contractor considers to be due, and
c) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion.

14.10.2 The Architect shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].

14.11 Application for Final Payment Certificate

14.11.1 Within 60 days after receiving the Completion Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement with supporting documents showing in detail in a form approved by the Engineer:

a) The value of all work done in accordance with the Contract, and
b) Any further sums which the Contractor considers to be due to him under the Contractor otherwise.

14.11.2 If the Architect disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Architect may reasonably require within 30 days from receipt of said draft and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Architect the final statement as agreed. This agreed statement is referred to in these Conditions as the “Final Statement”.

14.11.3 However, if, following discussions between the Architect and the Contractor and any changes to the draft final statement which are agreed, it becomes evident that a dispute exists, the Architect shall deliver to the Procuring Entity (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 20.4 [Obtaining Dispute Board's Decision] or Sub-Clause 20.5 [Amicable Settlement], the Contractor shall then prepare and submit to the Procuring Entity (with a copy to the Engineer) a Final Statement.

14.12 Discharge

When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the outstanding balance of this total, in which event the discharge shall be effective on such date.

14.13 Issue of Final Payment Certificate

14.13.1 Within 30days after receiving the Final Statement and discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall deliver, to the Procuring Entity and to the Contractor, the Final Payment Certificate which shall state:

a) The amount which he fairly determines is finally due, and
b) After giving credit to the Procuring Entity for all amounts previously paid by the Procuring Entity and for all sums to which the Procuring Entity is entitled, the balance (if any) due from the Procuring Entity to the Contractor or from the Contractor to the Procuring Entity, as the case may be.

14.13.2 If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall request the Contractor to do so. If the Contractor fails to submit an application within a period of 30 days, the Architect shall issue the Final Payment Certificate for such amount as he fairly determines to be due.

14.14 Cessation of Procuring Entity's Liability

14.14.1 The Procuring Entity shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:

a) in the Final Statement and also,
b) (except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Statement at completion described in Sub-Clause 14.10 [Statement at Completion].

14.14.2 However, this Sub-Clause shall not limit the Procuring Entity's liability under his indemnification obligations, or the Procuring Entity's liability in any case of fraud, deliberate default or reckless misconduct by the Procuring Entity.

14.15 Currencies of Payment

The Contract Price shall be paid in the currency or currencies named in the Schedule of Payment Currencies. If more than one currency is so named, payments shall be made as follows:

a) If the Accepted Contract Amount was expressed in Local Currency only:
   i) the proportions or amounts of the Local and Foreign Currencies, and the fixed rates of exchange to be used for calculating the payments, shall be as stated in the Schedule of Payment Currencies, except as otherwise agreed by both Parties;
   ii) payments and deductions under Sub-Clause 13.5 [Provisional Sums] and Sub-Clause 13.7 [Adjustments for Changes in Legislation] shall be made in the applicable currencies and proportions; and
   iii) other payments and deductions under sub-paragraphs (a) to (d) of Sub-Clause 14.3 [Application for Interim Payment Certificates] shall be made in the currencies and proportions specified in sub- paragraph (a) (i) above;
b) payment of the damages specified in the Special Conditions of Contract, shall be made in the currencies and proportions specified in the Schedule of Payment Currencies;
c) other payments to the Procuring Entity by the Contractor shall be made in the currency in which the sum was expended by the Procuring Entity, or in such currency as may be agreed by both

Parties;

d) if any amount payable by the Contractor to the Procuring Entity in a particular currency exceeds the sum payable by the Procuring Entity to the Contractor in that currency, the Procuring Entity may recover the balance of this amount from the sums otherwise payable to the Contractor in other currencies; and

e) if no rates of exchange are stated in the Schedule of Payment Currencies, they shall be those prevailing on the Base Date and determined by the Central Bank of Kenya.

15. TERMINATION BY PROCURING ENTITY

15.1 Notice to correct any defects or failures

If the Contractor fails to carry out any obligation under the Contract, the Architect may by notice require the Contractor to make good the failure and to remedy it within 30 days.

15.2 Termination by Procuring Entity

15.2.1 The Procuring Entity shall be entitled to terminate the Contract if the Contractor breaches the contract based on following circumstances which shall include but not limited to:

a) fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct],

b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,

c) without reasonable excuse fails:

i) to proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or

ii) to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 30 days after receiving it,

d) subcontracts the major part or whole of the Works or assigns the Contract without the consent of the Procuring Entity,

e) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events, or

f) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an induce mentor reward:

i) for doing or for bearing to do any action in relation to the Contract, or

ii) for showing or for bearing to show favor or disfavor to any person in relation to the Contract, or

iii) if any of the Contractor's Personnel, agents or Subcontractors gives or offers to give (directly or indirectly) to any person any such induce mentor reward as is described in this sub-paragraph (f). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination, or

g) If the contract or repeatedly fails to remedy delivers defective work,

h) based on reasonable evidence, has engaged in Fraud and Corruption as defined in paragraph 2.2 of the Appendix B to these General Conditions, in competing for or in executing the Contract.

15.2.2 In any of these events or circumstances, the Procuring Entity may, upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub-paragraph (e) or (f) or (g) or (h), the Procuring Entity may by notice terminate the Contract immediately.

15.2.3 The Procuring Entity's election to terminate the Contract shall not prejudice any other rights of the Procuring Entity, under the Contractor otherwise.

15.2.4 The Contractor shall then leave the Site and deliver any required Goods, all Contractor's Documents, and other design documents made by or for him, to the Engineer. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice (i) for the

assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.

15.2.5 After termination, the Procuring Entity may complete the Works and/ or arrange for any other entities to do so. The Procuring Entity and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor.

15.2.6 The Procuring Entity shall then give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall promptly arrange their removal, at the risk and cost of the Contractor. However, if by this time the Contractor has failed to make a payment due to the Procuring Entity, these items may be sold by the Procuring Entity in order to recover this payment. Any balance of the proceeds shall then be paid to the Contractor.

15.3 Valuation at Date of Termination

As soon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor for work executed in accordance with the Contract.

15.4 Payment after Termination

After a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Procuring Entity may:

a) Proceed in accordance with Sub-Clause 2.5 [Procuring Entity's Claims],
b) withhold further payments to the Contractor until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Procuring Entity, have been established, and/ or

c) recover from the Contractor any losses and damages incurred by the Procuring Entity and any extra costs of completing the Works, after allowing for any sum due to the Contractor under Sub-Clause 15.3 [Valuation at Date of Termination]. After recovering any such losses, damages and extra costs, the Procuring Entity shall pay any balance to the Contractor.

15.5 Procuring Entity's Entitlement to Termination for Convenience

The Procuring Entity shall be entitled to terminate the Contract, at any time at the Procuring Entity's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 30 days after the later of the dates on which the Contractor receives this notice or the Procuring Entity returns the Performance Security. The Procuring Entity shall not terminate the Contract under this Sub-Clause in order to execute the Works itself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2 [Termination by Contractor]. After this termination, the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment] and shall be paid in accordance with Sub-Clause 16.4 [Payment on Termination].

15.6 Fraud and Corruption

The Contractor shall ensure compliance with the Kenya Government's Anti-Corruption Laws and its prevailing sanctions.

15.7 Corrupt gifts and payments of commission

15.7.1 The Contractor shall not;

a) Offer or give or agree to give to any person in the service of the Procuring Entity any gift or consideration of any kind as an inducement or reward for doing or for bearing to door for having done or for borne to do any act in relation to the obtaining or execution of this or any other Contract for the Procuring Entity or for showing or for bearing to show favor or disfavor to any person in relation to this or any other contract for the Procuring Entity.
b) Enter into this or any other contract with the Procuring Entity in connection with which commission

has been paid or agreed to be paid by him or on his behalf or to his knowledge, unless before the Contract is made particulars of any such commission and of the terms and conditions of any agreement for the payment there of have been disclosed in writing to the Procuring Entity.

15.7.2 Any breach of this Condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the provisions of the Public Procurement and Asset Disposal Act (2015) and the Anti-Corruption and Economic Crimes Act (2003) of the Laws of Kenya.

16. SUSPENSION AND TERMINATION BY CONTRACTOR

16.1 Contractor's Entitlement to Suspend Work

16.1.1 If the Architect fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates] or Sub-Clause 14.7 [Payment],or not receiving instructions that would enable the contractor to proceed with the works in accordance with the program, the Contractor may, after giving not less than 30 days' notice to the Procuring Entity, suspend work (or reduce the rate of work) unless and until the Contractor has received the Payment Certificate, reasonable evidence or payment, as the case may be and as described in the notice.

16.1.2 The Contractor's action shall not prejudice his entitlements to financing charges under Sub-Clause 14.8 [Delayed Payment] and to termination under Sub-Clause 16.2 [Termination by Contractor].

16.1.3 If the Contractor subsequently receives such Payment Certificate, evidence or payment (as described in the relevant Sub-Clause and in the above notice) before giving a notice of termination, the Contractor shall resume normal working as soon as is reasonably practicable.

16.1.4 If the Contractor suffers delay and/or incurs Cost as a result of suspending work (or reducing the rate of work) in accordance with this Sub-Clause, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

16.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

16.3 Termination by Contractor

16.3.1 The Contractor shall be entitled to terminate the Contract if:

a) the Architect fails, within 60 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate,
b) the Contractor does not receive the amount due under an Interim Payment Certificate within 90 days after the expiry of the time stated in Sub-Clause1 4.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Procuring Entity's Claims]),
c) the Procuring Entity substantially fails to perform his obligations under the Contract in such manner as to materially and adversely affect the economic balance of the Contract and/or the ability of the Contractor to perform the Contract,
d) a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension], or
e) the Procuring Entity becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events.
f) the Contractor does not receive the Architect instruction recording the agreement of both Parties on the fulfilment of the conditions for the Commencement of Works under Sub-Clause 8.1 [Commencement of Works].

16.3.2 In any of these events or circumstances, the Contractor may, upon giving 14 days' notice to the Procuring Entity, terminate the Contract. However, in the case of sub-paragraph (f) or (g), the Contractor may by notice terminate the Contract immediately.

16.3.3 The Contractor's election to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contractor otherwise.

16.4 Cessation of Work and Removal of Contractor's Equipment

After a notice of termination under Sub-Clause 15.5 [Procuring Entity's Entitlement to Termination for Convenience], Sub-Clause 16.2 [Termination by Contractor] or Sub-Clause 19.6 [Optional Termination, Payment and Release] has taken effect, the Contractor shall promptly:

a) cease all further work, except for such work as may have been instructed by the Architect for the protection of life or property or for the safety of the Works,
b) hand over Contractor's Documents, Plant, Materials and other work, for which the Contractor has received payment, and
c) remove all other Goods from the Site, except as necessary for safety, and leave the Site.

16.5 Payment on Termination

After a notice of termination under Sub-Clause 16.2 [Termination by Contractor] has taken effect, the Procuring Entity shall promptly:

a) Return the Performance Security to the Contractor,
b) pay the Contractor in accordance with Sub-Clause 19.6 [Optional Termination, Payment and Release], and
c) pay to the Contractor the amount of any loss or damage sustained by the Contractor as a result of this termination.

17. RISK AND RESPONSIBILITY

17.1 Indemnities

17.1.1 The Contractor shall indemnify and hold harmless the Procuring Entity, the Procuring Entity's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

a) Bodily injury, sickness, disease or death, of any person what so ever arising out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, willful actor breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, or any of their respective agents, and
b) damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, willful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.1.2 The Procuring Entity shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, willful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, or any of their respective agents, and (2) the matters for which liability may be excluded from insurance cover, as described in sub-paragraphs (d)(i), (ii) and (iii) of Sub-Clause 18.3 [Insurance Against Injury to Persons and Damage to Property], unless and to the extent that any such damage or loss is attributable to any negligence, willful actor breach of the Contract by the contractor, the contractor's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.2 Contractor's Care of the Works

17.2.1 The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 10.1 [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Procuring Entity. If a Taking-Over Certificate is issued (or is so deemed to be issued) for any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Procuring Entity.

17.2.2 After responsibility has accordingly passed to the Procuring Entity, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.

17.2.3 If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractor is responsible for their care, from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform with the Contract.

17.2.4 The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.

17.3 Procuring Entity's Risks

The risks referred to in Sub-Clause 17.4 [Consequences of Procuring Entity's Risks] below, in so far as they directly affect the execution of the Works in Kenya, are:

a) War hostilities (whether war be declared or not),
b) rebellion, riot, commotion or disorder, terrorism, sabotage by persons other than the Contractor's Personnel,
c) explosive materials, ionizing gradiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such explosives, radiation or radio-activity,
d) pressure waves caused by aircraft or other aerial devices traveling at sonic or supersonic speeds,
e) use or occupation by the Procuring Entity of any part of the Permanent Works, except as may be specified in the Contract,
f) design of any part of the Works by the Procuring Entity's Personnel or by others for whom the Procuring Entity is responsible, and
g) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventive precautions.

17.4 Consequences of Procuring Entity's Risks

17.4.1 If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Architect and shall rectify this loss or damage to the extent required by the Engineer.

17.4.2 If the Contractor suffers delay and/ or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

(a) An extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
(b) Payment of any such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (e)and
(g) of Sub-Clause 17.3 [Procuring Entity's Risks], Accrued Costs shall be payable.

17.4.3 After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

17.5 Intellectual and Industrial Property Rights

17.5.1 In this Sub-Clause, "infringement" shall refer to an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and "claim" shall refer to a claim (or proceedings pursuing a claim) alleging an infringement.

17.5.2 Whenever a Party does not give notice to the other Party of any claim within 30 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.

17.5.3 The Procuring Entity shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

a) An un avoidable result of the Contractor's compliance with the Contract, or
b) A result of any Works being used by the Procuring Entity:
   i) for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or
   ii) in conjunction with anything not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.

17.5.4 The Contractor shall indemnify and hold the Procuring Entity harmless again stand from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.

17.5.5 If a Party is entitled to be indemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.

17.5.6 For operation and maintenance of any plan to equipment installed, the contractor shall grant a non-exclusive and non-transferable license to the Procuring Entity under the patent, utility models ,or other intellectual rights owned by the contractor or a third party from whom the contract or has received the rights to grant sub-licenses and shall also grant to the Procuring Entity a non-exclusive and non-transferable rights (without the rights to sub-license) to use the knowhow and other technical information disclosed to the contract or under the contract. Nothing contained here-in shall be construed as transferring ownership of any patent, utility model, trademark, design, copy right, know-how or other intellectual rights from the contractor or any other third party to the Procuring Entity.

17.6 Limitation of Liability

17.6.1 Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contractor for any in director consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than as specifically provided in Sub-Clause 8.7 [Delay Damages]; Sub-Clause 11.2 [Cost of Remedying Defects]; Sub-Clause 15.4 [Payment after Termination]; Sub-Clause 16.4 [Payment on Termination]; Sub-Clause 17.1 [Indemnities]; Sub-Clause 17.4(b) [Consequences of Procuring Entity's Risks] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights].

17.6.2 The total liability of the Contractor to the Procuring Entity, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Procuring Entity's Equipment and Free- Issue Materials], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount, as stated in **the Special Conditions of Contract**, or (if such multiplier or other sum is not so stated) the Accepted Contract Amount.

17.6.3 This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct

by the defaulting Party.

17.7 Use of Procuring Entity's Accommodation/Facilities

17.7.1 The Contractor shall take full responsibility for the care of the Procuring Entity provided accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).

17.7.2 If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Procuring Entity is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

18. INSURANCE

18.1 General Requirements for Insurances

18.1.1 In this Clause, "insuring Party" means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.

18.1.2 Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms approved by the Procuring Entity. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

18.1.3 Wherever the Procuring Entity is the insuring Party, each insurance shall be effected with insurers and in terms acceptable to the Contractor. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

18.1.4 If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Procuring Entity shall act for Procuring Entity's Personnel, (ii) additional joint insured shall not be entitled to receive payments directly from the insurer or to have any other direct dealings with the insurer, and (iii) the insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.

18.1.5 Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.

18.1.6 The relevant insuring Party shall, within the respective periods stated in **the Special Conditions of Contract** (calculated from the Commencement Date), submit to the other Party:

a) Evidence that the insurances described in this Clause have been affected, and
b) copies of the policies for the insurances described in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment] and Sub-Clause 18.3 [Insurance against Injury to Persons and Damage to Property].

18.1.7 When each premium is paid, the insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer.

18.1.8 Each Party shall comply with the conditions stipulated in each of the insurance policies. The insuring Party shall keep the insurers informed of any relevant changes to the execution of the Works and ensure that insurance is maintained in accordance with this Clause.

18.1.9 Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or at tempts to make) any alteration, the Party first notified by

the insurer shall promptly give notice to the other Party.

18.1.10 If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contractor fails to provide satisfactory evidence and copies of policies in accordance with this Sub- Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due. The insuring Party shall pay the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.

18.1.11 Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Procuring Entity, under the other terms of the Contractor otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Procuring Entity.

18.1.12 Procuring Entity in accordance with these obligations, liabilities or responsibilities. However, if the insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the Contract, and the other Party neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the insuring Party.

18.1.13 Payments by one Party to the other Party shall be subject to Sub-Clause 2.5 [Procuring Entity's Claims] or Sub- Clause 20.1 [Contractor's Claims], as applicable.

18.1.14 The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 18) with insurers from any eligible source country.

18.2 Insurance for Works and Contractor's Equipment

18.2.1 The insuring Party shall insure the Works, Plant, Materials and Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit. This insurance shall be effective from the date by which the evidence is to be submitted under sub-paragraph (a) of Sub-Clause 18.1 [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.

18.2.2 The insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability]).

18.2.3 The insuring Party shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.

18.2.4 Unless otherwise stated in the Special Conditions, insurances under this Sub-Clause:

a) Shall be effected and maintained by the Contractor as insuring Party,

b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated to the Party actually bearing the costs of rectifying the loss or damage,

c) shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks],

d) shall also cover, to the extent specifically required in the tendering documents of the Contract, loss or damage to a part of the Works which is attributable to the use or occupation by the Procuring Entity of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h)of Sub-Clause 17.3 [Procuring Entity's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated **in the Special Conditions** of Contract (if an amount is not so stated, this sub-paragraph (d) shall not apply), and

e) may however exclude loss of, damage to, and reinstatement of:

i) a part of the Works which is in a defective condition due to a defect in its design, materials or

workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below),

ii) apart of the Works which is lost or damaged in order to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship,

iii) apart of the Works which has been taken over by the Procuring Entity, except to the extent that the Contractor is liable for the loss or damage, and

iv) Goods while they are not in Kenya, subject to Sub-Clause 14.5 [Plant and Materials intended for the Works].

18.2.5 If, more than one year after the Base Date, the cover described in sub-paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as insuring Party) give notice to the Procuring Entity, with supporting particulars. The Procuring Entity shall then (i) be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to payment of an amount equivalent to such commercially reasonable terms as the Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover at commercially reasonable terms, to have approved the omission under Sub-Clause 18.1 [General Requirements for Insurances].

18.3 Insurance against Injury to Persons and Damage to Property

18.3.1 The insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 18.4 [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

18.3.2 This insurance shall be for a limit per occurrence of not less than the amount stated in **the Special Conditions of Contract**, with no limit on the number of occurrences. If an amount is not stated in the **Special Conditions of Contract**, this Sub-Clause shall not apply.

18.3.3 Unless otherwise stated in the Special Conditions, the insurances specified in this Sub-Clause:

a) Shall be effected and maintained by the Contractor as insuring Party,

b) shall be in the joint names of the Parties,

c) shall be extended to cover liability for all loss and damage to the Procuring Entity's property (except things insured under Sub-Clause 18.2) arising out of the Contractor's performance of the Contract, and

d) may however exclude liability to the extent that it arises from:

i) the Procuring Entity's right to have the Permanent Works executed on, over, under, in or

ii) through any land, and to occupy this land for the Permanent Works,

iii) damage which is an unavoidable result of the Contractor's obligations to execute the

iv) Works and remedy any defects, and

v) a cause listed in Sub-Clause 17.3 [Procuring Entity's Risks], except to the extent that cover is available at commercially reasonable terms.

18.4 Insurance for Contractor's Personnel

18.4.1 The Contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.

18.4.2 The insurance shall cover the Procuring Entity and the Architect against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Procuring Entity or of the Procuring Entity's Personnel.

18.4.3 The insurance shall be maintained in full force and effect during the whole time that these personnel are

assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

19. FORCE MAJEURE

19.1 Definition of Force Majeure

19.1.1 In this Clause, "Force Majeure" means an exceptional event or circumstance:

a) Which is beyond a Party's control,
b) Which such Party could not reasonably have provided against before entering into the Contract,
c) which, having arisen, such Party could not reasonably have avoided or overcome, and
d) which is not substantially attributable to the other Party.

19.1.2 Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war,
c) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel,
d) munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as maybe attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, and
e) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.

19.2 Notice of Force Majeure

19.2.1 If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.

19.2.2 The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.

19.2.3 Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

19.3 Duty to Minimize Delay

Each Party shall at all times use all reasonable endeavors to minimize any delay in the performance of the Contract as a result of Force Majeure. A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.

19.4 Consequences of Force Majeure

19.4.1 If the Contractor is prevented from performing his substantial obligations under the Contract by Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], and suffers delay and/ or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) if the event or circumstance is of the kind described in sub-paragraphs (i) to (iv) of Sub-Clause 19.1 [Definition of Force Majeure] and, in sub-paragraphs (ii) to (iv), occurs in Kenya, payment of any such Cost, including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in Sub- Clause18.2 [Insurance for Works and Contractor's Equipment].

19.4.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

19.5 Force Majeure Affecting Subcontractor

If any Subcontractor is entitled under any contract or agreement relating to the Works to relief from force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.

19.6 Optional Termination, Payment and Release

19.6.1 If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].

19.6.2 Upon such termination, the Architect shall determine the value of the work done and issue a Payment Certificate which shall include:

a) The amounts payable for any work carried out for which a price is stated in the Contract;

b) the Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Procuring Entity when paid for by the Procuring Entity, and the Contractor shall place the same at the Procuring Entity's disposal;

c) other Cost or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;

d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and

e) the Cost of repatriation of the Contractor's staff and lab or employed wholly in connection with the Works at the date of termination.

19.7 Release from Performance

Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the Parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other Party of such event or circumstance:

a) The Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and

b) The sum payable by the Procuring Entity to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.

20. SETTLEMENT OF CLAIMS AND DISPUTES

20.1 Contractor's Claims

20.1.1 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 Engineer, 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.

20.1.2 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.

20.1.3 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.

20.1.4 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 Engineer. Without admitting the Procuring Entity's liability, the Architect 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 Architect to inspect all these records and shall (if instructed) submit copies to the Engineer.

20.1.5 Within 42days 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 Engineer, the Contractor shall send to the Architect 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 Architect 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 Engineer.

20.1.6 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 Architect and approved by the Contractor, the Architect 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.

20.1.7 Within the above defined period of 42 days, the Architect 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.

20.1.8 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.

20.1.9 If the Architect does not respond within the time frame defined in this Clause, either Party may consider that the claim is rejected by the Architect and any of the Parties may refer the dispute for amicable settlement in accordance with Clause 20.3.

20.1.10 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 20.3.

20.2 Procuring Entity's Claims

20.2.1 If the Procuring Entity considers itself to be entitled to any payment under any Clause of these Conditions or otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Procuring Entity or the Architect shall give notice and particulars to the Contractor. However, notice is not required for payments due under Sub-Clause 4.19 [Electricity, Water and Gas], under Sub-Clause 4.20 [Procuring Entity's Equipment and Free-Issue Materials], or for other services requested by the Contractor.

20.2.2 The notice shall be given as soon as practicable and no longer than 30 days after the Procuring Entity became aware, or should have become aware, of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.

20.2.3 The particulars shall specify the Clause or other basis of the claim and shall include substantiation of the amount and/or extension to which the Procuring Entity considers itself to be entitled in connection with the Contract. The Architect shall then proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the amount (if any) which the Procuring Entity is entitled to be paid by the Contractor, and/ or (ii) the extension (if any) of the Defects Notification Period in accordance with Sub-Clause 11.3 [Extension of Defects Notification Period].

20.2.4 This amount may be included as a deduction in the Contract Price and Payment Certificates. The Procuring Entity shall only be entitled to set off against or make any deduction from an amount certified in a Payment Certificate, or to otherwise claim against the Contractor, in accordance with this Sub-Clause.

20.3 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 20.1 above should move to commence arbitration after 60 days from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

20.4 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) Whether or not the issue of an instruction by the Architect is empowered by these Conditions.
b) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
c) Any dispute arising in respect risks arising from matters referred to in Clause 17.3 and Clause 19.
e) 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.

20.5 Arbitration

20.5.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 20.3 shall be finally settled by arbitration.

20.5.2 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.

20.5.3 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.

20.5.4 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 a ward 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 require mentor notice had been given.

20.5.5 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Architect from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

20.5.6 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.

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

20.5.8 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.

20.6 Arbitration with National Contractors

20.6.1 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

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

20.7 Arbitration with Foreign Contractors

20.7.1 Arbitration with foreign contractors shall be conducted in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or with proceedings administered by the International Chamber of Commerce (ICC) and conducted under the ICC Rules of Arbitration; by one or more arbitrators appointed in accordance with said arbitration rules.

20.7.2 The place of arbitration shall be a location specified in the **SCC;** and the arbitration shall be conducted in the language for communications defined in Sub-Clause1.4 [Law and Language].

20.8 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.

20.9 Failure to Comply with Arbitrator's Decision

20.9.1 The award of such Arbitrator shall be final and binding up on the parties.

20.9.2 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.

20.10 Contract operations to continue

Notwithstanding any reference to arbitration herein,

1.1.1 the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and

1.1.2 the Procuring Entity shall pay the Contractor any monies due the Contractor.

Section IX - Special Conditions of Contract

The following Special Conditions shall supplement the GCC. Whenever there is a conflict, the provisions here in shall prevail over those in the GCC.

Conditions	Sub-Clause	Data
Part A - Contract Data		
Procuring Entity's name and address	Heading	*The Deputy Director, Procurement Division* *Central Bank of Kenya* *P.O. Box 60000 – 00200 Nairobi* *TELEPHONE +254202861000/2860000* *Email:* supplies@centralbank.go.ke
Name and Reference No. of the Contract	Heading and 1.1	*Proposed Construction of Eldoret Branch for the Central Bank of Kenya (CBK).* *Tender No. CBK/072/2026-2027*
Priority of Documents	1.5	For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence: a) Contract agreement form; b) Tender Form; c) Acceptance letter d) Notification of award e) Notification of intention to enter into a contract f) Special Conditions g) The General Conditions of Contract h) Technical Specifications/information i) Price Schedule or bill of quantities submitted by Contractor j) Drawings k) Any other Schedule
Engineers Name and address	Heading and 3.1.1	*Appointed Consultant*
Contractor's Representative's name	4.3.1	*[insert the name of the Contractor's Representative agreed by the Procuring Entity prior to Contract signature]*
Key Personnel names	16.9.1	*[insert the name of each Key Personnel agreed by the Procuring Entity prior to Contract signature]*
Time for Completion	1.1.	_____days *If Sections are to be used, refer to Table: Summary of Sections below*
Defects Notification Period	1.1	365 days
Defects Liability Period	1.1	365 days
Sections	1.1	*If Sections are to be used, refer to Table: Summary of Sections below*
Electronic transmission systems	1.3	Email is allowed.
Time for the Parties entering into a Contract Agreement	1.6	Within 30 days
Confidential Details	1.12	Add; **1.12.3. Confidentiality**

Conditions	Sub-Clause	Data
		i. The Bank acknowledges the confidential nature of any information which may be disclosed to or otherwise come into the possession of the service provider, or its employees, in any manner directly or indirectly arising from the conclusion or performance of this Contract. ii. The Contractor shall not divulge such information to any person nor permit such to be communicated among its employees, agents or sub-contractors save to the extent that is necessary for the performance of this Contract, without The Bank's prior written consent. The Contractor shall obtain from any employee, agent or sub-contractor to whom any such information is to be disclosed or who may in any manner obtain access to such information, an appropriate undertaking in terms no less binding upon such person as the terms of this clause. iii. Confidential information means all information (whether commercial, financial, technical or otherwise) relating to the disclosing party, its sub-contractors, other customers and Service providers disclosed to or otherwise obtained by the recipient party under or in connection with this Contract and which is designated as being confidential or which is by its nature clearly confidential. iv. This obligation in this clause shall not apply to any Confidential Information: • In the recipient's possession (with full right to disclose) before receiving it; or Which is, or becomes, public knowledge other than by breach of this clause; or • Is independently developed by the recipient without access to or use of the Confidential information; or • Is lawfully received from a third party with full right to disclose. v. This Confidentiality clause shall continue in force notwithstanding the termination of this Contract for any reason. **1.12.4. Data Protection** a. The Contractor acknowledges that this Agreement may involve the processing of personal data. The Parties shall handle such personal data in accordance with the Data Protection Act (No. 4 of 2019 Laws of Kenya) and any applicable laws, regulations, and other legal requirements relating to; i. privacy and data security; and ii. the use, collection, retention, storage, security,

Conditions	Sub-Clause	Data
		disclosure, transfer, disposal, and other processing of any personal data. b. The Parties shall process personal data in accordance with the Data Processing Agreement between the Parties as provided in Appendix B ["Data Processing Agreement"]. c. The Parties agree to be bound by the terms of the Data Processing Agreement in connection with the processing of personal data under this Agreement. d. Without prejudice to any clauses in this Agreement, this Clause shall survive termination of this Agreement.
Commencement Date	8.1.1	To be agreed upon
Time for access to the Site	2.1.1	To be agreed upon
Architect Duties and Authority	3.1.6 (b) (ii)	Variations resulting in an increase of the Accepted Contract Amount in excess of__2__% shall require approval of the Procuring Entity.
Performance Security	4.2.1	The performance security will be in the form of a GUARANTEE FROM CONTRACTOR'S BANK in the amount of 10% of the Accepted Contract Amount and in the same currency (ies) of the Accepted Contract Amount.
Sub-contractors	4.4.1	Add; **Assignment, Subcontracting and Re-Structuring Clause** i. Neither Party may assign or otherwise dispose of this Agreement or any interest hereunder except with the prior written consent of the other. Further, in the event that the Procuring Entity wishes to assign this Agreement to any Third Party, the Contractor agrees that it shall not unreasonably withhold or delay its consent to such assignment or novation and that it shall only be entitled to recover from the Bank any reasonable legal costs incurred by it as a direct result of such assignment or novation. ii. The Contractor may not subcontract the performance of its obligations under this Agreement without the Project Manager's prior written consent. Where the Project Manager consents to a sub-contracting the Contractor will remain responsible for all the acts and omissions of the subcontractors as fully as if they were the acts and omissions of the Contractor or its employees or agents. The Contractor will be The Procuring Entity's point of contact for the Services. The Contractor shall be liable for all taxes, expenses, costs and liabilities

Conditions	Sub-Clause	Data
		arising as a result of any subcontracting of the Services.
Normal working hours	6.5	Subject to statutory regulations
Delay damages for the Works	8.7 & 14.15(b)	0.01 % of the Contract Price per day.
Maximum amount of delay damages	8.7.1	____5__% of the final Contract Price.
Provisional Sums	13.6. (b)(ii)	*[If there are Provisional Sums, insert a percentage for adjustment of Provisional Sums]* ___10___%
Adjustments for Changes in Cost	13.9	Period "n" applicable to the adjustment multiplier "Pn": _____ *[Insert the period if different from one (1) month; if period "n" is one (1) month, insert "not applicable"]* ***12 months after signing of the contract***
Total advance payment	14.2.1	To be agreed upon
Repayment amortization rate of advance payment	14.2.5 (a)	____20___% To be agreed upon
	14.2.5 (b)	____80___% To be agreed upon
Percentage of Retention	14.3.2 (c)	____10___%
Limit of Retention Money	14.3.2 (c)	____5___% of the Accepted Contract Amount
Plant and Materials	14.5.3(b)(i)	If Sub-Clause 14.5 applies: Plant and Materials for payment Free on Board _____ *[list]. N/A*
	14.5.3(c)(i)	Plant and Materials for payment when delivered to the Site _____ *[list]. N/A*
Minimum Amount of Interim Payment Certificates	14.6.2	_____% of the Accepted Contract Amount. N/A
Publishing source of commercial interest rates for financial charges in case of delayed payment	14.8	Specify _____% rate per month of delayed payment. Prevailing Central Bank of Kenya Rate
Payment	14.7.1 (b) & (c)	120 Days
Maximum total liability of the Contractor to the Procuring Entity	17.6.2	*[Select one of the two options below as appropriate]* The product of_____ *[insert a multiplier less or greater than one]* times the Accepted Contract Amount, *or* _____ *[insert amount of the maximum total liability] As per applicable government regulations*
Periods for submission of insurance: a. evidence of insurance. b. relevant policies	18.1.6	*[Insert period for submission of evidence of insurance and policy. Period may be from 14 days to 30days.]* ____30_days ___30__days
Maximum amount of deductibles for insurance of the Procuring Entity's risks	18.2.4 (d)	*[Insert maximum amount of deductibles]* *As per applicable government regulations*
Minimum amount of third-party insurance	18.3.2	*[Insert amount of third-party insurance]* *As per applicable government regulations*

Conditions	Sub-Clause	Data
Duty to Minimize Delay	19.3	Add; Business Continuity: a. The Contractor shall maintain an up-to-date Business Continuity Plan (BCP) and Disaster Recovery Plan (DRP) to ensure the continued performance of its obligations under this Contract. These plans shall be reviewed and tested regularly to ensure their effectiveness in mitigating risks and minimizing disruptions. b. In the event of a material service disruption, the Provider shall notify the Project Manager **within eight (8) hours** of becoming aware of the disruption. The notification shall include: • A description of the disruption and its potential impact; • The estimated timeframe for service restoration; and • Regular updates on the recovery progress until full resolution is achieved
Excusable Delays and Force Majeure	19.8	Add clause 19.8 - If the Contractor is delayed by a Force Majeure event beyond the control of the Parties, the Contractor shall promptly notify the Procuring entity who will fairly determine contractor's entitlement. Force Majeure shall not automatically give rise to claim for additional payment, compensation, loss and expense, or damages, except where unavoidable costs are demonstrated and justified under the circumstances.
The place of arbitration	20.7.2	*Insert City and Country* *Nairobi Center for International Arbitration, Nairobi, Kenya.*

SECTION X - CONTRACT FORMS

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

FORM NO. 2 – REQUEST FOR REVIEW

FORM No. 3-LETTEROF AWARD

FORM No. 4 - CONTRACT AGREEMENT

FORM No. 5 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee]

FORM No. 6- PERFORMANCE SECURITY [Option 2– Performance Bond]

FORM No. 7 - ADVANCE PAYMENT SECURITY

FORM No. 8 - RETENTION MONEY SECURITY

FORM No 1: NOTIFICATION OF INTENTION TO AWARD OF CONTRACT

This Notification of Award shall be sent to each Tenderer that submitted a Tender and was not successful. 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 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)* 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 by submitting a Procurement-related Complaint in relation to the decision to award the contracts.

   a) The successful tenderers

   i) Name of successful Tender

   ii) Address of the successful Tender

   _____

   iii) Contract price of the successful Tender Kenya Shillings

   _____

   (in words_____)

   b) The reasons for your tender being unsuccessful are as follows:

c) 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.

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 dead line 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*]
   iii) Agency: [*insert name of Procuring Entity*]
   iv) 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 www.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. <u>Standstill Period</u>

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: _____

FORM NO. 2- REQUEST FOR REVIEW

FORM FOR REVIEW (r.203(1))

PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

APPLICATION NO…….OF……..…20……...

BETWEEN

……...…….APPLICANT

AND

……RESPONDENT (Procuring Entity)

Request for review of the decision of the…… (Name of the Procuring Entity of ……dated the…day of ……20…….in the matter of Tender No……..…of ……..20….. for ..... (Tender description).

REQUEST FOR REVIEW

I/We……,the above named Applicant(s), of address: Physical address…….P. O. Box No……. Tel. No……..Email ……., hereby request the Public Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the following grounds , namely:

1.

2.

By this memorandum, the Applicant requests the Board for an order/orders that:

1.

2.

SIGNED …….(Applicant) Dated on……..day of ……/…20……

FOR OFFICIAL USE ONLY Lodged with the Secretary Public Procurement Administrative Review Board on……day of ……....20….……

SIGNED

Board Secretary

FORM NO 3: LETTER OF AWARD

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 here by accepted by…… *(name of Procuring Entity)*.

You are requested to furnish the Performance Security within 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 4: 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 there in,

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 Notification of Award
   b) the Form 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 here by 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 here by covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects there in, 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 where of the parties here to 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. 5 - 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, here by 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 it self 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. 6- 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**

BOND No.:___

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 Obliged (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 there to, which to the extent here in provided for, are by reference made part here of and are here in after 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 there under, the Surety may promptly remedy the default, or shall promptly:

   a) Complete the Contract in accordance with its terms and conditions; or

   b) 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

   c) 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 here in or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.

6. In testimony whereof, the Contractor has here unto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly at tested by the signature of his legal representative, this day _____of_____20_____.

SIGNED ON_____on behalf of_____

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. 7 - ADVANCE PAYMENT 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 been informed that (hereinafter called "the Contractor") has entered into Contract No. *dated* with the Beneficiary, for the execution of (hereinafter called" the Contract").

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, here by 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. 8 – 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 been informed 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 upto 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])*[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 that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified there in.

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.*

FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM

(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022)

INSTRUCTIONS TO TENDERERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer pursuant to Regulation 13 (2A) and 13 (6) of the Companies (Beneficial Ownership Information) Regulations, 2020. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the legal person (tenderer) or arrangements or a natural person on whose behalf a transaction is conducted, and includes those persons who exercise ultimate effective control over a legal person (Tenderer) or arrangement.

Tender Reference No.:_____[*insert identification no*] Name of the Tender Title/Description:_____*[insert name of the assignment]* to:_____*[insert complete name of Procuring Entity]*

In response to the requirement in your notification of award dated__*[insert date of notification of award]* to furnish additional information on beneficial ownership:_____*[select one option as applicable and delete the options that are not applicable]*

I) We here by provide the following beneficial ownership information.

Details of Beneficial ownership

	Details of all Beneficial Owners		**% of shares a person holds in the company Directly or indirectly**	**% of voting rights a person holds in the company**	**Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer** (Yes / No)	**Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)**
1.	Full Name		Directly---------- % of shares Indirectly---------- % of shares	Directly…….% of voting rights Indirectly----------% of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No---- 2. Is this right held directly or indirectly?: Direct…… Indirect……	1. Exercises significant influence or control over the Company body of the Company (tenderer) Yes -----No---- 2. Is this influence or control exercised directly or indirectly? Direct…….. Indirect……
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					
	Nationality					
	Date of birth *[dd/mm/yyyy]*					
	Postal address					
	Residential address					
	Telephone number					
	Email address					

	Details of all Beneficial Owners		**% of shares a person holds in the company Directly or indirectly**	**% of voting rights a person holds in the company**	**Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer** (Yes / No)	**Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)**
	Occupation or profession					
2.	Full Name		Directly---------- % of shares Indirectly---------- % of shares	Directly…… …….% of voting rights Indirectly---------% of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No---- 2. Is this right held directly or indirectly?: Direct…… … Indirect…… ...	1. Exercises significant influence or control over the Company body of the Company (tenderer**)** Yes -----No---- 2. Is this influence or control exercised directly or indirectly? Direct…….. Indirect……
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					
	Nationality(ies)					
	Date of birth *[dd/mm/yyyy]*					
	Postal address					
	Residential address					
	Telephone number					
	Email address					
	Occupation or profession					
3. **e.t.c**						

II) Am fully aware that beneficial ownership information above shall be reported to the Public Procurement Regulatory Authority together with other details in relation to contract awards and shall be maintained in the Government Portal, published and made publicly available pursuant to Regulation 13(5) of the Companies (Beneficial Ownership Information) Regulations, 2020.(Notwithstanding this paragraph Personally Identifiable Information in line with the Data Protection Act shall not be published or made public). *Note that Personally Identifiable Information (PII) is defined as any information that can be used to distinguish one person from another and can be used to deanonymize previously anonymous data. This information includes National identity card number or Passport number, Personal Identification Number, Date of birth, Residential address, email address and Telephone number.*

III) In determining who meets the threshold of who a beneficial owner is, the Tenderer must consider a natural person who in relation to the company:

(a) holds at least ten percent of the issued shares in the company either directly or indirectly;

(b) exercises at least ten percent of the voting rights in the company either directly or indirectly;

(c) holds a right, directly or indirectly, to appoint or remove a director of the company; or

(d) exercises significant influence or control, directly or indirectly, over the company.

IV) What is stated to herein above is true to the best of my knowledge, information and belief.

Name of the Tenderer: .....[insert complete name of the Tenderer]*_____

*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]*

Designation 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 this ..... [insert date of signing] day of..... [Insert month], [insert year]

Bidder Official Stamp

PART III: BILLS OF QUANTITIES

C2: CBK - Official



PROPOSED CONSTRUCTION OF ELDORET BRANCH

FOR

THE CENTRAL BANK OF KENYA

IN

ELDORET, UASIN GISHU COUNTY

TENDER REF NO : CBK/072/2026-2027

BILLS OF QUANTITIES

NOVEMBER 2026

TABLE OF CONTENTS

	PAGE NO.
BILLS OF QUANTITIES	
1. Preambles, Specifications and Pricing Notes	**1-94**
2. Particular Preliminaries	**PP / 1 - 14**
3. General Preliminaries	**GP / 1 - 23**
4. Vault	**VAULT / 33**
5. Currency Processing Hall	**C.P.H / 36**
6. Offices and Verification	**O.V / 1**
7. Banking Hall	**B.H / 1**
8. Accommodation Building	**A.B / 1**
9. External Works	**EW / 28**
10. Provisional Sums	**P SUMS / 3**
11. Dayworks and Schedule of Rates	**DW-SCH / 9**
12. Electrical Works	**GS-1**
13. Mechanical Works	**MECH-SUMMARY**
14. Grand Summary	**GS / 1**

SPECIFICATIONS FOR BUILDERS' WORK

1. CONTRACTOR'S OBLIGATIONS

1) PRELIMINARIES

The contractor is advised to read and understand all preliminary items.

2) CONTRACTOR'S SUPERINTENDENCE /SITE AGENT

The Contractor shall constantly keep on the works a literate English fluent speaking Agent or Representative, competent and experienced in the kind of work involved, who shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor, directions and instructions from the Engineer Contractor, directions and instructions from the Engineer and such directions and instructions shall be deemed to be given to the Contractor in accordance with conditions of Contract. The Agent shall not be replaced without the specific approval of the Engineer.

3) SUFFICIENCY OF TENDER

The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the Works and the rates and the prices stated in the Bills of Quantities. Rates and prices quoted shall cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the Works.

4) COMPLIANCE TO A PANDEMIC OUTBREAK

Pursuant to the guidelines issued by the Ministry of Health the Contractor shall ensure that all necessary measures with regards to prevention, detection and containment of any pandemic are in place on site throughout the entire construction period. These include, but not limited to, provision of hand washing points with soap and water or approved anti-bacterial hand sanitizers, requirement for the use of masks, social distancing as far as is possible, signages, warnings, inspections and periodical fumigation.

5) TEMPORARY DISPOSAL OF RAIN WATER

The Contractor shall provide and maintain all necessary temporary gutters, downpipes, chutes, drains etc. for conveying rainwater from the buildings. The Contractor shall allow for temporary drainage plumbing and piping for keeping the premises and site free from accumulation of water. The Contractor shall allow for draining flood water out of the site

6) SITE TELEPHONE

The contractor shall provide telephone facilities (fixed or mobile) on site throughout the duration of the contract for use by the project consultants. He shall also maintain the phone in permanent working condition and pay all charges for the duration of the Contract.

7) WATCHING, LIGHTING AND CCTV

The Contractor shall provide at his own risk and cost all watching as necessary to safeguard the works, plants and materials against damage and theft.

8) STAMP DUTY CHARGES

The Contractor shall allow for the payment of all stamp duty charges in connection with the Performance Bond and Contract Agreement.

9) SITE LEVELS

Before commencing work the Contractor must arrange for and agree with the Engineer the existing site levels and similarly establish and the existing site levels

10) SETTING OUT

The contractor shall set out works in accordance with the dimensions and levels shown on the drawings and shall be responsible of the correctness of all dimensions and levels set out by him and he will be required to amend all errors arising from inaccurate setting out at his own cost and expenses. In the event of any error or discrepancy in the dimensions or levels marked on the drawings being discovered, such errors or discrepancies must be reported by the contractor to the Engineer for his immediate attention. No work shall be commenced by the contractor until he has received written instructions from the Engineer to adjust such discrepancies which may be proved, upon receipt of such instructions and no claim for extra expenses or relief from the provisions of the Conditions of the Contract, any discrepancy or error in the dimensions or levels shown on the drawings may be made thereafter.

Before any work is commenced by Sub-Contractors or Specialist firms, dimensions must be checked on the site and/or building and agreed with the Contractor irrespective of the comparable dimensions shown on the drawings. The Contractor shall be responsible for the accuracy of such dimensions.

11) EXISTING PROPERTY AND ADJACENT PROPERTY

The contractor shall take every precaution to avoid damage to all existing and adjacent property including buildings, roads, cables, drains and other services and he will be held responsible for all damages hereto arising from the execution of his contract and he shall make good all such damages when directed at his own expense to the satisfaction of the Engineer . Special attention must be paid to newly constructed site access road

12) TRANSPORT TO AND FROM THE SITE

The contractor shall include in his prices for the transport of materials, workmen etc to and from the site of the proposed works at such hours and by such routes as are permitted by the Authorities.

13) SECURITY OF WORKS

The contractor shall be entirely responsible and shall pay security of all works, stores, materials, plant, personnel etc both his own and sub-contractors and shall also provide all necessary watching, lighting, and other precautions as necessary to ensure the security, the safety and protection of the public.

14) PROGRESS SCHEDULE

The Contractor shall furnish to the Engineer within 14 days of the possession of site a Time progress Chart for approval and display in the site offices showing the time and order in which he proposes to carry out the works within the total construction time stated in the contract. The chart will how in detail the construction time and order in which each section of the work is to be carried out and be sub-divided into trades and tasks. If the contractor proposes sectional completion of the project he must plan this in detail including access roads, and services and this shall be reflected on the chart

15) EXCAVATION

Prices are to include for excavating in all materials met with except Rock as specified. Prices are also to include planking and strutting and for destroying all white ants in the vicinity of the buildings.

Shall be to the widths and depths indicated on the drawings or to such lesser or greater depth as the Project Engineer may deem necessary and so instruct the contractor in order to obtain satisfactory foundations.

STARTING LEVEL

Unless otherwise described the starting level of all excavations has been measured from the level remaining after completion of reduced level excavation, generally taken as the underside of 200 surface strip.

CLASSIFICATION OF EXCAVATED MATERIAL CLASS I ROCK OR HARD MATERIAL

This class shall consist of all materials which cannot be removed except by blasting, by the use of metal wedges and sledge hammers or by ripper with heavy tractor and rear mounted hydraulic single type heavy –duty ripper.

Boulders greater than 0.5 CM; when their nature and size is such that they cannot be removed without recourse to one or more of the methods described above shall also be categorized under class one.

Where the boulders constitute 50% or more of a particular part of the excavation, such part shall be considered as class 1 material throughout.

CLASS 2 NORMAL OR SOFT MATERIAL

This class shall constitute all materials, which can be removed without recourse to the methods described for class I above, and/or class 3 below.

CLASS 3-COMPACTED GRAVEL OR DECOMPOSED ROCK

This class shall constitute of all materials such as consolidated murram gravel decomposed or stratified rock, stone and boulders less than 0.5CM, harder than class 2, but which can be excavated by ripping or which in confined spaces, requires excavation by hand using compressor tools.

EXCAVATION WORK

Excavation work is measured net as before digging and the Contractor must allow for increases in bulk after digging.

FILLING

Filling is measured net after consolidation. Filling obtained from surplus excavated materials is to be free from all weeds, roots, vegetable soil or other unsuitable materials and is to be filled in layers each of not more than 225mm finished thickness. Each layer shall be well wetted and consolidated as described hereafter.

NO BORROW PITS

No borrow will be allowed to be opened on the site.

REMOVAL OF SURPLUS MATERIALS

All surplus excavated material, where so directed, and all rubbish, is to be carried away from the site and the Contractor shall find his own dump and pay all charges.

FOUNDATIONS NOT TO BE COVERED

No excavations or foundations work shall be filled in or covered up until all measurements necessary for the adjustment of variations have been made by the Quantity Surveyor.

HARDCORE FILLING

Hardcore for filling under floors, etc, shall be hard broken quarry waste to the approval of the Project Engineer broken to pass not greater than a 150mm ring or to be 75% of the finished thickness of the layers being compacted whichever is the lesser and graded so that it can be easily and thoroughly compacted by rolling. The filling is to be laid in layers each of a consolidated thickness not exceeding 225mm and well-watered and rolled with a vibrating roller where rolling is impossible, compaction shall be by hand or mechanical tampers.

The top surface of the hardcore shall be leveled or graded to falls as required and blinded with similar material broken to 25mm gauge and surfaced with 50mm layer of stone dust or murram, well-watered and rolled to receive concrete or paving.

16) NOTES CONCERNING MEASUREMENT AND PRICING

The Contractor must allow for all costs incurred during progress of the contract for complying with the provisions concerning the preparation and use of graded mixes.

Prices for concrete shall include for mixing and depositing as described or indicated and for hoisting and depositing at the various levels required throughout the building, and shall also include for forming or hacking a satisfactory key for all faces receiving asphalt and plaster work. Prices for slabs shall also include for leveling off the surface as described under "Compaction" and all temporary formwork to form construction joints at bay edges.

Prices for reinforced concrete shall, in addition, include for filling into, between or on formwork, and thoroughly compacting between and around rods or fabric reinforcement and for forming all additional construction joints between varying mixes. Where described as 'vibrated', prices must include for fully vibrating as described.

Prices for formwork shall include for extra material at joints, extra labour and waste for narrow widths, small quantities, overlaps, passing at angles straight cutting and waste, splayed edges, notchings, etc and for fixing at the various levels including battens, struts, and supports for bolting, wedging, easing, striking and removal. Prices for linear items such as boxings shall include for angles and ends.

Prices for steel rod reinforcement shall include for cutting to lengths and all labour in bending and cranking, forming hooked ends, handling, hoisting and fixing in position and for providing all necessary tying wire and supports. Prices for fabric reinforcement shall include for all straight cutting and waste, handling, hoisting and fixing in position, producing all necessary tying wire supports and all extra material laps.

Prices of all precast concrete shall include for all moulds, finishing as described, handling reinforcement, hoisting and fixing at the required levels, bedding, jointing and pointing in cement and sand (1:4) mortar also for casting or cutting to the exact lengths required and any waste resulting from such cutting.

17) CODE OF PRACTICE

All workmanship, materials, tests and performance in connection with the reinforced concrete work are to be in conformity with the latest edition of the British Standard Code of Practice (C.P. 8110 of 1985 "The Structural Use of Reinforced Concrete in Buildings") where not inconsistent with these Preambles.

18) SUPERVISION

The Contractor whose duty will be to supervise all stages in the preparation and placing of the concrete shall employ a competent person approved by the Engineer. All cubes shall be made and site tests carried out under his direct supervision, in consultation with the Engineer.

19) CONTRACTOR'S PLANT, EQUIPMENT AND CONSTRUCTION PROCEDURES

Not less than 30 days prior to the installation of the Contractor's plant and equipment for processing, handling, transporting, storing and proportioning ingredients, and for mixing, transporting and placing concrete, the Contractor shall submit drawings for approval by the Engineer, showing proposed general plant arrangement, together with a general description of the equipment he proposes to use.

After completion of installation, the operation of the plant and equipment shall be subject to the approval of the Engineer.

Where these Preambles, the Bills of Quantities or the Drawings require specific procedures to be followed, such requirements are not to be construed as prohibiting the use by the Contractor of alternative procedures if it can be demonstrated to the satisfaction of the Engineer that equal results will be obtained by the use of such alternatives.

Approval of plant and equipment or their operation, or of any construction procedure, shall not operate to waive or modify any provision or requirements contained in these Preambles governing the quality of the materials of the finished work.

20) LEVELS AND FOUNDATIONS

The foundations of the works shall be carried down to depths as directed by the Engineer and they must be cut as nearly to the size of the concrete as possible and the vacant spaces between the concrete and the solid ground, except where otherwise shown, must be carefully filled in as directed by the Engineer.

All temporary timbering shall be removed but should any timber be left in or should any other work be done beyond that specified; it will be at the Contractor's own cost.

A. TOLERANCE

All insitu concrete work shall be dimensionally accurate to within the following tolerances: -

.01 between the centerline of principal members columns or beams

+/- 5mm up to 15 metres c/c

+/- 10mm over 15 metres c/c

Note the +/- 10mm tolerance shall not be accumulative.

.02 In storey height

+/- 5mm floor to floor

.03 In plumpness of columns and walls

+/- 10mm on any storey or overall the structure

.04 In level of floors

+ 5mm /- 3mm of the true prescribed horizontal surface level

.05 In cross sectional dimensions of column beams and walls

+ 5mm/- 3mm in any dimensions up to 2 metres overall

+10mm/- 3mm in any dimension over 2 metres.

.06 Cover to reinforcement

+5mm/5 of the stated covers

The Contractor shall be responsible for the cost of all corrective measures required by the Engineer to rectify work, which is not construed within the tolerances set out above.

2) MATERIALS GENERALLY

All materials which have been damaged, contaminated or have deteriorated or do not comply in any way with the requirements of these Preambles shall be rejected and shall be removed immediately from the Site at the Contractor's own expense. No materials shall be stored or stacked on suspended floors without the Engineer's prior approval.

A. SAMPLES AND TESTING

Every facility shall be provided to enable the Engineer to obtain samples and carry out tests on the materials and construction. If these tests show that any of the materials and construction does not comply with the requirements of these Preambles, the Contractor will be responsible for the costs of the tests and the replacement of defective materials and/or construction.

B. CEMENT

Cement unless otherwise specified shall be approved Cement of a brand approved by the Engineer and shall comply with the requirements of B.S. 12, with the exceptions that it may contain reactive volcanic ash of not more than 10 per cent of the total weight and the quality of insoluble residue permitted in B.S. 12 may be exceeded on this account only. A manufacturer's Certificate of Test in accordance with B.S. 12 shall be supplied for each consignment delivered to the site.

Cement may be delivered to the site either in bags or in bulk. If delivered in bags, each bag shall be properly sealed and marked with the manufacturer's name and on the site, it is to be stored in a weather proof shed of adequate dimensions with a raised floor. Each consignment shall be kept separate and marked so that it may be used in the sequence in which it is received. Any bag found to contain cement, which has set or partly set shall be completely discarded and not used in the works. Bags shall not be stored more than 1.5m in height.

C. AGGREGATES

Aggregates shall conform to the requirements of B.S. 882 and the sources and types of all aggregate are to be approved in all respects by the Engineer before work commences. The grading of aggregates shall be one within the limits set out in B.S.882 and as later specified and the grading, once approved, shall be adhered to throughout the works and not varied without the approval of the Engineer. Fine aggregate shall be clean, coarse, siliceous sand of good, sharp, hard quality and shall be free from lumps of stone, earth, loam, dust, salt, organic matter and any other deleterious substances. It shall be graded within the limits of Zone 1 or 2 of Table 2 of B.S. 882.

Coarse aggregate shall be good, hard, clean, approved black trap or similar stone, free from dust, decomposed stone, clay, earth matter, and foreign substances of friable thin elongated or laminated pieces. It shall be graded within the limits of Table 1 of B.S. 882 for its respective nominal size.

If in the opinion of the Engineer, the aggregate meets with the above requirements but is dirty or adulterated in any manner it shall be screened and/or washed with clean water at the Contractor's expenses.

Aggregates shall be delivered to the site in their prescribed sizes or grading and shall be stocked-piled on paved areas or boarded platforms in separate units to avoid intermixing. **On no account shall aggregates be stockpiled on the ground.**

The Engineer shall be entitled to require a Certificate from an approved testing laboratory in connection with each source of fine and coarse aggregate showing that materials comply with the Specification. All such testing be carried but at the Contractor's expense.

D. WATER

The water used for mixing concrete shall be from an approved source, clean, fresh and free from impurities and comply with the requirements of B.S.3148.

E. CONCRETE STRENGTHS

Grade "35", "30", "25" and "20" concrete shall have minimum strengths as given by Works Cube

Tests shown

	MINIMUM CRUSHING STRENGTHS	**(i) DITTO**	**(ii) DITTO**	**(iii) DITTO**
	Grade 40	Grade 30	Grade 25	Grade 20
7 days	25.00 N/mm2	20.00 N/mm2	16.5N/mm2	13.5 N/mm2
28 days	40.0 N/mm2	30.0 N/mm2	25.0 N/mm2	20.0 N/mm2

The average strength obtained from cube tests shall be 10 percent higher than the minimum strength shown above.

Grades lower than those given shall be of nominal mixes and may be measured by volume or weight. Unless the Engineer directs so, no cube tests will be required for these grades.

Nominal mix by column	-	1:3:6	1:4:8
Cube metres of Fine Aggregate			
Per 50Kgs bag of cement	-	0.12	0.16
Cubic metres of Fine Aggregate			
Per 50Kgs bag of cement	-	0.24	0.32
Max size of Coarse Aggregate	-	20mm	20mm

F. CEMENT

The quantity of cement shall be measured by weight or volume. Where delivered in bags, each batch of concrete is to use one or more whole bags of cement.

G. AGGREGATE

(i) For grades "35", "30", "25" concrete aggregates shall be measured by weight in a weight batching machine as described hereafter.

(ii) For lower grade concrete, aggregates may be measured by weight or by volume, where approved gauge boxes of such a size as will give the correct proportions shall be used.

H. WEIGHT BATCHING MACHINES

Weight batching machines shall be of an approved type and shall be properly maintained and checked for accuracy at regular intervals.

I. CONCRETE MIXES

The weights of fine and coarse aggregate to be used in concrete mixes "35", "30" and "20" shall be limited in accordance with the table below. The Engineer shall first approve the proportions of fine to coarse aggregate and cement, which the contractor proposes to use for each of the mixes specified. The contractor will then be required to prepare Preliminary Test Cubes and have these cubes tested as described for Work Cube Tests.

The test results should be submitted to the Engineer in sufficient time for further tests to be carried out should they prove unsatisfactory. Cube strengths in the preliminary tests must show crushing strengths at least 25 per cent higher than the strengths specified for work cube test. If contractor is unable to produce specified cube strengths he will be required at his own cost to increase the cement contents of the mix until satisfactory results are produced.

The Engineer may require at any time during the Contract the proportions of fine to coarse aggregate to be altered in order to produce a mix of greater strengths or improved workability and providing that the total proportions of aggregate to cement remain unchanged, no claim for additional cost will be considered.

MIX	**Grade 40**	**Grade 30**	**Grade 25**	**Grade 20**
Minimum cement Content by weight to Combined total Weight of aggregate	1 to 5	1 to 6	1 to 7	1 to 7

Work cubes are to be made at intervals as required by the Engineer and the contractor shall provide a continuous record of the concrete work. The cubes shall be made in approved 150mm moulds in strict accordance with the Code of Practice.
Six cubes shall be made on each occasion, from difference batches, the concrete being taken from the point of deposit.
Each cube shall be marked with a distinguishing number (number to run consecutively) and the date, and a record shall be kept on site, giving the following particulars: -

(a) Cube No.

(b) Date made

(c) Location in work

(d) 7-day Test

Date……..

Strength:……

(e) 28-day Test

Date:……..

Strength:……

Cubes shall be forwarded, carriage paid to an approved Testing Authority in time to be tested three at 7-days and three at 28-days. No cube shall be dispatched within three (3) days of casting.

Copies of all Work Cube Test results shall be forwarded to the Engineer and one shall be retained on the site.

If the strengths required above are not attained and maintained throughout the carrying out of the Contract, the Contractor will be required to increase the proportion of cement and/or substitute letter aggregate so as to find concrete which does comply with the requirement of the Contract. The Contractor may be required to remove and replace at his own cost any concrete, which fails to attain the required strength as, ascertained by Work Cube Tests.

3) CONCRETE WORK

TRADE PREAMBLES

The Contractor must allow in his rates for concrete test cubes for all expenses in connection with the preparation and conveyance to the Testing Laboratory and testing of test cubes and no claim in respect of his failure to do so will be entertained.

B. MAKING AND PLACING OF CONCRETE

The concrete shall be mixed only in approved power-driven mixers of a type and capacity suitable for the work and in any event not smaller than 0.5/0.33-cu.m capacity. The mixer shall be equipped with an accurate water-measuring device. All materials shall be thoroughly **mixed dry** before the water is added and the mixing of each batch shall continue for a period of **not less than three minutes** after the water has been added and until there is a uniform distribution of the materials and the mass is uniform in colour.

The entire contents of the mixed drum shall be discharged before recharging. The volume of mixed materials shall not exceed the rated capacity of the mixer. Whenever the mixer is started, 10 per cent extra cement shall be added to the first batch and no extra payment will be made on this account.

As a check on concrete consistency, slump tests may be carried out and shall be in accordance with BS. 1881. The Contractor shall provide the necessary apparatus and allow for the costs of such tests. The slump of the concrete made with the specified water content, using dry materials shall be determined and the water to be added under wet conditions shall be so reduced as to give approximately the same slump.

The concrete shall be mixed as near to the place where it is required as is practicable, and only as much as is required for a specified section of the work shall be mixed at one time, such section being commenced and finished in one operation without delay.

All concrete must be efficiently handled and used in the works within twenty (20) minutes of mixing. It shall be discharged from the mixer direct either into receptacles or barrows and shall be distributed by approved means, which do not cause separation or otherwise impair the quality of the concrete. Approved mechanical means of handling will be encouraged, but the use of chutes for placing concrete is subject to the prior approval of the Engineer.

Concrete shall be placed from a height not exceeding 1.500m. directly into its permanent position and shall not be worked along the shutters to that position. Unless otherwise

approved, concrete shall be placed in a single operation to the full thickness of slabs, beams and similar members, and shall be placed in horizontal layers not exceeding 1.500m. deep in walls and similar members.

Concrete in columns may be placed to a height of 4.000m. with careful placing and vibration and satisfactory results. Where the height of the column exceeds 4M suitable openings must be left in the shutters so that this maximum lift is not exceeded.

Concrete shall be placed continuously until completion of the part work between construction joints as specified hereinafter or of a part of approved extent. At the completion of a specified or approved part, a construction joint of the form and in the position hereinafter specified shall be made. If stopping of concreting be unavoidable elsewhere, a construction joint shall be made where the work is stopped. **The Contractor must make a record of all such joints and a copy supplied to the Engineer.**

Any accumulation of set concrete on the reinforcement shall be removed by wire brushing before further concrete is placed.

The Contractor shall provide runways for concreting to the satisfaction of the Engineer. Under no circumstances will the runway be allowed to rest on the reinforcement.

Care shall be taken that the concrete is not disturbed or subjected to vibrations and shocks during the setting period.

Mixing machines, platforms and barrows shall be clean before commencing mixing and be cleaned on every session of work.

Where concrete is laid on hardcore or other absorbent materials, the base shall be suitable and sufficiently wetted before the concrete is deposited.

C. COMPACTION

At all times during which concrete is being placed, the Contractor shall provide adequately trained and experienced labour to ensure that the concrete is compacted in the forms to the satisfaction of the Engineer.

Concrete shall not be placed at a rate greater than will permit satisfactory compaction or to a depth greater than 450mm before it is compacted.

During and immediately after placing the concrete shall be thoroughly compacted by means of continuous tamping, spacing, slicing and vibration. **Vibration is required for concrete of Grades "40","30" "25" and "20".**

Care shall be taken to fill every part of the forms, to work the concrete under and around reinforcement without displacing it and to avoid disturbing recently placed concrete which has begun to set. Any water accumulating on the surface of newly placed concrete shall be removed and no further concrete shall be placed thereon until such water is removed.

Internal vibrations shall be of a frequency of not less than 7,000 cycles per minute and shall have a rotating eccentric weight of at least 0.75Kg with and eccentricity of not more than 15mm. Such vibrators shall visibly affect the concrete within a radius of 250mm from the vibrator.

Internal vibrators shall not be inserted between layers of reinforcement less than one half times the diameter of the vibrators apart. Contact between vibrators and reinforcement and vibrators and formwork shall be avoided.

Internal vibrators shall be inserted vertically into the concrete wherever possible at not more than 500mm centres and shall constantly be moved from place to place.

No internal vibrator shall be permitted to remain in any one position for more than ten seconds and it shall be withdrawn very slowly from the concrete.

In consolidating each layer of concrete the vibrating head shall be allowed to penetrate and re-vibrate the concrete in the upper portion of the underlying layer. In the area where newly placed concrete in each layer joins previously placed concrete more than usual, vibration shall be performed, the vibrator penetrating deeply at close intervals along these contacts. Layers of concrete shall be placed until layers previously placed have been vibrated thoroughly as specified.

Vibrators shall not be used to move concrete from place to place in the formwork.
At least one internal vibrator shall be operated for every two cubic metres of concrete placed per hour and at least one spare vibrator shall be maintained on site in case of breakdown during concreting operations.
External formwork vibrators shall be of the high frequency low amplitude type applied with the principal direction of vibration in the horizontal plane. They shall be attached directly to the forms at not more than 1.200mm centres.
In addition to internal and external vibration, the upper surface of suspended floor slabs shall be leveled with a tamping or vibrating screed prior to finishing. Vibrating elements shall be of the low frequency high amplitude type operating at a speed of not less than 3.000 r.p.m.

D. CONSTRUCTION JOINTS

Construction joints shall be permitted only at the positions predetermined on the Drawings or as instructed on the sites by the Engineer. In general, they shall be perpendicular to the lines of principal stresses and shall be located at points of minimum shear, viz. vertically at, or near mid-spans of slabs, ribs and beams.

Suspended concrete slabs are generally to be cast using alternate bay construction in bays not exceeding 15.00m in length. No two adjacent bays are to be cast within a minimum period of 48 hours of each other.
The joints between adjacent bays are to be in positions agreed with the Engineer.
Under no circumstances shall concrete be allowed to tail-off, but it shall be deposited against stopping-off boards.

Before placing new concrete against already hardened, the face of the old concrete shall be thoroughly hacked, roughened and cleaned and laitance and loose material removed there from, and immediately before placing the new concrete the surface shall be

saturated with water and covered with a coat of mortar at least 25mm in thickness composed of cement and fine aggregate in the proportions used in the concrete.

E. CURING AND PROTECTION

Care must be taken no concrete is allowed to become prematurely dry and the fresh concrete must be carefully protected within two hours of placing from rain, sun and wind by means of Hessian sacking, polythene sheeting, or other approved means. This protective layer and the concrete itself must be kept continuously wet for at least seven days after the concrete has been placed. The Contractor must allow for the complete coverage of all fresh concrete for a period of 7 days. Hessian or polythene sheeting shall be in the maximum widths obtainable and shall be secured against wind. **The Contractor will not be permitted to use bags, Hessian or other material in small places.**

Concrete in foundations and other underground work shall be protected from admixture with falling earth during and after placing.

Traffic or loading must not be allowed on the concrete until the concrete is sufficiently matured and in no case shall traffic or loading be of such magnitude as to cause deflection or other movement in the formwork or damage to the concrete members. Where directed by the Engineer, props may be required to be left in position under slabs and other members for greater periods than that specified hereafter.

F. FAULTY CONCRETE

Any concrete which fails to comply with these Preambles or which shows signs of setting before it is placed shall be taken out and removed from the site. Where concrete is found to be defective after it has set, the concrete shall be cut out and replaced in accordance with the Engineer's instructions. **On no account shall any faulty, honeycombed, or otherwise defective concrete be repaired or patched until the Engineer has inspected and issued instructions for the repair.** The whole of the cost

whatever, which may be occasioned by the need to remove faulty concrete, shall be borne by the Contractor.

4) . ROD REINFORCEMENT

The steel reinforcement shall comply with the latest requirements of the following British Standards: -

4449:	1988	Specification for bars for the reinforcement of Concrete.
4466:	1989	Bending dimensions and scheduling of bats for The reinforcement of concrete
4483:	1985	Steel fabric for the reinforcement of concrete

The Contractor shall submit a test certificate of the rollings. Reinforcement shall be stored on racks above ground level. All reinforcement shall be free from loose mill scales or rust, grease, paint or other substances likely to reduce the bond between the steel and concrete.

A. FABRIC REINFORCEMENT

Fabric reinforcement shall be electrically cross-welded steel wire mesh reinforcement to B.S. 4483 and of the size and weight specified.

B. FIXING ROD REINFORCMENT

Reinforcement shall be accurately bent to the shapes and dimensions shown on the Drawings and Schedules and in accordance with B.S. 4466. Reinforcement must cut and bent cold and no welded joints will be permitted unless so detailed.

No concreting shall be commenced until the reinforcement in position and until his approval has been obtained. The Contractor shall give two clear days' notice of his intention to concrete to the Engineer.

The Contractor is responsible for maintaining the reinforcement in its correct position, according to the Drawings, before and during concreting. During concreting a competent steel fixer must be in attendance on the concreters to adjust and correct the positions of any reinforcement, which may be displaced. The vibrators are not to come into contact with the reinforcement.

Irrespective of whether any inspection and/or approval of the fixing of the reinforcement has been carried out as above, it shall be the Contractor's sole responsibility to ensure that the reinforcement complies with the details on the drawings or bending schedules and is fixed exactly in the positions shown therein and, in the positions, to give the prescribed cover.

C.. <u>COVER TO ROD REINFORCEMENT</u>

The Contractor will be held entirely responsible for any failing or defect in any portion of the reinforced concrete structure and including any consequent delay, claims, third party claims, etc., where it is shown that the reinforcement has been incorrectly positioned or is incorrect in size or quantity with respect to the detailed drawings or bending schedules.

Spacing blocks of approved size and shape of concrete similar to that used in the surrounding construction and fixed to the reinforcement on formwork by No.18 S.W.G. wires set into the spacer blocks or other approved means shall be provided where necessary to ensure that the requisite cover is obtained. The Contractor is to include providing sufficient such spacer blocks in his prices for steel reinforcement.

D. COVER TO ROD REINFORCEMENT (CON'TD)

Unless otherwise directed the concrete cover to rod reinforcement over main bars in any face shall be: -

Foundations against earth face	75mm
Foundations against blinding	50mm
Columns	40mm
Beams	25mm
Slabs	20mm
Walls	25mm

E.. FIXING FABRIC REINFORCEMENT

The fabric shall be free from scale, rust, grease or other substance likely to reduce the bond between the steel and the concrete and shall be laid with minimum 300mm laps and bound with No.18 S.W.G. appealed iron wire.

Where reinforcement projects from a concrete section of the structure and this reinforcement are expected to remain exposed for some time, it is to be coated with cement grout to prevent rust staining on the finished concrete. This grout is to be brushed off the reinforcement prior to the continuation of concreting.

5) FIXTURES AND INDENTATIONS IN CONCRETE

No openings, chases, holes or other voids shall be formed in the concrete without the approval of the Engineer. Details of any fixtures to be permanently build into the concrete including the proposed positions of all conduits 25mm and over in diameter shall be submitted to the Engineer for his approval before being placed.

A. CHASES, HOLES ETC IN CONCRETE

The Contractor shall be responsible for the co-ordination with the Electrical and other Sub-Contractors for incorporating electrical conduits, pipes, fixing blocks, chases, holes and the like in concrete members as required and must ensure that adequate notice is given to such Sub-Contractors informing them when concrete members incorporating the above are to be poured. The Contractor shall submit full details of these items to the Engineer for approval before the work is put in hand. All fixing blocks, chases, holes etc. to be left in the concrete shall be accurately set out and cast with the concrete.
Unless otherwise instructed by the Engineer, all electrical conduits to be positioned within the reinforced concrete shall be **fixed inside** the steel cages of beams and columns and **between the top and bottom** steel layers in slabs and similar members.

6) FORMWORK

The Engineer shall approve the method and systems of formwork, which the Contractor proposes to use, before construction commences. Formwork shall be substantially and rigidly constructed of timber or steel or precast concrete or other approved material.

All timber for formwork shall be of good sound, clean, sawn, well-seasoned timber, free from warps and loose knots and of scantlings sufficiently strong for their purpose.

A. CONSTRUCTION OF FORMWORK

All formwork shall be of sufficient thickness and with joints close enough to prevent undue leakage of liquid from the concrete and fixed to proper alignment, level and plumb and supported on sufficiently strong bearers, shores, braces, plates, etc. properly held together by bolts or other fastenings to prevent displacement, vibration or movement by the weight of materials, men and plant on same and so wedged and clamped as to permit of casing and removal of the formwork without jarring the concrete.

Where formwork is supported on previously constructed portions of the reinforced concrete structural frame, the Contractor shall by consultation with the Engineer ensure that the supporting concrete structure is capable of carrying the load and/or sufficiently propped from lower floors or portions of the frame to permit the load to be temporarily carried during construction.

Soffits shall be erected with an upward camber of 10mm for each 4.000m of horizontal span or as directed by the Engineer.

Great care shall be taken to make and maintain all joints in the formwork as tight as possible, to prevent the leakage of grout during vibration. All faulty joints shall be caulked to the Engineer's approval before concreting.

The formwork shall be sufficiently rigid to ensure that no distortion or bulging occurs under the effects of vibration. If at any time the formwork is insufficiently rigid or in any way defective the Contractor shall strengthen or improve such formwork as the Engineer may direct.

The Contractor's attention is drawn to the various surface textures and applied finishes required and the faces of formwork next to the concrete must be of such material and

construction and be sufficiently true to provide a concrete surface which will in each particular case permit the specified surface treatment or applied finish.

All surfaces, which will be in contact with concrete, shall be oiled or greased to prevent adhesion of mortar. Oil or grease shall be of a non-staining mineral type applied as a thin film before the reinforcement is placed. Surplus moisture shall be removed from the forms prior to placing of the concrete.

Temporary openings shall be provided at the base of columns wall and beams and at any other points where necessary to facilitate cleaning and inspection immediately before the pouring of concrete. Before the concrete is placed the shuttering shall be trued-up and any water accumulated therein shall be removed. All sawdust, chips, nails and other debris shall be washed out or otherwise removed from within the formwork. The reinforcement shall then be inspected for accuracy of fixing. Immediately before placing the concrete, the formwork shall be well wetted and inspection openings shall be closed.

The erection, casing, striking and removing of all formwork must be done under the personal supervision of competent foremen, and any damage occurring through faulty formwork or the Contractor at his own expense shall make its incorrect removal good.

After removal of formwork, all projections, fins etc on the concrete surface shall be chipped off and made good to the requirements of the Engineer at the Contractor's expense. Any voids or honeycombing shall be treated as described under "Faulty concrete".

B. <u>STRIPPING FORMWORK</u>

All formwork shall be removed without undue vibration on shock and without damage to the concrete. No formwork shall be removed without the prior consent of the Engineer and the minimum periods that shall elapse between the placing of the concrete and the striking of the formwork will be as follows: -

Beam sides, wall and columns - 2 days

Removal of formwork and props from slabs and beams - 21 days

If the Contractor wishes to take advantage of the shorter stripping times permitted for beam and slab soffits when props are left in place, he must so design his formwork that sufficient props as agreed with the Engineer can remain in their original position without being moved in any way until expiry of the minimum time for removal of props. Stripping and re-propping will not be permitted.

The above times may be reduced in certain circumstances, at the discretion of the Engineer provided an approved method is adapted at the Contractor's expense to ensure that the required concrete strength is attained before the forms are stripped.

The tops of retaining walls shall be adequately supported with stout raking props at intervals required by the Engineer. These props are not to be removed until after 7 days after casting of the floor slab.

C. FAIR FACE FINISHED

Where fair face finish is specified the concrete shall be brought to a perfectly true smooth and even surface by rubbing with carborundum stone dipped in cement grout. Such work must be commenced within one hour of removing the formwork and actively and rapidly pursued until completed, the objective being to complete the finish as soon as possible after removal of shuttering. On no account may such work be postponed to a later stage in the contract. Fair face surfaces shall be clean, smooth, even true, to form and free from all board marks, joints marks, honeycombing, pitting. Etc. The Contractor is permitted at his own expense to provide smooth lining to the forms, which will achieve the required finish without rubbing down. All rubbed down work must be lightly washed with plain cold water at the completion of the contract, and not before the cement grout used in the finish is at least four weeks old after initial mixing.

7) PRECAST CONCRETE

Unless otherwise approved by the Engineer, all precast concrete construction shall be carried out on the site and shall conform to requirements given elsewhere in these Preambles.

The minimum size of coarse aggregate in precast concrete shall not exceed 20mm and for thicknesses less than 75mm it shall not exceed 15mm.

The compacting of precast concrete shall conform to requirements given elsewhere in these preambles except for thin slabs where use of immersion type vibrators is not practicable. The concrete in these slabs may be consolidated on a vibrating table or by any other methods approved by the Engineer.

The precast work shall be made under cover and shall remain under the same for seven days. During this period and for a further seven days the concrete shall be shielded by sacking or other approved material kept constantly wet. It shall then be stacked in the open for at least a further seven days to season before being set into position.

Precast concrete units shall be constructed in individual forms. The method of handling the precast concrete units after casting, during curing and during transport and erection shall be subject to the approval of the Engineer, providing that such approval shall not relieve the Contractor of responsibility for damage to precast concrete units resulting from careless handling.

Repair of damage to the precast concrete units, except for minor abrasions of the edges which will not impair the installation and/or appearance of the units will not be permitted and the damaged unit shall be replaced by the Contractor at his how expense.

Except where precast work is described as "fair face" or as having an "exposed aggregate" or terrazzo finish, the moulds shall be made of suitable strong sawn timber true in form to the shapes required. Unless otherwise described, faces are to be left rough from the moulds.

Where precast concrete work is described as "fair face" the moulds are to be made of metal or are to have metal or plywood linings or are to be other approved moulds which will produce a smooth dense fair face to the finished concrete suitable to receive a painted finish direct and free from all shutter marks, holes, pittances etc. In his prices for such precast work the Contractor shall include for all rubbing down to produce the finish required, to the satisfaction and approval of the Engineer.

Where precast work is to have an "exposed aggregate" or terrazzo finish the moulds shall be constructed to the requirements given for moulds for "finished fair" work. The method of achieving the exposed aggregate finish shall be the "aggregate transfer" or other approved methods.

The precast units shall be installed to the lines, grades and dimensions shown on the Drawings or as directed by the Engineer.

8) CONCRETE SURFACE BEDS

Concrete for surface beds shall be Grade 30 and Grade 25.
Before placing concrete and where specified or shown on the drawings a layer of 500-gauge polythene or diothene sheeting shall be laid on the base course. Minimum 300mm laps shall be provided at all joints.
The concrete shall be placed as soon as possible after being mixed. In transporting the concrete, adequate precautions shall be taken to avoid damage to the prepared base. The concrete shall be spread to such a thickness that when compacted it shall be spread to such a thickness that when compacted it shall have the finished thickness as specified or shown on the drawings. A layer of concrete 50mm less than the finished thickness shall first be spread and struck off at the correct level to receive the top fabric

reinforcement. The top layer shall then be added. Not more than 30 minutes shall elapse between spreading the bottom layer and the start of compaction of the top layer.

The Contractor shall be responsible for maintaining the reinforcement in its correct position during the placing and compaction of the concrete.

The compaction and finishing of the concrete shall be effected by immersion vibrators and hand or mechanical tamper weighing not less than 10 Kgs per metre run and having a tamping edge shod with a steel strip 75mm wide fixed to the tamper by countersunk screws. Immersion vibrator with "spade" attachment will be permitted. Compaction shall be continued until a dense, scaled surface finish is achieved. Over compaction causing an excessive amount of lines to be brought to the surface shall be avoided.

The surface of the concrete shall be finished to the surface texture specified to the levels, falls and cross-falls, as directed or shown on the drawings and shall be subject to the following tolerances: -

The level be within + to – 6mm of the levels specified

The falls shall be within 10% of the falls specified

The smoothness shall be such that departures from a 3.000m straight edge laid in any direction shall not exceed 3mm.

Minor irregularities shall be made good by the use of a steel float but in no circumstances shall mortar be used to make good the surface.

As soon as the surface has been finished, it shall be protected against too rapid dying by means of polythene sheeting or other approved means placed carefully on the surface

and kept damp and in position for 7 days and the concrete shall be kept wet for a further 21 days. The most critical period is the first 24 hours after placing or curing during that time shall be very thorough. The Contractor is to obtain the Engineer's approval to the material and method he proposes to use for curing and no concreting will be permitted until sufficient such material is on site.

Forms shall not be removed from freshly placed concrete until it is at least 24 hours old. Care shall be taken that in their removal no damage is done to the concrete, but should any damage occur the Contractor should be responsible for making it good.

9) MASONRY AND BLOCKWORK

A. GENERALLY

(i) Prices for all walling shall include for normal rough and **straight cutting,** plumbing angles, all cutting and waste and split courses necessary for bond, bonding at angles, intersections and junctions of walling of all thicknesses, split courses, cutting and pinning up to columns, beams, slabs, etc., hoisting and building at any level, forming all openings and reveals to same and all cutting and waste to walling in short lengths such as mullions unless specifically measured.

(ii) Prices for hollow block walling must further include for all necessary solid blocks or fine concrete filling to open ends of blocks at intersections, ends and angles of walling.

(iii) Prices for damp-proof courses, which are measured the net area covered, shall include for all cutting, waste, and extra material in laps at joints, angles, etc.

B. CEMENT

All cement used for making mortar shall be approved cement as described in "Concrete Work".

C. SAND

All sand used for making mortar shall be clean, well-graded siliceous sand of good sharp quality, equal to sample, which the Project Engineer shall approve. It shall be free from lumps of stone, earth, loam, dust, salt organic matter and any other deleterious substance, sieved through a fine sieve and washed if so directed by the Project Engineer.

D. LIME

(i) Lime for mortar shall be non-hydraulic or semi-hydraulic quick lime or hydrated lime in accordance with B.S. 890, Class 'B'.

Quick lime shall be run to putty immediate after delivery to the site in a pit dug on the site or in an approved container. The water to be first run into the pit or container and the lime to be added until it is completely submerged and stirred until all lumps are disintegrated and the resulting mild lime shall then be run through a 3mm.square mesh sieve and run into a pit or other container and kept clean and moist for not less than 4 weeks before use.

(ii) Hydrated lime shall be added to water in a clean receptacle thoroughly mixed to the consistency of thick cream and allowed to stand, and be kept clean and moist for not less than 16 hours before use.

E. CEMENT MORTAR

Cement mortar shall be composed of approved cement and sand in 1:4 ratio by volume, measured in specially prepared gauge boxes and thoroughly mixed in an approved mechanical mixer or mixed dry on a clean and approved mixing platform, with added afterward until all parts are completely incorporated and brought to a proper consistency. The use of re-tampering of wholly or partially set mortar will not be allowed.

F. CONCRETE BLOCKS

(i) Concrete blocks shall be solid, hard, true to size and shape with sharp arises in accordance with B.S 2028 type 'A', and approved by the Project Engineer.

(ii) They shall be obtained from an approved manufacturer or manufactured on site in approved block making machines. The cement aggregate mix used shall be not less than 1:9 by volume and the maximum size of aggregate shall not exceed 12mm.

(iii) All solid and hollow concrete blocks used in walling must be capable of withstanding a crushing pressure of not less than 2.80 N/mm2 after 28 days.

(iv) The blocks on removal from the machine shall be carefully deposited on edge on racks under sheds erected by the Contractor and left for 3 days during which period they shall be kept constantly wet after which they shall be placed on edge in the open on racks and protected by sacking or other approved covering and kept wet for further 5 days. Thereafter the blocks shall be left in the same position without wetting for a further 20 days.

(v) No blocks will be allowed to be used in the work until 28 days old and until samples have been taken and approved by the Project Engineer.

(vi) They shall be laid dry except for the top surface, which shall be wetted immediately before mortar is spread on. After laying no further water shall be applied.

(vii) The concrete blocks shall be 200mm.high to bond satisfactory with all other walling.

G. STONE WALLING

(i) The stone for walling shall be sound and hard throughout, free from all defects, and shall be obtained from a quarry approved by the Project Engineer. It shall be chisel dressed into true rectangular blocks, with each surface even and at right angles to all adjoining surfaces.

(ii) The contractor shall if necessary re-dress the beds of stones on the site to the minimum extent required to obtain uniformity of coursing, and his Tender shall be deemed to include for such re-dressing.

(iii) Stone block for general walling shall nominally be 200mm. high, 90mm. 140mm or190mm. thick as required for the works, the maximum permissible variations of any of the foregoing dimensions being 12mm.

(iv) Stone shall not be less than 400mm. long but a proportion of 20% will be permissible in lengths between 300mm. and 400mm long. Samples shall be

submitted to the Project Engineer for approval and when so approve shall become the standard for the works.

H. STABILIZED EARTH

These shall consist of cement mixed with selected approved red soil in a proportion not less than 1:20 by volume.

The manufacture and curing of the blocks shall generally be as described for concrete block above.

I. BEDDING AND JOINTING

The blocks shall be bedded and joined in cement and sand mortar as described with beds and joints not more than 12mm. or less than 6mm. thick, all flushed up and grouted solid as the work proceeds.

MASONRY AND BLOCKWORK (CONT'D)

A. REINFORCED WALLING

Walls of less than 200mm. thickness shall be reinforced with one of 20-gauge hoop iron 20mm. wide, built into every third course, well lapped at junctions and joints and carried at least 100mm. into abutting walls at intersections.

B. PROTECTION

All walling shall be properly protected while mortar is setting, as the Project Engineer shall direct.

C. SETTING OUT RODS

The contractor shall provide proper setting out rods and set out all work on the same for courses, opening heights, etc., and shall built the walls, piers, etc., to widths, depths

and heights indicated on the Drawings. Setting out rods to be gauged in order to allow for an average height of 200mm for each course.

D. CURING OF WORK

All walls shall be maintained in a damp condition for at least 24 hours after laying. Wall under construction shall be damped by applying water with a brush and no hoisting directly on the wall shall be permitted. When the work ceases on any section of the wall, polythene or Hessian shall be draped over the wall, for at least 24 hours. If Hessian is used it shall be maintained continuously wet.

E. WALL TIES

Wall ties shall be provided to connect walls to steel or concrete columns and beams to connect two unborded leaves of wall.

Wall ties shall be provided at 300mm centres both vertically and 600mm centres horizontally. Wall ties shall be staggered when used to connect two leaves of unbounded walls.

10) ROOFING

A. GENERALLY

Bituminous felt, flashing, etc., have been measured the net area covered. Prices shall include for all straight cutting and waste and laps and in case of flashing, aprons, covering to kerfs, etc., where the net covered girth is measured and necessary overlaps for bond with adjoining areas.

BITUMINOUS FELT ROOFING

B. BUILT-UP ROOFING

The built-up roofing shall be in accordance with B.S 747 (classes 1,2, and 5) applied to a screeded base and shall comprise the following applications (see Clause 'E' below), laid strictly in accordance with the manufacturer's printed instructions and the Code of Practice 144.101.

C. STORAGE

Rolls must be transported and stored on end, one roll high, and adequately protected from the sun.

D. SCREED

The minimum fall for the screed on flat roofs be 1 in 30. The screed must be thoroughly dry and swept clean before commencing laying operations.

A. SEQUENCE

(i) Jointing Compound: - One application of hot bituminous compound weighing not less than 16.3 Kgs per 10 square metres.

(ii) First Layer: (Class 1A) One layer of self-finished felt weighing not less than 13.6 Kgs per Sq. m.

(iii) Jointing Compound: As described in (i) above.

(iv) Second Layer: (Class 1A) One layer of self-finished felt weighing not less than 13.6 Kgs per Sq. m.

(v) Jointing Compound: As described in (i) above.

(vi) Third Layer: (Class E) — One layer of mineral surfaced roofing felt weighing not less than 36.2 Kgs Per 10 Sq. m. (Colour to be decided by The Project Engineer)

RESINCOT PROFILED OR CORRUGATED GALVANISED SHEETS

A. MATERIALS:

Resincot galvanized corrugated sheeting and accessories shall be of approved manufacture in accordance with B.S 3083 and of an approved colour. The thickness of the sheeting shall be as specified and shall be laid and fixed strictly in accordance with the manufacturer's printed instructions.

Resincot galvanized profiled sheeting and accessories shall be approved manufacture in accordance with BS 3083 and of an approved colour. The thickness of the sheeting shall be as specified and shall be laid and fixed strictly in accordance with manufacturer printed instructions.

A. LAPS:

Sheeting shall be laid with ends laps of 150mm. and side laps of one corrugation on the side away from the prevailing wind.

B. FIXING TO PURLINS:

The sheets shall be fixed to 150 x 50mm timber purlins with 8mm. galvanized gimlet pointed screws 114mm. long. All screws and bolt fixings shall have "Selawasher" plastic washers or other equal and approved.

C. HOLES:

Holes shall be drilled through the ridges of corrugations, not in the hollows.

D. **RIDGES ETC.**

Ridges and other accessories shall be supplied as shown on the Drawing and shall be fixed to purlins as above described.

11) CARPENTRY

E. **ALL TIMBER**

Shall be in accordance with the latest approved Grading Rules issued by the Government of Kenya (Legal Notice No.358). Timber for carpentry shall be **SECOND (OR SELECT GRADE).**

F. **GENERALLY**

The Contractor as it arrives on the site shall inspect all timber, and any timer brought on the site and not complying with the specification or not approved must be removed forthwith from the site and only timer as approved shall be used in the works.

The Contractor shall upon signing the contract, purchase sufficient supplies of specified hardwood to avoid possible shortage at a later date.

A. **SPECIES OF TIMBER**

The following timber shall be used: -

Standard Common Name	Botanical Names
Podocarpus	Podocarpus spp.
Cypress	Cypress
Cedar	Juniperus Procera

African Mahogany (munyama)	Khay Anthotheca
African Teak (Mvule)	Milicia excelsa

B. **TOLERANCES IN THICKNESS**

Shall conform with the following extracts from the Government of Kenya Grading Rules (or the metric equivalent).

(i) Hardwood Grading (First and Second Grades)

The following tolerances in thickness will be omitted: -

(a) 1 ½ mm oversize on pieces up to 25mm in thickness

(b) 3mm oversize on pieces over 25mm and up to 50mm in thickness

(c) 6mm oversize on piece over 50mm in thickness.

(ii) Softwood grading: Strength Grades (for Carpentry) first and second Grades. Undersize not allowed.

Oversize. All timber to be sawn oversize by 1 ½ mm per 25mm thickness and width. Not more than 3mm in thickness and not more than 6mm in width.

(iii) Softwood Grading Appearance, Grades (for Joinery) First and Second Grades. All as for Strength Grades above.

All timber shall be free of live borer beetle or other insect attack when brought upon the site. The contractor shall be responsible up to the end of the maintenance period for

executing at this own cost all work necessary to eradicate insect attack of timber which becomes evident including the replacement of timber attack or suspected of being attacked, notwithstanding that the timber concerned may have already been inspected and passed as fit for use.

A. SEASONING OF TIMBER

All timber shall be seasoned to moisture content of not more than 22% for Carpentry.

B. PRESSURE IMPREGNTION TREATMENT

All carpentry timber, sawn joinery and timber groups for fixing shall be treated with pressure impregnated "Celcured" or "tanalith" solution with a minimum net retention of 5.6 Kg of dry salt per cubic meter. If so required "Charge Sheets" issued after treatment with "Celcured" or "Tanalith" shall be submitted by the Contractor to the Project Engineer for his retention. All cut ends and any other cut faces or timbers sawn after treatment shall be treated before fixing with "Celcured" B or "Wolmanol" solution brushed on. The contractor's prices for such timber hereinafter must allow for the above treatment.

C. INSPECTION AND TESTING

The Project Engineer shall be given facilities for inspection of all works in progress whether in workshop or on site. The contractor is to allow for testing or prototypes of special construction and the Project Engineer shall be at liberty to select any samples he may require for the purpose of testing i.e. for moisture content, or identification, species strength, etc., such test will be carried out by the Forestry Department.

D. CLEARING UP

The contractor is to clear out and destroy or remove all cut ends, shaving and other wood waste from all parts of the building and the site generally, as the work progress and at the conclusion of the work.

This is to prevent accidental borer infestation and to discourage termites and decay.

E. WORKMANSHIP

All carpenter's work shall be accurately set out strictly in accordance with the drawings and shall be framed together and securely fixed in the best responsible manner with properly made joints, all brands nails and screws shall be provided as necessary, directed, and approved, the contractor's prices shall allow for all the foregoing.

All workmanship shall be of the best quality.

F. DIMENSIONS

Dimensions of timber for carpentry left with sawn faces shall comply with the previous clause specifying tolerance in thickness. Dimensions for wrought members shall be a described in joinery.

G. JOINTING

All timber shall be as long as possible and practicable eliminate joints. Where joints are unavoidable surfaces shall be in contact over the whole area of the joint before fastenings are applied.

No nails, screws or bolts are to be fixed in any split. If splitting is likely, or is encountered in the course of the work, holes for nails are to be prebored at diameter not exceeding $4/5^{th}$ of the diameter of the nails. Client nails must be bent at right angles to the grain.

Lead holes are to be bored for all screws. When the use of bolts is specified

the holes are to be bored from both sides of the timber and are to be of the diameter D/16 where D is the diameter of the bolt. Nuts must be brought up tight but care is to be taken to avoid crushing of the timber under the washers.

12) JOINERY

A. ALL TIME TIMBER

All timber shall be First (OR PRIME) Grade. Species of timber tolerance shall be as defined under "Carpentry".

B. GENERALLY

All joiner's work shall be accurately set out on boards to full size for the information and guidance of the artisans before commencing the respective works, with all joints iron work and others connected therewith fully delineated. Such setting out must be submitted to the Project Engineer and approved before such respective works are commenced.

All joiners' work shall be cut out and framed together as soon after the commencement of the building as is practicable, but not wedged up or glued until the building is ready for fixing same. Any portions that wrap, wind or develop shakes or other defects within six months after completion of the works shall be removed and new fixed in their place together with all other work which may be affected thereby all at the contractor's own expense.

All work shall be properly mortised, tenoned, housed shouldered, dovetailed, notched, pinned branded, etc., as directed and to the satisfaction of the Project Engineer and all properly glued up with the best quality glue.

Joints in joinery must be as specified or detailed, and so designed and secured as to resist or compensate for any stresses to which they may be subjected. All nails, sprig etc., are to be punched and putted. Loose joints are to be made where provision must be made

for shrinkage, glued joints where shrinkage need not be considered and where scaled joints are required. Glued for load bearing joints or where conditions may be guaranteed casein or organic glues may be used.

All exposed surfaces of joinery work shall be wrought and all arises "cased off" by planning and sandpapering an approved finish suitable to the specified treatment.

C. INSECT DAMAGE

All timber shall be free of insect damage as defined under "Carpentry".

D. SEASONING OF TIMBER

All timber shall be seasoned to a moisture content of not more than 15%.

E. DIMENSIONS

3mm reduction of specified sizes will be allowed to each wrought face except where described as finished size in which joinery shall hold up to the full dimensions.

The contractor is to note that all joinery timber size nominal unless otherwise stated as finished sizes. The nominal sizes have been calculated in accordance with Standard method of Measurement of Building works for East Africa 1st Edition metric and no regard has been taken of metre sizes of timber at present being sold.

F. FIXING JOINERY

All beads, fillets and small members shall be fixed with round or oval brads or nails well punched in and stopped. All larger members shall be fixed with screws. Brass screw shall be used for fixing of all hardwoods, the heads let in and pelleted over with wood pellets to match the grain.

G. BEDDING FRAMES ETC.

The contractor's rates must include for bedding frames, sills, etc., in mortar or dressing surfaces of walls, etc. in lieu.

H. PLUGGING CONCRETE AND WALLS

Round wood plugs shall not be used, all work described a plugged shall be fixed with screws to plugs formed by drilling concrete walls, etc., with a proper tool of suitable size at 750mm spacings and filling the holes completely with "Philplug" rawl plastic or Rawlplugs in accordance with the manufacturer's instructions. Alternatively, and where so agreed by the Project Engineer hardwood dovetailed fixing slips dipped in "Wolmanol" or "Celcured" solution and cut and pinned or bedded in cement (1:3) mortar may be used.

13) GYPSUM BOARD

Shall be 12mm gypsum boards .

14) PLYWOOD

Shall comply with B.S 145S (First Quality "interior type unless otherwise specified).

15) BLOCKBOARD

Shall be laminated board faced both sides with 4mm plywood. Exposed edges shall be lipped with 19mm hardwood and rates shall include for lipping.

16) PLASTIC SHEETING

Shall be "Formica" sheeting 1.5mm thick and securely fixed with approved type waterproof adhesive and in the colours approved by the Project Engineers.

17) CHIPBOARD

Shall be resin bonded and shall comply with BS 2604.

18) PROTECT JOINERY

Any fixed joinery which in the opinion of the Project Engineer is liable to become bruised or damaged in any way, shall be completely cased and protected by the Contractor until the completion of the works.

19) FLUSH DOORS

All flush doors shall be manufactured to the thickness specified and consists of 100mm. Wide fixing all around with horizontal core battens not more than 75mm. Centre pressure impregnated as described and bored with 12mm diameter ventilation holes at 300mm centres. Doors shall have two lock blocks and be faced both sides with 6mm ply and have 25mm mvule twice rebated lipping all round or otherwise be equal to an approved sample. External flush doors shall be as described above but faced both sides with marine quality plywood; same should be for kitchen and bathroom.

A. PRICES TO INCLUDE

Prices of items hereafter shall include for the foregoing labours, etc., and in addition all prices for linear items are to include all internal and external angles, either mitred or tongued, all fair fitted, stopped, notched or returned ends all similar incidental labours and all the lengths.

B. BOTTOM EDGES

Bottom edges of doors shall be painted with one coat of approved primer before fixing.

20) IRONMONGERY

All locks ironmongery shall be fixed with screws etc. to match. Before the woodwork is painted, handles shall be removed. Carefully stored and refixed after completion of painting and locks oiled and left in project working order. All keys shall be labelled with the door reference marked on labels before handling to the Project Engineer on completion.

IRONMONGERY

D. GENERALLY

All ironmongery shall be fitted and fixed in accordance with the manufacturer's printed instructions. Rates for fixing are to include for all cutting, sinking, boring noticing and fitting in hardwood or softwood and for supplying all necessary and matching screws.

All locks shall be provided with a master key system and prices shall include for this. The requirement must be obtained by the contractor before ordering. The keys of all locks shall have labels attached with door reference marked on before handing to the Project Engineer.

E. MOVEABLE PARTS

All locks, springs and other items of ironmongery with moveable parts shall be properly tested, cleaned and adjusted where necessary to ensure proper working order at the completion of the works and left in perfect working order by the Contractor.

A. SAMPLES

(i) Samples of all ironmongery specified shall be submitted to the Project Engineer for approval and the approved samples shall thereafter be regarded as the standard for the work. Ironmongery, which in the opinion of the Project Engineer does not conform to this standard, shall be removed from the site.

(ii) Alternatively, ironmongery of an equal standard will be acceptable providing samples are submitted to and approved by the Project Engineer before orders for such ironmongery are placed.

21) METAL WORK

B. ALL MATERIALS

Shall be of the best quality, free from defects. The materials in all stages of transportation, handling and piling shall be kept clean and injury from breaking, bending and distortion prevented.

C. NAILS, SCREWS AND BOLTS

Shall be of the best quality stainless steel grade 316 of lengths and weight approved by the Project Engineer. Nails shall be to B.S. 1202 and bolt to B.S. 916.

D. WORKMANSHIP

All work shall be carried out in the most workmanlike manner and strictly as directed by the Project Engineer.

Welding shall be neatly cleaned off and units shall be prefabricated in the workshop wherever possible, the minimum of site welding being employed.
All screwed work shall have full internal and external threads and holes shall have been cleaned off. Counter sinkings must be concentric.

A. NACO LOUVRES

Shall be of steel, aluminium-lacquered, single control type, unless otherwise described, carefully screwed into timber sub-frames or plugged and screwed to walling. Louvers of equal quality of other manufacture may be substituted on approval.

Prices shall include for oiling and adjusting and leaving clean and undamaged on completion.

B. **MILD STEEL**

For burglar bars and reinforcement shall comply with B.S. 19 No. work shall be fabricated until the site dimensions have been checked and no additional claim will be accepted should final dimension differ from these on the drawings.All welds shall be ground smooth and the contractor shall ensure that the metalwork is prepared for painting as described in painting and decorating.

The contractor is to ensure that all work is erected plumb and true and be so maintained until properly secured by permanent fixings.

C. **PAINTING**

All steel is to be sand blasted and any loose scale, dirt or grease shall be removed before any painting is commenced. One coat of 2 pack epoxy zinc phosphate primer to B.S 2523 shall be applied at the shop.

Any damage to the priming paint shall be made good to the Project Engineer's satisfaction.

B. **MATERIALS GENERALLY**

(i) MATERIALS

Specified in this section may be applicable to any or all the subsequent sub trades in metalwork.

(ii) SUPPLIERS

Obtain all materials from suppliers approved by the Engineers.

(iii) STANDARDS

Produce the manufacturer's certificate of compliance with the standards specified if so requested by the Engineer.

(iv) FINISHES

Metal commodities for making components must be either pre-finished or suitable to receive the finishes specified.

C. **SECTION ETC.**

(i) HOT ROLLED STEEL SECTIONS

Except equal and unequal angles: to B.S. 4: part 1, made from steel to B.S. 4360 part 2.

(ii) HOT ROLLED EQUAL AND UNEQUAL ANGLES

Part 1 (metric converted from imperial dimensions) or to B.S 4848: part 4 accordinated metric dimensions. Do not substitute sections or dimensions other than those specified without the prior approval of the Engineer.

(iii) HOT ROLLED HOLLOW STEEL SECTIONS

Part 2, made from steel to B.S 4360: part 2.

(iv) HOT ROLLED STEEL BARS

To B.S. 4449.

(v) COLD ROLLED STEEL SECTION

To B.S 2994, made from steel to B.S. 1449: part 1 B (HR, CR, HS, OR CS quality unless otherwise specified or shown on the drawings).

(vi) STEEL TUBES AND TUBULARS

To B.S. 1387 medium thickness unless otherwise specified. If steel tubes to B.S. 1775 are required they will be specified or shown on the drawings.

(vii) STAINLESS STEEL TUBES

To B.S. 3014, welded unless otherwise specified. To be of Grade 316

(viii) COPPER AND ALUMINUM ALLOYS

If the alloy is not specified or stated on the drawings, it is to be suitable for the application.

(ix) ALUMINUM ALLOY BARS, TUBES AND SECTIONS

To B.S. 1161 AND B.S 1474.

(x) COPPER AND COPPER ALOY RODS AND SECTIONS

To B.S. 2874

(xi) COPPER AND COPPEY ALLOY TUBES

To B.S. 2871: part 2

(xii) TIMBER FOR CORES OF DRAWN SECTIONS

To B.S. 1186: part 1, concealed surfaces class, straight grained of mahogany or other approved hardwood.

A. **MESH**

(i) STEEL MESH FABRIC

To B.S. welded type, and square, structural or long mesh as specified or shown on the drawing.

(ii) MOSQUITO MESH

Approved fine wire mesh or gauze of non-corroding metal, for example aluminium.

B. **PLATE SHEET AND STRIP**

(i) STEEL PLATE

For welding to B.S. 4360, section 2 unless otherwise specified. Steel to this standard is equally suitable for bolting and riveting, and may be used unless steel plate to B.S. 1449 is specified.

22) PAVINGS AND PLASTERWORK

A. **GENERALLY.**

(i) Prices for paving shall include for preparation of concrete floor and painting with cement grout as described, and any extra thickness consequent upon the floor not being finished to the true levels and also for all temporary rules and for all formwork to stop pavings at openings or edges as required. Prices for tile and similar paving shall include for any pointing to exposed edges.

(ii) Plastering to walls has been measured over concrete columns, lintels, etc., flush with wall face, and prices for plastering shall include for hacking concrete or for raking out joints to form key, and for any necessary rubbing out.

(iii) Prices of superficial items of paving and plastering are to include for narrow widths and small quantities, fair edges and arises, rounded external angles up to 10mm. radius, making good to metal windows or door frames and making good around pipes, holder bats, and other metalwork and for all similar incidental labours unless specifically measured.

(iv) Prices of lineal items are to include for all short lengths, angles, arises, mitres, ends and the like and for all necessary rubbing out.

(v) Prices for floor or wall tiling shall include for all straight cutting and waste, small quantities and narrow widths.

B. **CEMENT**

Cement shall be described in "Concrete Work".

C. **SAND**

Sand shall be as described in "Masonry and Blockwork".

D. **LIME**

Lime and treatment before use shall be as described in "Masonry and Blockwork" except that it shall comply with B.S. 890, Class 'A'.

E. **WATERPROOFING COMPOUNDS**

All waterproofing compounds are to be to the Project Engineer's approval and used strictly in accordance with the manufacturer's printed directions.

E. **PAVING**

All materials for paving and plastering must be measured in proper gauge boxes in the proportions specified and mixed on clean wood or iron platforms and turned over at least three times dry until the mix is of a uniform colour. Water shall then be added by means of a rose nozzle and the materials again turned over until the mass is thoroughly mixed with water. Alternatively, mechanical mixing methods may be used to obtain the same result as approved by the Project Engineer.

F. **PREPARATION FOR PAVING AND SCREEDS**

As soon as the paving has set sufficiently, it is to be covered with a well wetted layer of sawdust, Hessian or other approved material and this layer is to be kept dump for at least seven days during which period no traffic is to be allowed over paving. When no

longer required as a protection to the surface, the materials are to be removed the paving left clean and perfect.

All paving shall be laid with joints coinciding with the construction joints in the concrete beds upon which they are laid and the pattern set out accordingly.

G. VERMICULITE ROOF SCREEDS

Vermiculite screeds are to be mixed in the proportions of 250 kgs. Pozzolana cement to 1 cubic metre Vermiculite Grade 5, all in strict accordance with the Manufacturer's printed instructions. The screed is to be finished with 10 mm cement and sand (1:3), troweled smooth to receive roof finish as previously specified. No vermiculite is to be laid in rainy weather and screeds are not to be walked on for three days after lying.

H. SCREEDS TO RECEIVE FLOOR AND WALL FINISHES

There are to be laid true and level, particular care being taken to obtain a perfectly smooth surface to receive P.V.C and similar floor finishing.

I. CEMENT AND SAND PAVINGS

To be in cement and sand (1:4) and finished perfectly smooth with a steel trowel.

J. SKIRTINGS

Skirtings to cement paved floors shall be in cement and sand (1:4) to match the paving, with rounded edges and 38 mm radius cove at junction with paving.

K. JUNCTION STRIPS

At the junction of differing floor finishing fix in position 3mm x 25mm plastic jointing strips cut to lengths, bedded in and finished flush with pavings. All plastic jointing strip shall be black in colour.

L. **FLOOR HARDENER**

This shall be cast insitu with screed as specified with three coasts of sodium silicate or other equal and approved hardener in accordance with the manufacturer's instructions.

M. **GRANOLITHIC AND TERRAZZO PAVING AND WALL FINISHES**

(a) GENERALLY

(i) Construction joints between bays of paving are to be straight and vertical and are to be coincide as far as possible, with those in the concrete under.

(ii) After spreading and before finally striking to screen levels the pavings etc., are to be lightly tamped each stage of laying operation is to be properly carried out at the optimum degree of stiffness of the mix so that the aggregate remains correctly distributed throughout the pavings etc., and so finished that the surface is true to level, dense, smooth and free of laitance and other defects and blemishes. The use of dry cement or sand to absorb surplus moisture will not be allowed.

(iii) The thickness of the pavings etc., in these Bills of Quantities include for the combine screed or backing and granolithic or terrazzo finish.

(iv) All granolithic and terrazzo finishing shall be divided into areas not exceeding 3 square metres with dividing strips as specified.

GRANOLITHIC AND TERRAZZO PAVING AND WALL FINISHES (CONT'D)

(b) SCREED AND BACKING

To be in cement and sand (1:4).

(c) GRANOLITHIC

(i) To be composed by volume of one part of cement, one part of sand and two parts 6mm black trap chippings free of dust laid or applied to screeds or backings whilst they are still green.

(ii) Paving shall be 40mm minimum combined thickness comprising 20mm thick cement and sand (1:4) backing and 20mm. thick granolithic.

(iii) Dados shall be 20mm minimum combined thickness comprising 12mm thick cement and sand (1:4) backing and 8mm thick granolithic.

(iv) Polished granolithic to be finished with a metal roller and all surplus cement lightly brushed off when surface is sufficiently hard to resist dislodgement of aggregate, when the surface is hard enough it shall be wet ground, using a machine, until the aggregate is uniformly revealed and then well washed with clean water. Any small voids or holes left in the surface are to be filled with cement grout rubbed down-by hand. Mouldings etc. not accessible to machines are to be hand rubbed and polished with carborundum. After an interval of 1 to 3 days the surface is to be finally machine ground using the fine abrasive.

(d) TERRAZZO

(i) To be composed of one part of "Snowcrete" "Colourcrete" or other equal and approved white or coloured cement to two parts of clean imported marble chippings well washed and free from dust. The marble chipping

may vary in colour and from 3mm to 9mm dependent on the effect required and sample areas must be prepared for Project Engineer's approval.

(ii) Pavings to be 25mm minimum thickness overall. As for granolithic (ii) preceding.

(iii) Polished terrazzo to be finished as granolithic (iv) preceding.

A. ALUMINIUM DIVIDING STRIP

To be 3mm x 32mm strip set in position before paving is commenced, and embedded straight and true.

B. PLASTERING GENERALLY

(i) All surfaces to be plastered or rendered shall be brushed clean and be well wetted before plaster is applied. All plaster and rendering shall be kept continuously damp for seven days after application.

All arises shall be finished true and slightly rounded except where otherwise stated, and shall be run at the same time as the adjoining plaster.
No partially or wholly set plaster or rendering will be allowed to be used or re-mixed.

(ii) The contractor shall prepare samples of the plastering and rendering as directed until the quality texture and finish required is obtained and

approved by the Project Engineer, after which all plastering executed in the work shall conform to the respective approved samples.

(iii) The contractor shall cut out and make good all cracks, blisters and other defects and leave the whole of the work perfect on completion. When making good defects, the plaster or rendering shall be cut out to a rectangular shape with edges undercut to form dovetailed key, and all finished flush with face of surrounding plaster or rendering.

C. INTERNAL OR EXTERNAL CEMENT AND SAND RENDER

Plaster described as internal cement and sand (1:4) render or external cement and sand (1:4) render shall be executed in two coats and be composed of one-part cement to four parts sand. The first coat shall be laid to a uniform surface finished with wood float well scored and allowed to dry out for at least 7 days before applying the finishing coat. The second or finishing coat shall be thoroughly worked and finished hard and true with a steel trowel or wood float as specified hereinafter. The total finished thickness of plaster shall be not less than 12mm thick.

A. INTERNAL GAUGED PLASTER

Plaster described as "Internal gauged plaster in two coats" shall consist of a first or rendering coat composed or one-part cement, two parts lime and nine parts sand and a finishing coat composed of one-part cement, three parts lime and six parts sand. Application and thickness will be as for last item.

23) GRANITO WALL TILING

(i) Granito wall tiles shall be 600 x 300 x 6mm thick cushion and tiles with matching fittings, all conforming to B.S 1281 in colours specified by the Project Engineers.

(ii) Tiles are to be bedded in an approved tile-fixing compound applied strictly in accordance with the manufacturer's printed instructions.

(iii) Walls are to be dry before tiles are fixed and tiles are not to be soaked in water before use. Tiling is to be set and closely straight jointed with 1.5mm joints. If non-lu tiles are used, cardboard or plastic spacer pieces are to be used to obtain constant joint width. On completion tiling is to be pointed in white or coloured cement and cleaned down.

24) GLAZING

A. GENERALLY

(i) Glass for glazing and mirrors shall be of approved manufacture and is to comply with B.S. 952 in all respects, free from flaws, bubbles, specks and other imperfections.

(ii) Each pane of glass where its dimensions contain fractions of centimeter above both in width and height. Louver blades have been similarly measured in regard to length.

(iii) Prices for glazing shall include for back-puttying, fixing glazing clips of springing as required, cutting glass to sizes, cleaning all glass inside and out, removing all paint and putty marks, replacing any broken, scratched or cracked panes and leaving all glazing sound and perfect at completion.

B. **CLEAR SHEET GLASS**

Clear sheet glass shall be Ordinary Glazing (Q.Q) quality.

C. **POLISHED PLATE GLASS**

Polished plate and Georgian wired polished plate to be General Glazing (G.Q) quality.

D. **OBSCURED GLASS**

To be of the types described and as approved by the Project Engineers.

E. **MIRRORS**

To be S.Q quality plate glass mirrors of approved manufacture with beveled edges and fixed at all corners to walls with raw plugs and brass screws with removable chromium-plate dome heads.

F. **PUTTY**

(i) The putty for glazing to metal windows is to be gold size metal window putty specially designed for tropical use, all as B.S 544 (Type 2 putty) or patent mastic putty as approved by the Project Engineer.

(ii) All putty shall be delivered on site in the original manufacturer's sealed cans or drums and used direct there from, with the addition only of pure linseed oil if necessary. No mineral or other oils may be used in the putties except genuine linseed oil.

A. **GLAZING**

(i) Glass panes shall be cut to sizes to fit the openings with more than 1.5mm play round.

(ii) The rebates of all windows shall be painted one coat before puttying.

(iii) All glass, where fixed with putty, is to be back and front puttied and care must be taken to ensure that putty does not project beyond the sight lines of panes and is to be neatly mitred at angles.

(iv) Putty, which has not set hard within seven days, must be removed and the glass re-putted at the contractor's expense.

(v) Allow for removing all cracked or broken panes of glass, cleaning rebates and re-glazing with new glass throughout the progress of the works and for cleaning all glass on both sides and leaving perfect upon completion.

B. **BEDDING STRIPS**

Wash-leather, velvet, etc., bedding strip to edges of glass is to be sufficient width to be turned over 6mm to each side of pane and shall be trimmed to the sight lines of the pane.

25) PAINTING

A. **GENERALLY**

(i) Prices must include for rubbing down with glass paper between successive coats and all cutting in at edge.

(ii) Prices shall include for all work in parti-colours and all cuttings to line.

B. **MATERIALS**

(i) Paints shall be obtained from M/s Crown Paints or other manufacturers approved by the Project Engineer.

(ii) The materials for all other finishes shall be of the best quality available of approved manufacture.

(iii) Before commencing painting, the Contractor shall submit to the Project Engineer for approval a list of all the brands of paints and finishing including the necessary primers and undercoats he intends to use and immediately upon being so approved, orders shall be placed and total requirements obtained for the works.

(iv) Once approved, no other brand of material shall be used without the express permission of the Project Engineer, in writing.

C. **MORDANT SOLUTION**

All galvanized metal work to be painted shall first receive a coat of a propriety mordant solution, approved by the Project Engineer as suitable for this purpose.

D. **KNOTTING**

To B.S 1336.

E. **STOPPING**

To be composed of linseed oil putty, white lead, red lead and gold size suitable proportioned and mixed.

F. **POLYURETHENE**

To be polyurethane approved by the Project Engineer.

G. **WAX POLISH**

Wash polish is to be furniture polish of an approved proprietary brand.

PAINTING

TRADE PREAMBLES

PAINTING (CONT'D)

A. **DELIVERY OF PAINTS TO SITE**

(i) All paints etc., shall be delivered on site in the original drums or tins, and shall be mixed and applied strictly in accordance with the manufacturer's printed directions. The only addition which will be allowed to be made will be liquid thinners, driers etc., supplied by the makers for the purpose. No paint, distemper, etc., shall be thinned more than approved by the Project Engineer.

(ii) Paint for external work shall be of the special quality recommended by the manufacturers for external use.

B. **GENERAL WORKMANSHIP**

(i) The priming, undercoats and finishing coats shall each one be of different tints and the priming and undercoats shall be the correct brands and tints to suit the respective finishing coats, all in accordance with the manufacturer's directions.

(ii) All surfaces must be thoroughly cleaned down previous to painting and decoration work and no external painting may be done in rainy weather. All paint must be thoroughly well worked on and excess of paint in any coat must be avoided.

(iii) All brushes, tools and receptacles are to be kept clean and free from dirt or old paint and are to be thoroughly cleaned each time after use.

(iv) Each coat is to be well brushed into the surface so that every part, including joints, angles etc., is adequately covered, but care is to be taken to avoid

excessive or uneven thickness of paint film, particularly at edges and in angles, etc.

(v) Each coat of paint etc. shall be properly dry and shall be well rubbed down with fine sandpaper and be brushed clean before the next coat is applied. The paintwork shall be finished smooth and free from brush marks.

(vi) Where so required or directed, painting shall be in parti-colored and picked out and cut in and the prices shall include for this.

PAINTING (CONT'D)

GENERAL WORKMANSHIP (CONT'D)

(vii) All ironmongery, metal or plastic plates and electrical outlet plates and fitting and the like shall be removed before painting is commenced, and re-fixed on the completion of the work.

(viii) The Project Engineer will allow no sprays or roller painting unless permission is given.

(ix) The contractor shall so arrange his programmed of work that all other trades are completed and away from the area to be painted when painting begins.

A. **SAMPLES AND COLOURS**

He Project Engineer will select all colors from the B.S range of colors. Samples and colour cards of all paints, distemper, and materials shall be submitted for approval of the Project Engineer before the same are applied and sample panels shall be executed for the Project Engineer's approval where directed. Such samples when approved shall become the standard for the work.

B. **PREPARATION AND PRIMING OF PAINTED SURFACES**

(a) PLASTERED AND RENDERED SURFACES

(i) Plastered surfaces are to be perfectly smooth, free from defect and ready for decorations. All such surfaces shall be allowed to dry for a minimum period of four weeks and rubbed down with No.2 grade sandpaper to remove trowel marks stains, etc. After the priming coat, all cracks and imperfections are to be made good with 'Polyfilla' (or a similar approved hard filler), well rubbed down and then touched up with the priming coat.

(ii) Priming for plastic emulsion paint shall be the paint thinned with 25 percent water.

(iii) Priming for oil paint shall be with alkali-resistant primer.

(b) HARDBOARD SURFACES

(i) Priming for plastic emulsion paint shall be the paint thinned with 25 per cent water.

(ii) Priming for oil paint shall be with a thin oil primer.

PREPARATION AND PRIMING OF PAINTED SURFACES (CONT'D)

(c) FERROUS METALWORK

All surfaces shall be thoroughly brushed down with wire brushes to remove all scale, rust, etc., and rubbed down with No.2 Grade sandpaper and brushed and left perfectly clean immediately prior to decoration

(i) Shop-Primed: Surface to receive oil paint shall have all bare places touched up with approved metal zinc chromate primer.

(ii) Unprimed: Surface shall be given one coat of primer as last.

(iii) Galvanized: Surface shall be treated before painting with mordant solution. The surfaces shall then be thoroughly washed down with clean water, allowed to dry and primed as last.

(iv) Coated: Surfaces already treated with bituminous solution shall receive an insulating coat of anti-bitumen primer or 'Shellac' knotting.

(d) WOOD SURFACES TO RECEIVE PAINT

(i) The woodwork shall have all knots or resinous parts carefully treated with self-knotting aluminum primer. All cracks, nails, or other holes shall be thoroughly cleaned out and after priming all such cracks etc., are to be filled with matching hard stopping which is to be rubbed down flush with the adjoining surface.

(ii) Priming for oil paint shall be self-knotting aluminum primer.

(iii) The back of all joinery work is to be primed before fixing.

A. **PREPARATION, PRIMING ETC., OF CLEAR TREATED WOOD SURFACE**

All wood surfaces to receive clear treatment shall be rubbed down to a stain finish with fine sandpaper immediately prior to application.

B. **COVERING UP**

All floors etc., shall be covered up with dustsheets when executing all painting and decorating work.

C. **DELIVER UP CLEAN**

Paint splashes, spots and stains, shall be removed from floors, woodwork, etc. Any damaged surfaces shall be toughed up and the whole of the work left clean and perfect upon completion.

26) ROAD WORKS

A GENERALLY

The Specification of work and materials in this section, which repeat similar work in proceeding sections, shall be deemed to the full specification of work and materials contained in the preceding Bills.

ACCESS ROADS AND CAR PARKS

B EXCAVATION

Excavation shall be to levels approved by the Project Engineer. All soft spots are to be excavated and filled with approved filling thoroughly compacted.

C FALLS

Roads and car parks shall have a minimum fall of 1 in 40. The actual falls will be decided by the Project Engineers on Site.

D COMPACTION OF FORMATION

The maximum dry density of the soils to be compacted shall be determined by Test 9 as described in B.S. 1377/49.

The dry density of the soil in the filed shall be determined by Test 10 as described in B.S. 1377/49.

The relative compaction of the formation shall be determined by the percentage rates of the dry density in the field (Test 10) to the maximum dry density (Test 9).

The relative compaction of the formation is to be not less than 100% when compacted at optimum moisture content plus a minus 2%. Water shall be used as necessary to achieve the desired moisture content.

E **COMPACTION ON SUB-BASE**

The murram sub-base shall be built up in layers as described hereafter, each layer shall be compacted at B.S. optimum moisture content plus or minus 2% until relative compaction is obtained of 95% for the lower layer and 102% for the top layer. Water shall be used as necessary to achieve the desired moisture content.

EXTERNAL WORKS (CONT'D)

A **MURRAM SUB-BASE**

The murram shall be approved clean, hard, dark coloured; Imported murram free from all vegetable matter, clay or other deleterious substances and obtained from an approved source.

The murram sub-base shall be 150mm, Thick (finished) laid in two layers to the required compaction as described herein to form on completion a firm dense surface.

B. HAND PACKED STONE BASE MATERIAL

The rock from which the stone and screenings are to be produced shall comply with the following: -

ACV: not greater than 40%

LAA: not greater than 60%

SSS: loss on 5 cycles to be not more than 12%

The stones shall be free from an excess of flat or elongated particles; soft and less durable rock, clays, loam, topsoil and other deleterious matter. The larger stones shall have a maximum dimension slightly greater than the thickness of the required compacted layer and be of a shape acceptable to the Engineer. The smaller stones shall have a reasonably uniform grading and be of a nominal size suitable, in the opinion of the Engineer, for filling the surface voids of the as placed larger stones. The nominal size will be of the order of 50 mm (2").

The screenings shall consist of tough durable crushed rock, free from an excess of flat, elongated, soft or disintegrated pieces and harmful material, such as loam, clay, organic matter, or other deleterious substances and shall be to the Engineer's approval. The grading of the screenings shall form a smooth curve and shall be within, and approximately parallel to, the following grading limits: -

BS Sieve Size	**Percentage by Weight Passing BS Sieves**
3/8 "	100
3/16"	85 – 100
No. 36	30 – 50
No. 100	10 – 30
No. 200	0 – 20

Sandy soil which may, with the approval of the Engineer, be added to the screenings or used in lieu of the screenings, shall comply with the following requirements: -

(i) It shall consist mainly of sand sizes and have a reasonable smooth grading.

(ii) The fraction passing No. 200 sieve shall be less than half the weight passing No. 36 sieve.

(iii) PI shall not be greater than 5%.

STOCKPILING MATERIAL

The site of the stockpile shall be levelled, graded and drained, all vegetation removed and if necessary the area shall be surfaced with murram or other material as directed by the Engineer. Each category of material shall be stockpiled separately and not intermingled with each other or any other material.

PLACEMENT OF STONE FOR HANDPACKED STONE BASE

On the prepared area, the pitching stone shall first be laid, each individual stone being positioned by hand, closely packed with the greatest dimension vertical, and the largest and flattest and downwards. The majority of the stones will be slightly higher than the final thickness of layer required. When an area has been covered in this way a second placing of stones of smaller size, keystone, shall be positioned in the spaces between those first placed and shall be wedged home by hammering. The points of pitching stone projecting beyond the required height shall then be knapped, and a third placing of stone shall follow the second and so on until in the opinion of the Engineer the voids are sufficiently filled to permit compaction. No hand packed stone layer of greater compaction thickness than 230 mm shall be laid.

COMPACTION AND SLUSHING

After placement of the stone in the specified manner the material shall be initially compacted with a heavy smooth steel-wheeled roller, weighing not less than 12 tone

and/or vibratory roller, and shall continue until the layer is thoroughly keyed, showing virtually no movement under or ahead of the roller.

All rolling shall be longitudinal and shall commence at the outer edges of the road, and progress towards the center of the road except that on super-elevated curves, rolling may progress from the lower to the higher edge.

The irregularities that may show up during compaction shall be corrected by loosening the surface removing or adding material as may be required, and recomposing.

After the stone has been rolled and keyed, binder material, where necessary, shall be spread dry in thin layers and boomed into the interstices and dry rolling continued with approved vibratory and smooth swivel-wheeled rollers until no more binding material will go in.

The layer shall then be saturated with water slushed and compacted with a smooth-steel-wheeled roller weighing not less than 12 tonnes. This rolling and slushing, with the addition of more binder material where necessary shall continue until all surface voids are filled and there is no visible movement under the roller.

All surplus fines shall be brushed off to expose a closely-knit compact mosaic of stones as the finished surface of the layer.

A. **TOLERANCES FOR HANDPACKED STONE BASE**

The following tolerances shall apply to the hand packed stone base course: -

Thickness	**3m Straight Edge**	**(iv) Width**
+ 10 mm	+ 6 mm	+ 150 mm

- 0 mm	- 6 mm	- 0 mm

B. **MEASUREMENT AND PAYMENT FOR HANDPACKED STONE BASE**

The hand packed stone base material will be paid for per cubic metre of material measured in place upon the road. The volume of material shall be calculated as the product of the compacted thickness specified or ordered by the Engineer and the net area requiring to be laid. The rate shall be the full inclusive price for providing spreading and compacting the material.

C. PRIMING COAT

The priming coat shall consist of Grade MC 30. Medium curing cutback bitumen or emulsion as directed by the Project Engineer.

Priming shall not commence until all loose fines, superficial films and foreign material have been removed from the surface of the base by sweeping with mechanical or hard hand broom. The prepared base shall be watered, if necessary, in order to ensure that the surface is damp when the prime coat is being applied. Care shall be taken not to cause free water to lie on the surface.

On the properly cleaned and prepared base, the MC 30 cut back bitumen shall be applied at a temperature of 43°C, and at a rate of 1 litre per square metre by means of a pressure distributor. The prime coat shall be applied over the full width of the base and shall be left undisturbed for a period of not less than two (2) days and preferably until complete absorption has taken place and the applied prime coat has dried off thoroughly. Any excess prime remaining on the surface shall be blotted with crusher fines or sand.

After the primer has been applied the surface of the base shall be checked for smoothness and accuracy of elevation, grade and cross-section and any irregularities or

inaccuracies shall be corrected by filling in or surfacing with premixed bituminous material and compacting until specified requirements are obtained to the satisfaction of the Project Engineer, all at the Contractor's expense.

PREMIX SURFACING

PREMIX WEARING COURSE

.01 The Term "Premix" shall mean mixture of dried, hot aggregate of pre-determined grading and hot straight run bitumen in pre-determined quantity to give adequate strength and stability and shall apply both to the mix and the compacted layer on the road.

.02 The actual quantity of binder and the aggregate used in various proportions shall be determined by laboratory tests and trial mixes.

.03 The Contractor shall be responsible for the design of the mix and shall provide the design information to the Engineer together with sample sections on the site based on the designed proportions of the aggregate and binder to the Engineer's approval.

.04 Once the design mix has been approved it shall not be varied by the Contractor without written authority of the Engineer.

.05 Notwithstanding the Engineer's approval the Contractor shall be responsible for compliance with the provisions of this Specification.

.06 The Materials used shall comply with the following requirements: -

.01 Bitumen grades 80/100

.02 **COARSE AGGREGATE**

.01 Los Angeles Abrasions – Max. 35

.02 Aggregate Crushing Value – Max 28

.03 Sodium Sulphate Soundness – Max 12

.03 **FINE AGGREGATE**

.01 Sand equivalent min. 40.

.02 Sodium Sulphate Soundness max 12.

.04 **MINERAL FILLER**

.01 Shall be cement, lime, limestone or other mineral matter and shall be NON-PLASTIC

.05 GRADING

.01 Passing 0.425mm 100%

.02 Passing 0.075mm 75%

.06 GRADING

The mix grading shall comply with the table below: -

Sieve Size	**Percentage by Weight Passing**
14	100
10	90 – 100
6.3	62 – 92
4	50 – 80
2	35 – 65
1	25 – 50
0.425	14 – 33
0.300	11 – 27
0.150	6 – 27
0.075	3 – 8

.07 **PREMIX WEARING COURSE**

.08 Asphalt Mix

The mix shall comply with the following table: -

Test	**Result Required**
.01 Crushing Ratio	60 – 100%
.02 Marshall Stability (N)	
(Test ASTM, D 1559)	5000 – 9000
.03 Flow (mm)	2 – 5
.04 Voids in total mix (%)	3 – 8

.08 Mixing shall be carried out in an approved stationary plant at controlled temperatures as follows: -

.01 The materials shall be mixed in such a manner that on discharge from the mixer the mixture is uniform in composition and all particles of the aggregate are completely coated. The mixing time shall be the minimum to ensure such coating and shall not exceed 90 secs. From the addition of the bitumen.

.09 When permitted by the Engineer, soil binder material may be added to screenings or used in lieu of screenings, provided it complies with the following requirements: -

.01 The fraction passing BS sieve No. 200 shall be less than half that passing No. 36 sieve.

.02 The plasticity index shall be not greater than 8 and preferably not greater than 5.

.09 **MURRAM (GRAVEL) FOR SUB-BASE MATERIAL**

.01 Where murram is specified for sub-base construction, naturally occurring lateritic gravel or decomposed stone and coral shall be used. The material may be in either a loose or cemented to an acceptable size on the roadbed during consolidation. The proportion of clay in the material must not be excessive and test results for the grading of the material and the Attenburg Limits must be produced by the Contractor prior to any material being delivered to site.

A. MANUFACTURE AND LAYING

The premix shall be manufactured in an approved plant and shall, where required by the Project Engineer be laid by means of an approved paving machine such as a Blaw-Knox or Barber-Green type paver, or otherwise shall be laid in an approved manner.

B. BITUMEN

The bitumen used in the premix shall be straight-run bitumen as follows: -

Base Course	-	80 - 100 Penetration
Wearing Course	-	80 – 100 Penetration

The bitumen shall be from an approved source delivered in sealed drums and opened with care to ensure cleanliness.

.10 BITUMEN AND BITUMEN EMULSIONS

.01 Before any bitumen or bitumen emulsion is delivered to the site, the Contractor shall provide the Engineer with a certificate from the manufacturer that the material to be supplied complies in all respects to the relevant specification given or referred to hereinafter.

.02 Any bitumen or bitumen emulsion delivered in leaking containers or deteriorated containers may be rejected. The types of bitumen binders required will normally be as follows: -

.01 **Prime Coat**

On stone base course (R.C. 30 or MC 30)

On stabilized base course (Alternatively R.C. Or MC 1)

A. AGGREGATE

The aggregate shall be black trap, hard, dense stone free from dust, impurities or a mixture of softer stone. Before commencing manufacture the Contractor must submit to the Project Engineer samples of all sizes of stone he proposes to use and these, when approved, shall form the standard for the work. If the samples are rejected, the Contractor shall be responsible for providing samples from alternative sources.

B. BASE COURSE

The base course premix shall be of the specified thickness after consolidation of crushed black trap aggregate with 80 – 100 penetration straight run bitumen and approved filler. The grading shall comply with Table 2 of B.S. 1621. The soluble bitumen binder minimum shall be raised from 3.0% to 3.5%.

C. WEARING COURSE

The wearing course premix shall be of the specified thickness after consolidation of crushed black trap aggregate with 80 – 100 penetration straight run bitumen and approved filler.
The grading complies with Table 5 of B.S. 1621.

The finish surface shall be to the required gradients and cambers and shall be well rolled and neatly finished off at all curbs, walls, drainage galleys etc., to the approval of the Project Engineer.

D. CONCRETE KERBS

The rates entered by the Tenderer in Bills of Quantities for the provision and placing of precast concrete kerbs shall include for all necessary concrete bedding and haunching, and all necessary shuttering all in accordance with the specification and the drawings.
Concrete kerbs shall comply with B.S. 340 (Figure 7) for 250 x 125mm splayed, plain or circled kerbs.
Kerbs will be set on concrete (1:3:6) foundations size 225mm wide x 100mm thick and a 100mm thick x 200mm high haunching behind.

Kerbs to be bedded, jointed and pointed in cement mortar (1:3) and to be laid true to line, perfectly level or to even gradients and to be free from all chips, cracks, blemishes and cement stains at joints.

A. WORKMANSHIP

Excavation in Trench for Pipe Culverts, Headwalls and Wing walls

.01 Trenches for culverts, headwalls, wing walls shall be excavated to line and depths shown on the drawings or as directed by the Engineer and shall be of sufficient width to give working clearance in the trench but for the purpose of measurement and payment, the width of the trench shall be taken as 1.5D where D is the outside measurement of the pipe. Backfilling of trenches around culverts shall be done to a density of 100% BS Compaction. Excavation for inlet and outfall drains, catch water drains and trench or subsoil drains shall be to the dimensions ordered by the Engineer.

B. GROUTED STONE PITCHING

.01 The stones used for the grouted pitching shall be hard angular rock, roughly cubical in shape and of dimensions such that they can be laid with a minimum thickness equal to that specified.

.02 The interstices of the grouted pitching shall not be filled with fill material, but may be choked with large rock spalls. The pitching shall be thoroughly soaked with water and grout of 1:4 cement: sand mortar shall be rammed into the interstices and smoothed off flush with the pitched face.

.03 Grouted pitching to embankments and around structures shall be constructed as soon as possible after the embankments have been built. The surface of the filling to receive the pitching shall be compacted and trimmed to slope and the stone hand laid interlocked and rammed.

CONCRETE PAVING BLOCK

A. SCOPE

Concrete paving blocks shall comply with the requirements of the Specification for precast concrete paving blocks published jointly by the Cement and Concrete

Association, the County Surveyor's Society and Interpave, September 190 (or as amended by subsequent British Standards).

B. CONSTRUCTIONAL DETAILS

LAYING PATTERN

The laying pattern shall be that specified for vehicular traffic or the herringbone type.

SURFACE LEVELS OF PAVEMENTS

The following levels shall apply to the various layers of concrete block pavements.

Layer	Tolerance
Formation	+20 mm – 30 mm
Sub-base	+20 mm
Road base (where required)	+15 mm
Pavement Surface (except adjacent to gullies)	+6 mm

Surface levels of Paving Blocks Adjacent to Drainage Installations

The surface levels of paving blocks immediately adjacent to gullies, surface drainage channels and outlets shall not deviate from the design level by more than +6mm, -0mm and on the upper level of drainage installation +0mm, -10mm.

DEVIATION FROM DESIGN PROFILE

The deviation from the design profile measured under a 3m straight edge shall not exceed 10 mm.

(v) LEVELS OF ADJACENT BLOCKS

Levels of any two adjacent blocks shall not differ by more than 2 mm.

(vi) CROSSFALLS AND GRADIENTS

A minimum cross fall of 2.5% shall be adopted where practicable. Longitudinal gradients shall not be less than 1%.

(vii) A PAVEMENT CONSTRUCTION

(viii) Preparation of Sub-grade

The sub grade shall be prepared to the required formation and shall be sufficiently wide to extend to the near face of the proposed edge restraint and around existing structures. The sub grade shall be drained and protected against inundation and ground water by piped or channeled storm water drainage and sub soil drainage. All drainage works located beneath the

Pavement shall be completed in conjunction with sub grade preparation before commencement of sub-base construction. Any unsuitable material shall be removed from the sub-grade and treated or replaced with suitable material properly compacted.

(ix) PREPARATION OF SUB-BASE

(x) New Sub-base

Sub-bases shall be constructed by following construction requirements and using one or other of the materials complying with Department of Transport Specification for Road Works as listed below: -

Granular sub-base materials type 1
Soil-Cement
Cement-bound granular material
Lean Concrete
Wet mix macadam
Wet lean concrete.

When no road base is to be laid, the surface of the sub-base shall be close-knit to prevent laying course material from sinking.

(xi) EXISTING SUB-BASE

Where an existing sub-base is to be used, it shall be inspected to ensure that it is suitable for the purpose. Any unsuitable material shall be removed and replaced by sub-base material complying with the requirements of Clause 1201.2.1.

(xii) PREPARATION OF ROAD-BASE

When a road base is required, it shall be formed with materials described in the Department of Transport Specification for Road works and constructed in accordance with that Specification, e.g.

Soil-cement

Cement bound granular material

Lean concrete

Wet mix macadam

Wet lean concrete

(xiii) LAYING COURSE

(i) LAYING COURSE MATERIAL

The laying course shall be of uniform thickness and shall be made up of naturally occurring sand or crushed rock fines. The material shall be free from deleterious salts or contaminants. The grading shall be within and approximately parallel to the following grading limits.

BS Sieve Size	**Percentage of Weight Passing**
5.00 mm	90 – 100
2.36 mm	75 – 100
1.18 mm	55 – 90
0.60 mm	35 – 59
0.30 mm	8 – 30
0.15 mm	0 – 10

MOISTURE CONTENT OF LAYING COURSE

The moisture content of the laying course material shall not deviate by more than 1% from its optimum moisture content as determined in accordance with test 12 of BS 1377.

SCREEDING THE LAYING COURSE

The laying course shall be such that after compaction it forms a uniform layer 25 mm below the blocks. It may be screed in accordance with the following two methods: -

Either

(a) The material shall be spread loose in a uniform layer and screed to a thickness required to give a nominal 25 mm layer after completion of the paving.

Or

The material shall be spread in loose uncompacted layer approximately two thirds of the required final thickness. This layer shall be lightly compacted by means of a vibrating plate compactor. A further layer of loose material shall be spread and screeded to create a loose surface on to which the blocks can be placed.

Where closer tolerance than those quoted in Clause 1201.2 for the level of the sub-base materials have been achieved, or road base has been used, a thinner laying course can be used.

SURFACE COURSE

EDGE RESTRAINTS

Edge Restraints shall be provided along the perimeter of all paved areas and shall be adequate to support traffic loads and to prevent the escape of laying course material

from beneath the paved surface. Edge restraints shall be formed before compacting adjacent blocks and the restraint together with any concrete haunching shall be mature before vibration of the surface course is undertaken. Haunching to an edge restraint on the paving face shall be vertical down to the level of the underside of the laying course.

LAYING BLOCK PAVING

The blocks shall be laid hand-tight in the design pattern working from an existing laying face edge or edge restraint wherever possible. Mechanical forces shall not be used to obtain tight joints. Block shapes designed to assist with formation of boundaries and with changes in direction may be incorporated as appropriate. Full blocks

Shall be laid first; closure units shall then be laid. The area to be laid shall be completed as far as it is possible in entire block units. Infilling to boundaries and obstructions shall proceed, as the laying of the surface course proceeds and in any case, infilling shall be completed before compaction commences.

27) ADDITIONAL SPECIFICATIONS

PLASTERWORK AND OTHER FINISHES

Generally: All plasterwork and paving to be as described in the General Specification and in these Bills of Quantities.

TERRAZZO PAVING

Shall be as described for granolithic paving, but using marble chippings and colour cement. Paving:- Prices are to include for brushing concrete clean, wetting and "coating with cement and sand grout 1:1. Tyrolean rendering shall be in two coats: The first coat 10mm. thick in gauged cement mortar 1:4 (with 10% lime added to the cement) applied

with a trowel and the second coat in cement and sand 1:4 applied with Tyrolean spraying machine in three layers to a total thickness between 5 and 10mm.

GLAZING

Polished Plate Glass: Shall be General Glazing Quality. Prime Rebates: Prices are to include for priming rebates before placing putty. Broken or Scratched Glass: The Contractor will be responsible at his own cost, for replacing any broken or scratched glass and handing over in perfect condition.

PAINTING

Generally: - Note that the General Contractor is to provide scaffolding for all trades including painting.

Prices: - Prices are to include for all preparatory work priming coats and for protecting other works and for cleaning up on completion. Prices for painting on galvanized metal are to include for mordant solution as necessary.

WATERPROOFING

To be as BOQ specifications.

Provide 10-year waterproofing guarantee

METAL WORK

BALUSTRADES

ROLLED PLATES, BARS, SECTIONS AND TUBES

GLASS BALUSTRADES

Supply, assemble and fix 1400 mm high purpose made stainless steel (grade 3.1.6) glazed balustrading comprising of 50mm x 12mm thick stainless steel double flat bar vertical support using stainless steel spider bolt anchors/ connectors. Balusters fixed to concrete floor at 1025mm centres including 200mm x 150mm x 15mm thick stainless-steel base plate fixed to concrete reinforcement and at the top 3mm thick x 75mm

diameter oval stainless-steel handrail tube; including all necessary cleats, stiffeners and the like; all to Project Engineer's instructions and approval

GRANITE

Supply and fix full length local granite slabs or other equal and approved granite slabs; to approved pattern; bedding and jointing in approved adhesive with proprietary grouting laid on cement sand bed (m/s);

BLOCKWORK

Concrete hollow block; B.S 2028; 7 N per square millimetre in 25 mm thick cement sand mortar (1:3)

ALUMINIUM DOORS

Aluminium framed doors fabricated from composite powder coated heavy duty approved standard hollow aluminium sections 150 x 80 x minimum 3 mm thick; including glazing with 4mm + 4mm thick toughened laminated glazing; glass secured to aluminium door framing, stiles, top, middle and bottom rails using approved glazing strips and glazing beading including waterproofing all joints using approved silicon sealing compounds and including approved aluminium brackets; soft closing hinges, locks, catches, automatic door closer, oval satin door stopper, 500 mm long stainless steel pull handles, stainless steel push/pull plate, accessories, opening mechanism and any other necessary ironmongery all as approved ; including timber offcuts in hinge fixing points and fixing with powder coated stainless steel screws; plugging or fixing on aluminium framing; sealing with mastic; oiling and adjusting on completion all to Project Engineer's details and approval

EPOXY FINISH

Works to be executed by an approved specialist surface laitance and expose defects, repairing defects and cracks, fill control joints with shrinkage compensated mortar;

apply moisture barrier and Captive blasting and wash with approved acid; apply primer as X-prime MT100 and finishing coat as X-Tech Epoxy Floor SL2 all as supplied by X-Calibur construction Chemistry(E.A) Limited email address niyaz@x-calibur.usa or other equal and approved epoxy all applied in accordance with manufacturer's printed instructions.

PLASTER

Plaster; 9 mm (minimum) first coat of cement and sand (1:4); 3 mm second coat of cement and lime putty (1:5) steel trowelled hard and smooth

MILD STEEL DOORS

Mild steel double door comprising of upper fixed panel 1800 x 450 mm high and two bottom openable equal leaves each 900 x 2250 mm high; door leaves fixed to and including 100 x 50 x 4 mm thick pressed frame fixed to wall with and including building frame into block wall; each openable leaf comprising of 75 x 50 x 4 mm thick pressed steel stiles and middle rails and 100 x 50 x 4 mm thick top & bottom rails (frames and stiles in rolled hollow sections) faced both sides with 3 mm thick mild steel plate infill panel spot welded to mild steel stiles and rails; each door leaf to have 700 x 240 mm louvered vent with 18 gauge cranked louvres fixed at 45 degrees at 60 mm centres welded to stiles; with 25 x 4 mm thick mild steel flats welded to edges of the door leaf in filled with approved mosquito gauze spot welded to sub frame. Each door leaf supplied complete with 2 pairs heavy duty 150 mm pressed steel butt hinges welded to door leaf and door framing 2 No 16 mm diameter once kneed barrel bolts 250 mm long; with 50 mm diameter curved steel tube pull handles; 2 No steel padlock hasps and including priming door leaf and door frame with 2 pack epoxy zinc phosphate primer before delivery to site and all necessary welding and grinding welds smooth

FRAMELESS GLASS DOOR

12mm thick toughened frameless glass manual sliding/ openable double door; overall size 1800 x 2800 mm high in 2 No. active leaves each of size 900 x 2400 mm high and 2 No. fixed light 900 x 300 mm high complete with and including soft closing hinges, locks, catches, automatic door closer, oval satin door stopper, 500 mm long stainless steel pull handles, stainless steel push/pull plate, accessories, opening mechanism and any other necessary ironmongery all as "ASSA ABLOY" or equal and approved to Project Engineer's details and approval

ALUMINIUM PURPOSE MADE WINDOWS

Supply and fix 100 x 50 x 3 mm (minimum)thick powder coated top - hung openable/sliding aluminium framed windows, to be supplied and fixed by an approved domestic subcontractor, to be fabricated from approved composite extruded powder coated heavy duty hollow or angle sections (minimum 3 mm thick); including glazing with 8 mm thick clear glass secured to framing using approved rubber glazing strips , aluminium beading and silicone sealant where necessary; complete with 400 mm wide champagne powder coated aluminium louvres including sandwiched plastic insect gauze; frames and framing all round mitred at corners including reinforcing cleats, fixing with aluminium screws; plugging and fixing to jambs; sealing with mastic; oiling and adjusting on completion and all necessary ironmongery such as hinges, locking devices such as windows fasteners, stays locks, bolts sliding tracks etc. to Project Engineer's approval and in accordance with Project Engineer's drawing

SKIN WALL

Selected approved quality natural stone fine machine dressed and cut to regular block size: stone load bearing blocks (7N/mm?): including double dressing to corner blocks: 20-gauge x 25mm wide hoop iron in every alternate course: with 20 Gauge hoop iron reinforcement and column-wall ties: one end cast into concrete: other end built into walling in alternate courses:

INTERNAL PAINT

One coat CROWN ‘solo' or other equal and approved undercoat including skimming surfaces to smoothen them using approved filler and sanding to smooth surface; approved colour; three coats first quality silk vinyl sheen emulsion paint other equal and approved; approved colour; applied in accordance with manufacturer's printed instruction.

EXTERNAL PAINT

Prepare and apply textured paint as Marmoran or other equal and approved exterior surface paint to; As per BOQ specs: -

GRANITO FLOOR TILE SPECIFICATIONS

GRADE: Grade One. WEAR RATING: Porcelain and Enamel Institutes (PEI) Wear Rating of five (V). WATER ABSORPTION (WA)RATE: Impervious. SLIP RESISTANCE: Coefficient of friction of greater than 0.6. PRINTING:3D Digital Print Technology. BODY COMPOSITION: Full Body. THICKNESS: Above 3/4inch (18mm and above). FINISH: Micro-crystal finish of the 'Thick Collection' glass layer of more than 3mm thick. DIMENSIONS: Rectified tiles for uniform dimensions (dimensionally stable tiles) to take a maximum of 1.5mm wide grout joints. TOLERANT DISTORTION: Below 0.5% in both right-angle level and flatness straightness. Grade 1/PEI Rating of V, Water absorption rate (WA) - Impervious, Slip resistance co-efficient friction of more than 0.60, through body

28. STANDARDS

1. ISO/IEC 17020:2012 – Conformity Assessment Requirements for the operation of various types of bodies performing inspection.

2. ILAC P15:06/2014 – Application of ISO/IEC 17020:2012 for the Accreditation of Inspection Bodies
3. SAC-SINGLAS 006 - Traceability of Measurement

4. BS 5930:2015 – Code of practice for site investigations

5. BSISO 14686: 2003 – Hydrometric Determination Plumbing tests for Wells. Considerations and guidelines for design, performance and use.

6. BS EN ISO 14688-1:2002+A1:2013 – Geotechnical investigation and testing.

7. BS EN ISO 14689 Part1:2003 – Geotechnical investigation and testing.

8. BS EN ISO 22282-1:2012 – Geotechnical investigation and testing – Geohydraulic testing: Part 1- General rules

9. BS EN ISO 22282-2:2012 – Geotechnical investigation and testing – Geohydraulic testing: Part 2 – Water permeability tests in a borehole using open systems

10. BS EN ISO 22282-3:2012 – Geotechnical investigation and testing – Geohydraulic testing: Part 3 – Water pressure tests in rock

11. BS EN ISO 22282-4:2012 – Geotechnical investigation and testing – Geohydraulic testing: Part 4 – Pumping tests

12. BS EN ISO 22282-6:2012 – Geotechnical investigation and testing – Geohydraulic testing: Part 6 - Water permeability tests in a borehole using closed systems

13. BS EN ISO 22475 Part1:2006 – Geotechnical investigation and testing. Sampling methods and groundwater measurements. Technical principles for execution.

14. BS EN ISO 22476 Part1:2012 – Geotechnical investigation and testing. Field testing. Electrical cone and piezocone penetration test

15. BS EN ISO 22476 Part 3:2005+A1:2011 – Geotechnical investigation and testing – Standard Penetration Test.

16. BS EN ISO 2274 Part 4:2012 – Geotechnical investigation and testing – Menard Pressure meter Test

17. BS EN ISO 22476 :Part 5 :2012 – Geotechnical investigation and testing – Flexible Dilatometer Test

18. BS EN ISO 22476: Part 11:2006 – Geotechnical investigation and testing – Flat Dilatometer Test

19. ASTM D6274 Part 18 – Standard Guide for conducting Borehole Geophysical Logging – Gamma

20. BS 7022:1988 – Guide for geophysical logging of boreholes for hydrogeological purposes.

PARTICULAR PRELIMINARIES

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	AMOUNT
	BILL NO. 1	
1	**PARTICULAR PRELIMINARIES**	
	PARTIES	
A.	**The "EMPLOYER" is** CENTRAL BANK OF KENYA HAILE SELASSIE AVENUE P.O. BOX 60000 - 00200, NAIROBI	
B.	**The Project "ENGINEER" - CBK have contracted a project consultant who will supervise the project.**	
(a).	The Term "Approved", "Directed" or "Selected" shall mean the approval, direction or selection by the procuring entity.	
(b).	Wherever the word "Allow" occurs the cost of the item is at the risk of the Contractor.	
(c).	The Contractor shall provide all materials unless otherwise and wherever the term "Supply", or "Provide" occur they shall be held to mean provide only in that section where the term is used, it must be assumed that the fixing has been measured in another section of the Bills of Quantities.	
(d).	The Term "as described" shall mean as described in the general and particular specifications for materials and workmanship.	
(e).	The expenditure of amounts in the Particular and General Preliminary Items shall be at the guidance and instructions of the Project Consultants. The Project Consultants shall determine what items are priority and what amounts shall be re-allocated to more priority items. There shall be no additional costs to the contractor in such re-allocations.	
(f).	All equipments and tools under prelimary items meant for the implementation of the works shall upon the completion of the project be scrapped,written off or transferred to the project consultant for extended project monitoring and evaluation as per the instructions of the Project Consultant at no additional cost.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**DESCRIPTION OF SITE**	
	The site of the proposed works is situated in Eldoret City, Uasin Gishu County	
	The Contractor shall provide and maintain any necessary temporary roads, sleeper tracks, ramps and temporary crossovers during the execution of the works for both his own use and that of all Nominated Sub-Contractors and Suppliers together with all those having the Employer's or Project Consultant's authority, clear away the same at completion and reinstate and make good any existing disturbed structures, roads etc. to the satisfaction of the Local Authority and the Project Consultant. Where temporary access roads are in the position of permanent new roads, the permanent sub-base may be excavated for and laid as temporary road and later regraded, dressed and surfaced in accordance with the specifications prepared by the Civil Engineer. The Contractor shall be deemed to have visited the Site and satisfied himself as to :-	
(a).	The nature of the site.	
(b).	The amount of demolition, bush, rubbish or debris to be cleared away before commencement.	
(c).	The nature, proximity and size of adjoining property and buildings.	
(d).	The nature of existing communications by road or otherwise.	
(e).	The means of access to the site which is to be confirmed as being acceptable to the Project Consultant.	
(f).	The availability of land for the erection and positioning of all temporary structures, plant and materials necessary for the proper execution of the works.	
(g).	The amount of clearing and cutting and fillings and therefore ready with the right equipment.	
(h).	The sources of adequate supplies of labour, water, power, plant and materials for the successful completion of the works.	
	Any sand, aggregate or other building materials found upon the site shall be the property of the Employer and shall not be used in the Construction of the Works without the written consent of the Project Consultant.	
	The Contractor is to satisfy himself as to any difficulties that the Site may present and to make all necessary enquiries as to any point which in his opinion requires further elucidation prior to tendering, as no claim for lack of information on any of the foregoing will be entertained.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
	DESCRIPTION OF THE WORKS	
	The works comprise the main building, police residential apartments,guest houses, caretaker's house, power house,gym and clinic building, police station,gate houses, CIT lounges and associated civil works as detailed here below:-	
A.	The substructure comprises raft, strip and pad foundation in class 40, class 30 and class 25 reinforced concrete, lift base; columns; lift walls; 200 mm thick masonry wall; 175 mm thick slab; waterproofed as necessary.	
B.	R.C. Works are class 30 and class 25 concrete in staircase,columns, beams & slabs.	
C.	Walls are painted; cladded with alucobond where applicable and rendered under windows externally. Internally; walls are plastered and painted; granite slabs and tiles; granito tiles are applied to wet areas.	
D.	Floor finishes are mainly granito tiles,ceramic tiles,carpet,granite slabs	
E.	Doors include, glass door, aluminium doors, mahogany panelled doors and solid core flush doors.	
F.	The works comprise of plumbing installation and electrical installations as necessary.	
G.	External works include :- the construction and completion of access roads, car parks and foot paths around the buildings, foul drainage, stormwater drainage, basic landscaping among others.	
	The overall floor area, measured over external walls given without warranty and is for guidance only:-	
	Total Area- Approx 11,500m2	
H.	All the works shall generally proceed at the same time and in accordance with a programme to be approved by the Project Consultant who shall have the Sole discretion of speeding up sections of the works in order to monitor and maintain quality and no claims shall be entertained for any disruption that this may cause.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**PRICING ITEMS OF PRELIMINARIES** Prices SHALL BE INSTERTED against Items of "Preliminaries" in the tenderer's priced Bill of Quantities. Where no price is inserted 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 such costs involved in complying with all the requirements for the proper execution of the whole of the works in the Contract. The contractor is advised to read and understand all preliminary items. **The contractor MUST PRICE and extend all priceable items in the Preliminaries and the bills of quantities. Failure to do so shall lead to automatic disqualification in accordance to the mandatory evaluation .**	
B.	**LABOUR CAMPS** The contractor shall be allowed to house labour on site ONLY to the approval of the Project Consultant . The contractor to make his own arrangements to transport additional labour not housed on site to and from site on a daily basis.	
C.	**SHEDS** The contractor shall set up to the approval of the Project Consultant a temporary office accommodation and ample temporary watertight sheds in the premise for his own use and the use of Sub-contractors.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**STORES** The contractor shall set up to the approval of the Architect ample temporary watertight stores on site for own use and the use of the sub-contractors for the proper storage and protection of materials vulnerable to theft and weather. All such temporary structures shall comply in all aspects with the national laws, rules, and regulations currently in force and applicable to such structures. All temporary structures shall be erected in a manner that the unloading of materials causes minimum obstruction to the use of adjacent roads and other facilities.	
B.	**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 a claim notice to the PROJECT CONSULTANTS within the contract period. No claims shall be entertained upon the expiry of the said contract period.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A	**VEHICULAR AND PEDESTRIAN GATES** The contractor shall provide a of a heavy duty mild steel vehicular and pedestrian gate; overall size 7500mm length x 3000mm high; comprisng of 75x75x2mm thick SHS frames and 2mm thick mild steel plates on both sides; The surfaces of the gate will be primed and painted with undercoat and two finishing coat gloss oil plant; Advertisements on the gate will only be allowed with the express approval of the Project Consultant.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**TELEPHONE** The contractor shall provide a telephone facilities (fixed or mobile) on site throughout the duration of the contract for use by the project manager. He shall also maintain the phone in permanent working condition and pay all charges for the duration of the Contract.	
B.	**CCTV WATCHING** The Contractor shall provide at his own risk and cost all watching as necessary to safeguard the works, plants and materials against damage and theft.	
C.	**TEMPORARY DISPOSAL OF RAIN WATER** The Contractor shall provide and maintain all necessary temporary gutters, downpipes, chutes, drains etc. for conveying rainwater from the buildings. The Contractor shall allow for temporary drainage plumbing and piping for keeping the premises and site free from accumulation of water. The Contractor shall allow for draining flood water out of the site	
D.	**PROJECT SITE OFFICE** The Contractor shall renovate one existing masonary dwelling unit block to serve as the site office as instructed by the Project Consultant approximate plinth area of 200m2 x 2.8m high. The contractor shall maintain the site office for the sole use of the Employer, Consultants and Clerk of Works. The contractor shall make replace any damaged, doors, windows sanitary fittings, electrical fittings etc. Repaint the internal and external walls, exisiting windows and doors. Repair any roof leakage; all to the Project Consultants approval. The Contractor shall not be issued with the any interim payment certificates before this is met.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**SITE OFFICE FURNITURE** The contractor shall supply and fix the following site office furniture The Office Seats are to be medium back orthopedic-size 800 x 700 x 1100mm high in full mesh with plastic arm rests;heavy duty seat cushion in fabric, swivel with adjusted head rest, arm rest and seat adjustable for height and swivel angle, with tilt action, complete with 5no castor wheels in chrome-50no Executive Desks - Size 2400 x 1050 x 750mm freestanding mahogany executive desk with meeting module and integrated cable management system: complete with grommet holes: side panels with approved high quality leather padding to the front: 800 x 630 x 750mm high matching side return with fixed 2 no. drawer and a lateral filing drawer: 400 x 500 x 610mm mobile pedestal unit with 3 no. drawers approved aluminium handles, 4 no. castors to match main desk: all in polished mahogany and moulded polyurethane edging to top; complete with low level credenza size 1200 x 550 x 75mm low level credenza in polished solid mahogany-5no Office Desks - Size 1800 x 750 x 750mm freestanding mahogany veneered MDF desk; complete with grommet: complete with side panels: 800 x 500 x 750mm matching side return with fixed 2 no. drawer and a lateral filing drawer: 400 x 500 x 610mm mobile pedestal unit with 3 no. drawers approved aluminium handles, 4 no. castors to match main desk: all in mahogany veneered MDF and moulded polyurethane edging to top-12 no. 15 pax. Member conference tables -Size 10200 x 3000 x 750mm consisting of rectangular boardroom table shockproof desk tops in solid mahogany board with scratch proof laminate finish: solid hardwood (moulded) legs, modesty panel: complete with grommets to approval and cable managed detachable straight panel, each piece size 1600 x 700 x 750mm-1No Open Filing Cabinet - 800 x 400 x 2100mm high cabinet in scratch proof mahogany veneered laminated MDF; Upper shelf left open; complete with 2no. Swing doors at bottom; including all necessary ironmongery-20No. Lockable Cabinets - 800 x 400 x 2100mm high cabinet unit in scratch proof mahogany veneered laminated MDF; complete with 2 no.swing doors at top and 2 no. swing doors at bottom; including all necessary ironmongery-20No. 3 seater low back visitor's sofa -size 3000 x 700 x 900mm in genuine leather on 60kgm3 high density latex foam; frame in solid hardwood; coil-spring seat-3No The Contractor shall not be issued with the any interim payment certificates before this is met.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
	MAINTENANCE AND OPERATIONALIZATION OF THE CONSULTANTS AND CLERK OF WORK'S OFFICE	
A	Provide a provisional sum of Kenya shillings Ten million, Eight Hundred Thousand for the purchase, maintenance and operationalization of the Consultants and Clerk of Work's office on site. This shall include . Site measurement tools-2no. laser distometer as Bosch 250VF range of 250m, 2no stanley tape measure 30m Site digital camera as Canon EOS 90D DSLR with 18-135mm lens Printer A3/A4 colour laser-Konica bizhub c450i printer Plotter A0-Hp Designjet T950 36-in Printer Time lapse camera as Dsoon Time Lapse Camera Outdoor Construction/Plant/Weather/Life 1080P, 2.4" HD TFT LCD, Waterproof Level IP66, 6 Month Battery Life, 32GB TF Card Include Desktops 3no-P OMEN 45L Gaming Desktop, 13th Generation Intel Core i7-13700KF, 32 GB RAM, 1 TB Solid State Drive, NVIDIA GeForce RTX 4080 Ti Graphics, Windows 11 Pro, GT22-1060 (2023) with Hp U32 4k Hdr Monitor 31.5-inch Monitor 4k Laptops 4no-HP OMEN Gaming Laptop, 17.3" HD Display, 13th Gen Intel Core i9-13900HX, 32 GB DDR5 RAM, 1 TB PCIe SSD, GeForce RTX 4080, Backlit Keyboard, Windows 11 pro Autodesk software -one user for 36 months A4 ream papers(1 box) replaceable after 4 months for 36 months A3 ream papers(1 box) replaceable after 4 months for 36 months A0 tracing papers replaceable after 4 months for 36 months Toners,drum,developer,rollers replaceable after 4 months for 36 months It shall also cater for the hiring of site office messenger/cleaner and mainetance of the equipment and providing stationery listed above - further specificationss to be provided by the Project Consultant. The Contractor shall not be issued with the any interim payment certificates before this is met. Allow for Contractor's profits and overheads (.....%)	10,800,000.00
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A	**PROJECT SUPERVISION EXPENSES** The Contractor is required to make provisions to the satisfaction of the Project Consultant for the following items :-	
(i)	Provide a Provisional Sum of Kenya Shillings Five Million, Four Hundred Thousand for the Clerk of Works @ 150,000/= for 36 Months Allow for Contractor's profits and overheads (……%) The Contractor shall not be issued with the any interim payment certificates before this is met.	5,400,000.00
(ii)	Provide a Provisional Sum of Kenya Shillings Two Million, Four Hundred Thousand for the Resident Engineer @ 100,000/= for 24 Months Allow for Contractor's profits and overheads (……%) The Contractor shall not be issued with the any interim payment certificates before this is met.	2,400,000.00
(iii)	Provide a Provisional Sum of Kenya Shillings Eight Million for factory/shop visits abroad to verify and approve materials to be incorporated in the works. The cost of the visit to include:- i) Visa processing fees ii) Return air-tickets to and from the factory. iii) Any transfer fees iv) Local transport both in Nairobi and the city of destination. v) Accommodation for the ten at a hotel/resort not less than 4 stars in rating. vi) Any other incidental costs for smooth facilitation of the trip. Allow for Contractor's profits and overheads (……%)	8,000,000.00
(iv)	Provide a provisional sums of Kenya Shillings Five Hundred Thousand for Public Procurement Capacity Building Levy Allow for Contractor's profits and overheads (……%)	500,000.00
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A	**PROJECT VEHICLES: 2NO.** The Contractor shall price for supply and provision of Two **(2No.)Toyota Prado from an approved car dealer** together with complete registration to the project consultant and licensed competent driver for use and to the satisfaction of the Project Consultant all in accordance with the notes and specifications below:- The Contractor shall ensure that the vehicles comply with the all government regulatory requirements in force such as licenses, comprehensively insured, and serviced regularly in accordance with the manufacturer's instructions and maintained in good condition throughout the entire contract period so that the vehicles are available for use in good serviceable condition at all times. In the event of the vehicles being unserviceable when required, the contractor shall provide alternative vehicles of the same model or other equal and approved in compliance with the provisions of this condition. In the event of the drivers being unavailable for whatever reason, the contractor shall provide alternative and equal qualified drivers. **To be priced in next page.**	

ITEM	DESCRIPTION	AMOUNT
(i)	Provide 2 no. All time 4x4 Toyota Prado (2.8L diesel 8-AT All Rounder) from Toyota Kenya including charges thereof in connection with inspection, licensing and registration to the Project Consultant.	
(ii)	Provide a comprehensive insurance as described per year for 3no. years at Ksh …….. per year for the two vehicles in (i) above	
(iii)	Provide two competent driver per calendar month for 36no. calendar months at Ksh **…….**per month for the two vehicles in (i) above	
(iv)	Provide fuel described per calendar month for 36no. calendar months at Ksh 50,000 per month for five number vehicles as per instructions of the Project Consultant.	
(v)	Allow for providing regular maintenance,lubricants,spare and tyres at Ksh**……..**per km for the two vehicles in (i) above	
(vi)	Allow for fitting of five (5No) New tyres at the end of the contract for the two vehicles in (i) above. The old tyres shall remain the property of the contractor.	
(vii)	Allow for final inspection by the National Transport and Saftey Authority (NTSA), State Department of Transport for the two vehicles in (i) above	
(viii)	Allow for change in registration and transfer to employer for the two vehicles in (i) above	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**CONTRACTOR'S SUPERINTENDENCE/ SITE AGENT** The Contractor shall constantly keep on the works a literate English fluent speaking Agent or Representative, competent and experienced in the kind of work involved, who shall give his whole time to the superintendence of the works. The site agent shall have a diploma in construction related field as a minimum requirement. The site agent shall have experience in construction of maraine structures . Such Agent or Representative shall receive on behalf of the Contractor, directions and instructions from the Project Consultant and such directions and instructions shall be deemed to be given to the Contractor in accordance with conditions of Contract. The Agent shall not be replaced without the specific approval of the Project Consultant.	
B.	**SUFFICIENCY OF TENDER** The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the Works and the rates and the prices stated in the Bills of Quantities. Rates and prices quoted shall cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the Works.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
	COLLECTIONS	
	From page :	
	1/1	
	1/2	
	1/3	
	1/4	
	1/5	
	1/6	
	1/7	
	1/8	
	1/9	
	1/10	
	1/11	
	1/12	
	1/13	
	BILL NO. 1	
	PARTICULAR PRELIMINARIES	
	TOTAL CARRIED TO SECTION SUMMARY **KSHS.**	

GENERAL PRELIMINARIES

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	AMOUNT
	BILL NO. 2	
2	**GENERAL PRELIMINARIES**	
A.	**METHOD OF MEASUREMENT**	
	The Bills of Quantities have been prepared in accordance with the general principles of the Standard Method of Measurement of Building Works for East Africa, First Metric Edition published by the Project Consultantural Association of Kenya Chapter of Quantity Surveyors, and applies equally to the Measurement of proposed works and of variations.	
	SECTION B	
	Preliminaries	
	GENERAL MATTERS	
	OMIT B5 (VI) National Insurance and pension for work people	
	ADD Payments in respect of the National Social Security Fund	
	OMIT B5 (VII) Holidays for work people	
	ADD All payments in accordance with the current Regulation of Wages (Building and Construction Industry) Orders issued by the Government of Kenya.	
	SECTION N	
	Structural Steelwork	
	OMIT 3 (c) (i) Compound single *(i.e. those consisting of one joint or channel with one or more flange plates).*	
	ADD Compound single *(i.e. those consisting of one joint or channel with one or more flange plates).*	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**PRICED BILLS OF QUANTITIES** **All relevant items in these Bills of Quantities must be priced in black ink.** No alterations of the Quantities or descriptions made by the Tenderer will be allowed. Should the priced Bills of Quantities of the Tenderer recommended for acceptance show errors in pricing and/or arithmetic (after a complete technical and arithmetic check) the difference between the tender figure and the corrected total figure for the "Builder's Work" (that is the arithmetically corrected figure less all P.C., Provisional Sums and Contingencies) shall be adjusted either by agreement or by a percentage adjustment calculated upon the total amount of such errors in relation to the value of the "Builder's Work" so that the original tender figure shall remain unaltered. All variations to the quantum of the "Builder's Work" will be subject to the same amended rates of percentage adjustments.	
B.	**FORM OF CONTRACT** The Form of Contract shall be as stipulated in the Republic of Kenya's Standard Tender Document for Procurement of Works (Building and Associated Civil Engineering Works 2021 Edition rev 2022) included herein. Particulars of insertions to be made in the Appendix to the Contract Agreement will be found in the Particular Preliminaries part of these Bills of Quantities	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**DEFINITION OF ABBREVIATIONS** Abbreviations have been used in the Bills of Quantities for the units of measurements and the Contractor should take due notice of the undermentioned. C.M. - Shall mean Cubic Metre. S.M. - Shall mean Square Metre. L.M. - Shall mean Linear Metre. mm. - Shall mean Millimetre. KG. - Shall mean Kilogramme. NO. - Shall mean Number. PRS - Shall mean Pairs. (m.s.)- Shall mean measured separately. n.e - Shall mean not exceeding. exc. - Shall mean exceeding. ø - Shall mean diameter. **Ditto - Shall mean the whole of the preceding description except as qualified in the description in which it occurs.** a.b.d - Shall mean as before described. **PRICING AND PARTICULAR PRELIMINARIES**	
B.	**SITE CLEARING**	
(a)	Site Clearing shall include removal and disposal of any structure whether naturally occurring like trees, bushes, ant-hills, rock, out-crops and the like or dumped material.	
(b)	Prices inserted in these Bills of Quantities against the item of cutting down trees shall include :- for grubbing up roots and stumps and reinstating the disturbed ground by filling the cavities and compacting as described.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**SITE CLEARING *(CONT'D)***	
(a)	Prices inserted against removal of ant-nests, ant-hills or other such lumps or previous dumpings on the site shall also include for reinstating the disturbed ground as described under trees etc. and exterminating the ants as described.	
(b)	Prices inserted against loading and carting away excavated material shall be deemed to include for finding and paying for a tip at the Contractor's own expense.	
(c)	Any valuable material arising out of the above activities subsequent to the possession of the site by the Contractor shall be the property of the Contractor unless otherwise stated in the contract documents.	
B.	**EXCAVATION**	
(a)	Prices shall include for excavating in any material encountered unless specifically measured.	
(b)	Excavation and disposal of soil are measured nett before excavation; filling is measured nett after consolidation.	
(c)	Prices for excavating shall include all handling, etc., of any extra bulk after excavating, or before consolidating, any extra excavation required for formwork or planking and strutting, circular work, grubbing up any old drains, roots etc., that may be encountered, for trimming levelling and ramming bottoms, forming steppings and battens as required for well watering bottoms before laying concrete unless specifically measured.	
(d)	Price for returning, filling and ramming or carting away are to include for removing the excavated material to temporary heaps or dumps. All excavated material will have been either returned, filled in and rammed or carted away and therefore the rates for these items must include for all costs involved in getting this material to its final position.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**EXCAVATION *(CONT'D)***	
(a)	The thickness of all soil, hardcore, etc., beds given herein is the thickness after consolidation.	
(b)	The term formation level used in description of work means the level after general excavation to reduce levels of site of where there is no such bulk excavation on the level after removal of surface soil.	
B.	**DRAINING OF RAIN WATER AND SEWAGE DISCHARGE DURING THE CONSTRUCTION PERIOD**	
	It shall be the Contractor's duty to provide and later clear away installations for draining off rainwater from the roads and the storage areas which he has established. He shall also provide the necessary piping to lead sewage from the toilets to a holding tank which shall be emptied by a cesspool-emptying vehicle during and at the end of this contract at the contractor's expense.	
C.	**SITE LEVELS**	
	Before commencing work the Contractor must arrange for and agree with the Project Consultant the existing site levels and similarly establish and agree on a bench mark.	
D.	**SETTING OUT**	
(a)	The Contractor shall survey the plot. On the basis of this, the buildings and construction shall be set out with benchmarks that are sufficiently durable to last for at least as long as construction will go on on the site. This setting out shall be controlled by the Project Consultant, who may require that any of these marks shall be strengthened if he considers it necessary. The original point of reference shall be chosen and set out.	
(b)	A drawing of the land survey with the setting out, carefully marked in relation to the survey shall be forwarded to the Project Consultant.	
(C)	It should be noted that all expenses in connection with remedying defects and shortcomings arising out of faulty setting out and not notified by the Contractor shall be met by the Contractor. This responsibility shall comprise faults consequent upon displacement of benchmarks.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**CONCRETE WORK**	
(a)	The Contractor must allow for all costs incurred during the progress of the Contract for complying with the provisions concerning the preparation and use of graded mixes.	
(b)	Prices for concrete shall include for mixing and depositing as described or indicated and for hoisting and depositing at the various levels required throughout the building, and shall also include for forming or hacking a satisfactory key for all faces receiving asphalt and plasterwork. Prices for slabs shall also include for all temporary formwork to form construction joints at bay edges.	
(c)	Prices for reinforced concrete shall, in addition, include for filling into, between or on formwork and thoroughly compacting between and around roads or fabric reinforcement and for forming all additional construction joints between varying mixes.	
(d)	Formwork *(use and waste only)* is measured nett to the actual face of the concrete to be supported and the prices for formwork shall include for the extra material at joints, extra labour and waste for narrow widths, small quantities, overlaps, passing at angles, straight cutting and waste, splayed edges notchings, etc., and for fixing at the various levels including battens, struts, supports and for bolting, wedging, easing, striking and removal. Prices for lineal items such as boxing shall include for angles and ends.	
(e)	Formwork to sides of kerbs and upstands and the like exceeding 300 mm high have been measured and given in square metres unless otherwise described.	
(f)	Prices for steel reinforcement shall include for cutting to lengths and all labour in bending and cranking, forming hooked ends, handling, hoisting and fixing in position and for providing all necessary tying wire and temporary supports.	
(g)	Prices for fabric reinforcement shall include for all straight cutting and waste, handling, hoisting and fixing in position, providing all necessary tying wire, and temporary supports and all extra material in laps.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**CONCRETE WORK *(CONT'D)***	
(a)	Prices for hollow block suspended slabs shall include for concrete filling run into the open ends of blocks or for blind blocks.	
(b)	Prices of Precast concrete shall include for all moulds, finishing as described, hoisting and fixing at the required levels bedding, jointing and pointing in cement and sand *(1:5)* mortar, also for casting or cutting to the exact lengths required and any waste resulting from such cutting. The sizes of weathered or moulded items stated are extreme sizes.	
(c)	Prices for expansion joints shall include for cutting to size and all temporary supports and prices for expansion joint sealers shall include for all temporary battens or fillets required to form the necessary grooves.	
(a)	Prices for all walling shall include for normal rough and straight cutting, plumbing angles, all cutting and waste and split courses necessary for bond, bonding at angles, intersections and junctions of walling of all thickness, split courses, cutting and pinning up to columns, beams, slabs etc., cutting and pinning in ends of cills, lintols, beams, etc., forming all openings and reveals to the same and all cutting and waste to walling in short lengths such as mullions unless specifically measured.	
(b)	Prices for hollow block walling must further include for all necessary solid blocks or fine concrete filling to open ends of blocks at intersections, ends and angles of walling.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**ROOFING**	
	Roofing, skirting, linings to upstands etc., have been measured, the nett area covered. Prices shall include for all working into corners, and waste and in the case of flashings, aprons, coverings to kerbs, etc., where the nett covered girth is measured by any necessary overlaps for bond with adjoining areas.	
B.	**CARPENTRY AND JOINERY**	
(a)	Prices of Precast concrete shall include for all moulds, finishing as described, hoisting and fixing at the required levels bedding, jointing and pointing in cement and sand *(1:5)* mortar, also for casting or cutting to the exact lengths required and any waste resulting from such cutting. The sizes of weathered or moulded items stated are extreme sizes.	
(b)	Prices for hanging doors must include for any type either folding, swinging or sliding.	
(c)	Prices shall also include for all necessary gluing, spiking nailing, screwing whether specifically mentioned or not.	
(d)	Prices for items described as plugged shall include for fixing with screws and for sinking and pelleting the screw heads wherever the work is in an exposed position.	
C.	**PROGRESS CHARTS**	
	The Contractor shall within 10 days of signing the contract, prepare a full detail programme and progress chart to coincide with the various sectional completion dates if any before the commencement of the Contract. The draft is to be submitted and approved by the Project Consultant	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**RECORDS**	
(a)	The Contractor shall allow for keeping all records in English appertaining to the Works and shall keep on the site a daily diary recording weather conditions, temperature, visitors to the site etc.	
(b)	The Contractor is to supply to the Project Consultant/Engineer with such information as he may require in connection with the work, including a statement showing the number of men employed in all trades daily, and delivery notes (stating the name of the project) for all materials delivered to the site.	
B.	**RATES OF WAGES, HOURS AND CONDITIONS OF LABOUR**	
(a)	The Contractor shall pay rates of wages and observe hours and conditions of labour not less favourable than those laid down in the Regulations of Wages and Conditions of Employment Act for the Building and Construction Employment Act for the Building and Construction Industry issued by the Government of Kenya.	
(b)	The Contractor shall be deemed to have provided in his tender for all proper emoluments and expenses of labour current in the District at the date of submission of Tender.	
C.	**PROJECT CONSULTANT'S INSPECTION**	
	No work shall be covered up until it is inspected and approved by the Project Consultant. The Project Consultant may at any time up to the end of the Defects Liability period instruct the Contractor to open up, pull down, test or expose any part of the Works in order to satisfy himself as to the quality of the materials or workmanship used. If, in the opinion of the Project Consultant, such parts are not in strict accordance with the Contract Documents, he may order the Contractor to remove all defective work replace with approved materials and reinstate any such part of the works and any other work disturbed at his own expense and to the entire satisfaction of the Project Consultant/Engineer. If any such part of the works are found to be in accordance with the Contract Documents, the Contractor will be reimbursed the nett cost of his expense in this connection.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**DISTURBANCE OR NUISANCE**	
(a)	The Contractor shall allow for taking all necessary precautions in the order and execution of the Works so as to avoid causing disturbance or nuisance to the occupants of any existing buildings on or adjacent to the Site and to the public and for complying with the Project Consultant/Engineer's instructions in this respect.	
(b)	The Contractor shall at all times take all reasonable precaution to prevent any unlawful riotous or disorderly conduct by his staff arising out of disposal of any alcoholic liquor, drugs or arms and ammunition by members of his staff.	
(c)	The Contractor shall meet any claims lodged by existing tenants where their operations have been interupted or disrupted by construction of these works.	
B.	**TRESPASS, DAMAGE AND CARE OF WORKS**	
	The Contractor shall prevent any trespass on the adjoining property, and he shall take all reasonable precautions during the progress of the Contract to prevent any damage to the adjoining property or public or private roadways and to prevent material, plant, rubbish debris, etc., collecting on the adjoining property or roadways. Should the Contractor wish to erect scaffolding on or to make use of adjoining property, he shall obtain prior permission from the Project Consultant/Engineer and clear away to completion of his work or when directed and make good any damage to his satisfaction. Except as provided for in the conditions of Contract, the Contractor shall be held responsible for the care of works generally executed and materials deposited on the site by himself or Sub-Contractors or suppliers, together with all risks arising from weather, carelessness of operatives, damage or loss by theft, or by other cause and he shall make good all such damage or loss at his own expense.	
	The Contractor will be responsible for the protection of adjoining buildings, boundary walls, fences, services either overhead or underground and for the making good of or paying for all damage thereto, should such be caused in the course of building operations.	
C.	**TRESPASS, DAMAGE AND CARE OF WORKS *(CONT'D)***	
	The Contractor shall at all times observe any police, Kenya Navy and KPA regulations including those regarding the loading or unloading or waiting by vehicles on the public highway and the Contract Sum shall be deemed to include for strict compliance therewith.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**PROTECTION FROM THE WEATHER** The Contractor shall allow for covering up and protecting all new work from injury by weather or any other cause. Any damage, loss or expense caused by non-compliance with this clause shall be at sole risk of the Contractor.	
B.	**TOOLS, PLANT AND SCAFFOLDING** Provide all necessary cranes, hoists and other plant including ladders, staging, access gangways, tackle tarpaulins, tools, moulds, templates and other requisites necessary for the proper execution of the works. Allow for removing and reinstating, adapting from time to time as may be necessary and maintaining all plant and equipment during the course of the Contract. The Contractor shall allow for providing, adapting from time as may be necessary and maintaining all scaffolding, scaffold boards and temporary staging, etc., necessary for the execution of the work. The Contractor is to provide everything necessary for the proper execution of the Works according to the true intent and meaning of the Drawings, etc. Whether the same may or may not be particularly shown on the Drawings or described in the General Specifications provided that the same is reasonably to be inferred therefrom. The Contractor shall allow for all costs related to hoisting his or his Sub-Contractor's materials for fixing at any level within the limits shown on the drawings or included in the general description of the works. All such plant, tools and scaffolding shall comply with all regulations whether general or local in force throughout the period of the contract and shall be required as may be necessary to comply with any amendments in or additions to such regulations	
C.	**SITE ACCOMMODATION AND SANITATION** The Contractor shall provide and maintain any necessary temporary office accommodation required by himself and his Sub-Contractors suitably equipped with desks, chairs, drawing boards and electric lighting. The Contractor shall provide and maintain for his Workers, latrine facilities, washing and drinking water, first aid equipment and shelters equipped with tables, benches and cooking facilities all to the reasonable satisfaction of the workmen and approved by the Project Consultant and the Health Authorities. The Contractor shall provide and maintain any temporary storage shed or buildings which in his opinion are necessary for himself and his Sub-Contractors for the proper execution of the Works.	
D.	**LABOUR CAMPS** Limited Labourer's camp will be allowed on the site and the Contractor must allow here or elsewhere for any costs occassioned by this condition.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**SECURITY FOR THE WORKS ETC.** The Contractor shall be entirely responsible for all the security of all the works, stores, materials, plant, personnel etc., both its own and sub-contractors' and must provide all necessary lighting and other precautions as necessary to ensure security against theft, loss or damage and protection of the public.	
B.	**VALUE ADDED TAX** The Contractor's attention is drawn to the Legal Notice in the Finance Act part 3 Section 21(b) operative from 1st September, 1993 which requires payment of VAT on all contracts. In accordance with Government public notice No. 35 & 36 Dated 11th September 2003 operational from 1st October 2003, withholding VAT was to be levied against the contract sum by the Employer and remitted to the Commissioner of VAT through all interim certificates. **THE CURRENT LAWS ON THIS SUBJECT SHALL APPLY.** The contractor should include his taxes in the rates and **NOT** in the **Grand Summary page**.	
C.	**BID BOND** If so stated, the tenderer shall furnish, as part of his bid, a bid security in the sum prescribed in the invitation to tender or advertisement. The bid security shall, at the tenderers option be in the form of a Guarantee from a reputable bank or an insurance company recognized by PPRA. The format of the bank guarantee shall be in accordance with one of the sample forms of bid security included in the post qualifications.	
D.	**LOCAL REGULATIONS AND BY-LAWS** The contractor is to comply with all local regulations and by-laws of the Local Authority including serving notices and paying of fees.	
E.	**GOVERNMENT ACTS AND REGULATIONS, STATUTORY LEVIES** The contractor is to comply with all government acts and regulations including serving notices and paying of fees. The tender price must include for all costs arising or resulting from compliance with any Act, Order or Regulation. such as Standard Levy, Capacity Building Levy under Public Procurement and Disposal Act and all costs arising or resulting from any Law requiring payment by the Contractor of any Statutory Levy or Levies currently in force The Contractor shall be required to indemnify the Employer for any claims arising out of non- compliance with the above requirements	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**PERFORMANCE BOND** The Contractor shall find and submit on the form of tender the name of one surety who shall be a bank regulated by the Central Bank of Kenya who will be willing to be bound to the Employer in an amount equal to ten per cent (10%) of the contract sum for the due performance of the contract up to the date of completion as certified by the Project Consultant and who will, when and if called upon to do so, sign a bond to that effect on the sample provided (without the addition of any limitations) within fourteen (14) days from when the contract agreement is signed. No payment on account for the works executed will be made to the contractor until he has submitted the Performance Bond to the Project Consultant duly signed, sealed and stamped from an approved Institution.	
B.	**INSURANCE** The Contractor shall insure the work as required in the Conditions of Contract. No payment on account of the work executed will be made to the Contractor until he has satisfied the Project Consultant 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 Consultant 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 Consultant's inspection. Some of the insurances required include but not limited to: 1. Insurance for the Works 2. Insurance for Third Party 3.Insurance for Contractor's employees and workmen 4. Insurance against loss or damage of Plant, Machinery and Equipment 5. Provide full insurance for adjacent property. Not withstanding the above, the Contractor shall specifically take insurance for the full value of the following adjacent buildings a) Adjacent Labs Provide insurance for personal injury or death insurance. The Contractor shall further indemnify the Employer against all claims arising out of the execution of the Contract Works.	
	To collection **Kshs.**	

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 be left uncovered for a reasonable time to allow all measurements needed for such adjustment to be taken by the Project Consultant. Immediately the work is ready for measuring, the Contractor shall give notice to the Project Consultant. If the Contractor makes default in these respects he shall if the Project Consultant so directs uncover the work to enable all measurements to be taken and afterwards reinstate at his own expense.	
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 Consultant and the work will be measured and paid for to the extent executed at rates provided in these Bills. This shall include any other party to be nominated by the client at any stage of the project	
C.	**ADJUSTMENT OF PRIME COST SUMS** In the final account all Prime Cost Sums shall be deducted and the amount properly expended upon the Project Consultants order in respect of each of them added to the Contract sum. The Contractor shall produce to the Project Consultant 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.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**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.	
B.	**GOVERNMENT ACTS REGARDING WORK PEOPLE 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 Contractors 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 Insurance, pensions and holidays for workpeople or to 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 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 tender. No Claim in respect of lack of knowledge in this connection will be entertained.	
C.	**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 Consultant.	
D.	**EXISTING SERVICES AND ADJACENT 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 Consultant. The Contrator shall ensure adjacent buildings and structures are protected. The school shall time to time issue notice of stopages during school functions. Where removal or disconnection of such service lines is required to be carried out under the Contract, the operations must be carried out in co-ordination with the relevant Local Service Authority so as to minimize any disruption of services to the surrounding buildings and to enable them not make any precautions necessary and to make any alternative arrangement for the temporary provision of the services affected. The Contractor will further be required to provide at his own cost any temporary service lines or connections for the duration of disruption caused by such disconnections or removal.The Contractor to allow for relocation of existing services that may be required.The Contractor shall be held responsible for and shall indemnify the Employer against all losses and expenses incurred as a result of such damage and disruption of services	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**WATER FOR THE WORKS** The Contractor shall allow for all necessary clean, fresh water for the Works, including that required by Sub-Contractors and other Contractors on site and for any temporary plumbing meters and storage facilities and pay all charges in connection therewith and clear away on completion and make good works disturbed. Recovering payments due from the Sub-Contractors shall be the Contractor's sole responsibility. Water shall be periodically tested monthly and test results issued to the project consultant.No claims for lack of water or water pressure will be entertained	
B.	**LIGHTING AND POWER FOR THE WORKS** The Contractor shall allow for providing and maintaining a temporary three phase electricity supply for the works including that required by Sub-Contractors and others on site and for any metres and fittings to give artificial lighting and power necessary for the execution of the work and pay all charges in connection and make good all works disturbed. The Contractor is advised to visit the Project Consultant/Engineer's office to obtain thenecessary information regarding such requirements of other Contractors. Such other Contractors will be liable for payment for their services but the onus for collection of payments rests with the Contractor.	
C.	**WATCHING AND LIGHTING** The Contractor shall allow for providing and maintaining any barriers, watching, lighting which must comply with the by-laws or requirements of the Employer, Local Authority, Police and other security regulations and the Contractor must give all requisite notices to these Authorities and provide everything necessary to protect the general public, workmen, plant, material and the whole of the Works from injury or damage.	
D.	**TRANSPORT TO AND FROM THE SITE** The contractor shall include in his prices for the transport of materials, workmen etc to and from the site of the proposed works at such hours and by such routes as are permitted by the Authorities.	
E.	**POLICE REGULATIONS AND TRAFFIC** The contractor is to allow for complying with all Government Acts, orders or regulations in connection with employment of labour and other matters related to the execution of the works.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**POLICE REGULATIONS AND TRAFFIC-CONT…** The contractor must acquaint himself duly with current acts and regulations, including police regulations regarding the movement, housing, security and control of labour, labour camps, passes for transport, etc.. The Contractor will be required to agree the access route to the site with the Employer and relevant statutory authorities before commencement of the Contract Works and must adhere to this route throughout the course of the Contract, unless agreed otherwise. The Contractor will also be required to observe certain traffic rules and regulations pertaining to the use by his vehicles of the roads adjacent to the site. These rules and regulations should be investigated by him at the commencement of the contract	
B.	**ADVERTISEMENTS** No advertisements will be permitted on the site without the written authorization of the Project Consultant.	
C.	**DAYWORKS** **Rates, etc.** Any Daywork ordered under Sub-Clause (4) (C) of Clause 11 shall be executed at the following rates :- Labour : The Prime Cost to which *.....per centum shall be added. Materials :The Prime Cost *(delivered to Site)* to which *..... per centum shall be added Plant : The Nett Hire Charge to which *..... per centum shall be added. *** Insert percentage** These percentage additions shall cover all insurances, use of small tools and non-mechanical plant, sharpening tools, water, supervision, watching, lighting, establishment and overhead charges and profit. Dayworks will be allowed only where specifically ordered by the Project Consultant in writing. All Daywork sheets must be signed by the Project Consultant and the Contractor or their authorised representatives. No payment for foreman and other such supervisory/salaried staff shall be allowed under Dayworks.	
D.	**SUFFICIENCY OF TENDER** The Contractor shall be deemed to have satisfied himself before submitting a tender as to the correctness, completeness and sufficiency of his total tender for the entire Works and that the rates and prices stated in his Bills of Quantities cover all his obligations under the contract.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**STAMP CHARGES** The Contractor shall allow for the payment of all stamp charges in connection with Surety Bond, Contract Agreement or any other such levies.	
B.	**CONTRACTOR'S SUPERINTENDENCE AND SITE MEETING** The Contractor shall constantly keep on the Works a literate English-Speaking Agent or Representative who must also be competent and experienced in the kind of work involved and who, together with Sub-Contractors' site agents, shall attend all site meetings. Such Agent/Representative shall receive on behalf of the Contractor directions and instructions which shall be deemed to be given to the Contractor under this contract.	
C.	**PROGRESS PHOTOGRAPHS** The Contractor is to allow for taking, processing and supplying four (4) full colour plate size photos to the Project Consultant per month throughout the construction period.	
D.	**COMPLIANCE WITH OFFICIAL DOCUMENTS** In all essentials the entire works shall be in accordance with the prescriptions of the following documents (including their possible updatings) : - Kenya Standards - British Standards All untraditional materials shall have been subjected to a technical approbation and shall be used in the same way under the same conditions as those under which the material in question was authorised. No payment for foreman and other such supervisory/salaried staff shall be allowed under Dayworks. The supply of materials e.g. cement, steel, sheet metal, may be accepted in accordance with other National Standards if these are comparable to the British Standards.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**CERTIFICATES OF ORIGIN OF MATERIALS AND SAMPLES** **Materials** Whenever requested, the Contractor shall certify the origin of the materials supplied to the site by producing invoices, certificates of origin, freight bills etc. The opening of sacks and sealed containers shall take place in the presence of a representative of the Employer, if the latter considers this formality necessary. **Samples** The Contractor shall submit at his own expense in due time, a sample of each specified material to the Project Consultant for approval. If this sample is accepted by the Project Consultant, it shall remain deposited in the Employer's or Project Consultant's office and serve as evidence for the reception of Works of a similar quality.The Project Consultant may reject any materials or workmanship not in his opinion to be up to approved samples. The contractor shall furnish at the earliest possible.	
B.	**ACCEPTANCE OF MATERIALS AND THEIR USE** The Contractor shall, at his own expense, take such measures as shall be required by the Project Consultant/Engineer for the acceptance of the materials. All materials that are not approved shall be removed immediately by the Contractor when so instructed by the Project Consultant/Engineer, who, if his orders are not carried into effect, shall have the right to have the materials disposed of at the public dumps and at the expense of the Contractor. Upon the instruction of the Project Consultant/Engineer, the Contractor shall demolish all portions of the Works that have been badly executed or constructed from defective materials and he shall reinstate it at his own expense. The same shall apply for all such Works that do not comply with the required satisfaction. The acceptance by the Engineer of any materials or works does not in any way relieve the Contractor of his responsibilities as regards the Works to be executed under this Contract.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**PROTECTIVE EQUIPMENT AND CLOTHING** The Contractor shall provide all protective or any other special clothing or equipment that may be necessary for use by the Consultants, visitors and all his employees. This shall include, inter-alia, safety helmets, gloves, goggles, earmuffs, gumboots, overalls etc according to the type of work. The Contractor shall ensure that safety helmets are worn by all staff on site at all times.	
B.	**SAFETY** The Contractor shall comply at all times with the requirements of the Factory Act *(Cap 514)* , Building Construction Rules, Supplement 18, Legal Notice No. 40 dated 5th April, 1984 ensure that the safety of his workpeople and authorised visitors to the Site is protected at all times. In particular there shall be proper provision of planked footways and guard-rails to scaffolding, etc, protection against falling materials and tools and the Site shall be kept tidy and clear of dangerous rubbish. The Contractor shall appoint a Safety Officer as required by the Factory Act and notify the Factory Inspector of his name. The Safety Officer shall be on Site at all times and all directions given by the Project Consultant to the Safety Officer shall be deemed to be Project Consultant's Instructions, and shall be complied with promptly without additional cost to the contract. The Project Consultant shall be empowered to suspend work on the Site should he consider that these conditions are not being observed, and no claim arising from such a suspension will be allowed.	
C.	**AUDITABLE DOCUMENTS AND RECORDS** The Contractor shall keep auditable records of all materials delivered to the site for permanent incorporation into the works. Such records shall include receipts, invoices, delivery notes properly certified signed and documented as by law required.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**SIGN BOARD** The Contractor shall provide and erect a sign board on the site showing the title of the Contract, the names and addresses of the Employer, Consultants, Nominated Supplier and Sub-Contractors, and such information as may be required in a position approved by the Project Consultant. The whole board shall be maintained in good condition repainted when necessary and removed when no longer required. A drawing of the sign board should be inspected in the office of the Project Consultant before submitting tenders. In addition, adequate notices shall be posted to indicate that building operations are in progress and that trespass or entering thereupon is dangerous.	
B.	**PROTECTION** The Contractor is required to protect the Works in all sections until practical completion.	
C.	**CONCRETE TESTS** Concrete Test cubes i.e. per set of three as later described, including testing fees, labour and materials, moulds, transport and handling. Successful tests only The laboratory shall be approved by the Project Manager Set of Three No.24 times @ ..... *(Tenderer to insert rate and extend)*	
D.	**REMOVING RUBBISH AND CLEANING** The Contractor shall make good all defects and injuries to the Work, clean down external faces, wash off stains to faced work, clean off marks of mortar and cement, scrub floors, clean windows inside and out, flush out plumbing installations and drain runs and leave all parts of the Works clean, free from rubbish and waste material and perfect on completion. The Contractor shall clear and cart away all rubbish as it accumulates and keep all the works in an orderly condition to the satisfaction of the Project Consultant.	
E.	**VISIT SITE AND EXAMINE DRAWINGS.** The Contractor is recommended to examine the drawings and visit the site the location of which is described in the Particular Preliminaries hereof. He shall be deemed to have acquainted himself therewith as to its nature, position, means of access or any other matter which, may affect his tender. No claim arising from his failure to comply with this recommendation will be considered.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
A.	**MATERIALS ON SITE** All materials for incorporation in the works must be stored on or adjacent to the site before payment for the same is effected unless specifically exempted by the Project Consultant. This includes the materials of the Main Contractor, Nominated Sub-Contractors and Nominated Suppliers.	
B.	**TEMPORARY STRUCTURES** All the temporary structures on site, once paid for by the Client as herein earlier priced, shall become the property of the Client to be disposed off, after completion of the contract, as directed by the Client.	
C.	**AS BUILT DRAWINGS, METHOD STATEMENTS & SHOP DRAWINGS** The Contractor shall be expected to submit detailed Method Statements and Shop Drawings for all specialised aspects of work that the Project Consultants deem necessary. The format and contents of the Method Statements and Shop Drawings shall be provided by the Project Project Consultant. The Contractor shall be required to submit, atleast 4 calendar weeks before Practical Completion Date, As-Built drawings and report covering all works under his Contract. The contents and format of the As-Built drawings and report shall be defined by the Project Consultant'.	
D.	**BLASTING OPERATIONS** Blasting will only be allowed with the express permission of the PROJECT CONSULTANT 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 CONSULTANT governing the use and storage of explosives.	
E.	**MATERIALS ARISING FROM EXCAVATIONS** Materials of any kind obtained from the excavations shall be the property of the Government. Unless the PROJECT CONSULTANT directs otherwise such materials shall be dealt with as provided in the Contract. 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 CONSULTANT 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.	
	To collection **Kshs.**	

ITEM	DESCRIPTION	AMOUNT
	COLLECTIONS	
	From page :	
	2/1	
	2/2	
	2/3	
	2/4	
	2/5	
	2/6	
	2/7	
	2/8	
	2/9	
	2/10	
	2/11	
	2/12	
	2/13	
	2/14	
	2/15	
	2/16	
	2/17	
	2/18	
	2/19	
	2/20	
	2/21	
	2/22	
	BILL NO. 2	
	GENERAL PRELIMINARIES	
	TOTAL CARRIED TO SECTION SUMMARY **KSHS.**	

VAULT

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO.3				
	VAULT				
	ELEMENT NO. 1				
	SUBSTRUCTURES (ALL PROVISIONAL)				
	EXCAVATION AND EARTHWORK				
A	Mass excavation to reduce levels starting from existing ground level; ground level not exceeding 1.50m deep	m3	1574		
B	Ditto: Between 1.50 - 3.0m ditto	m3	525		
C	Excavation pit for bases between 0.00-1.50m deep starting from reduced level	m3	109		
D	Ditto: Between 1.50 - 3.0m ditto	m3	37		
E	Extra over excavation for excavating in any class of rock in any position	m3	10		
	PLUNKING AND STRUTTING				
F	Allow for maintaining and supporting sides of excavations and for keeping free from fallen materials.	Item	1		
	DISPOSAL OF WATER				
G	Allow for keeping the whole of excavations free from all ground and running water by pumping	Item	1		
	DISPOSAL AND BACKFILLING				
H	Returning, filling and ramming within foundations	m3	1274		
I	Load and cart away surplus excavated material as necessary; including double and multi - handling where required	m3	971		
J	Grade,level and compact to falls,cross falls and slopes; compact to 105% MDD existing ground levels	m2	1050		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FILLING MATERIALS				
A	Imported murram or other equal and approved filling material : compacted in layers of not exceeding 200mm to 105% MDD	m3	3674		
B	300mm thick hardcore filling : hand packed : scarify, spread, grade and compact to falls, cross falls and slopes in layers not exceeding 150 mm thick	m2	1050		
C	50 mm thick approved quarry dust blinding on surfaces of hardcore	m2	1050		
	ANTI-TREATMENT				
D	Treat surface of hardcore with "Premise 200 SC" or any other equal and approved anti-termite insecticide applied strictly in accordance with manufactures printed instructions including providing a 10 years guarantee period.	m2	1050		
	DAMP PROOF MEMBRANE				
E	One layer 1000 gauge polythene sheet damp proofing membrane : under floor bed : 300mm laps	m2	1050		
	CONCRETE WORK				
	Plain concrete class 30/20 as described in:				
F	100mm thick to raft	m2	1050		
G	Ditto to column bases	m2	73		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Vibrated Reinforced concrete class 40/20mm with and including strengthening admixture as "Sika Viscoflow-615 KE or any other equal and approved in:-				
A	600mm thick raft	m3	630		
B	Column bases	m3	60		
C	Columns	m3	22		
D	600mm thick walls	m3	147		
E	Extra over reinforced concrete raft for 1 No. Sump overall size 2000 mm long x 2000 mm wide; average depth of 2000 mm (internal dimensions) having 200mm thick sides and bottom in concrete class 60/20 mm) and including including for all necessary excavations, earthworks, formwork and concrete work	No	1		
	REINFORCEMENT				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
F	Assorted sizes; T8mm-T32mm	kg	87010		
	Tang Bar Reinforcement				
G	Supply and installation of specialized 230mm wide x3mm thick Tang Bar reinforcement manufactured from mild steel sheets, punched to form a double-combed profile and mechanically twisted along its longitudinal axis into a rigid cylindrical structure. The bars laid horizontally in overlapping, interlocking layers embedded completely within the reinforced concrete; including providing all necessary binding wires, spacers, chairs and rolling margins	Kg	16170		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Fabric reinforcement to B.S. 4483 and setting in concrete with 300mm side and end laps (measured net; allow for laps)				
A	BRC mesh fabric reinforcement ref A142 (weighing 2.2kg/m2) ; 150mm overlaps (measured net-no allowance made for laps)	m2	1123		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
B	Sides of Raft	m2	105		
C	Sides of column bases	m2	132		
D	Ditto:columns	m2	102		
E	Ditto: walls	m2	488		
	Plaster				
	40 mm thick cement and sand (1:4) to receive waterproofing				
F	To horizontal surface of raft	m2	1050		
G	To sides of raft	m2	105		
H	To RC walls	m2	488		
I	To internal sides of sump	m2	16		
	WATERPROOFING				
	Works to be executed by an approved specialist				
	Supply and apply 5mm thick APP modified bituminous membrane; from an approved manufacturer; one coat bituminous anti-dust primer, one layer APP membrane with mineral finish; torch bonded ; executed by specialist under 10 years guarantee:				
J	To horizontal surface of raft	m2	1050		
K	To sides of raft	m2	105		
L	To RC walls	m2	488		
M	To internal sides of sump	m2	16		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Protective screed				
	40 mm thick cement and sand (1:4) to receive waterproofing				
A	To horizontal surface of raft	m2	1050		
B	To sides of raft	m2	105		
C	To RC walls	m2	488		
D	To internal sides of sump	m2	16		
	FRENCH DRAIN				
	Aggregate filling in making up levels				
E	Over 300mm thick; depositing loose approved aggregate to sides of retaining wall maximum size of aggregate to be 20mm; compact in layers	m3	244		
	Open ended perforated UPVC french drain pipe laid to fall 1 in 300 including setting in 20mm loose aggregate surround (m/s) encased in geotextile membrane (m/s) all to Engineer's approval				
F	200mm diameter	m	122		
	Geotextile filter				
G	Bidim geotextile filter grade A3 as manufactured by Kaytech or equal and approved	m2	122		
	Water bars; standard PVC bulb edged strip; as "Sika Waterbar" or other equal and approved				
H	200mm wide; casting into concrete; temporary fixing to formwork; all in accordance with manufacturer's printed instructions	m	122		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	PLINTH TREATMENT				
	12mm thick cement and sand (1;4) wood floated rendering to:-				
A	To plinths of building	m2	54		
	Prepare surface and apply two coats of black bituminous paint or other approved paint to:				
B	Rendered plinth	m2	54		
	EXPANSION JOINT				
	Joint Filler				
C	30 mm thick "Jumbo Chem" expansion joint filler or other equal and approved	m2	18		
D	30mm x 30mm deep " NITOSEAL MS 100 "or equal and approved expansion joint sealer : raking out groove in concrete	m	30		
E	150mm wide x 4mm thick heavy duty flush mounted aluminium expansion joint cover; fixed with and including anchors at 200mm centres; rate to include cutting, joint preparation and alignment	m	30		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.1				
	SUBSTRUCTURES				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		1		
			2		
			3		
			4		
			5		
			6		
	Carried Forward to Summary				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	STRUCTURAL CONCRETE WORK				
	Vibrated Reinforced concrete class 40/20mm with and including strengthening admixture as "Sika Viscoflow-615 KE or any other equal and approved in:-				
A	Columns	m3	75		
B	Beams	m3	76		
C	Gutter beams	m3	50		
D	Upstand beams	m3	8		
E	600mm thick RC walls	m3	495		
F	600mm thick roof slab	m2	910		
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
G	Assorted sizes; T8mm - T32mm	kg	187160		
	Carried to Collection				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Tang Bar Reinforcement				
A	Supply and installation of specialized 230mm wide x3mm thick Tang Bar reinforcement manufactured from mild steel sheets, punched to form a double-combed profile and mechanically twisted along its longitudinal axis into a rigid cylindrical structure. The bars laid horizontally in overlapping, interlocking layers embedded completely within the reinforced concrete; including providing all necessary binding wires, spacers, chairs and rolling margins	Kg	54450		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
B	To sides of columns	m2	345		
C	Ditto to RC walls	m2	1648		
D	Soffit of suspended floor slab; strutting height 0-3.5m	m2	910		
E	Ditto 3.5-5.0m	m2	910		
F	Ditto 5.0-6.5m	m2	910		
H	Ditto 6.5-8.0m	m2	910		
H	Sides and soffit of beams; ditto	m2	606		
I	Sides and soffit of gutter beams	m2	423		
J	Sides of upstand beams	m2	105		
K	Edge of suspended slab	m2	74		
	EXPANSION JOINT				
	Joint Filler				
L	30 mm thick "Jumbo Chem" expansion joint filler or other equal and approved	m2	28		
M	30mm x 30mm deep " NITOSEAL MS 100 "or equal and approved expansion joint sealer : raking out groove in concrete	m	46		
N	150mm wide x 4mm thick heavy duty flush mounted aluminium expansion joint cover; fixed with and including anchors at 200mm centres; rate to include cutting, joint preparation and alignment	m	46		
	Carried to Collection				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		8		
			9		
	Carried Forward to Summary				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 3				
	WALLING AND PARTITIONS				
	MASONRY WALLING				
	EXTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
A	200mm Thick external parapet wall	m2	118		
	Mild steel Grilles				
	Mild steel grille doors of purpose made mild steel grill doors in 75 x 75 x 4mm thick SHS framing, bottom, top and middle rail; 75 x 75 x 4mm thick SHS internal members at 300 mm centres; 200mm wide x 3mm mild steel plate welded over framing and middle rails on both sides; prime with one coat of zinc chromate before fixing; to architect's detail				
B	Mild steel grilles	m2	878		
	Prepare, touch up primer and apply zinc chromate primer and two coats of gloss oil paint finish				
C	General surface of steel	m2	1756		
	Carried to Collection				
	ELEMENT NO.3 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3 WALLING AND PARTITIONS **COLLECTION** Total Brought Forward from Page No.		*Page No* 11		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.3 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	ROOF AND RAINWATER DISPOSAL *(All Provisional)*				
	ROOF COVERINGS				
	Supply and fix 24 gauge mild steel troughed roofing sheet type IT5 "Tekdek" roofing sheets from MRM or other equal and approved supplier ; including metal flashing: pre-painted to an approved colour; including fixing to roof trusses with appropriate fasteners; Fix as per manufacturer's written instructions; allow for raking				
A	Roof covering : to slopes exceeding 10 degrees to horizontal	m2	1200		
	Extra Over roof covering for:				
B	Ridge capping	m	50		
D	Hip capping	m	25		
D	Valley capping	m	25		
E	750mm girth flashing	m	25		
	STEEL ROOF STRUCTURE				
	Structural mild steel to BS 4360 grade 43C in roof structure: allow for 5FW continuous welding : 3mm blanked open ends : one coat zinc chromate primer : including drilling holes in steel: all connections, cleats, bolts, nuts, washers etc; to Engineer's detail				
F	200 X 50 X 3mm thick ridges	Kg	7469		
G	100 X 50 X 3mm thick hip rafters	Kg	2204		
G	100 X 50 X 3mm thick valley rafters	Kg	678		
H	100 X 50 X 3mm thick rafters	Kg	8747		
I	100 X 50 X 3mm thick common rafters	Kg	1000		
J	100 X 50 X 3mm thick tie beam	Kg	7435		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	75 X 50 X 3mm thick struts	Kg	12040		
B	150 X 50 X 2mm thick Z-Purlins weighing 4.44kg/m	Kg	3668		
C	75 X 50 X 3mm thick wall plate	Kg	890		
	SUNDRIES				
D	200 x 200 x 10mm thick angle cleats; with 4no. holes	No	43		
E	12mm dia x 400mm long bolt; complete with nut and washers	No	172		
F	300 x 300 x 10mm thick angle cleats; with 4no. holes	No	86		
G	12mm dia x 1000mm long mild steel anchor bolts; complete with nut and washers	No	344		
H	20mm diameter mild steel round bar sag rods	m	200		
	ROOF UNDERLAY				
I	Supply and fix 50mm thick super heavy duty roof sisalation from Jumbo Chem or from an equal and approved supplier; with and including fixing with strainin wires; fix as per manufacturer's specifications	m2	1200		
	WATERPROOFING				
	ROOF TERRACES				
	Cement and sand (1:4) mortar backing : wood float finish : to receive waterproofing membrane (measured separately)				
J	40mm thick to roof terrace and gutters ; laid to falls and crossfalls	m2	1145		
K	20mm thick to vertical sides of walls; 300mm high	m2	37		
	Works to be executed by an approved specialist				
	Supply and apply 5mm thick APP modified bituminous membrane; from an approved manufacturer; one coat bituminous anti-dust primer, one layer APP membrane with mineral finish; torch bonded ; executed by specialist under 10 years guarantee:				
L	To terraces and gutters	m2	1145		
M	To sides of walls	m2	37		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	RAINWATER DISPOSAL				
	Unplasticized PVC downpipes and fittings: solvent welded joints				
A	210mm diameter rainwater downpipe: fixed to wall using brackets	m	28		
	Extra Over for:				
B	210mm diameter fulbora roof outlet : with domical gratings : vertical spigots	No	6		
C	210mm diameter x 200mm long UPVC pipe sleeve ; casting into concrete slab	No	6		
D	Bend : including socket adaptor from gutter outlet to downpipes; complete	No	6		
E	Rainwater shoe	No	6		
F	Rainwater outlets: 210mm diameter	No	6		
	Painting and decorating				
	Prepare, touch up primer and apply zinc chromate primer and two coats of gloss oil paint finish				
G	General surface of steel	m2	2100		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	ROOFING AND RAINWATER DISPOSAL				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.				
			13		
			14		
			15		
	Carried Forward to Summary				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	DOORS				
	Mild steel grille doors				
	Mild steel grille doors of purpose made mild steel grill doors in 75 x 50 x 3mm thick RHS framing, bottom, top and middle rail; 75 x 50 x 3mm thick SHS internal members at 400 mm centres; 200mm wide x 3mm mild steel plate welded over framing and middle rails on both sides; with and including purpose made heavy duty hinges, lock bolt and other necessary ironmongery; prime with one coat of zinc chromate before fixing; to architect's detail				
A	Double leaf door overall size 2000 x 2400mm high	No	10		
	Prepare, touch up primer and apply zinc chromate primer and two coats of gloss oil paint finish				
B	General surface of steel	m2	96		
	Vault Doors				
	Supply and fix vault door as " Chubbsafes Centurion Door" grade IX CD EX with EN 1143-1 certification; overall size 1500 x 2500mm high with overall thickness of 320mm suitable for wall thickness of 600mm; Secured by 2x14 lever KABA MAUER Primus 70011 Class C Double bitted keylock, 2x KABA LAGARD 1947 four wheel mechanical Combination lock and 1xS&G 6370-005 Three movement Mechanical Reset Action Time lock; independenly tested by ECB.S; door frame to be also armoured to provide extra protection;including all necessary accessories; all to CBK's specification				
C	Door overall size 1500 x 2500mm high	No	3		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5 DOORS **COLLECTION** Total Brought Forward from Page No.		*Page No* 17		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	WINDOWS				
	ALUMINIUM WINDOWS				
	Supply and fix the following heavy duty Aluminium profiled casement windows as manufactured by an approved supplier; curved to plan and comprising of 100 x 50 x 3mm thick standard hollow sections; frames mitred at corners; fixing to masonry or concrete jambs with appropriate lugs; including all necessary ironmongery and fittings : complete with 18mm thick blue tinted bullet prooof glass; including glazing beading; joints sealed using approved silicon compound : including bedding and pointing in cement and sand(1:4) mortar: oiling and adjusting on completion; Complete with permanent air vent: all in accordance with Architect's details				
A	Window overall size 3400mm x 1000mm high	No	10		
	Carried to Collection				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6 WINDOWS **COLLECTION** Total Brought Forward from Page No.		*Page No* 19		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	INTERNAL FINISHES				
	WALL FINISHES				
	15mm cement and sand (1:4) backing;wood float finish				
A	To receive epoxy	m2	1168		
	Works to be executed by an approved specialist				
	Supply and apply anti-static solvent free high build industrial epoxy to walls including grinding surface to remove surface laitance and expose defects, repairing defects and cracks, fill control joints with shrinkage compensated mortar; apply moisture barrier and Captive blasting and wash with approved acid; apply epoxy primer with and including 0.5mm quartz sand , epoxy undercoat and one top coat of epoxy ; applied in accordance with manufacturer's printed instructions				
	3 mm thick, 2 No coat work to concrete base (m.s); generally				
B	To plastered walls	m2	1168		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	40mm thick smooth powerfloated to receive epoxy floor finish	m2	824		
	Works to be executed by an approved specialist				
	Supply and apply anti-static solvent free high build industrial epoxy floor including grinding surface to remove surface laitance and expose defects, repairing defects and cracks, fill control joints with shrinkage compensated mortar; apply moisture barrier and Captive blasting and wash with approved acid; apply epoxy primer with and including 0.5mm quartz sand , epoxy undercoat and one top coat of epoxy ; applied in accordance with manufacturer's printed instructions				
	3 mm thick, 2 No coat work to concrete base (m.s); generally				
B	To screeded floor	m2	824		
C	100mm high matching skirting	m	116		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To concrete ceilings	m2	1459		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B	To plastered concrete ceilings	m2	1459		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	INTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		21		
			22		
			23		
	Carried Forward to Summary				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	EXTERNAL FINISHES				
	WALL FINISHES				
	20mm thick cement and sand (1:4) plaster : wood float finished : to :				
A	To plastered surfaces of walls and columns to receive textured paint finish (m.s)	m2	717		
	Specialist applied textured finish as 'Marmoran'' supplied by Galaxy Paints Ltd or other equal and approved; 3mm thick (minimum) finish including primer coat before application; applied with a trowel or roller as per manufacturer's recommendation : All to Architect's approval				
B	To plastered surfaces	m2	717		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	40mm thick wood floated to receive granite slab	m2	50		
	Granite slab				
	Supply and fix polished local coloured granite slab from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
	20 mm thick; butt joints strait both ways; to cement and sand base (m/s); generally to				
B	To screeded floor	m2	50		
C	100mm high x 10mm Thick skirting with rounded top edge	m	60		
	PAVING AROUND THE BUILDING				
D	600 x 600 x 50mm Thick pre-cast concrete slabs laid on and including 50mm thick consolidated sand bed and 100mm thick murram sub-base - to fall and including all necessary excavations and anti-termite treatment to sub-base	m2	100		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To horizontal soffits of concrete slab	m2	100		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B	To plastered horizontal soffits of concrete slab	m2	100		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	EXTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		25		
			26		
			27		
	Carried Forward to Summary				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9				
	FIXTURES AND FITTINGS (ALL PROVISIONAL)				
	Plain insitu concrete: class 15/20mm				
A	100mm thick plinths	m2	3		
	Sawn formwork to:				
B	Vertical edges: over 75mm but not exceeding 150mm high	m	9		
	Cement and sand(1:4) paving : steel trowelled to				
C	20mm thick to plinths	m2	3		
	Concrete worktops				
D	100mm thick reinforced concrete vanity worktop : 600mm wide x 900mm high: including 100mm thick division walls at every 1000mm centres; complete with plasterwork to worktop to granite (m/s) and wall; including reinforcement and necessary formwork	m	5		
	Worktops: 600mm wide : with round edges : form holes for sink.				
E	600mm wide x 20mm thick granite top fixed with cement sand mortar mix (1:4) : with round edges :allow to form holes for sinks	m2	3		
F	20 x 100 mm granite fascia	m	5		
	Column Protection Detail				
G	50 mm x 50 mm x 3 mm galvanized mild steel angle with 3 No. mild steel lug cast into concrete at 400 mm centres; 1000 mm high fixed flush to column finish including approved reflective safety tape; all to architects detail	m	171		
	Carried to Collection				
	ELEMENT NO.9 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9 FIXTURES AND FITTINGS **COLLECTION** Total Brought Forward from Page No.		*Page No* 29		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.9 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 10				
	SIGNAGES				
	DOOR SIGNAGE				
	Supply the following in high grade brass plate treated with sealer and chemical etching ; graphics and lettering finished in 3M vinyl cut outs as per architect's details; Allow fixing to manufacturer's instructions				
A	Signage plate with engraved names size 450 x 75mm high	No	10		
B	Directional signages size 400 x 400mm high	No	4		
	Supply and fix 'FIRE EXIT' hanging illuminated signage				
C	Fire exit signages size 300 x 150mm high	No	1		
	Carried Forward to Summary				
	ELEMENT NO.10 SIGNAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 11				
	BUILDERS WORK IN CONNECTION WITH SERVICES				
	All builder's work in connection with electrical installations including chasing in walls,holes and recesses and making good therewith				
A	Cutting horizontal or vertical chase for small conduits 25-32mm dia	m	120		
B	Ditto for large conduits over 50mm dia	m	50		
C	Allow for cutting through slabs, walls and leaving all necessary holes for lighting points	No	20		
D	Ditto for all types of switch points	No	18		
E	Ditto for all types of socket outlet points	No	25		
F	Ditto for all types of floor boxes	No	36		
G	Ditto for TV/date/CCTV points	No	26		
H	Ditto for fire alarm points	No	31		
I	Ditto for consumer units/distribution boards	No	3		
	Carried Forward to Summary				
	ELEMENT NO.11 B.W.I.C				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SUMMARY				
	BILL NO.3				
	VAULT		***Page No***		***Amount Kshs***
1	SUBSTRUCTURES		7		
2	R.C. SUPERSTRUCTURE		10		
3	WALLING AND PARTITIONS		12		
4	ROOFING		16		
5	DOORS		18		
6	WINDOWS		20		
7	INTERNAL FINISHES		24		
8	EXTERNAL FINISHES		28		
9	FIXTURES AND FITTINGS		30		
10	SIGNAGES		31		
11	BUILDER'S WORK IN CONNECTION WITH SERVICES (B.W.I.C)		32		
	Carried to General Summary				

CURRENCY PROCESSING HALL

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO.4				
	CURRENCY PROCESSING HALL				
	ELEMENT NO. 1				
	SUBSTRUCTURES (ALL PROVISIONAL)				
	EXCAVATION AND EARTHWORK				
A	Mass excavation to reduce levels starting from existing ground level; ground level not exceeding 1.50m deep	m3	324		
B	Excavation for foundation strips between 0.00-1.50m deep starting from reduced level	m3	283		
C	Ditto: Between 1.50 - 3.0m ditto	m3	142		
D	Excavation pit for bases between 0.00-1.50m deep starting from reduced level	m3	198		
E	Ditto: Between 1.50 - 3.0m ditto	m3	74		
F	Extra over excavation for excavating in any class of rock in any position	m3	10		
	PLUNKING AND STRUTTING				
G	Allow for maintaining and supporting sides of excavations and for keeping free from fallen materials.	Item	1		
	DISPOSAL OF WATER				
H	Allow for keeping the whole of excavations free from all ground and running water by pumping	Item	1		
	DISPOSAL AND BACKFILLING				
I	Returning, filling and ramming within foundations	m3	300		
J	Load and cart away surplus excavated material as necessary; including double and multi - handling where required	m3	721		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FILLING MATERIALS				
A	Imported murram or other equal and approved filling material : compacted in layers of not exceeding 200mm to 105% MDD	m3	1214		
B	300mm thick hardcore filling : hand packed : scarify, spread, grade and compact to falls, cross falls and slopes in layers not exceeding 150 mm thick	m2	593		
C	50 mm thick approved quarry dust blinding on surfaces of hardcore	m2	593		
	ANTI-TREATMENT				
D	Treat surface of hardcore with "Premise 200 SC" or any other equal and approved anti-termite insecticide applied strictly in accordance with manufactures printed instructions including providing a 10 years guarantee period.	m2	593		
	DAMP PROOF MEMBRANE				
E	One layer 1000 gauge polythene sheet damp proofing membrane : under floor bed : 300mm laps	m2	593		
	CONCRETE WORK				
	Plain concrete class 15/20 as described in:				
F	50mm thick to column bases	m2	102		
G	Ditto to strip foundation	m2	189		
H	Ditto to vault base	m2	30		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Vibrated Reinforced concrete class 25/20mm with and including strengthening admixture as "Sika Viscoflow-615 KE or any other equal and approved in:-				
A	Vault base	m3	30		
B	600mm thick RC walls	m3	23		
	Vibrated Reinforced concrete class 25/20mm				
C	Column bases	m3	82		
D	Columns	m3	30		
E	Foundation strips	m3	38		
F	150mm thick slab	m2	593		
	REINFORCEMENT				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
G	Assorted sizes; T8mm-T32mm	kg	16840		
	Anti-Drill Plate				
H	Supply and fix 12mm thick anti-drill case-hardened steel plate fixed to concrete; with and including all necessary accessories	m2	42		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Fabric reinforcement to B.S. 4483 and setting in concrete with 300mm side and end laps (measured net; allow for laps)				
A	BRC mesh fabric reinforcement ref A142 (weighing 2.2kg/m2) ; 150mm overlaps (measured net-no allowance made for laps)	m2	593		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
B	Sides of foundation strips	m2	126		
C	Sides of column bases	m2	194		
D	Sides of vault bases	m2	22		
E	Ditto:columns	m2	141		
F	Ditto: walls	m2	64		
G	Edge of ground floor slab girth over 75mm but not exceeding 150mm girth;including those curved to plan	m	107		
	FOUNDATION WALLING				
	Selected and approved natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
H	200mm thick wall	m2	566		
	Plaster				
	40 mm thick cement and sand (1:4) to receive waterproofing				
I	To sides of vault base	m2	22		
J	Horizontal surface of vault base	m2	30		
K	To sides of RC walls	m2	64		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	WATERPROOFING				
	Works to be executed by an approved specialist				
	Supply and apply 5mm thick APP modified bituminous membrane; from an approved manufacturer; one coat bituminous anti-dust primer, one layer APP membrane with mineral finish; torch bonded ; executed by specialist under 10 years guarantee:				
A	To sides of vault base	m2	22		
B	Horizontal surface of vault base	m2	30		
C	To sides of RC walls	m2	64		
	Protective screed				
	40 mm thick cement and sand (1:4) to receive waterproofing				
D	To sides of vault base	m2	22		
E	Horizontal surface of vault base	m2	30		
F	To sides of RC walls	m2	64		
	FRENCH DRAIN				
	Aggregate filling in making up levels				
G	Over 300mm thick; depositing loose approved aggregate to sides of retaining wall maximum size of aggregate to be 20mm; compact in layers	m3	32		
	Open ended perforated UPVC french drain pipe laid to fall 1 in 300 including setting in 20mm loose aggregate surround (m/s) encased in geotextile membrane (m/s) all to Engineer's approval				
H	200mm diameter	m	21		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Geotextile filter				
A	Bidim geotextile filter grade A3 as manufactured by Kaytech or equal and approved	m2	21		
	Water bars; standard PVC bulb edged strip; as "Sika Waterbar" or other equal and approved				
B	200mm wide; casting into concrete; temporary fixing to formwork; all in accordance with manufacturer's printed instructions	m	21		
	PLINTH TREATMENT				
	12mm thick cement and sand (1;4) wood floated rendering to:-				
C	To plinths of building	m2	71		
	Prepare surface and apply two coats of black bituminous paint or other approved paint to:				
D	Rendered plinth	m2	71		
	EXPANSION JOINT				
	Joint Filler				
E	30 mm thick "Jumbo Chem" expansion joint filler or other equal and approved	m2	12		
F	30mm x 30mm deep " NITOSEAL MS 100 "or equal and approved expansion joint sealer : raking out groove in concrete	m	22		
G	150mm wide x 4mm thick heavy duty flush mounted aluminium expansion joint cover; fixed with and including anchors at 200mm centres; rate to include cutting, joint preparation and alignment	m	22		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.1 SUBSTRUCTURES **COLLECTION** Total Brought Forward from Page No.		*Page No* 1 2 3 4 5 6		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	STRUCTURAL CONCRETE WORK				
	Vibrated Reinforced concrete class 25/20mm with and including strengthening admixture as "Sika Viscoflow-615 KE or any other equal and approved in:-				
A	600mm thick RC walls	m3	85		
	Vibrated Reinforced concrete class 25/20mm				
B	Columns	m3	113		
C	Beams	m3	44		
D	Gutter beams	m3	36		
E	Upstand beams	m3	5		
F	Intermediate beams	m3	18		
G	270mm thick roof slab	m2	500		
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
H	Assorted sizes; T8mm - T32mm	kg	60950		
	Anti-Drill Plate				
I	Supply and fix 12mm thick anti-drill case-hardened steel plate fixed to concrete; with and including all necessary accessories	m2	142		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
J	To sides of columns	m2	528		
	Carried to Collection				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	Ditto to RC walls	m2	284		
B	Soffit of suspended floor slab; strutting height 0-3.5m	m2	500		
C	Ditto 3.5-5.0m	m2	500		
D	Ditto 5.0-6.5m	m2	500		
E	Ditto 6.5-8.0m	m2	500		
F	Sides and soffit of beams; ditto	m2	350		
G	Sides and soffit of gutter beams	m2	301		
H	Sides of upstand beams	m2	52		
I	Sides of intermediate beams; strutting height of max 10m	m2	173		
J	Edge of suspended slab girth over 225mm but not exceeding 300mm girth	m	93		
	EXPANSION JOINT				
	Joint Filler				
K	30 mm thick "Jumbo Chem" expansion joint filler or other equal and approved	m2	13		
L	30mm x 30mm deep " NITOSEAL MS 100 "or equal and approved expansion joint sealer : raking out groove in concrete	m	38		
M	150mm wide x 4mm thick heavy duty flush mounted aluminium expansion joint cover; fixed with and including anchors at 200mm centres; rate to include cutting, joint preparation and alignment	m	38		
	Carried to Collection				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		8		
			9		
	Carried Forward to Summary				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 3				
	WALLING AND PARTITIONS				
	MASONRY WALLING				
	EXTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
A	200mm Thick external wall	m2	640		
B	200mm Thick external parapet wall	m2	58		
	Hessian based bituminous felt damp proofing course laid on cement and sand (1:4) mortar				
C	200mm wide	m	64		
	INTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
D	200mm Thick wall	m2	112		
	Hessian based bituminous felt damp proofing course laid on cement and sand (1:4) mortar				
E	200mm wide	m	65		
	Frameless Glass Partitions				
F	Supply, assemble and fix 6750 mm high 20mm thick toughened glass partition fixed to upstand masonary wall (m/s)at bottom ;complete with stainless steel glass patch fittings and any other necessary accessories	m2	522		
	Carried to Collection				
	ELEMENT NO.3 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3 WALLING AND PARTITIONS **<u>COLLECTION</u>** Total Brought Forward from Page No.		*Page No* 11		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.3 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	ROOF AND RAINWATER DISPOSAL *(All Provisional)*				
	ROOF COVERINGS				
	Supply and fix 24 gauge mild steel troughed roofing sheet type IT5 "Tekdek" roofing sheets from MRM or other equal and approved supplier ; including metal flashing: pre-painted to an approved colour; including fixing to roof trusses with appropriate fasteners; Fix as per manufacturer's written instructions; allow for raking				
A	Roof covering : to slopes exceeding 10 degrees to horizontal	m2	700		
	Extra Over roof covering for:				
C	Ridge capping	m	25		
D	Hip capping	m	12		
D	Valley capping	m	12		
E	750mm girth flashing	m	12		
	STEEL ROOF STRUCTURE				
	Structural mild steel to BS 4360 grade 43C in roof structure: allow for 5FW continuous welding : 3mm blanked open ends : one coat zinc chromate primer : including drilling holes in steel: all connections, cleats, bolts, nuts, washers etc; to Engineer's detail				
F	200 X 50 X 3mm thick ridges	Kg	3735		
G	100 X 50 X 3mm thick hip rafters	Kg	1102		
G	100 X 50 X 3mm thick valley rafters	Kg	339		
H	100 X 50 X 3mm thick rafters	Kg	4374		
I	100 X 50 X 3mm thick common rafters	Kg	500		
J	100 X 50 X 3mm thick tie beam	Kg	3718		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	75 X 50 X 3mm thick struts	Kg	6020		
B	150 X 50 X 2mm thick Z-Purlins weighing 4.44kg/m	Kg	1834		
C	75 X 50 X 3mm thick wall plate	Kg	445		
	SUNDRIES				
D	200 x 200 x 10mm thick angle cleats; with 4no. holes	No	22		
E	12mm dia x 400mm long bolt; complete with nut and washers	No	88		
F	300 x 300 x 10mm thick angle cleats; with 4no. holes	No	44		
G	12mm dia x 1000mm long mild steel anchor bolts; complete with nut and washers	No	176		
H	20mm diameter mild steel round bar sag rods	m	100		
	ROOF UNDERLAY				
I	Supply and fix 50mm thick super heavy duty roof sisalation from Jumbo Chem or from an equal and approved supplier; with and including fixing with strainin wires; fix as per manufacturer's specifications	m2	700		
	WATERPROOFING				
	ROOF TERRACES				
	Cement and sand (1:4) mortar backing : wood float finish : to receive waterproofing membrane (measured separately)				
J	40mm thick to roof terrace and gutters ; laid to falls and crossfalls	m2	667		
K	20mm thick to vertical sides of walls; 300mm high	m2	28		
	Works to be executed by an approved specialist				
	Supply and apply 5mm thick APP modified bituminous membrane; from an approved manufacturer; one coat bituminous anti-dust primer, one layer APP membrane with mineral finish; torch bonded ; executed by specialist under 10 years guarantee:				
L	To terraces and gutters	m2	667		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	To sides of walls	m2	28		
	RAINWATER DISPOSAL				
	Unplasticized PVC downpipes and fittings: solvent welded joints				
B	210mm diameter rainwater downpipe: fixed to wall using brackets	m	28		
	Extra Over for:				
C	210mm diameter fulbora roof outlet : with domical gratings : vertical spigots	No	4		
D	210mm diameter x 200mm long UPVC pipe sleeve ; casting into concrete slab	No	4		
E	Bend : including socket adaptor from gutter outlet to downpipes; complete	No	4		
F	Rainwater shoe	No	4		
G	Rainwater outlets: 210mm diameter	No	4		
	Painting and decorating				
	Prepare, touch up primer and apply zinc chromate primer and two coats of gloss oil paint finish				
H	General surface of steel	m2	1700		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	ROOFING AND RAINWATER DISPOSAL				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		13		
			14		
			15		
	Carried Forward to Summary				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	DOORS				
	Vault Doors				
	Supply and fix vault door as " Chubbsafes Centurion Door" grade IX CD EX with EN 1143-1 certification; overall size 1500 x 2500mm high with overall thickness of 320mm suitable for wall thickness of 600mm; Secured by 2x14 lever KABA MAUER Primus 70011 Class C Double bitted keylock, 2x KABA LAGARD 1947 four wheel mechanical Combination lock and 1xS&G 6370-005 Three movement Mechanical Reset Action Time lock; independenly tested by ECB.S; door frame to be also armoured to provide extra protection;including all necessary accessories; all to CBK's specification				
A	Door overall size 1500 x 2500mm high	No	1		
	FRAMELESS GLASS DOOR				
	12mm thick toughened frameless glass door with polycarbonate security film on both sides; double leaf door with screwed to concrete beam with appropriate screws; including patch fittings, stainless steel hinges, ,tower bolt,door locks and any other necessary ironmongery all as "Assa Abloy" or other equal and approved ; to Architect's details and approval				
B	Double leaf; Overall size 1000 x 2400mm high	No	7		
	PANELLED DOORS				
	50mm thick hardwood panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail : complete with moulded grooves to door leaf on both sides;solid blocking to iron mongery (m/s) to door				
C	Double leaf door overall size 2000 x 2400mm high	No	2		
D	Single leaf door overall size 1000 x 2400mm high	No	3		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SECURITY DOOR				
	70mm thick hardwood security panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail :infilled with insulation and 3mm thick heavy duty galvanised steel plate; complete with moulded grooves to door leaf on both sides;complete with and including 3mm thick prepainted mild steel frame and heavy duty ironmonery including steel dog bolt pins; tested and certified to LPS 1175 SR4 Issue 8 D10 .				
A	Double leaf door overall size 2400 x 2400mm high	No	1		
	FRAMES				
	Wrot prime grade mahogany timber frames, well seasoned and pressure impregnated with approved preservative as described in:-				
B	200 x 50mm thick door frame; four labours; counter sunk screws	m	31		
C	Ditto transomes	m	7		
D	75 x 25mm architrave with two labours plugged	m	31		
E	25 x 25mm quadrant beading	m	31		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
F	Surfaces over 200mm but not exceeding 300mm girth	m	31		
G	Ditto: 0-100 mm girth	m	62		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
H	Timber surfaces between 200-300 mm girth	m	31		
I	Ditto: 100-200 mm girth	m	31		
J	Ditto: 0-100mm girth	m	31		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	Ditto over 300mm girth	m2	4		
B	General timber surfaces of doors	m2	33		
	Ironmongery				
	Supply and fix the following approved quality ironmongery from 'ASSA ABLOY' or other equal and approved manufacturer; including all necessary matching screws:-				
C	150mm heavy duty brass ball bearing hinges	Prs	10.5		
D	5-Lever mortice lock complete with aluminium lever handles	No	5		
E	Euro-cylinder lock 72mm centres with brass handle	No	5		
F	Door closer as "Union 8834" or equal and approved	No	15		
G	800 x 200mm high stainless steel kick plate onto both sides to approval	No	14		
H	Buffered coat hooks with rubber tip	No	5		
I	Stainless steel push plate-100x300mm	No	5		
J	Stainless steel pull plate-100x300mm	No	5		
K	Oval satin nickel floor mounted door stop fixed with screw to approval	No	16		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	DOORS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.				
			17		
			18		
			19		
	Carried Forward to Summary				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	WINDOWS				
	WINDOW CILL				
	Window cill in reinforced concrete class 20 fair faced all exposed surfaces bedded and jointed cement and sand (1:3) mortar				
A	250 x 50mm thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	m	37		
	WINDOW BOARDS				
	Wrot prime grade mahogany timber, well seasoned and pressure impregnated with approved preservative as described in:-				
B	150 x 25mm Window board	m	37		
C	20 x 25mm Quadrant beading	m	37		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
D	Back of wood frames over 100mm but not exceeding 200mm girth	m	37		
E	Ditto: 0-100 mm girth	m	37		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
F	Timber surfaces between 100-200mm girth	m	37		
G	Ditto: 0-100 mm girth	m	37		
	Carried to Collection				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CURTAIN WALLING				
	Supply, assemble and fix the following weather tight curtain-wall system with horizontal and vertical visible heavy duty powder coated aluminium frame overall size 150 x 80 x 3mm thick ; structurally glazed 12mm thick laminated glass with polished edges comprising of 6mm thick solar glass (blue colour or other approved colour) plus 1.52mm ultra-safety and security polyvinyl butyral (PVB) film plus 6mm thick self-cleaning clear glass all as manufactured by Saint Gobain – coolite series and supplied locally by Impala Glass or other equal and approved glass; including all necessary accessories such as EPDM gaskets, mild steel powder coated fixing brackets, beading and the like; all as per the Architect's design & details				
A	Curtain walling to curved detail	m2	339		
	ALUMINIUM WINDOWS				
	Supply and fix the following heavy duty Aluminium profiled casement windows as manufactured by an approved supplier; curved to plan and comprising of 100 x 50 x 3mm thick standard hollow sections; frames mitred at corners; fixing to masonry or concrete jambs with appropriate lugs; including all necessary ironmongery and fittings : complete with 18mm thick blue tinted bullet prooof glass; including glazing beading; joints sealed using approved silicon compound : including bedding and pointing in cement and sand(1:4) mortar: oiling and adjusting on completion; Complete with permanent air vent: all in accordance with Architect's details				
B	Window overall size 11000mm x 2000mm high	No	2		
C	Ditto overall size 8000mm x 2000mm high	No	1		
D	Ditto overall size 5000mm x 2000mm high	No	1		
	Carried to Collection				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	WINDOWS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		21		
			22		
	Carried Forward to Summary				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	INTERNAL FINISHES				
	WALL FINISHES				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	Concrete or masonry surfaces internally	m2	1573		
	15mm cement and sand (1:4) backing;wood float finish				
B	To receive epoxy	m2	203		
	PAINTING AND DECORATION				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion ant-fungal paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
C	To plastered masonry and concrete surfaces	m2	1573		
	Works to be executed by an approved specialist				
	Supply and apply anti-static solvent free high build industrial epoxy to walls including grinding surface to remove surface laitance and expose defects, repairing defects and cracks, fill control joints with shrinkage compensated mortar; apply moisture barrier and Captive blasting and wash with approved acid; apply epoxy primer with and including 0.5mm quartz sand , epoxy undercoat and one top coat of epoxy ; applied in accordance with manufacturer's printed instructions				
	3 mm thick, 2 No coat work to concrete base (m.s); generally				
D	To plastered walls	m2	203		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	40mm thick smooth powerfloated to receive epoxy floor finish	m2	500		
	Works to be executed by an approved specialist				
	Supply and apply anti-static solvent free high build industrial epoxy floor including grinding surface to remove surface laitance and expose defects, repairing defects and cracks, fill control joints with shrinkage compensated mortar; apply moisture barrier and Captive blasting and wash with approved acid; apply epoxy primer with and including 0.5mm quartz sand , epoxy undercoat and one top coat of epoxy ; applied in accordance with manufacturer's printed instructions				
	3 mm thick, 2 No coat work to concrete base (m.s); generally				
B	To screeded floor	m2	500		
C	100mm high matching skirting	m	246		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To concrete ceilings	m2	500		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B	To plastered concrete ceilings	m2	500		
	GYPSUM CEILINGS				
	Suspended gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
C	12mm thick gypsum flat ceilings	m2	100		
D	200mm high drop-provisional	m	50		
E	100mm girth polyutherane cornice	m	60		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
F	To general surface of gypsum and bulkheads	m2	110		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	INTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		24		
			25		
			26		
	Carried Forward to Summary				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	EXTERNAL FINISHES				
	WALL FINISHES				
	20mm thick cement and sand (1:4) plaster : wood float finished : to :				
A	To plastered surfaces of walls and columns to receive textured paint finish (m.s)	m2	955		
B	Ditto to receive alucobond cladding (m.s)	m2	239		
	Specialist applied textured finish as 'Marmoran'' supplied by Galaxy Paints Ltd or other equal and approved; 3mm thick (minimum) finish including primer coat before application; applied with a trowel or roller as per manufacturer's recommendation : All to Architect's approval				
C	To plastered surfaces	m2	955		
	Alucobond Cladding				
	Supply and fix 6mm thick nano self cleansing perforated aluminium composite cladding sheets in panes sizes ranging from 400 x 400mm -600 x 600 mm; cutting to sizes;comprising of normal PE core, aluminium panel, primer,paint, PVDF paint and finished in nanometer paint all as Alucobond or other equal and approved; with matching trim and associated accessories; fixed to and including aluminium sections and brackets with approved silicon sealant;all to manufacturer's specifications and details				
D	Butt joints; over 300mm wide	m2	239		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	40mm thick wood floated to receive granite slab	m2	78		
	Granite slab				
	Supply and fix polished local coloured granite slab from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
	20 mm thick; butt joints strait both ways; to cement and sand base (m/s); generally to				
B	To screeded floor	m2	78		
C	100mm high x 10mm Thick skirting with rounded top edge	m	71		
	PAVING AROUND THE BUILDING				
D	600 x 600 x 50mm Thick pre-cast concrete slabs laid on and including 50mm thick consolidated sand bed and 100mm thick murram sub-base - to fall and including all necessary excavations and anti-termite treatment to sub-base	m2	140		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To horizontal soffits of concrete slab	m2	100		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B	To plastered horizontal soffits of concrete slab	m2	100		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	EXTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		28		
			29		
			30		
	Carried Forward to Summary				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9				
	FIXTURES AND FITTINGS (ALL PROVISIONAL)				
	Plain insitu concrete: class 15/20mm				
A	100mm thick plinths	m2	3		
	Sawn formwork to:				
B	Vertical edges: over 75mm but not exceeding 150mm high	m	9		
	Cement and sand(1:4) paving : steel trowelled to				
C	20mm thick to plinths	m2	3		
	Concrete worktops				
D	100mm thick reinforced concrete vanity worktop : 600mm wide x 900mm high: including 100mm thick division walls at every 1000mm centres; complete with plasterwork to worktop to granite (m/s) and wall; including reinforcement and necessary formwork	m	5		
	Worktops: 600mm wide : with round edges : form holes for sink.				
E	600mm wide x 20mm thick granite top fixed with cement sand mortar mix (1:4) : with round edges :allow to form holes for sinks	m2	3		
F	20 x 100 mm granite fascia	m	5		
	Column Protection Detail				
G	50 mm x 50 mm x 3 mm galvanized mild steel angle with 3 No. mild steel lug cast into concrete at 400 mm centres; 1000 mm high fixed flush to column finish including approved reflective safety tape; all to architects detail	m	206		
	Carried to Collection				
	ELEMENT NO.9 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9 FIXTURES AND FITTINGS **COLLECTION** Total Brought Forward from Page No.		*Page No* 33		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.9 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 10				
	SIGNAGES				
	DOOR SIGNAGE				
	Supply the following in high grade brass plate treated with sealer and chemical etching ; graphics and lettering finished in 3M vinyl cut outs as per architect's details; Allow fixing to manufacturer's instructions				
A	Signage plate with engraved names size 450 x 75mm high	No	12		
B	Directional signages size 400 x 400mm high	No	2		
	Supply and fix 'FIRE EXIT' hanging illuminated signage				
C	Fire exit signages size 300 x 150mm high	No	2		
	Carried Forward to Summary				
	ELEMENT NO.10 SIGNAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 11				
	BUILDERS WORK IN CONNECTION WITH SERVICES				
	All builder's work in connection with electrical installations including chasing in walls,holes and recesses and making good therewith				
A	Cutting horizontal or vertical chase for small conduits 25-32mm dia	m	117		
B	Ditto for large conduits over 50mm dia	m	42		
C	Allow for cutting through slabs, walls and leaving all necessary holes for lighting points	No	18		
D	Ditto for all types of switch points	No	16		
E	Ditto for all types of socket outlet points	No	22		
F	Ditto for all types of floor boxes	No	36		
G	Ditto for TV/date/CCTV points	No	26		
H	Ditto for fire alarm points	No	31		
I	Ditto for consumer units/distribution boards	No	3		
	Carried Forward to Summary				
	ELEMENT NO.11 B.W.I.C				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SUMMARY				
	BILL NO.4				
	CURRENCY PROCESSING HALL		***Page No***		***Amount Kshs***
1	SUBSTRUCTURES		7		
2	R.C. SUPERSTRUCTURE		10		
3	WALLING AND PARTITIONS		12		
4	ROOFING		16		
5	DOORS		20		
6	WINDOWS		23		
7	INTERNAL FINISHES		27		
8	EXTERNAL FINISHES		31		
9	FIXTURES AND FITTINGS		33		
10	SIGNAGES		34		
11	BUILDER'S WORK IN CONNECTION WITH SERVICES (B.W.I.C)		35		
	Carried to General Summary				

OFFICES/VERIFICATION CENTRE

Note:

1. The rates and prices shall be inclusive of VAT at 16%

GROUND FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO.5				
	GROUND FLOOR				
	ELEMENT NO. 1				
	SUBSTRUCTURES (ALL PROVISIONAL)				
	EXCAVATION AND EARTHWORK				
A	Mass excavation to reduce levels starting from existing ground level; ground level not exceeding 1.50m deep	m3	1500		
B	Excavation for foundation strips between 0.00-1.50m deep starting from reduced level	m3	1435		
C	Ditto: Between 1.50 - 3.0m ditto	m3	718		
C	Excavation pit for bases between 0.00-1.50m deep starting from reduced level	m3	926		
D	Ditto: Between 1.50 - 3.0m ditto	m3	463		
F	Excavation pit for lift shaft bases between 0.00-1.50m deep starting from reduced level	m3	59		
G	Ditto: Between 1.50 - 3.00m ditto	m3	30		
I	Extra over excavation for excavating in any class of rock in any position	m3	10		
	PLUNKING AND STRUTTING				
J	Allow for maintaining and supporting sides of excavations and for keeping free from fallen materials.	Item	1		
	DISPOSAL OF WATER				
K	Allow for keeping the whole of excavations free from all ground and running water by pumping	Item	1		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	DISPOSAL AND BACKFILLING				
A	Returning, filling and ramming within foundations after construction of foundation walls	m3	4912		
B	Load and cart away surplus excavated material as necessary; including double and multi - handling where required	m3	682		
	FILLING MATERIALS				
C	Imported murram or other equal and approved filling material : compacted in layers of not exceeding 200mm to 105% MDD	m3	5340		
D	300mm thick hardcore filling : hand packed : scarify, spread, grade and compact to falls, cross falls and slopes in layers not exceeding 150 mm thick	m2	3200		
E	50 mm thick approved quarry dust blinding on surfaces of hardcore	m2	3200		
	ANTI-TREATMENT				
F	Treat surface of hardcore with "Premise 200 SC" or any other equal and approved anti-termite insecticide applied strictly in accordance with manufactures printed instructions including providing a 10 years guarantee period.	m2	3518		
	DAMP PROOF MEMBRANE				
G	One layer 1000 gauge polythene sheet damp proofing membrane : under floor bed : 300mm laps	m2	3518		
	CONCRETE WORK				
	Plain concrete class 15/20 as described in:				
H	50mm thick to column bases	m2	618		
I	Ditto to lift bases	m2	39		
J	Ditto to strip foundation	m2	957		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Vibrated Reinforced concrete class 25/20mm				
A	Lift bases	m3	59		
B	Column bases	m3	272		
C	Columns	m3	57		
D	Foundation strips	m3	192		
E	Steps at entrances	m3	16		
F	400mm thick lift walls	m3	21		
G	400mm thick RC walls	m3	5		
H	150mm thick ground floor slab	m2	3443		
I	150mm thick ramp slab at gradient of 1:12; with and including tamped finish	m2	75		
J	Extra over concrete slab for power floated smooth finish with approved hardener as Sikafloor 3 QuartzTop or other equal and approved to surface of concrete; heavy duty application; application as per manufacturer's printed instruction	m2	296		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	REINFORCEMENT				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
A	Assorted sizes; T8mm-T32mm	kg	57650		
	Fabric reinforcement to B.S. 4483 and setting in concrete with 300mm side and end laps (measured net; allow for laps)				
B	BRC mesh fabric reinforcement ref A142 (weighing 2.2kg/m2) ; 150mm overlaps (measured net-no allowance made for laps)	m2	3518		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
C	Sides of lift bases	m2	44		
D	Sides of column bases	m2	1030		
E	Ditto:columns	m2	360		
F	Ditto: Circular columns	m2	104		
G	Ditto: lift walls and RC walls	m2	126		
H	Ditto foundation strips	m2	843		
I	Edge of ground floor slab girth over 75mm but not exceeding 150mm girth;including those curved to plan	m	531		
J	Ditto edges of ramp	m	89		
K	Ditto edges of steps	m	125		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	EXPANSION JOINT				
	Joint Filler				
A	30 mm thick "Jumbo Chem" expansion joint filler or other equal and approved	m2	228		
B	30mm x 30mm deep " NITOSEAL MS 100 "or equal and approved expansion joint sealer : raking out groove in concrete	m	285		
C	150mm wide x 4mm thick heavy duty flush mounted aluminium expansion joint cover; fixed with and including anchors at 200mm centres; rate to include cutting, joint preparation and alignment	m	285		
	FOUNDATION WALLING				
	Selected and approved natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
D	200mm thick wall	m2	2900		
	Plaster				
	40 mm thick cement and sand (1:4) to receive waterproofing				
E	To sides of lift bases	m2	44		
F	Horizontal surface of lift base	m2	39		
G	To sides of lift walls	m2	126		
	WATERPROOFING				
	Works to be executed by an approved specialist				
	Supply and apply 5mm thick APP modified bituminous membrane; from an approved manufacturer; one coat bituminous anti-dust primer, one layer APP membrane with mineral finish; torch bonded ; executed by specialist under 10 years guarantee:				
H	To sides of bases	m2	44		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	Horizontal surface of lift base	m2	39		
B	To sides of lift walls	m2	126		
	Protective screed				
	40 mm thick cement and sand (1:4) to receive waterproofing				
C	To sides of bases	m2	44		
D	Horizontal surface of lift base	m2	39		
E	To sides of lift walls	m2	126		
	PLINTH TREATMENT				
	12mm thick cement and sand (1;4) wood floated rendering to:-				
F	To plinths of building	m2	638		
	Prepare surface and apply two coats of black bituminous paint or other approved paint to:				
G	Rendered plinth	m2	638		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.1				
	SUBSTRUCTURES				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		1		
			2		
			3		
			4		
			5		
			6		
	Carried Forward to Summary				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	STRUCTURAL CONCRETE WORK				
	Vibrated reinforced concrete class 25/20mm, as described, in:-				
A	Columns	m3	124		
B	Beams	m3	239		
C	Intermediate beams	m3	37		
D	Upstand beams	m3	23		
E	400mm thick lift walls	m3	45		
F	400mm thick RC walls	m3	10		
G	175mm thick slab	m2	2048		
H	175mm thick sunshading canopies	m2	156		
	Carried to Collection				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
A	Assorted sizes; T8mm - T32mm	kg	127879		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
B	To sides of columns	m2	780		
C	Ditto: Circular columns	m2	226		
D	Ditto:lift walls and RC walls	m2	272		
E	Soffit of suspended floor slab; strutting height 0-3.5m	m2	3035		
F	Ditto 3.5-5.0m	m2	3035		
G	Sides and soffit of beams;including those curved to plan	m2	2534		
H	Sides and soffit of intermediate beams	m2	681		
I	Sides of upstand beams; including those curved to plan	m2	428		
J	Edge of suspended slab girth over 150mm but not exceeding 225mm girth;including those curved to plan	m	616		
	EXPANSION JOINT				
	Joint Filler				
K	30 mm thick "Jumbo Chem" expansion joint filler or other equal and approved	m2	112		
L	30mm x 30mm deep " NITOSEAL MS 100 "or equal and approved expansion joint sealer : raking out groove in concrete	m	531		
M	150mm wide x 4mm thick heavy duty flush mounted aluminium expansion joint cover; fixed with and including anchors at 200mm centres; rate to include cutting, joint preparation and alignment	m	531		
	Carried to Collection				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		8		
			9		
	Carried Forward to Summary				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 3				
	REINFORCED CONCRETE STAIRCASE AND FINISHES				
	STRUCTURAL CONCRETE WORK				
	Vibrated reinforced concrete class 25/20mm, as described, in:-				
A	Staircase	m3	21		
B	175mm thick landing	m2	24		
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
C	Assorted sizes; T8mm-T12mm	kg	3570		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
D	Soffits of staircase landing	m2	24		
E	Sloping soffits of staircase	m2	81		
F	Edge of riser over 75mm but not exceeding 150mm girth	m	240		
G	Edges of open staircase string 300mm (extreme) girth including forming to profile of risers and treads	m	41		
H	Edge of suspended landing over 150mm but not exceeding 225mm girth	m	24		
	Carried to Collection				
	ELEMENT NO.3 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	20mm wood floated to receive granite	m2	24		
B	Ditto at treads; 300mm wide	m	240		
C	Ditto to risers; 150mm high	m	240		
D	To edges of waists of stairs cut to profile of steps - 350 mm wide extreme	m	41		
	Granite slab				
	Supply and fix polished local coloured granite slab from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
	20 mm thick; butt joints strait both ways; to cement and sand base (m/s); generally to				
E	To landing; to approved sizes and pattern	m2	24		
F	To treads; 300 mm wide full length slab with bull nosings (rounded and double granite edges)	m	240		
G	Extra over treads for 2 No. water drip on either sides of every step each 150 mm long x 600 mm wide in granite	m	41		
H	To risers; 150 mm high full length slab	m	240		
I	150mm high x 10mm Thick skirting with rounded top edge	m	93		
J	Extra; 3 No.5 mm wide x 3 mm deep anti slip grooves cut into 20mm thick granite slab finish (m/s)	m	240		
	Carried to Collection				
	ELEMENT NO.3 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To horizontal soffits of landing	m2	24		
B	To slopping soffits of staircase	m2	81		
C	To open staircase string 300mm (extreme) girth to profile of risers and treads	m	41		
	Painting and decoration				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
D	To plastered horizontal soffits of landing	m2	24		
E	To plastered slopping soffits of staircase	m2	81		
F	To plastered open staircase string 300mm (extreme) girth to profile of risers and treads	m	41		
	Carried to Collection				
	ELEMENT NO.3 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3				
	STAIRCASE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		11		
			12		
			13		
	Carried Forward to Summary				
	ELEMENT NO.3 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	WALLING AND PARTITIONS				
	MASONRY WALLING				
	EXTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
A	200mm Thick external wall	m2	648		
	Hessian based bituminous felt damp proofing course laid on cement and sand (1:4) mortar				
B	200mm wide	m	476		
	INTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
C	200mm Thick wall	m2	1663		
D	150mm Thick wall	m2	297		
E	100mm Thick wall	m2	169		
	Hessian based bituminous felt damp proofing course laid on cement and sand (1:4) mortar				
F	200mm wide	m	465		
G	150mm wide	m	149		
H	100mm wide	m	55		
	Carried to Collection				
	ELEMENT NO.4 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FRAMELESS GLASS PARTITION				
A	Supply, assemble and fix 3900 mm high 20mm thick toughened glass partition fixed to upstand masonary wall or upstand beam or slab (m/s) and concrete beam (m/s) ;complete with stainless steel glass patch fittings and any other necessary accessories	m2	253		
	Aluminium Partitions				
B	Supply, assemble and fix 3900 mm high purpose made powder coated finish aluminium partitions comprising 3 mm thick (minimum) approved aluminium sections comprising of 100 x 50 mm top & bottom rails and 100 x 50 mm vertical members at 900 mm centres; horizontally divided into two parts consisting of 1500 mm high bottom panel infilled with 25mm thick beech laminated MDF board on both sides and infilled with rockwool, 2100 mm high middle panel infilled with 8mm thick laminated glazing; including all accessories such as beadings and sub frames, 150 mm wide flashing to seal, rubber gaskets and the like: all necessary ironmongery	m2	50		
C	Supply and fix 10 UM coloured vinyl film or sand blast film with client's logo and graphics from an approved supplier as per as per Architect's details	m2	122		
	HDF Partitions				
D	Supply and fix 20mm thick moistureproof HDF partitions; complete with all fittings including stainless steel anchor bolted to concrete floor; colour to Architect's approval	m2	169		
	Carried to Collection				
	ELEMENT NO.4 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4 WALLING AND PARTITIONS **COLLECTION** Total Brought Forward from Page No.		*Page No* 15 16		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.4 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	ROOF AND RAINWATER DISPOSAL *(All Provisional)*				
	RAINWATER DISPOSAL				
	Unplasticized PVC downpipes and fittings: solvent welded joints				
A	210mm diameter rainwater downpipe: fixed to wall using brackets	m	64		
	Extra Over for:				
B	210mm diameter fulbora roof outlet : with domical gratings : vertical spigots	No	16		
C	210mm diameter x 200mm long UPVC pipe sleeve ; casting into concrete slab	No	16		
D	Bend : including socket adaptor from gutter outlet to downpipes; complete	No	16		
E	Rainwater shoe	No	16		
F	Rainwater outlets: 210mm diameter	No	16		
	Carried to Collection				
	ELEMENT NO.5 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	ROOFING AND RAINWATER DISPOSAL				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		18		
	Carried Forward to Summary				
	ELEMENT NO.5 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	DOORS				
	FRAMELESS GLASS DOOR				
	12mm thick toughened frameless glass door with polycarbonate security film on both sides; double leaf door with screwed to concrete beam with appropriate screws; including patch fittings, stainless steel hinges, ,tower bolt,door locks and any other necessary ironmongery all as "Assa Abloy" or other equal and approved ; to Architect's details and approval				
A	Double leaf; Overall size 1800 x 2400mm high	No	12		
B	Single leaf door; Overall size 1000 x 2400mm high	No	7		
	12mm thick toughened frameless glass automatic sliding with polycarbonate security film on both sides; complete with and including programming switch, battery back up, motion detectors, sensors,adaptors,patch fittings, bottom and top sliding rails, including accessories, opening mechanism and all necessary ironmongery all as " Assa Abloy" or other equal and approved; to architect's details				
C	Sliding door; Overall size 3600 x 5400mm high	No	2		
D	Sliding door; Overall size 1800 x 5400mm high	No	3		
	Roller Shutter Doors				
	Supply and fix both electronically operated slatted aluminium roller shutter in 100 x 100 x 6mm angle frame infilled with 3mm thick aluminum sheet roller shutter slats complete with all necessary sliding channels, hood for shutter, pull chain, galvanised ironmongery including locking devices with key access and other neccessay accesories. Roller shutter fixed to walls slab or columns including cutting or forming holes and making good; Upward sliding door; All welding ground smooth and shoped prime with two pack epoxy zinc phosphate primer before fixing				
E	Door overall size 8100 x 3900mm high	No	1		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	Door overall size 5000 x 3900mm high	No	2		
B	Door overall size 2600 x 3900mm high	No	3		
C	Door overall size 1500 x 3900mm high	No	2		
	PANELLED DOORS				
	50mm thick hardwood panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail : complete with moulded grooves to door leaf on both sides; solid blocking to iron mongery (m/s) to door				
D	Double leaf door overall size 1800 x 2400mm high	No	4		
E	Single leaf door overall size 1000 x 2400mm high	No	22		
F	Single leaf door overall size 1200 x 2400mm high	No	6		
	FLUSH DOORS				
	Supply and fix 45mm solid core flush doors; mahogany veneered on facing to both sides ; Hardwood lipping on all edges : solid blocking for iron mongery (m/s) to door				
G	Single door leaf overall size 1000 x 2400mm high	No	28		
	DUCT DOORS				
	Supply and fix the following heavy duty powder coated aluminium profiled doors as manufactured by an approved supplier; comprising of 150 x 80 x 3mm thick standard hollow sections: infilled with 50x3mm louvres set at 45 degrees at 50mm centres; including all necessary iron mongery (matching locks): ; including glazing beading; joints sealed using approved silicon compound; fixing to masonry or concrete jambs with appropriate lugs ;including all necessary ironmongery(hinges,locks etc) adjust on completion; including bedding and pointing in cement and sand(1:4) mortar: to				
H	Double leaf door overall size 900 x 2700mm high	No	10		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FIRE RATED DOORS				
	Supply and fix 50mm thick one hour fire rated(1 HR) as 'Assa Abloy' or other equal and approved ; complete with fireproof frames and leaf made of 2mm thick G.I Steel in filled with rockwool and gypsum powder and finished in polyester powder coating and 450mm high fanlight glazed with 10mm thick georgian wire glass; complete with fire rated iron mongery (mortise lock,levers,hinges,door closer,panic bars and contact alarm ; solid blocking for iron mongery				
A	Double leaf door overall size 1800 x 2400mm high	No	2		
	ALUMINIUM DOORS				
	Supply and fix the following heavy duty powder coated aluminium profiled doors as manufactured by an approved supplier; comprising of 150 x 80 x 3mm thick standard hollow sections: complete with 6mm thick blue tinted laminated glass; including all necessary iron mongery (matching locks): ; including glazing beading; joints sealed using approved silicon compound; fixing to masonry or concrete jambs with appropriate lugs ;including all necessary ironmongery(hinges,locks etc) adjust on completion; including bedding and pointing in cement and sand(1:4) mortar: to				
B	Double leaf door overall size 1800 x 2400mm high	No	6		
	FIRST QUALITY WPC DOORS				
	Solid core 50mm thick WPC doors; all sides finished with 4mm thick WPC laminate hot pressed in vacuum machine using high quality glue; solid blocking and leaving provision for ironmongery fixing.				
C	Single door leaf overall size 1000 x 2400mm high	No	28		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SECURITY DOOR				
	70mm thick hardwood security panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail :infilled with insulation and 3mm thick heavy duty galvanised steel plate; complete with moulded grooves to door leaf on both sides;complete with and including 3mm thick prepainted mild steel frame and heavy duty ironmonery including steel dog bolt pins; tested and certified to LPS 1175 SR4 Issue 8 D10 .				
A	Double leaf door overall size 1500 x 2400mm high	No	4		
	FRAMES				
	Wrot prime grade mahogany timber frames, well seasoned and pressure impregnated with approved preservative as described in:-				
B	200 x 50mm thick door frame; four labours; counter sunk screws	m	190		
C	Ditto transomes	m	37		
D	150 x 50mm thick door frame; four labours; counter sunk screws	m	163		
E	Ditto transomes	m	28		
F	75 x 25mm architrave with two labours plugged	m	353		
G	25 x 25mm quadrant beading	m	353		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
H	Surfaces over 200mm but not exceeding 300mm girth	m	190		
I	Ditto: 100-200 mm girth	m	163		
J	Ditto: 0-100 mm girth	m	706		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
A	Timber surfaces between 200-300 mm girth	m	353		
B	Ditto: 100-200 mm girth	m	353		
C	Ditto: 0-100mm girth	m	353		
D	Ditto over 300mm girth	m2	30		
E	General timber surfaces of doors	m2	310		
	Ironmongery				
	Supply and fix the following approved quality ironmongery from 'ASSA ABLOY' or other equal and approved manufacturer; including all necessary matching screws:-				
F	150mm heavy duty double action spring hinges	Prs	9		
G	150mm heavy duty brass ball bearing hinges	Prs	51		
H	150mm stainless steel butt hinges	Prs	42		
I	5-Lever mortice lock complete with aluminium lever handles	No	32		
J	Euro-cylinder lock 72mm centres with brass handle	No	32		
K	Indicator bolt 'Vacant / Engaged'	No	28		
L	Door closer as "Union 8834" or equal and approved	No	81		
M	Ditto double action door closer	No	6		
N	800 x 200mm high stainless steel kick plate onto both sides to approval	No	76		
O	Buffered coat hooks with rubber tip	No	28		
P	Stainless steel push plate-100x300mm	No	38		
Q	Stainless steel pull plate-100x300mm	No	38		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	19x225mm high stainless steel conceal fix pull handles	No	76		
B	Oval satin nickel floor mounted door stop fixed with screw to approval	No	131		
C	200x300mm high stainless steel transfer grills	No	38		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	DOORS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		20		
			21		
			22		
			23		
			24		
			25		
	Carried Forward to Summary				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	WINDOWS				
	WINDOW CILL				
	Window cill in reinforced concrete class 20 fair faced all exposed surfaces bedded and jointed cement and sand (1:3) mortar				
A	250 x 50mm thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	m	57		
	WINDOW BOARDS				
	Wrot prime grade mahogany timber, well seasoned and pressure impregnated with approved preservative as described in:-				
B	150 x 25mm Window board	m	57		
C	20 x 25mm Quadrant beading	m	57		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
D	Back of wood frames over 100mm but not exceeding 200mm girth	m	57		
E	Ditto: 0-100 mm girth	m	57		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
F	Timber surfaces between 100-200mm girth	m	57		
G	Ditto: 0-100 mm girth	m	57		
	Carried to Collection				
	ELEMENT NO.7 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CURTAIN WALLING				
	Supply, assemble and fix the following weather tight curtain-wall system with horizontal and vertical visible heavy duty powder coated aluminium frame overall size 150 x 80 x 3mm thick ; structurally glazed 12mm thick laminated glass with polished edges comprising of 6mm thick solar glass (blue colour or other approved colour) plus 1.52mm ultra-safety and security polyvinyl butyral (PVB) film plus 6mm thick self-cleaning clear glass all as manufactured by Saint Gobain – coolite series and supplied locally by Impala Glass or other equal and approved glass; including all necessary accessories such as EPDM gaskets, mild steel powder coated fixing brackets, beading and the like; all as per the Architect's design & details				
A	Curtain walling to curved detail	m2	1280		
	ALUMINIUM WINDOWS				
	Supply and fix the following heavy duty Aluminium profiled casement windows as manufactured by an approved supplier; curved to plan and comprising of 100 x 50 x 3mm thick standard hollow sections; frames mitred at corners; fixing to masonry or concrete jambs with appropriate lugs; including all necessary ironmongery(stays,hinges and locks) and fittings : complete with 6mm thick blue tinted laminated glass; including glazing beading; joints sealed using approved silicon compound : including bedding and pointing in cement and sand(1:4) mortar: oiling and adjusting on completion; Complete with permanent air vent: all in accordance with Architect's details				
	Sliding windows complete with sliding tracks				
B	Window overall size 3400mm x 2000mm high	No	15		
	Carried to Collection				
	ELEMENT NO.7 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ALUMINIUM FIXED WINDOWS				
	Supply and fix the following heavy duty Aluminium profiled casement windows as manufactured by an approved supplier; curved to plan and comprising of 100 x 50 x 3mm thick standard hollow sections; frames mitred at corners; fixing to masonry or concrete jambs with appropriate lugs; including all necessary ironmongery and fittings : complete with 18mm thick blue tinted bullet prooof glass; including glazing beading; joints sealed using approved silicon compound : including bedding and pointing in cement and sand(1:4) mortar: oiling and adjusting on completion; Complete with permanent air vent: all in accordance with Architect's details				
A	Window overall size 3000mm x 2000mm high	No	5		
	Carried to Collection				
	ELEMENT NO.7 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	WINDOWS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		27		
			28		
			29		
	Carried Forward to Summary				
	ELEMENT NO.7 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	INTERNAL FINISHES				
	WALL FINISHES				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	Concrete or masonry surfaces internally	m2	6312		
	15mm cement and sand (1:4) backing;wood float finish				
B	To receive wall tiles	m2	1445		
	PAINTING AND DECORATION				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
C	To plastered masonry and concrete surfaces	m2	6312		
	WALL TILING				
	Granito wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout				
D	300 x 600 x 10mm thick granito tiles	m2	1322		
E	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	700		
	Supply and fix polished local coloured granite from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
F	20mm thick granite tiles to lift shaft walls	m2	123		
G	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	36		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	40mm thick wood floated to receive granito tiles	m2	176		
B	Ditto to receive porcelain tiles	m2	1436		
C	Ditto to receive ceramic tiles	m2	10		
D	Ditto to receive acoustic floor finish	m2	22		
E	Ditto to receive carpet finish	m2	74		
F	Ditto to receive gym flooring	m2	203		
G	Ditto to receive timber finish	m2	25		
H	Ditto to receive granite finish	m2	162		
I	40mm thick smooth powerfloated to receive epoxy floor finish	m2	767		
	Granito floor tiles				
	Supply and fix non-slip granito tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
J	600 x 600 x 10mm thick granito tiles	m2	176		
K	150 x 10mm thick skirting	m	194		
	Porcelain floor tiles				
	Supply and fix non-slip porcelain tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting; allow for tile work at expansion joints; generally to				
L	600 x 600 x 10mm thick porcelain tiles	m2	1436		
M	150 x 10mm thick skirting	m	1012		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Ceramic floor tiles				
	Supply and fix non-slip ceramic tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
A	600 x 600 x 10mm thick ceramic tiles	m2	10		
B	150 x 10mm thick skirting	m	20		
	Works to be executed by an approved specialist				
	Supply and apply anti-static solvent free high build industrial epoxy floor including grinding surface to remove surface laitance and expose defects, repairing defects and cracks, fill control joints with shrinkage compensated mortar; apply moisture barrier and Captive blasting and wash with approved acid; apply epoxy primer with and including 0.5mm quartz sand , epoxy undercoat and one top coat of epoxy ; applied in accordance with manufacturer's printed instructions				
	3 mm thick, 2 No coat work to concrete base (m.s); generally				
C	To screeded floor	m2	767		
D	100mm high matching skirting	m	293		
	Raised floor panels				
	Supply and fix raised acoustic floor panels size 600x600mm thickness between 50-60mm; to provide functions such as air conditioning and load bearing capacity. With point load of 10000N ; to be flexible, abrasiion resistant, non magnetic and anti-static; complete with pedestal and all jointing materials.				
E	600 x 600 x 10mm thick acoustic floor panels	m2	22		
F	150 x 10mm thick matching skirting	m	18		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Fitted carpet				
	Supply and fix 12mm thick high quality heavy duty wall to wall floor carpet with dense yarn with high fade resistant with 100% solution dyed nylon suitable for heavy commercial usage yarn weight minimum 1.2kg/m2 and total weight equal or above 2.5kg/m2; electrostatic propensity less than 2.0 kv ; prepare surface and lay complete with 6mm thick underlay as per manufacturer's printed instructions; Allow for brass knaplocks and other necessary accessories; all to approval				
A	To screeded floor	m2	74		
	Gym Flooring				
	Supply and install 20mm thick gym rubber flooring; complete with and including 15mm thick compressed high density foam as underlay from Jumbo Chem Kenya Ltd or other equal and approved;fixing in accordance to manufacturer's written instructions				
B	To screeded floor	m2	203		
	Mahogany timber skirting				
C	150 x 25mm thick moulded timber skirting	m	129		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
D	Surfaces over 100mm but not exceeding 200mm girth	m	129		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
E	Timber surfaces between 100-200 mm girth	m	129		
	Western Red Cedar				
	Wrot Weastern Red Cedar or other equal and approved wood strip floor toungued and grooved boarding : laid on and including 50 x 25mm thick cypress battens at 600mm centres both ways : butt jointed : secret nailing and varnished				
F	25mm thick timber floor boarding	m2	25		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Granite slab				
	Supply and fix polished local coloured granite slab from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
	20 mm thick; butt joints strait both ways; to cement and sand base (m/s); generally to				
A	To screeded floor	m2	162		
B	150mm high x 10mm Thick skirting with rounded top edge	m	69		
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
C	To concrete ceilings	m2	50		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
D	To plastered concrete ceilings	m2	50		
	GYPSUM CEILINGS				
	Suspended gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
F	12mm thick gypsum flat ceilings	m2	2766		
G	200mm high drop-provisional	m	1200		
H	100mm girth polyutherane cornice	m	1522		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
A	To general surface of gypsum and bulkheads	m2	3006		
	ACOUSTIC CEILINGS				
	Acoustic tiles as 'Dune Armstrong Tegular' set out in 600 x 600mm symmetrical panels supported with and including aluminium 'T ' frame grids and suitable hangers fixed to concrete slab; joints well filled; measured over light fittings; including all cutting and trimming to light fitting; as described on:-				
B	To suspended Ceiling	m2	22		
	GYPSUM CEILINGS				
	Suspended moisture resistant gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
C	12mm thick gypsum flat ceilings	m2	251		
D	200mm high drop-provisional	m	70		
E	100mm girth polyutherane cornice	m	366		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
F	To general surface of gypsum and bulkheads	m2	265		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	INTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		31		
			32		
			33		
			34		
			35		
			36		
	Carried Forward to Summary				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9				
	EXTERNAL FINISHES				
	WALL FINISHES				
	20mm thick cement and sand (1:4) plaster : wood float finished : to :				
A	To plastered surfaces of walls, canopies and columns to receive textured paint finish (m.s)	m2	1650		
B	Ditto to receive alucobond cladding (m.s)	m2	285		
C	Ditto to receive granite cladding (m.s)	m2	59		
	Specialist applied textured finish as 'Marmoran" supplied by Galaxy Paints Ltd or other equal and approved; 3mm thick (minimum) finish including primer coat before application; applied with a trowel or roller as per manufacturer's recommendation : All to Architect's approval				
D	To plastered surfaces	m2	1650		
	Alucobond Cladding				
	Supply and fix 6mm thick nano self cleansing perforated aluminium composite cladding sheets in panes sizes ranging from 400 x 400mm -600 x 600 mm; cutting to sizes;comprising of normal PE core, aluminium panel, primer,paint, PVDF paint and finished in nanometer paint all as Alucobond or other equal and approved; with matching trim and associated accessories; fixed to and including aluminium sections and brackets with approved silicon sealant;all to manufacturer's specifications and details				
E	Butt joints; over 300mm wide	m2	285		
	Carried to Collection				
	ELEMENT NO.9 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Granite Cladding				
	Supply and fix polished local coloured granite from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
A	20mm thick granite tiles to lift shaft walls	m2	59		
B	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	15		
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
C	40mm thick wood floated to receive granite slab	m2	272		
D	Ditto to receive granite slabs at treads; 600mm wide	m	120		
E	Ditto to receive granite slabs at risers; 150mm high	m	120		
	Granite slab				
	Supply and fix polished local coloured granite slab from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
	20 mm thick; butt joints strait both ways; to cement and sand base (m/s); generally to				
I	To landing; to approved sizes and pattern	m2	272		
J	To treads; 600 mm wide full length slab with bull nosings (rounded and double granite edges)	m	120		
K	Extra over treads for 2 No. water drip on either sides of every step each 150 mm long x 600 mm wide in granite	m	20		
L	To risers; 150 mm high full length slab	m	120		
	Carried to Collection				
	ELEMENT NO.9 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	150mm high x 10mm Thick skirting with rounded top edge	m	53		
B	Extra; 3 No.5 mm wide x 3 mm deep anti slip grooves cut into 20mm thick granite slab finish (m/s)	m	120		
	PAVING AROUND THE BUILDING				
C	600 x 600 x 50mm Thick pre-cast concrete slabs laid on and including 50mm thick consolidated sand bed and 100mm thick murram sub-base - to fall and including all necessary excavations and anti-termite treatment to sub-base	m2	554		
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
D	To horizontal soffits of concrete slab	m2	100		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
E	To plastered horizontal soffits of concrete slab	m2	100		
	GYPSUM CEILINGS				
	Suspended moisture resistant gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
F	12mm thick gypsum flat ceilings	m2	272		
G	200mm high drop-provisional	m	100		
H	100mm girth polyutherane cornice	m	167		
	Carried to Collection				
	ELEMENT NO.9 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
A	To general surface of gypsum and bulkheads	m2	292		
	Carried to Collection				
	ELEMENT NO.9 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9				
	EXTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		38		
			39		
			40		
			41		
	Carried Forward to Summary				
	ELEMENT NO.9 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.10				
	BALUSTRADING				
	Stainless steel balustrades and railings grade 316; all joints ground smooth and polished to architects detail				
A	Supply and fix 1200mm high raking balustrading comprising of 50mm diameter x 3mm thick stainless steel CHS handrail; 4no. 25mm diameter x 3mm thick horizontal middle rails and 1 no. 40mm diameter x 3mm thick horizontal bottom rails; 1200mm high x 50mm diameter x 3mm thick balusters at 1000mm centres; 80mm long lugs one end fish tailed and built into concrete work; with and including 3mm thick stainless steel plate brackets and any other necessary accessories; to Architect's details at staircase	m	240		
	Carried Forward to Summary				
	ELEMENT NO.10 BALUSTRADING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.11				
	FIXTURES AND FITTINGS (ALL PROVISIONAL)				
	Plain insitu concrete: class 15/20mm				
A	100mm thick plinths	m2	70		
	Sawn formwork to:				
B	Vertical edges: over 75mm but not exceeding 150mm high	m	128		
	Cement and sand(1:4) paving : steel trowelled to				
C	20mm thick to plinths	m2	70		
	Concrete worktops				
D	100mm thick reinforced concrete worktop : 600mm wide : including 100mm thick division walls at every 1000mm centres; complete with plasterwork to worktop to granite (m/s) and wall; including reinforcement and necessary formwork	m	35		
	Worktops: 600mm wide : with round edges : form holes for sink.				
E	600mm wide x 20mm thick granite top fixed with cement sand mortar mix (1:4) : with round edges :allow to form holes for sinks	m2	22		
F	20 x 100 mm granite fascia	m	36		
	Dado Rail				
	Wrot prime grade mahogany timber , well seasoned and pressure impregnated with approved preservative as described in:-				
G	200 x 50mm thick railing; four labours; counter sunk screws	m	500		
	Carried Forward to Summary				
	ELEMENT NO.11 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
A	Surfaces over 200mm but not exceeding 300mm girth	m	500		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
B	Timber surfaces between 200-300 mm girth	m	500		
	Shelving at stores				
C	5 tier open shelves comprising 600mm wide x 20mm thick veneered faced MDF from PG Bison or equal and approved in shelving ; with matching pvc lipping: complete with sides and divisions; secret nailing/screwing ; on and including painted mild steel brackets	m	32		
	Carried Forward to Summary				
	ELEMENT NO.11 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.11				
	FIXTURES AND FITTINGS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		44		
			45		
	Carried Forward to Summary				
	ELEMENT NO.11 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 12				
	SIGNAGES				
A	Supply and fix main floor directory signage overall size 2000mm x 2000mm high; comprising of 2mm polished plate background engraved with bronze colour front lettering on general floor directory overall size 1800mm x 1800mm high; cbk logo at top on 10mm white specialist Perspex background overall size 1680mm x 420mm high; mounted on wall; graphics and lettering to be as per architects details	No	1		
	DOOR SIGNAGE				
	Supply the following in high grade brass plate treated with sealer and chemical etching ; graphics and lettering finished in 3M vinyl cut outs as per architect's details; Allow fixing to manufacturer's instructions				
B	Signage plate with engraved names size 450 x 75mm high	No	82		
C	Floor marking signages size 240 x 400mm high	No	1		
D	Reception signages size 460 x 300mm high	No	1		
E	Washroom signages size 200 x 200mm high	No	19		
F	Directional signages size 400 x 400mm high	No	3		
	Supply and fix 'FIRE EXIT' hanging illuminated signage				
G	Fire exit signages size 300 x 150mm high	No	2		
	Carried Forward to Summary				
	ELEMENT NO.12 SIGNAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 13				
	BUILDERS WORK IN CONNECTION WITH SERVICES				
	All builder's work in connection with electrical installations including chasing in walls,holes and recesses and making good therewith				
A	Cutting horizontal or vertical chase for small conduits 25-32mm dia	m	200		
B	Ditto for large conduits over 50mm dia	m	80		
C	Allow for cutting through slabs, walls and leaving all necessary holes for lighting points	No	100		
D	Ditto for all types of switch points	No	100		
E	Ditto for all types of socket outlet points	No	100		
F	Ditto for all types of floor boxes	No	100		
G	Ditto for TV/date/CCTV points	No	70		
H	Ditto for fire alarm points	No	20		
I	Ditto for consumer units/distribution boards	No	5		
	All builder's work in connection with plumbing and dranage installations including chasing in walls,holes and recesses and making good therewith				
J	Cutting horizontal or vertical chase for small pipes 20-40mm dia	m	50		
K	Ditto for large conduits over 50mm dia	m	25		
L	Allow for cutting through slabs and walls; leaving all necessary holes for WC suites	No	38		
M	Ditto for wash hand basins, showers and urinals	No	62		
N	Ditto for PWD	No	10		
	Carried Forward to Summary				
	ELEMENT NO.13 B.W.I.C				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SUMMARY				
	BILL NO.5				
	GROUND FLOOR		***Page No***		***Amount Kshs***
1	SUBSTRUCTURES		7		
2	R.C. SUPERSTRUCTURE		10		
3	RC STAIRCASE AND STARCASE FINISH		14		
4	WALLING AND PARTITIONS		17		
5	ROOFING		19		
6	DOORS		26		
7	WINDOWS		30		
8	INTERNAL FINISHES		37		
9	EXTERNAL FINISHES		41		
10	BALUSTRADING		43		
11	FIXTURES AND FITTINGS		46		
12	SIGNAGES		47		
13	BUILDER'S WORK IN CONNECTION WITH SERVICES (B.W.I.C)		48		
	Carried to Building Summary				

FIRST FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO.5				
	FIRST FLOOR				
	ELEMENT NO. 1				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	STRUCTURAL CONCRETE WORK				
	Vibrated reinforced concrete class 25/20mm, as described, in:-				
A	Columns	m3	124		
B	Beams	m3	409		
C	Gutter beams	m3	133		
D	Intermediate beams	m3	44		
E	Upstand beams	m3	33		
F	400mm thick lift walls	m3	45		
G	175mm thick roof slab; sloped to profile	m2	2964		
H	175mm thick sunshading canopies	m2	205		
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
I	Assorted sizes; T8mm - T32mm	kg	202188		
	Carried to Collection				
	ELEMENT NO.1 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
A	To sides of columns	m2	780		
B	Ditto: Circular columns	m2	226		
C	Ditto:lift walls	m2	225		
D	Soffit of suspended floor slab;sloped; strutting height 0-3.5m	m2	3169		
E	Ditto 3.5-5.0m	m2	3169		
F	Sides and soffit of beams;including those curved to plan	m2	2880		
G	Sides and soffit of gutter beams	m2	1132		
H	Sides and soffit of intermediate beams	m2	578		
I	Sides of upstand beams; including those curved to plan	m2	428		
J	Edge of suspended slab girth over 150mm but not exceeding 225mm girth;including those curved to plan	m	533		
	EXPANSION JOINT				
	Joint Filler				
K	30 mm thick "Jumbo Chem" expansion joint filler or other equal and approved	m2	112		
L	30mm x 30mm deep " NITOSEAL MS 100 "or equal and approved expansion joint sealer : raking out groove in concrete	m	531		
M	150mm wide x 4mm thick heavy duty flush mounted aluminium expansion joint cover; fixed with and including anchors at 200mm centres; rate to include cutting, joint preparation and alignment	m	531		
	Carried to Collection				
	ELEMENT NO.1 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.1				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		1		
			2		
	Carried Forward to Summary				
	ELEMENT NO.1-FIRST FLOOR SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 2				
	REINFORCED CONCRETE STAIRCASE AND FINISHES				
	STRUCTURAL CONCRETE WORK				
	Vibrated reinforced concrete class 25/20mm, as described, in:-				
A	Staircase	m3	7		
B	175mm thick landing	m2	8		
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
C	Assorted sizes; T8mm-T12mm	kg	1190		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
D	Soffits of staircase landing	m2	8		
E	Sloping soffits of staircase	m2	27		
F	Edge of riser over 75mm but not exceeding 150mm girth	m	80		
G	Edges of open staircase string 300mm (extreme) girth including forming to profile of risers and treads	m	14		
H	Edge of suspended landing over 150mm but not exceeding 225mm girth	m	8		
	Carried to Collection				
	ELEMENT NO.2 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	20mm wood floated to receive granite	m2	8		
B	Ditto at treads; 300mm wide	m	80		
C	Ditto to risers; 150mm high	m	80		
D	To edges of waists of stairs cut to profile of steps - 350 mm wide extreme	m	14		
	Granite slab				
	Supply and fix polished local coloured granite slab from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
	20 mm thick; butt joints strait both ways; to cement and sand base (m/s); generally to				
E	To landing; to approved sizes and pattern	m2	8		
F	To treads; 300 mm wide full length slab with bull nosings (rounded and double granite edges)	m	80		
G	Extra over treads for 2 No. water drip on either sides of every step each 150 mm long x 600 mm wide in granite	m	14		
H	To risers; 150 mm high full length slab	m	80		
I	150mm high x 10mm Thick skirting with rounded top edge	m	31		
J	Extra; 3 No.5 mm wide x 3 mm deep anti slip grooves cut into 20mm thick granite slab finish (m/s)	m	80		
	Carried to Collection				
	ELEMENT NO.2 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To horizontal soffits of landing	m2	8		
B	To slopping soffits of staircase	m2	27		
C	To open staircase string 300mm (extreme) girth to profile of risers and treads	m	14		
	Painting and decoration				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
D	To plastered horizontal soffits of landing	m2	8		
E	To plastered slopping soffits of staircase	m2	27		
F	To plastered open staircase string 300mm (extreme) girth to profile of risers and treads	m	14		
	Carried to Collection				
	ELEMENT NO.2 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.2				
	STAIRCASE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		4		
			5		
			6		
	Carried Forward to Summary				
	ELEMENT NO.2 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3				
	WALLING AND PARTITIONS				
	MASONRY WALLING				
	EXTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
A	200mm Thick external wall	m2	592		
	INTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
B	200mm Thick wall	m2	1924		
C	150mm Thick wall	m2	423		
D	100mm Thick wall	m2	135		
	Insitu reinforced concrete class 20 (12mm,aggregate) including formwork, finishing fair face on all exposed surfaces, and bedding and jointing in cement and sand (1:3) mortar				
E	250x45mm thick copings; once weathered and throated	m	90		
	Carried to Collection				
	ELEMENT NO.3 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FRAMELESS GLASS PARTITION				
A	Supply, assemble and fix 3900 mm high 20mm thick toughened glass partition fixed to upstand masonary wall or upstand beam or slab (m/s) and concrete beam (m/s) ;complete with stainless steel glass patch fittings and any other necessary accessories	m2	161		
	Aluminium Partitions				
B	Supply, assemble and fix 3900 mm high purpose made powder coated finish aluminium partitions comprising 3 mm thick (minimum) approved aluminium sections comprising of 100 x 50 mm top & bottom rails and 100 x 50 mm vertical members at 900 mm centres; horizontally divided into two parts consisting of 1500 mm high bottom panel infilled with 25mm thick beech laminated MDF board on both sides and infilled with rockwool, 2100 mm high middle panel infilled with 8mm thick laminated glazing; including all accessories such as beadings and sub frames, 150 mm wide flashing to seal, rubber gaskets and the like: all necessary ironmongery	m2	20		
C	Supply and fix 10 UM coloured vinyl film or sand blast film with client's logo and graphics from an approved supplier as per as per Architect's details	m2	45		
	HDF Partitions				
D	Supply and fix 20mm thick moistureproof HDF partitions; complete with all fittings including stainless steel anchor bolted to concrete floor; colour to Architect's approval	m2	135		
	Carried to Collection				
	ELEMENT NO.3 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3 WALLING AND PARTITIONS **COLLECTION** Total Brought Forward from Page No.		*Page No* 8 9		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.3 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	ROOF AND RAINWATER DISPOSAL *(All Provisional)*				
	ROOF COVERINGS				
	Supply and fix 24 gauge mild steel troughed roofing sheet type IT5 "Tekdek" roofing sheets from MRM or other equal and approved supplier ; including metal flashing: pre-painted to an approved colour; including fixing to roof trusses with appropriate fasteners; Fix as per manufacturer's written instructions; allow for raking				
A	Roof covering : to slopes exceeding 10 degrees to horizontal	m2	1000		
	Extra Over roof covering for:				
B	Ridge capping	m	30		
C	Hip capping	m	20		
D	Valley capping	m	20		
E	750mm girth flashing	m	20		
	STEEL ROOF STRUCTURE				
	Structural mild steel to BS 4360 grade 43C in roof structure: allow for 5FW continuous welding : 3mm blanked open ends : one coat zinc chromate primer : including drilling holes in steel: all connections, cleats, bolts, nuts, washers etc; to Engineer's detail				
F	200 X 50 X 3mm thick ridges	Kg	4482		
G	100 X 50 X 3mm thick hip rafters	Kg	1300		
H	100 X 50 X 3mm thick valley rafters	Kg	400		
I	100 X 50 X 3mm thick rafters	Kg	5200		
J	100 X 50 X 3mm thick common rafters	Kg	500		
K	100 X 50 X 3mm thick tie beam	Kg	4400		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	75 X 50 X 3mm thick struts	Kg	7200		
B	150 X 50 X 2mm thick Z-Purlins weighing 4.44kg/m	Kg	2200		
C	75 X 50 X 3mm thick wall plate	Kg	534		
	SUNDRIES				
D	200 x 200 x 10mm thick angle cleats; with 4no. holes	No	26		
E	12mm dia x 400mm long bolt; complete with nut and washers	No	104		
F	300 x 300 x 10mm thick angle cleats; with 4no. holes	No	52		
G	12mm dia x 1000mm long mild steel anchor bolts; complete with nut and washers	No	208		
H	20mm diameter mild steel round bar sag rods	m	100		
	ROOF UNDERLAY				
I	Supply and fix 50mm thick super heavy duty roof sisalation from Jumbo Chem or from an equal and approved supplier; with and including fixing with strainin wires; fix as per manufacturer's specifications	m2	1000		
	WATERPROOFING				
	ROOF TERRACES				
	Cement and sand (1:4) mortar backing : wood float finish : to receive waterproofing membrane (measured separately)				
J	40mm thick to roof terrace and gutters ; laid to falls and crossfalls	m2	2500		
K	20mm thick to vertical sides of walls; 300mm high	m2	208		
	Works to be executed by an approved specialist				
	Supply and apply 5mm thick APP modified bituminous membrane; from an approved manufacturer; one coat bituminous anti-dust primer, one layer APP membrane with mineral finish; torch bonded ; executed by specialist under 10 years guarantee:				
L	To terraces and gutters	m2	2500		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	To sides of walls	m2	208		
	RAINWATER DISPOSAL				
	Unplasticized PVC downpipes and fittings: solvent welded joints				
B	210mm diameter rainwater downpipe: fixed to wall using brackets	m	96		
	Extra Over for:				
C	210mm diameter fulbora roof outlet : with domical gratings : vertical spigots	No	24		
D	210mm diameter x 200mm long UPVC pipe sleeve ; casting into concrete slab	No	24		
E	Bend : including socket adaptor from gutter outlet to downpipes; complete	No	24		
F	Rainwater shoe	No	24		
G	Rainwater outlets: 210mm diameter	No	24		
	ROOF SKYLIGHTS				
	Supply and fix 12mm thick laminated safety glass (6mm+6mm) as supplied by Impala Glass Industries Kenya Ltd ; including polyvinyl butuyral (PVB) film solar glass fixed on and including 50x50x3mm thick SHS steel trussesa and purlins; fixed in accordance with manufacturer's recommendations as described on:-				
H	To porte cochere	m2	180		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	ROOFING AND RAINWATER DISPOSAL				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		11		
			12		
			13		
	Carried Forward to Summary				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	DOORS				
	FRAMELESS GLASS DOOR				
	12mm thick toughened frameless glass door with polycarbonate security film on both sides; double leaf door with screwed to concrete beam with appropriate screws; including patch fittings, stainless steel hinges, ,tower bolt,door locks and any other necessary ironmongery all as "Assa Abloy" or other equal and approved ; to Architect's details and approval				
A	Double leaf; Overall size 1800 x 2400mm high	No	18		
B	Single leaf door; Overall size 1000 x 2400mm high	No	5		
	12mm thick toughened frameless glass automatic sliding with polycarbonate security film on both sides; complete with and including programming switch, battery back up, motion detectors, sensors,adaptors,patch fittings, bottom and top sliding rails, including accessories, opening mechanism and all necessary ironmongery all as " Assa Abloy" or other equal and approved; to architect's details				
D	Sliding door; Overall size 1800 x 5400mm high	No	3		
	PANELLED DOORS				
	50mm thick hardwood panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail : complete with moulded grooves to door leaf on both sides; solid blocking to iron mongery (m/s) to door				
D	Double leaf door overall size 1800 x 2400mm high	No	4		
E	Single leaf door overall size 1000 x 2400mm high	No	55		
F	Single leaf door overall size 1200 x 2400mm high	No	3		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLUSH DOORS				
	Supply and fix 45mm solid core flush doors; mahogany veneered on facing to both sides ; Hardwood lipping on all edges : solid blocking for iron mongery (m/s) to door				
G	Single door leaf overall size 1000 x 2400mm high	No	31		
	DUCT DOORS				
	Supply and fix the following heavy duty powder coated aluminium profiled doors as manufactured by an approved supplier; comprising of 150 x 80 x 3mm thick standard hollow sections: infilled with 50x3mm louvres set at 45 degrees at 50mm centres; including all necessary iron mongery (matching locks): ; including glazing beading; joints sealed using approved silicon compound; fixing to masonry or concrete jambs with appropriate lugs ;including all necessary ironmongery(hinges,locks etc) adjust on completion; including bedding and pointing in cement and sand(1:4) mortar: to				
H	Double leaf door overall size 900 x 2700mm high	No	10		
	FIRE RATED DOORS				
	Supply and fix 50mm thick one hour fire rated(1 HR) as 'Assa Abloy' or other equal and approved ; complete with fireproof frames and leaf made of 2mm thick G.I Steel in filled with rockwool and gypsum powder and finished in polyester powder coating and 450mm high fanlight glazed with 10mm thick georgian wire glass; complete with fire rated iron mongery (mortise lock,levers,hinges,door closer,panic bars and contact alarm ; solid blocking for iron mongery				
A	Double leaf door overall size 1800 x 2400mm high	No	2		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ALUMINIUM DOORS *Supply and fix the following heavy duty powder coated aluminium profiled doors as manufactured by an approved supplier; comprising of 150 x 80 x 3mm thick standard hollow sections: complete with 6mm thick blue tinted laminated glass; including all necessary iron mongery (matching locks): ; including glazing beading; joints sealed using approved silicon compound; fixing to masonry or concrete jambs with appropriate lugs ;including all necessary ironmongery(hinges,locks etc) adjust on completion; including bedding and pointing in cement and sand(1:4) mortar: to*				
B	Double leaf door overall size 1800 x 2400mm high	No	3		
	FIRST QUALITY WPC DOORS *Solid core 50mm thick WPC doors; all sides finished with 4mm thick WPC laminate hot pressed in vacuum machine using high quality glue; solid blocking and leaving provision for ironmongery fixing.*				
C	Single door leaf overall size 1000 x 2400mm high	No	31		
	SECURITY DOOR *70mm thick hardwood security panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail :infilled with insulation and 3mm thick heavy duty galvanised steel plate; complete with moulded grooves to door leaf on both sides;complete with and including 3mm thick prepainted mild steel frame and heavy duty ironmonery including steel dog bolt pins; tested and certified to LPS 1175 SR4 Issue 8 D10 .*				
A	Double leaf door overall size 1500 x 2400mm high	No	2		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FRAMES				
	Wrot prime grade mahogany timber frames, well seasoned and pressure impregnated with approved preservative as described in:-				
B	200 x 50mm thick door frame; four labours; counter sunk screws	m	364		
C	Ditto transomes	m	66		
D	150 x 50mm thick door frame; four labours; counter sunk screws	m	180		
E	Ditto transomes	m	31		
F	75 x 25mm architrave with two labours plugged	m	544		
G	25 x 25mm quadrant beading	m	544		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
H	Surfaces over 200mm but not exceeding 300mm girth	m	364		
I	Ditto: 100-200 mm girth	m	180		
J	Ditto: 0-100 mm girth	m	1088		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
A	Timber surfaces between 200-300 mm girth	m	544		
B	Ditto: 100-200 mm girth	m	544		
C	Ditto: 0-100mm girth	m	544		
D	Ditto over 300mm girth	m2	46		
E	General timber surfaces of doors	m2	465		
	Ironmongery *Supply and fix the following approved quality ironmongery from 'ASSA ABLOY' or other equal and approved manufacturer; including all necessary matching screws:-*				
F	150mm heavy duty double action spring hinges	Prs	4.5		
G	150mm heavy duty brass ball bearing hinges	Prs	100.5		
H	150mm stainless steel butt hinges	Prs	46.5		
I	5-Lever mortice lock complete with aluminium lever handles	No	62		
J	Euro-cylinder lock 72mm centres with brass handle	No	62		
K	Indicator bolt 'Vacant / Engaged'	No	31		
L	Door closer as "Union 8834" or equal and approved	No	116		
M	Ditto double action door closer	No	3		
N	800 x 200mm high stainless steel kick plate onto both sides to approval	No	76		
O	Buffered coat hooks with rubber tip	No	31		
P	Stainless steel push plate-100x300mm	No	38		
Q	Stainless steel pull plate-100x300mm	No	38		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	19x225mm high stainless steel conceal fix pull handles	No	76		
B	Oval satin nickel floor mounted door stop fixed with screw to approval	No	163		
C	200x300mm high stainless steel transfer grills	No	38		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	DOORS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		15		
			16		
			17		
			18		
			19		
			20		
	Carried Forward to Summary				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	WINDOWS				
	WINDOW CILL				
	Window cill in reinforced concrete class 20 fair faced all exposed surfaces bedded and jointed cement and sand (1:3) mortar				
A	250 x 50mm thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	m	76		
	WINDOW BOARDS				
	Wrot prime grade mahogany timber, well seasoned and pressure impregnated with approved preservative as described in:-				
B	150 x 25mm Window board	m	76		
C	20 x 25mm Quadrant beading	m	76		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
D	Back of wood frames over 100mm but not exceeding 200mm girth	m	76		
E	Ditto: 0-100 mm girth	m	76		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
F	Timber surfaces between 100-200mm girth	m	76		
G	Ditto: 0-100 mm girth	m	76		
	Carried to Collection				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CURTAIN WALLING				
	Supply, assemble and fix the following weather tight curtain-wall system with horizontal and vertical visible heavy duty powder coated aluminium frame overall size 150 x 80 x 3mm thick ; structurally glazed 12mm thick laminated glass with polished edges comprising of 6mm thick solar glass (blue colour or other approved colour) plus 1.52mm ultra-safety and security polyvinyl butyral (PVB) film plus 6mm thick self-cleaning clear glass all as manufactured by Saint Gobain – coolite series and supplied locally by Impala Glass or other equal and approved glass; including all necessary accessories such as EPDM gaskets, mild steel powder coated fixing brackets, beading and the like; all as per the Architect's design & details				
A	Curtain walling to curved detail	m2	1140		
	ALUMINIUM WINDOWS				
	Supply and fix the following heavy duty Aluminium profiled casement windows as manufactured by an approved supplier; curved to plan and comprising of 100 x 50 x 3mm thick standard hollow sections; frames mitred at corners; fixing to masonry or concrete jambs with appropriate lugs; including all necessary ironmongery(stays,hinges and locks) and fittings : complete with 6mm thick blue tinted laminated glass; including glazing beading; joints sealed using approved silicon compound : including bedding and pointing in cement and sand(1:4) mortar: oiling and adjusting on completion; Complete with permanent air vent: all in accordance with Architect's details				
	Sliding windows complete with sliding tracks				
B	Window overall size 3400mm x 2000mm high	No	10		
	Carried to Collection				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6 WINDOWS **COLLECTION**		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		22		
			23		
	Carried Forward to Summary				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	INTERNAL FINISHES				
	WALL FINISHES				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	Concrete or masonry surfaces internally	m2	7508		
	15mm cement and sand (1:4) backing;wood float finish				
B	To receive wall tiles	m2	1753		
C	To internal walls to receive acoustic foam padding	m2	448		
	PAINTING AND DECORATION				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D	To plastered masonry and concrete surfaces	m2	7508		
	WALL TILING				
	Granito wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout				
E	300 x 600 x 10mm thick granito tiles	m2	1630		
F	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	700		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Supply and fix polished local coloured granite from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
A	20mm thick granite tiles to lift shaft walls	m2	123		
B	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	36		
	ACOUSTIC FOAM PADDING				
	Supply and fix acoustic foam padding to walls comprising of 50mm thick compressed high density foam from Jumbo Chem Kenya Ltd or other equal and approved; fixed on and including 6mm thick high quality plywood nailed on and including 50x50mm thick cypress framework; complete with high quality leather with buttons as cover to compressed hexafoam; complete with and including 75x50mm thick varnished mahogany moulded beadings between foam paddings at horizontal and vertical at 500mm centres; secret nailing; including varnishing frames to approval				
C	To plastered surfaces	m2	448		
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : with and including "Sika 1-WT" or other equal and approved integral waterproofing additive applied to manufacturer's printed instructions				
D	40mm thick wood floated to receive porcelain tiles	m2	187		
E	Ditto to receive non-slip acid resistant/anti-corrosive ceramic tile	m2	55		
F	Ditto to receive granito tiles	m2	76		
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
G	40mm thick wood floated to receive granito tiles	m2	375		
H	Ditto to receive porcelain tiles	m2	1186		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	Ditto to receive ceramic tiles	m2	10		
B	Ditto to receive carpet finish	m2	494		
	Granito floor tiles				
	Supply and fix non-slip granito tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
C	600 x 600 x 10mm thick granito tiles	m2	451		
D	150 x 10mm thick skirting	m	472		
	Porcelain floor tiles				
	Supply and fix non-slip porcelain tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting; allow for tile work at expansion joints; generally to				
E	600 x 600 x 10mm thick porcelain tiles	m2	1373		
F	150 x 10mm thick skirting	m	914		
	Ceramic floor tiles				
	Supply and fix non-slip ceramic tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
G	600 x 600 x 10mm thick ceramic tiles	m2	10		
H	150 x 10mm thick skirting	m	20		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Non-slip acid resistant/anti-corrosive ceramic tile				
	Non-slip acid resistant/anti-corrosive ceramic tileto regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout				
A	600 x 600 x 10mm thick non-slip acid resistant/anti-corrosive ceramic tile	m2	55		
B	150 x 10mm thick skirting	m	67		
	Fitted carpet				
	Supply and fix 12mm thick high quality heavy duty wall to wall floor carpet with dense yarn with high fade resistant with 100% solution dyed nylon suitable for heavy commercial usage yarn weight minimum 1.2kg/m2 and total weight equal or above 2.5kg/m2; electrostatic propensity less than 2.0 kv ; prepare surface and lay complete with 6mm thick underlay as per manufacturer's printed instructions; Allow for brass knaplocks and other necessary accessories; all to approval				
C	To screeded floor	m2	494		
	Mahogany timber skirting				
D	150 x 25mm thick moulded timber skirting	m	350		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
E	Surfaces over 100mm but not exceeding 200mm girth	m	350		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
F	Timber surfaces between 100-200 mm girth	m	350		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To concrete ceilings	m2	50		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
B	To plastered concrete ceilings	m2	50		
	GYPSUM CEILINGS				
	Suspended gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
C	12mm thick gypsum flat ceilings	m2	2125		
D	200mm high drop-provisional	m	1000		
E	100mm girth polyutherane cornice	m	1554		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
F	To general surface of gypsum and bulkheads	m2	2325		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ACOUSTIC CEILINGS				
	Acoustic tiles as 'Dune Armstrong Tegular' set out in 600 x 600mm symmetrical panels supported with and including aluminium 'T ' frame grids and suitable hangers fixed to concrete slab; joints well filled; measured over light fittings; including all cutting and trimming to light fitting; as described on:-				
A	To suspended Ceiling	m2	300		
	GYPSUM CEILINGS				
	Suspended moisture resistant gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
B	12mm thick gypsum flat ceilings	m2	318		
C	200mm high drop-provisional	m	70		
D	100mm girth polyutherane cornice	m	435		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
E	To general surface of gypsum and bulkheads	m2	332		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	INTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		25		
			26		
			27		
			28		
			29		
			30		
	Carried Forward to Summary				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	EXTERNAL FINISHES				
	WALL FINISHES				
	20mm thick cement and sand (1:4) plaster : wood float finished : to :				
A	To plastered surfaces of walls, canopies and columns to receive textured paint finish (m.s)	m2	1874		
B	Ditto to receive alucobond cladding (m.s)	m2	285		
C	Ditto to receive granite cladding (m.s)	m2	59		
	Specialist applied textured finish as 'Marmoran" supplied by Galaxy Paints Ltd or other equal and approved; 3mm thick (minimum) finish including primer coat before application; applied with a trowel or roller as per manufacturer's recommendation : All to Architect's approval				
D	To plastered surfaces	m2	1874		
	Alucobond Cladding				
	Supply and fix 6mm thick nano self cleansing perforated aluminium composite cladding sheets in panes sizes ranging from 400 x 400mm -600 x 600 mm; cutting to sizes;comprising of normal PE core, aluminium panel, primer,paint, PVDF paint and finished in nanometer paint all as Alucobond or other equal and approved; with matching trim and associated accessories; fixed to and including aluminium sections and brackets with approved silicon sealant;all to manufacturer's specifications and details				
E	Butt joints; over 300mm wide	m2	285		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Granite Cladding				
	Supply and fix polished local coloured granite from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
A	20mm thick granite tiles to lift shaft walls	m2	59		
B	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	15		
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
C	40mm thick wood floated to receive polished concrete	m2	889		
	Polished Concrete				
	25mm thick insitu polished and sealed polished concrete laid on concrete in approved pattern and coloured aggregate;with and including polyutherane joint sealant as "Sikaflex Pro-3" or other equal and approved filled to control joints; finished smooth including granding as described in:				
D	To screed floor	m2	889		
E	100mm high matching skirting	m	214		
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
F	To horizontal soffits of concrete slab	m2	200		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
A	To plastered horizontal soffits of concrete slab	m2	200		
	GYPSUM CEILINGS				
	Suspended moisture resistant gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
B	12mm thick gypsum flat ceilings	m2	889		
C	200mm high drop-provisional	m	200		
D	100mm girth polyutherane cornice	m	128		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
E	To general surface of gypsum and bulkheads	m2	929		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	EXTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		32		
			33		
			34		
	Carried Forward to Summary				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9				
	BALUSTRADING				
	Stainless steel balustrades and railings grade 316; all joints ground smooth and polished to architects detail				
A	Supply and fix 1200mm high raking balustrading comprising of 50mm diameter x 3mm thick stainless steel CHS handrail; 4no. 25mm diameter x 3mm thick horizontal middle rails and 1 no. 40mm diameter x 3mm thick horizontal bottom rails; 1200mm high x 50mm diameter x 3mm thick balusters at 1000mm centres; 80mm long lugs one end fish tailed and built into concrete work; with and including 3mm thick stainless steel plate brackets and any other necessary accessories; to Architect's details at staircase and lobby	m	147		
	Carried Forward to Summary				
	ELEMENT NO.9 BALUSTRADING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.10				
	FIXTURES AND FITTINGS (ALL PROVISIONAL)				
	Plain insitu concrete: class 15/20mm				
A	100mm thick plinths	m2	80		
	Sawn formwork to:				
B	Vertical edges: over 75mm but not exceeding 150mm high	m	150		
	Cement and sand(1:4) paving : steel trowelled to				
C	20mm thick to plinths	m2	80		
	Concrete worktops				
D	100mm thick reinforced concrete worktop : 600mm wide : including 100mm thick division walls at every 1000mm centres; complete with plasterwork to worktop to granite (m/s) and wall; including reinforcement and necessary formwork	m	71		
	Worktops: 600mm wide : with round edges : form holes for sink.				
E	600mm wide x 20mm thick granite top fixed with cement sand mortar mix (1:4) : with round edges :allow to form holes for sinks	m2	43		
F	20 x 100 mm granite fascia	m	71		
	Carried to Collection				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Kitchen Cabinets				
	Low level cabinets: comprising of 25mm thick veneered faced MDF from PG Bison or equal and approved in internal shelvings, doors, sides and partitions; including 20 x 50mm hardwood timber runners ; including matching lipping to edges; secret nailing/screwing on prime timber substructures; All exposed surfaces in veneered faced MDF as before described; complete with drawers in 25mm thick veneered faced MDF as before described ; complete with doors in 25mm thick veneered faced MDF as before described; including malpa hinges, aluminium D handle, magnetic ball catches and all other necessary ironmongery. Including making hole for kitchen sink all as per Architect's details				
A	Low level cabinet overall size :overall length 6000mm x 600mm wide x 900mm high	No	2		
	High level cabinets: comprising of 25mm thick veneered faced MDF from PG Bison or equal and approved in sides,doors, divisions and shelves; 25mm thick veneered faced MDF as before described top on 20 x50mm hardwood timber framing; including matching pvc lipping to edges; secret nailing/screwing on prime timber substructures; complete with doors on malpa hinges; with aluminium D handle and magnetic ball catches and all other necessary iron mongery				
B	High level kitchen cabinet : overall size: length 4000mm x 300mm wide x 800mm high	No	2		
	Carried to Collection				**-**
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Wardrobes				
	Wardrobes: comprising of 25mm thick veneered faced MDF from PG Bison or equal and approved in internal shelvings, doors, drawers, sides and partitions; including 20 x 50mm hardwood timber runners ; including matching pvc lipping to edges; secret nailing/screwing on prime timber substructures; All exposed surfaces in veneered faced MDF as before described; complete with drawers in 25mm thick veneered faced MDF as before described ; complete with doors in 25mm thick veneered faced MDF as before described; including malpa hinges,sliding mechanism, chrome pipes hanging rail,shoe rack, aluminium D pul handles, drawer locks,magnetic ball catches and all other necessary ironmongery.				
A	Wardrobes overall size 3400 x 600mm wide x 3900mm high	No	2		
	Shelving at stores				
B	3900mm high 5 tier open shelves comprising 600mm wide x 3mm thick mild steel plate on and indluding 25x25x3mm thick SHS frame work and 40x40x3mm thick SHS stand supports; including applying zinc chromate primer and two coats of gloss oil paint finish to steel surfaces	m	26		
	Carried to Collection				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Cabinets				
	Low level cabinets: comprising of 25mm thick veneered faced MDF from PG Bison or equal and approved in internal shelvings, doors, sides and partitions; including 20 x 50mm hardwood timber runners ; including matching lipping to edges; secret nailing/screwing on prime timber substructures; All exposed surfaces in veneered faced MDF as before described; complete with drawers in 25mm thick veneered faced MDF as before described ; complete with doors in 25mm thick veneered faced MDF as before described; including malpa hinges, aluminium D handle, magnetic ball catches and all other necessary ironmongery. Including making hole for kitchen sink all as per Architect's details				
A	Low level cabinet overall size :overall length 5000mm x 600mm wide x 900mm high	No	1		
B	Ditto overall size :overall length 4100mm x 600mm wide x 900mm high	No	1		
C	Ditto overall size :overall length 2400mm x 600mm wide x 900mm high	No	1		
D	Ditto overall size :overall length 1500mm x 600mm wide x 900mm high	No	4		
	High level cabinets: comprising of 25mm thick veneered faced MDF from PG Bison or equal and approved in sides,doors, divisions and shelves; 25mm thick veneered faced MDF as before described top on 20 x50mm hardwood timber framing; including matching pvc lipping to edges; secret nailing/screwing on prime timber substructures; complete with doors on malpa hinges; with aluminium D handle and magnetic ball catches and all other necessary iron mongery				
E	High level cabinet : overall size: length 3000mm x 300mm wide x 600mm high	No	2		
	Carried to Collection				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	Ditto overall size: length 1500mm x 300mm wide x 600mm high	No	5		
	Dado Rail				
	Wrot prime grade mahogany timber , well seasoned and pressure impregnated with approved preservative as described in:-				
B	200 x 50mm thick railing; four labours; counter sunk screws	m	99		
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
C	Surfaces over 200mm but not exceeding 300mm girth	m	99		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
D	Timber surfaces between 200-300 mm girth	m	99		
	Carried to Collection				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.10 FIXTURES AND FITTINGS **COLLECTION** Total Brought Forward from Page No.		*Page No* 37 38 39 40 41		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.11				
	ALUMINIUM FINS (ALL PROVISIONAL)				
	Aluminium fins				
	Supply and fix heavy duty power coated aluminium fins : including drilling hole: all connections, cleats etc; to Engineer's detail; with and including necessary excavations, reinforced concrete, reinforcement and formwork				
A	150 x 50 x 2mm thick aluminium fins	m	5000		
B	200x200x10mm thick mild steel base plate; complete with 4 no. 16mm dia holes	No	768		
C	16mm diameter H.D bolts	No	3072		
	Carried Forward to Summary				
	ELEMENT NO.11 ALUMINIUM FINS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.12				
	SIGNAGES				
	DOOR SIGNAGE				
	Supply the following in high grade brass plate treated with sealer and chemical etching ; graphics and lettering finished in 3M vinyl cut outs as per architect's details; Allow fixing to manufacturer's instructions				
A	Signage plate with engraved names size 450 x 75mm high	No	78		
B	Floor marking signages size 240 x 400mm high	No	1		
C	Reception signages size 460 x 300mm high	No	1		
D	Washroom signages size 200 x 200mm high	No	18		
E	Directional signages size 400 x 400mm high	No	3		
	Supply and fix 'FIRE EXIT' hanging illuminated signage				
F	Fire exit signages size 300 x 150mm high	No	2		
	Carried Forward to Summary				
	ELEMENT NO.12 SIGNAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 13				
	BUILDERS WORK IN CONNECTION WITH SERVICES				
	All builder's work in connection with electrical installations including chasing in walls,holes and recesses and making good therewith				
A	Cutting horizontal or vertical chase for small conduits 25-32mm dia	m	200		
B	Ditto for large conduits over 50mm dia	m	80		
C	Allow for cutting through slabs, walls and leaving all necessary holes for lighting points	No	80		
D	Ditto for all types of switch points	No	80		
E	Ditto for all types of socket outlet points	No	80		
F	Ditto for cooker points,control unit and connector	No	3		
G	Ditto for all types of floor boxes	No	80		
H	Ditto for TV/date/CCTV points	No	50		
I	Ditto for fire alarm points	No	20		
J	Ditto for consumer units/distribution boards	No	5		
	All builder's work in connection with plumbing and dranage installations including chasing in walls,holes and recesses and making good therewith				
K	Cutting horizontal or vertical chase for small pipes 20-40mm dia	m	40		
L	Ditto for large conduits over 50mm dia	m	20		
M	Allow for cutting through slabs and walls; leaving all necessary holes for WC suites	No	33		
N	Ditto for wash hand basins, showers and urinals	No	42		
O	Ditto for PWD	No	2		
P	Ditto for kitchen sink	No	9		
	Carried Forward to Summary				
	ELEMENT NO.13 B.W.I.C				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SUMMARY				
	BILL NO.5				
	FIRST FLOOR		***Page No***		***Amount Kshs***
1	R.C. SUPERSTRUCTURE		3		
2	RC STAIRCASE AND STARCASE FINISH		7		
3	WALLING AND PARTITIONS		10		
4	ROOFING		14		
5	DOORS		21		
6	WINDOWS		24		
7	INTERNAL FINISHES		31		
8	EXTERNAL FINISHES		35		
9	BALUSTRADING		36		
10	FIXTURES AND FITTINGS		42		
11	ALUMINIUM FINS		43		
12	SIGNAGES		44		
13	BUILDER'S WORK IN CONNECTION WITH SERVICES (B.W.I.C)		45		
	Carried to Building Summary				

SECOND FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO.5				
	FIRST FLOOR				
	ELEMENT NO. 1				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	STRUCTURAL CONCRETE WORK				
	Vibrated reinforced concrete class 25/20mm, as described, in:-				
A	Columns	m3	20		
B	Beams	m3	45		
C	Intermediate beams	m3	12		
D	Upstand beams	m3	6		
E	400mm thick lift walls	m3	21		
F	175mm thick slab	m2	227		
	Carried to Collection				
	ELEMENT NO.1 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
A	Assorted sizes; T8mm - T32mm	kg	28290		
	WROT FORMWORK AS DESCRIBED TO:-				
B	To sides of columns	m2	192		
C	Ditto: Circular columns	m2	22		
D	Ditto:lift walls	m2	102		
E	Soffit of suspended floor slab;sloped; strutting height 0-3.5m	m2	227		
F	Ditto 3.5-5.0m	m2	227		
G	Sides and soffit of beams;including those curved to plan	m2	427		
H	Sides and soffit of intermediate beams	m2	160		
I	Sides of upstand beams; including those curved to plan	m2	73		
J	Edge of suspended slab girth over 150mm but not exceeding 225mm girth;including those curved to plan	m	71		
	Carried to Collection				
	ELEMENT NO.1 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.1				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		1		
			2		
	Carried Forward to Summary				
	ELEMENT NO.1 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 2				
	WALLING AND PARTITIONS				
	MASONRY WALLING				
	EXTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
A	200mm Thick external wall	m2	261		
B	Ditto at parapet wall	m2	92		
	INTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
C	200mm Thick wall	m2	84		
D	150mm Thick wall	m2	148		
	Carried Forward to Summary				
	ELEMENT NO.2 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3				
	ROOF AND RAINWATER DISPOSAL *(All Provisional)*				
	WATERPROOFING				
	ROOF TERRACES				
	Cement and sand (1:4) mortar backing : wood float finish : to receive waterproofing membrane (measured separately)				
A	40mm thick to roof terrace ; laid to falls and crossfalls	m2	498		
B	20mm thick to vertical sides of walls; 300mm high	m2	50		
	Works to be executed by an approved specialist				
	Supply and apply APP modified bituminous membrane; from an approved manufacturer; one coat bituminous anti-dust primer, one layer APP membrane with mineral finish; torch bonded ; executed by specialist under 10 years guarantee:				
C	To terraces	m2	498		
D	To sides of walls	m2	50		
	RAINWATER DISPOSAL				
	Unplasticized PVC downpipes and fittings: solvent welded joints				
E	210mm diameter rainwater downpipe: fixed to wall using brackets	m	24		
	Extra Over for:				
F	210mm diameter fulbora roof outlet : with domical gratings : vertical spigots	No	6		
G	210mm diameter x 200mm long UPVC pipe sleeve ; casting into concrete slab	No	6		
H	Bend : including socket adaptor from gutter outlet to downpipes; complete	No	6		
I	Rainwater shoe	No	6		
J	Rainwater outlets: 210mm diameter	No	6		
	Carried to Collection				
	ELEMENT NO.3 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3 ROOFING AND RAINWATER DISPOSAL **COLLECTION** Total Brought Forward from Page No.		*Page No* 5		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.3 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	DOORS				
	FRAMELESS GLASS DOOR				
	12mm thick toughened frameless glass door with polycarbonate security film on both sides; double leaf door with screwed to concrete beam with appropriate screws; including patch fittings, stainless steel hinges, ,tower bolt,door locks and any other necessary ironmongery all as "Assa Abloy" or other equal and approved ; to Architect's details and approval				
A	Double leaf; Overall size 1800 x 2400mm high	No	1		
	PANELLED DOORS				
	50mm thick hardwood panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail : complete with moulded grooves to door leaf on both sides; solid blocking to iron mongery (m/s) to door				
B	Double leaf door overall size 1800 x 2400mm high	No	1		
C	Single leaf door overall size 900 x 2400mm high	No	7		
D	Single leaf door overall size 1200 x 2400mm high	No	3		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLUSH DOORS				
	Supply and fix 45mm solid core flush doors; mahogany veneered on facing to both sides ; Hardwood lipping on all edges : solid blocking for iron mongery (m/s) to door				
A	Single door leaf overall size 900 x 2400mm high	No	8		
	DUCT DOORS				
	Supply and fix the following heavy duty powder coated aluminium profiled doors as manufactured by an approved supplier; comprising of 150 x 80 x 3mm thick standard hollow sections: infilled with 50x3mm louvres set at 45 degrees at 50mm centres; including all necessary iron mongery (matching locks): ; including glazing beading; joints sealed using approved silicon compound; fixing to masonry or concrete jambs with appropriate lugs ;including all necessary ironmongery(hinges,locks etc) adjust on completion; including bedding and pointing in cement and sand(1:4) mortar: to				
B	Double leaf door overall size 900 x 2700mm high	No	3		
	FIRE RATED DOORS				
	Supply and fix 50mm thick one hour fire rated(1 HR) as 'Assa Abloy' or other equal and approved ; complete with fireproof frames and leaf made of 2mm thick G.I Steel in filled with rockwool and gypsum powder and finished in polyester powder coating and 450mm high fanlight glazed with 10mm thick georgian wire glass; complete with fire rated iron mongery (mortise lock,levers,hinges,door closer,panic bars and contact alarm ; solid blocking for iron mongery				
C	Double leaf door overall size 1800 x 2400mm high	No	1		
	Carried to Collection				
	ELEMENT NO.4 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FRAMES				
	Wrot prime grade mahogany timber frames, well seasoned and pressure impregnated with approved preservative as described in:-				
A	200 x 50mm thick door frame; four labours; counter sunk screws	m	72		
B	Ditto transomes	m	14		
C	150 x 50mm thick door frame; four labours; counter sunk screws	m	46		
D	Ditto transomes	m	8		
E	75 x 25mm architrave with two labours plugged	m	118		
F	25 x 25mm quadrant beading	m	118		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
G	Surfaces over 200mm but not exceeding 300mm girth	m	72		
H	Ditto: 100-200 mm girth	m	46		
I	Ditto: 0-100 mm girth	m	236		
	Carried to Collection				
	ELEMENT NO.4 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
A	Timber surfaces between 200-300 mm girth	m	118		
B	Ditto: 100-200 mm girth	m	118		
C	Ditto: 0-100mm girth	m	118		
D	Ditto over 300mm girth	m2	11		
E	General timber surfaces of doors	m2	100		
	Ironmongery *Supply and fix the following approved quality ironmongery from 'ASSA ABLOY' or other equal and approved manufacturer; including all necessary matching screws:-*				
F	150mm heavy duty double action spring hinges	Prs	4.5		
G	150mm heavy duty brass ball bearing hinges	Prs	16.5		
H	150mm stainless steel butt hinges	Prs	12		
I	5-Lever mortice lock complete with aluminium lever handles	No	11		
J	Euro-cylinder lock 72mm centres with brass handle	No	11		
K	Indicator bolt 'Vacant / Engaged'	No	8		
L	Door closer as "Union 8834" or equal and approved	No	13		
M	Ditto double action door closer	No	3		
N	800 x 200mm high stainless steel kick plate onto both sides to approval	No	26		
O	Buffered coat hooks with rubber tip	No	8		
P	Stainless steel push plate-100x300mm	No	13		
Q	Stainless steel pull plate-100x300mm	No	13		
	Carried to Collection				
	ELEMENT NO.4 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	19x225mm high stainless steel conceal fix pull handles	No	26		
B	Oval satin nickel floor mounted door stop fixed with screw to approval	No	30		
C	200x300mm high stainless steel transfer grills	No	13		
	Carried to Collection				
	ELEMENT NO.4 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	DOORS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		7		
			8		
			9		
			10		
			11		
	Carried Forward to Summary				
	ELEMENT NO.4 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	WINDOWS				
	WINDOW CILL				
	Window cill in reinforced concrete class 20 fair faced all exposed surfaces bedded and jointed cement and sand (1:3) mortar				
A	250 x 50mm thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	m	40		
	WINDOW BOARDS				
	Wrot prime grade mahogany timber, well seasoned and pressure impregnated with approved preservative as described in:-				
B	150 x 25mm Window board	m	40		
C	20 x 25mm Quadrant beading	m	40		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
D	Back of wood frames over 100mm but not exceeding 200mm girth	m	40		
E	Ditto: 0-100 mm girth	m	40		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
F	Timber surfaces between 100-200mm girth	m	40		
G	Ditto: 0-100 mm girth	m	40		
	Carried to Collection				
	ELEMENT NO.5 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ALUMINIUM WINDOWS				
	Supply and fix the following heavy duty Aluminium profiled casement windows as manufactured by an approved supplier; curved to plan and comprising of 100 x 50 x 3mm thick standard hollow sections; frames mitred at corners; fixing to masonry or concrete jambs with appropriate lugs; including all necessary ironmongery(stays,hinges and locks) and fittings : complete with 6mm thick blue tinted laminated glass; including glazing beading; joints sealed using approved silicon compound : including bedding and pointing in cement and sand(1:4) mortar: oiling and adjusting on completion; Complete with permanent air vent: all in accordance with Architect's details				
A	Window overall size 2000mm x 1500mm high	No	2		
B	Ditto overall size 1600mm x 1500mm high	No	2		
C	Ditto overall size 6700mm x 1000mm high	No	1		
D	Ditto overall size 3000mm x 1000mm high	No	2		
E	Ditto overall size 5800mm x 1000mm high	No	1		
F	Ditto overall size 5000mm x 1500mm high	No	2		
	Carried to Collection				
	ELEMENT NO.5 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	WINDOWS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		13		
			14		
	Carried Forward to Summary				
	ELEMENT NO.5 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	INTERNAL FINISHES				
	WALL FINISHES				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	Concrete or masonry surfaces internally	m2	812		
	15mm cement and sand (1:4) backing;wood float finish				
B	To receive wall tiles	m2	531		
	PAINTING AND DECORATION				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
C	To plastered masonry and concrete surfaces	m2	812		
	WALL TILING				
	Granito wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout				
D	300 x 600 x 10mm thick granito tiles	m2	479		
E	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	200		
	Supply and fix polished local coloured granite from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
F	20mm thick granite tiles to lift shaft walls	m2	52		
G	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	14		
	Carried to Collection				
	ELEMENT NO.6 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : with and including "Sika 1-WT" or other equal and approved integral waterproofing additive applied to manufacturer's printed instructions				
A	40mm thick wood floated to receive granito tiles	m2	64		
B	Ditto to receive non-slip acid resistant/anti-corrosive ceramic tile	m2	52		
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
C	40mm thick wood floated to receive granito tiles	m2	47		
	Granito floor tiles				
	Supply and fix non-slip granito tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
D	600 x 600 x 10mm thick granito tiles	m2	111		
E	150 x 10mm thick skirting	m	142		
	Non-slip acid resistant/anti-corrosive ceramic tile				
	Non-slip acid resistant/anti-corrosive ceramic tile to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout				
F	600 x 600 x 10mm thick non-slip acid resistant/anti-corrosive ceramic tile	m2	52		
G	150 x 10mm thick skirting	m	27		
	Carried to Collection				
	ELEMENT NO.6 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To concrete ceilings	m2	20		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
B	To plastered concrete ceilings	m2	20		
	GYPSUM CEILINGS				
	Suspended gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
C	12mm thick gypsum flat ceilings	m2	73		
D	200mm high drop-provisional	m	50		
E	100mm girth polyutherane cornice	m	79		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
F	To general surface of gypsum and bulkheads	m2	83		
	Carried to Collection				
	ELEMENT NO.6 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	GYPSUM CEILINGS				
	Suspended moisture resistant gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
A	12mm thick gypsum flat ceilings	m2	116		
B	200mm high drop-provisional	m	100		
C	100mm girth polyutherane cornice	m	130		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D	To general surface of gypsum and bulkheads	m2	136		
	Carried to Collection				
	ELEMENT NO.6 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	INTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.				
			16		
			17		
			18		
			19		
	Carried Forward to Summary				
	ELEMENT NO.6 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	EXTERNAL FINISHES				
	WALL FINISHES				
	20mm thick cement and sand (1:4) plaster : wood float finished : to :				
A	To plastered surfaces of walls and columns to receive textured paint finish (m.s)	m2	660		
	Specialist applied textured finish as 'Marmoran'' supplied by Galaxy Paints Ltd or other equal and approved; 3mm thick (minimum) finish including primer coat before application; applied with a trowel or roller as per manufacturer's recommendation : All to Architect's approval				
B	To plastered surfaces	m2	660		
	Carried to Collection				
	ELEMENT NO.7 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	40mm thick wood floated to receive polished concrete	m2	498		
	Polished Concrete				
	25mm thick insitu polished and sealed polished concrete laid on concrete in approved pattern and coloured aggregate;with and including polyutherane joint sealant as "Sikaflex Pro-3" or other equal and approved filled to control joints; finished smooth including granding as described in:				
B	To screed floor	m2	498		
C	100mm high matching skirting	m	161		
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
D	To horizontal soffits of concrete slab	m2	50		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
E	To plastered horizontal soffits of concrete slab	m2	50		
	Carried to Collection				
	ELEMENT NO.7 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	GYPSUM CEILINGS				
	Suspended moisture resistant gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
A	12mm thick gypsum flat ceilings	m2	18		
B	200mm high drop-provisional	m	15		
C	100mm girth polyutherane cornice	m	29		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D	To general surface of gypsum and bulkheads	m2	21		
	Carried to Collection				
	ELEMENT NO.7 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	EXTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		21		
			22		
			23		
	Carried Forward to Summary				
	ELEMENT NO.7 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	BALUSTRADING				
	Stainless steel balustrades and railings grade 316; all joints ground smooth and polished to architects detail				
A	Supply and fix 1200mm high raking balustrading comprising of 50mm diameter x 3mm thick stainless steel CHS handrail; 4no. 25mm diameter x 3mm thick horizontal middle rails and 1 no. 40mm diameter x 3mm thick horizontal bottom rails; 1200mm high x 50mm diameter x 3mm thick balusters at 1000mm centres; 80mm long lugs one end fish tailed and built into concrete work; with and including 3mm thick stainless steel plate brackets and any other necessary accessories; to Architect's details at staircase and lobby	m	63		
	Carried Forward to Summary				
	ELEMENT NO.9 BALUSTRADING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.10				
	FIXTURES AND FITTINGS (ALL PROVISIONAL)				
	Plain insitu concrete: class 15/20mm				
A	100mm thick plinths	m2	20		
	Sawn formwork to:				
B	Vertical edges: over 75mm but not exceeding 150mm high	m	39		
	Cement and sand(1:4) paving : steel trowelled to				
C	20mm thick to plinths	m2	20		
	Concrete worktops				
D	100mm thick reinforced concrete worktop : 600mm wide : including 100mm thick division walls at every 1000mm centres; complete with plasterwork to worktop to granite (m/s) and wall; including reinforcement and necessary formwork	m	10		
	Worktops: 600mm wide : with round edges : form holes for sink.				
E	600mm wide x 20mm thick granite top fixed with cement sand mortar mix (1:4) : with round edges :allow to form holes for sinks	m2	6		
F	20 x 100 mm granite fascia	m	10		
	Carried to Collection				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.10 FIXTURES AND FITTINGS **COLLECTION** Total Brought Forward from Page No.		*Page No* 26		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.11				
	SIGNAGES				
	DOOR SIGNAGE				
	Supply the following in high grade brass plate treated with sealer and chemical etching ; graphics and lettering finished in 3M vinyl cut outs as per architect's details; Allow fixing to manufacturer's instructions				
A	Signage plate with engraved names size 450 x 75mm high	No	12		
B	Floor marking signages size 240 x 400mm high	No	1		
C	Reception signages size 460 x 300mm high	No	1		
D	Washroom signages size 200 x 200mm high	No	5		
E	Directional signages size 400 x 400mm high	No	1		
	Supply and fix 'FIRE EXIT' hanging illuminated signage				
F	Fire exit signages size 300 x 150mm high	No	1		
	Carried Forward to Summary				
	ELEMENT NO.11 SIGNAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 12				
	BUILDERS WORK IN CONNECTION WITH SERVICES				
	All builder's work in connection with electrical installations including chasing in walls,holes and recesses and making good therewith				
A	Cutting horizontal or vertical chase for small conduits 25-32mm dia	m	25		
B	Ditto for large conduits over 50mm dia	m	20		
C	Allow for cutting through slabs, walls and leaving all necessary holes for lighting points	No	10		
D	Ditto for all types of switch points	No	20		
E	Ditto for all types of socket outlet points	No	20		
F	Ditto for cooker points,control unit and connector	No	2		
G	Ditto for all types of floor boxes	No	5		
H	Ditto for TV/date/CCTV points	No	3		
I	Ditto for fire alarm points	No	2		
J	Ditto for consumer units/distribution boards	No	1		
	All builder's work in connection with plumbing and dranage installations including chasing in walls,holes and recesses and making good therewith				
K	Cutting horizontal or vertical chase for small pipes 20-40mm dia	m	50		
L	Ditto for large conduits over 50mm dia	m	20		
M	Allow for cutting through slabs and walls; leaving all necessary holes for WC suites	No	6		
N	Ditto for wash hand basins, showers and urinals	No	15		
O	Ditto for PWD	No	1		
P	Ditto for kitchen sink	No	2		
	Carried Forward to Summary				
	ELEMENT NO.12 B.W.I.C				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SUMMARY				
	BILL NO.5				
	FIRST FLOOR		***Page No***		***Amount Kshs***
1	R.C. SUPERSTRUCTURE		3		
2	WALLING AND PARTITIONS		4		
3	ROOFING		6		
4	DOORS		12		
5	WINDOWS		15		
6	INTERNAL FINISHES		20		
7	EXTERNAL FINISHES		24		
8	BALUSTRADING		25		
9	FIXTURES AND FITTINGS		27		
10	SIGNAGES		28		
11	BUILDER'S WORK IN CONNECTION WITH SERVICES (B.W.I.C)		29		
	Carried to Building Summary				

OFFICES AND VERIFICATION SUMMARY

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	PAGE NO.	AMOUNT FOR TENDERER'S USE	AMOUNT FOR CONSULTANTS' USE
	SUMMARY PAGE			
	Total Brought Forward from Page No.			
1.	GROUND FLOOR	GROUND F./49		
2.	FIRST FLOOR	FIRST F./46		
3.	SECOND FLOOR	SECOND F./30		
	Carried to Grand Summary	**Ksh**		
	OFFICE AND VERIFICATION SUMMARY			

BANKING HALL

Note:

1. The rates and prices shall be inclusive of VAT at 16%

GROUND FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO.6				
	GROUND FLOOR				
	ELEMENT NO. 1				
	SUBSTRUCTURES (ALL PROVISIONAL)				
	EXCAVATION AND EARTHWORK				
A	Mass excavation to reduce levels starting from existing ground level; ground level not exceeding 1.50m deep	m3	275		
B	Excavation for foundation strips between 0.00-1.50m deep starting from reduced level	m3	179		
C	Ditto: Between 1.50 - 3.0m ditto	m3	89		
D	Excavation pit for bases between 0.00-1.50m deep starting from reduced level	m3	168		
E	Ditto: Between 1.50 - 3.00m ditto	m3	84		
F	Extra over excavation for excavating in any class of rock in any position	m3	50		
	PLUNKING AND STRUTTING				
G	Allow for maintaining and supporting sides of excavations and for keeping free from fallen materials.	Item	1		
	DISPOSAL OF WATER				
H	Allow for keeping the whole of excavations free from all ground and running water by pumping	Item	1		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	DISPOSAL AND BACKFILLING				
A	Returning, filling and ramming within foundations after construction of foundation walls	m3	545		
B	Load and cart away surplus excavated material as necessary; including double and multi - handling where required	m3	250		
	FILLING MATERIALS				
C	Imported murram or other equal and approved filling material : compacted in layers of not exceeding 200mm to 105% MDD	m3	825		
D	300mm thick hardcore filling : hand packed : scarify, spread, grade and compact to falls, cross falls and slopes in layers not exceeding 150 mm thick	m2	500		
E	50 mm thick approved quarry dust blinding on surfaces of hardcore	m2	500		
	ANTI-TREATMENT				
F	Treat surface of hardcore with "Premise 200 SC" or any other equal and approved anti-termite insecticide applied strictly in accordance with manufactures printed instructions including providing a 10 years guarantee period.	m2	540		
	DAMP PROOF MEMBRANE				
G	One layer 1000 gauge polythene sheet damp proofing membrane : under floor bed : 300mm laps	m2	540		
	CONCRETE WORK				
	Plain concrete class 15/20 as described in:				
H	50mm thick to strip foundation	m2	119		
I	Ditto to column bases	m2	65		
J	Ditto to vault base	m2	67		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Vibrated Reinforced concrete class 25/20mm with and including strengthening admixture as "Sika Viscoflow-615 KE or any other equal and approved in:-				
A	Vault base	m3	67		
B	450mm thick RC walls	m3	21		
	Vibrated Reinforced concrete class 25/20mm				
C	Column bases	m3	23		
D	Columns	m3	6		
E	Ground floor beams	m3	15		
F	Foundation strips	m3	34		
G	Steps at entrances	m3	5		
H	150mm thick ground floor slab	m2	525		
I	150mm thick ramp slab at gradient of 1:12	m2	15		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	REINFORCEMENT				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
A	Assorted sizes; T8mm-T32mm	kg	22060		
	Anti-Drill Plate				
B	Supply and fix 12mm thick anti-drill case-hardened steel plate fixed to concrete; with and including all necessary accessories	m2	52		
	Fabric reinforcement to B.S. 4483 and setting in concrete with 300mm side and end laps (measured net; allow for laps)				
C	BRC mesh fabric reinforcement ref A142 (weighing 2.2kg/m2) ; 150mm overlaps (measured net-no allowance made for laps)	m2	540		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
D	Sides of vault bases; curved as plan	m2	34		
E	Sides of column bases	m2	120		
F	Ditto:columns	m2	33		
G	Ditto: Circular columns	m2	17		
H	Ditto: RC walls	m2	91		
I	Ditto ground floor beams including those curved to plan	m2	100		
J	Ditto foundation strips including those curved to plan	m2	113		
K	Edge of ground floor slab girth over 75mm but not exceeding 150mm girth;including those curved to plan	m	83		
L	Ditto edges of ramp	m	30		
M	Ditto edges of steps	m	50		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FOUNDATION WALLING				
	Selected and approved natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
A	200mm thick wall	m2	357		
	Plaster				
	40 mm thick cement and sand (1:4) to receive waterproofing				
B	To sides of vault base	m2	34		
C	Horizontal surface of vault base	m2	67		
D	To sides of RC walls	m2	91		
	WATERPROOFING				
	Works to be executed by an approved specialist				
	Supply and apply 5mm thick APP modified bituminous membrane; from an approved manufacturer; one coat bituminous anti-dust primer, one layer APP membrane with mineral finish; torch bonded ; executed by specialist under 10 years guarantee:				
E	To sides of vault base	m2	34		
F	Horizontal surface of vault base	m2	67		
G	To sides of RC walls	m2	91		
	Protective screed				
	40 mm thick cement and sand (1:4) to receive waterproofing				
H	To sides of bases	m2	34		
I	Horizontal surface of lift base	m2	67		
J	To sides of lift walls	m2	91		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FRENCH DRAIN				
	Aggregate filling in making up levels				
A	Over 300mm thick; depositing loose approved aggregate to sides of retaining wall maximum size of aggregate to be 20mm; compact in layers	m3	51		
	Open ended perforated UPVC french drain pipe laid to fall 1 in 300 including setting in 20mm loose aggregate surround (m/s) encased in geotextile membrane (m/s) all to Engineer's approval				
B	200mm diameter	m	26		
	Geotextile filter				
C	Bidim geotextile filter grade A3 as manufactured by Kaytech or equal and approved	m2	26		
	Water bars; standard PVC bulb edged strip; as "Sika Waterbar" or other equal and approved				
D	200mm wide; casting into concrete; temporary fixing to formwork; all in accordance with manufacturer's printed instructions	m	26		
	PLINTH TREATMENT				
	12mm thick cement and sand (1;4) wood floated rendering to:-				
E	To plinths of building	m2	125		
	Prepare surface and apply two coats of black bituminous paint or other approved paint to:				
F	Rendered plinth	m2	125		
	Carried to Collection				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.1				
	SUBSTRUCTURES				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		1		
			2		
			3		
			4		
			5		
			6		
	Carried Forward to Summary				
	ELEMENT NO.1 SUBSTRUCTURES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	STRUCTURAL CONCRETE WORK				
	Vibrated Reinforced concrete class 25/20mm with and including strengthening admixture as "Sika Viscoflow-615 KE or any other equal and approved in:-				
A	600mm thick RC walls	m3	62		
B	600mm thick suspended slab	m2	30		
	Vibrated reinforced concrete class 25/20mm, as described, in:-				
C	Columns	m3	13		
D	Beams	m3	24		
E	Intermediate beams	m3	6		
F	Upstand beams	m3	3		
G	175mm thick slab	m2	191		
	Carried to Collection				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
A	Assorted sizes; T8mm - T32mm	kg	20288		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
B	To sides of columns	m2	71		
C	Ditto: Circular columns	m2	37		
D	Ditto to RC walls	m2	274		
E	Soffit of suspended floor slab;sloped; strutting height 0-3.5m	m2	221		
F	Ditto 3.5-5.0m	m2	221		
G	Sides and soffit of beams ditto;including those curved to plan	m2	221		
H	Sides and soffit of intermediate beams;including those curved to plan	m2	84		
I	Sides of upstand beams; including those curved to plan	m2	28		
J	Edge of suspended slab;including those curved to plan	m2	14		
K	Edge of suspended slab girth over 150mm but not exceeding 225mm girth;including those curved to plan	m	67		
	Carried to Collection				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		8		
			9		
	Carried Forward to Summary				
	ELEMENT NO.2 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 3				
	REINFORCED CONCRETE STAIRCASE AND FINISHES				
	STRUCTURAL CONCRETE WORK				
	Vibrated reinforced concrete class 25/20mm, as described, in:-				
A	Staircase	m3	6		
B	175mm thick landing	m2	7		
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
C	Assorted sizes; T8mm-T12mm	kg	1023		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
D	Soffits of staircase landing	m2	7		
E	Sloping soffits of staircase	m2	24		
F	Edge of riser over 75mm but not exceeding 150mm girth	m	72		
G	Edges of open staircase string 300mm (extreme) girth including forming to profile of risers and treads	m	12		
H	Edge of suspended landing over 150mm but not exceeding 225mm girth	m	8		
	Carried to Collection				
	ELEMENT NO.3 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	20mm wood floated to receive porcelain tile flooring	m2	7		
B	Ditto at treads; 300mm wide	m	72		
C	Ditto to risers; 150mm high	m	72		
D	To edges of waists of stairs cut to profile of steps - 350 mm wide extreme	m	12		
	Porcelain floor tiling				
	Supply and fix non-slip porcelain tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
E	600 x 600 x 10mm thick tiles	m2	7		
F	Ditto to treads; 300mm wide with non-slip grooves and rounded nose	m	72		
G	Ditto to risers; 150mm high	m	72		
H	150mm high x 10mm Thick skirting with rounded top edge	m	17		
	Carried to Collection				
	ELEMENT NO.3 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To horizontal soffits of landing	m2	7		
B	To slopping soffits of staircase	m2	24		
C	To open staircase string 300mm (extreme) girth to profile of risers and treads	m	12		
	Painting and decoration				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
D	To plastered horizontal soffits of landing	m2	7		
E	To plastered slopping soffits of staircase	m2	24		
F	To plastered open staircase string 300mm (extreme) girth to profile of risers and treads	m	12		
	Carried to Collection				
	ELEMENT NO.3 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3				
	STAIRCASE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		11		
			12		
			13		
	Carried Forward to Summary				
	ELEMENT NO.3 STAIRCASE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	WALLING AND PARTITIONS				
	MASONRY WALLING				
	EXTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
A	200mm Thick external wall	m2	75		
	Hessian based bituminous felt damp proofing course laid on cement and sand (1:4) mortar				
B	200mm wide	m	20		
	INTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
C	200mm Thick wall	m2	180		
D	150mm Thick wall	m2	25		
	Hessian based bituminous felt damp proofing course laid on cement and sand (1:4) mortar				
E	200mm wide	m	76		
F	150mm wide	m	9		
	Carried to Collection				
	ELEMENT NO.4 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Aluminium Partitions				
A	Supply, assemble and fix 3900 mm high purpose made powder coated finish aluminium partitions comprising of approved aluminium sections comprising of 100 x 50 x 3mm top & bottom rails and 100 x 50 x 3mm mm vertical members at 900 mm centres; horizontally divided into two parts consisting of 2000 mm high bottom panel infilled with 25mm thick beech laminated MDF board on both sides and infilled with rockwool, 2000 mm high top panel infilled with 8mm thick laminated glazing; including all accessories such as beadings and sub frames, 150 mm wide flashing to seal, rubber gaskets and the like: all necessary ironmongery	m2	121		
B	Supply and fix 10 UM coloured vinyl film or sand blast film with client's logo and graphics from an approved supplier as per as per Architect's details	m2	59		
	Carried to Collection				
	ELEMENT NO.4 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4 WALLING AND PARTITIONS **COLLECTION** Total Brought Forward from Page No.		*Page No* 15 16		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.4 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	ROOF AND RAINWATER DISPOSAL *(All Provisional)*				
	RAINWATER DISPOSAL				
	Unplasticized PVC downpipes and fittings: solvent welded joints				
A	210mm diameter rainwater downpipe: fixed to wall using brackets	m	12		
	Extra Over for:				
B	210mm diameter fulbora roof outlet : with domical gratings : vertical spigots	No	3		
C	210mm diameter x 200mm long UPVC pipe sleeve ; casting into concrete slab	No	3		
D	Bend : including socket adaptor from gutter outlet to downpipes; complete	No	3		
E	Rainwater shoe	No	3		
F	Rainwater outlets: 210mm diameter	No	3		
	Carried to Collection				
	ELEMENT NO.5 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	ROOFING AND RAINWATER DISPOSAL				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		18		
	Carried Forward to Summary				
	ELEMENT NO.5 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	DOORS				
	FRAMELESS GLASS DOOR				
	12mm thick toughened frameless glass automatic sliding with polycarbonate security film on both sides; complete with and including programming switch, battery back up, motion detectors,surge protector sensors,adaptors,patch fittings, bottom and top sliding rails, including accessories, opening mechanism and all necessary ironmongery all as " Assa Abloy" or other equal and approved; to architect's details				
A	Double leaf; Overall size 2400 x 4000mm high	No	2		
	PANELLED DOORS				
	50mm thick hardwood panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail : complete with moulded grooves to door leaf on both sides; solid blocking to iron mongery (m/s) to door				
B	Single leaf door overall size 1000 x 2400mm high	No	7		
C	Single leaf door overall size 1200 x 2400mm high	No	1		
	FLUSH DOORS				
	Supply and fix 45mm solid core flush doors; mahogany veneered on facing to both sides ; Hardwood lipping on all edges : solid blocking for iron mongery (m/s) to door				
D	Single door leaf overall size 1000 x 2400mm high	No	2		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	DUCT DOORS *Supply and fix the following heavy duty powder coated aluminium profiled doors as manufactured by an approved supplier; comprising of 150 x 80 x 3mm thick standard hollow sections: infilled with 50x3mm louvres set at 45 degrees at 50mm centres; including all necessary iron mongery (matching locks): ; including glazing beading; joints sealed using approved silicon compound; fixing to masonry or concrete jambs with appropriate lugs ;including all necessary ironmongery(hinges,locks etc) adjust on completion; including bedding and pointing in cement and sand(1:4) mortar: to*				
A	Double leaf door overall size 900 x 2700mm high	No	2		
	ALUMINIUM DOORS *Supply and fix the following heavy duty powder coated aluminium profiled doors as manufactured by an approved supplier; comprising of 150 x 80 x 3mm thick standard hollow sections: complete with 6mm thick blue tinted laminated glass; including all necessary iron mongery (matching locks): ; including glazing beading; joints sealed using approved silicon compound; fixing to masonry or concrete jambs with appropriate lugs ;including all necessary ironmongery(hinges,locks etc) adjust on completion; including bedding and pointing in cement and sand(1:4) mortar: to*				
B	Single leaf door overall size 1000 x 2400mm high	No	7		
	Vault Doors *Supply and fix vault door as " Chubbsafes Centurion Door" grade IX CD EX with EN 1143-1 certification; overall size 1500 x 2500mm high with overall thickness of 320mm suitable for wall thickness of 600mm; Secured by 2x14 lever KABA MAUER Primus 70011 Class C Double bitted keylock, 2x KABA LAGARD 1947 four wheel mechanical Combination lock and 1xS&G 6370-005 Three movement Mechanical Reset Action Time lock; independenly tested by ECB.S; door frame to be also armoured to provide extra protection;including all necessary accessories; all to CBK's specification*				
C	Door overall size 1500 x 2500mm high	No	2		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FRAMES				
	Wrot prime grade mahogany timber frames, well seasoned and pressure impregnated with approved preservative as described in:-				
B	200 x 50mm thick door frame; four labours; counter sunk screws	m	58		
C	Ditto transomes	m	10		
D	150 x 50mm thick door frame; four labours; counter sunk screws	m	12		
E	Ditto transomes	m	2		
F	75 x 25mm architrave with two labours plugged	m	70		
G	25 x 25mm quadrant beading	m	70		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
H	Surfaces over 200mm but not exceeding 300mm girth	m	58		
I	Ditto: 100-200 mm girth	m	12		
J	Ditto: 0-100 mm girth	m	140		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
A	Timber surfaces between 200-300 mm girth	m	70		
B	Ditto: 100-200 mm girth	m	70		
C	Ditto: 0-100mm girth	m	70		
D	Ditto over 300mm girth	m2	6		
E	General timber surfaces of doors	m2	54		
	Ironmongery *Supply and fix the following approved quality ironmongery from 'ASSA ABLOY' or other equal and approved manufacturer; including all necessary matching screws:-*				
F	150mm heavy duty double action spring hinges	Prs	1.5		
G	Ditto: ball bearing hinges	Prs	10.5		
H	150mm stainless steel butt hinges	Prs	3		
I	5-Lever mortice lock complete with aluminium lever handles	No	8		
J	Euro-cylinder lock 72mm centres with brass handle	No	8		
K	Indicator bolt 'Vacant / Engaged'	No	2		
L	Door closer as "Union 8834" or equal and approved	No	18		
M	Ditto double action door closer	No	1		
N	800 x 200mm high stainless steel kick plate onto both sides to approval	No	2		
O	Buffered coat hooks with rubber tip	No	2		
P	Stainless steel push plate-100x300mm	No	3		
Q	Stainless steel pull plate-100x300mm	No	3		
R	19x225mm high stainless steel conceal fix pull handles	No	6		
S	Oval satin nickel floor mounted door stop fixed with screw to approval	No	22		
T	200x300mm high stainless steel transfer grills	No	3		
	Carried to Collection				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	DOORS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		20		
			21		
			22		
			23		
	Carried Forward to Summary				
	ELEMENT NO.6 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	WINDOWS				
	WINDOW CILL				
	Window cill in reinforced concrete class 20 fair faced all exposed surfaces bedded and jointed cement and sand (1:3) mortar				
A	250 x 50mm thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	m	46		
	WINDOW BOARDS				
	Wrot prime grade mahogany timber, well seasoned and pressure impregnated with approved preservative as described in:-				
B	150 x 25mm Window board	m	46		
C	20 x 25mm Quadrant beading	m	46		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
D	Back of wood frames over 100mm but not exceeding 200mm girth	m	46		
E	Ditto: 0-100 mm girth	m	46		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
F	Timber surfaces between 100-200mm girth	m	46		
G	Ditto: 0-100 mm girth	m	46		
	Carried to Collection				
	ELEMENT NO.7 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CURTAIN WALLING				
	Supply, assemble and fix the following weather tight curtain-wall system curved on elevation and plan to form a dome structure; complete with horizontal and vertical visible heavy duty powder coated aluminium frame overall size 150 x 80 x 3mm thick ; structurally glazed 12mm thick laminated glass with polished edges comprising of 6mm thick solar glass (blue colour or other approved colour) plus 1.52mm ultra-safety and security polyvinyl butyral (PVB) film plus 6mm thick self-cleaning clear glass all as manufactured by Saint Gobain – coolite series and supplied locally by Impala Glass or other equal and approved glass; including all necessary accessories such as curved EPDM gaskets, mild steel powder coated fixing brackets, beading and the like; all as per the Architect's design & details				
A	Curtain walling to curved detail	m2	382		
	ALUMINIUM WINDOWS				
	Supply and fix the following heavy duty Aluminium profiled casement windows as manufactured by an approved supplier; curved on elevation and plan to form a dome structure; comprising of 100 x 50 x 3mm thick standard hollow sections; frames mitred at corners; fixing to masonry or concrete jambs with appropriate lugs; including all necessary ironmongery(stays,hinges and locks suitable for curved configuration) and fittings : complete with 6mm thick blue tinted laminated glass; including glazing beading; joints sealed using approved silicon compound : including bedding and pointing in cement and sand(1:4) mortar: oiling and adjusting on completion; Complete with permanent air vent: all in accordance with Architect's details				
B	Window overall size 3400mm x 2000mm high	No	5		
	Carried to Collection				
	ELEMENT NO.7 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	WINDOWS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		25		
			26		
	Carried Forward to Summary				
	ELEMENT NO.7 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	INTERNAL FINISHES				
	WALL FINISHES				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	Concrete or masonry surfaces internally	m2	914		
	15mm cement and sand (1:4) backing;wood float finish				
B	To receive wall tiles	m2	71		
	PAINTING AND DECORATION				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen anti-fungal emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
C	To plastered masonry and concrete surfaces	m2	914		
	WALL TILING				
	Ceramic wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout				
D	300 x 600 x 10mm thick ceramic tiles	m2	71		
E	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	100		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	40mm thick wood floated to receive granite	m2	180		
B	Ditto to receive epoxy floor finish	m2	22		
C	Ditto to receive porcelain floor tiles	m2	239		
	Granite slab				
	Supply and fix polished local coloured granite slab from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
	20 mm thick; butt joints strait both ways; to cement and sand base (m/s); generally to				
D	To screeded floor	m2	180		
E	100mm high x 10mm Thick skirting with rounded top edge	m	56		
	Works to be executed by an approved specialist				
	Supply and apply anti-static solvent free high build industrial epoxy floor including grinding surface to remove surface laitance and expose defects, repairing defects and cracks, fill control joints with shrinkage compensated mortar; apply moisture barrier and Captive blasting and wash with approved acid; apply epoxy primer with and including 0.5mm quartz sand , epoxy undercoat and one top coat of epoxy ; applied in accordance with manufacturer's printed instructions				
	3 mm thick, 2 No coat work to concrete base (m.s); generally				
F	To screeded floor	m2	22		
G	100mm high matching skirting	m	27		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Porcelain floor tiling				
	Supply and fix non-slip porcelain tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
A	600 x 600 x 10mm thick porcelain tiles	m2	239		
B	150 x 10mm thick skirting	m	174		
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
C	To concrete ceilings	m2	22		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
D	To plastered concrete ceilings	m2	22		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	GYPSUM CEILINGS				
	Suspended gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
A	12mm thick gypsum flat ceilings	m2	419		
B	200mm high drop-provisional	m	200		
C	100mm girth polyutherane cornice	m	254		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion anti-fungal paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D	To general surface of gypsum and bulkheads	m2	459		
	Carried to Collection				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	INTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		28		
			29		
			30		
			31		
	Carried Forward to Summary				
	ELEMENT NO.8 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9				
	EXTERNAL FINISHES				
	WALL FINISHES				
	20mm thick cement and sand (1:4) plaster : wood float finished : to :				
A	To plastered surfaces of walls and columns to receive textured paint finish (m.s)	m2	152		
	Specialist applied textured finish as 'Marmoran'' supplied by Galaxy Paints Ltd or other equal and approved; 3mm thick (minimum) finish including primer coat before application; applied with a trowel or roller as per manufacturer's recommendation : All to Architect's approval				
B	To plastered surfaces	m2	152		
	Carried to Collection				
	ELEMENT NO.9 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	40mm thick wood floated to receive granite slab	m2	40		
B	Ditto to receive granite slabs at treads; 350mm wide	m	19		
C	Ditto to receive granite slabs at risers; 150mm high	m	19		
	Granite slab				
	Supply and fix polished local coloured granite slab from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
	20 mm thick; butt joints strait both ways; to cement and sand base (m/s); generally to				
D	To screeded floor	m2	40		
E	To treads; 350 mm wide full length slab with bull nosings (rounded and double granite edges)	m	19		
F	Extra over treads for 2 No. water drip on either sides of every step each 150 mm long x 300 mm wide in granite	m	20		
G	To risers; 150 mm high full length slab	m	19		
H	150mm high x 10mm Thick skirting with rounded top edge	m	35		
I	Extra; 3 No.5 mm wide x 3 mm deep anti slip grooves cut into 20mm thick granite slab finish (m/s)	m	19		
	Carried to Collection				
	ELEMENT NO.9 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CEILING FINISHES				
	Painting and decorating				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	To horizontal soffits of concrete slab	m2	50		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
B	To plastered horizontal soffits of concrete slab	m2	50		
	Carried to Collection				
	ELEMENT NO.9 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9				
	EXTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		33		
			34		
			35		
	Carried Forward to Summary				
	ELEMENT NO.9 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.10				
	BALUSTRADING				
	Stainless steel balustrades and railings grade 316; all joints ground smooth and polished to architects detail				
A	Supply and fix 1200mm high raking balustrading comprising of 50mm diameter x 3mm thick stainless steel CHS handrail; 4no. 25mm diameter x 3mm thick horizontal middle rails and 1 no. 40mm diameter x 3mm thick horizontal bottom rails; 1200mm high x 50mm diameter x 3mm thick balusters at 1000mm centres; 80mm long lugs one end fish tailed and built into concrete work; with and including 3mm thick stainless steel plate brackets and any other necessary accessories; to Architect's details at staircase	m	15		
	Carried Forward to Summary				
	ELEMENT NO.10 BALUSTRADING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.11				
	FIXTURES AND FITTINGS (ALL PROVISIONAL)				
	Plain insitu concrete: class 15/20mm				
A	100mm thick plinths	m2	3		
	Sawn formwork to:				
B	Vertical edges: over 75mm but not exceeding 150mm high	m	7		
	Cement and sand(1:4) paving : steel trowelled to				
C	20mm thick to plinths	m2	3		
	Concrete worktops				
D	100mm thick reinforced concrete vanity worktop : 600mm wide x 900mm high: including 100mm thick division walls at every 1000mm centres; complete with plasterwork to worktop to granite (m/s) and wall; including reinforcement and necessary formwork	m	5		
E	Ditto at counter worktops; overall size 1200mm wide x 1400mm high	m	11		
	Vanity Worktops: 600mm wide : with round edges : form holes for sink.				
F	600mm wide x 20mm thick granite top fixed with cement sand mortar mix (1:4) : with round edges :allow to form holes for sinks	m2	3		
G	20 x 100 mm granite fascia	m	6		
	Counter Worktops: 1200mm wide : with round edges : form holes for cash tray.				
H	600mm wide x 20mm thick granite top fixed with cement sand mortar mix (1:4) : with round edges :allow to form holes for cash tray and grommets	m2	10		
I	20mm thick granite slab fixed to wall with cement sand mortar mix (1:4)	m2	20		
J	20 x 100 mm granite fascia	m	15		
	Carried to Collection				
	ELEMENT NO.11 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Heavy duty stainless steel cash trays; grade 316; all joints ground smooth and polished to architects detail				
A	Supply and fix only stainless steel cashtrays overalls size 450 x 330mm x 150mm deep; with and including brass sliding knob and anti-bandit slider; from an approved manufacturer	No	4		
	Frameless Glass Partitions				
B	Supply, assemble and fix 2600 mm high 18mm thick bulletproof glass partition fixed to concrete woktops at bottom (m/s) and beams (m/s) at top ;complete with stainless steel glass patch fittings and any other necessary accessories	m2	29		
C	Supply, assemble and fix 2600 mm high 18mm thick bulletproof glass partition fixed to aluminium partitions (m/s) at sides and concrete worktops(m.s) at bottom ;complete with stainless steel glass patch fittings and any other necessary accessories	m2	13		
D	Supply and fix 10 UM coloured clear film with client's logo and graphics from an approved supplier as per as per Architect's details	m2	42		
	Grommets				
E	Supply and fix approved 80mm diameter plastic grommets	No	4		
	Speech transfer posts				
F	100x50mm alumnium speech transfer post as manufactured by "General Aluminium Fabricators Ltd.' or other equal and approved	m	50		
	CPU holders				
G	CPU holders fabricated in and including 25x25x3mm steel hollow frames and blockboard base including fixing in positio; including applying zinc chromate primer and two coats of gloss oil paint finish to steel surfaces	No	4		
	Carried to Collection				
	ELEMENT NO.11 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Footrest				
A	Footrest fabricated comprised of 25x25x3mm steel hollow frames and 100x50mm horizontal steel hollow setion including fixing in position; including applying zinc chromate primer and two coats of gloss oil paint finish to steel surfaces	m	10		
	Drawer Cabinet				
	20mm thick veneered MDF from PG Bison or equal and approved to sides, bottom and fascia; including 20 x 50mm hardwood timber runners ; including pvc lipping to edges; secret nailing/screwing to timber surfaces; complete with D handles, sliding mechanisms and all other necessary ironmongery				
B	Drawer overall size 450 x 600 x 150mm deep	No	6		
	Supply and fix mild steel grille comprising of 50 x 25 x 3mm SHS main Frames to existing masonary wall; complete with 25 x 25 x 3mm SHS members running horizontally and vertically at 200mm c/c;				
C	At teller worktop	m2	10		
	Prepare, touch up primer and apply one undercoat and two coats of gloss oil paint finish on steel surfaces				
D	To steel grills	m2	16		
	Writing Counter Worktop				
E	Teller counter comprising of 20mm thick polished coloured granite with round edges fixed on and including 25mm thick blockboard, complete with 25mm x 25mm x 3mm RHS frames; including applying zinc chromate primer and two coats of gloss oil paint finish to steel surfaces	m2	60		
F	200mm x 20mm thick polished coloured granite fascia	m	10		
G	100mm x 20mm thick ditto	m	10		
	Carried to Collection				
	ELEMENT NO.11 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.11				
	FIXTURES AND FITTINGS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		38		
			39		
			40		
	Carried Forward to Summary				
	ELEMENT NO.11 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 12				
	SIGNAGES				
A	Supply and fix main signage overall size 1680mm x 2044mm high; comprising of 2mm polished plate background engraved with bronze colour front lettering on general floor directory overall size 1680mm x 1624mm high; CBK logo at top on 10mm white specialist Perspex background overall size 1680mm x 420mm high; mounted on wall; graphics and lettering to be as per architects details	No	1		
	DOOR SIGNAGE				
	Supply the following in high grade brass plate treated with sealer and chemical etching ; graphics and lettering finished in 3M vinyl cut outs as per architect's details; Allow fixing to manufacturer's instructions				
B	Signage plate with engraved names size 450 x 75mm high	No	10		
C	Floor marking signages size 240 x 400mm high	No	1		
D	Reception signages size 460 x 300mm high	No	1		
E	Washroom signages size 200 x 200mm high	No	3		
F	Directional signages size 400 x 400mm high	No	1		
	Supply and fix 'FIRE EXIT' hanging illuminated signage				
G	Fire exit signages size 300 x 150mm high	No	1		
	Carried Forward to Summary				
	ELEMENT NO.12 SIGNAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 13				
	BUILDERS WORK IN CONNECTION WITH SERVICES				
	All builder's work in connection with electrical installations including chasing in walls,holes and recesses and making good therewith				
A	Cutting horizontal or vertical chase for small conduits 25-32mm dia	m	50		
B	Ditto for large conduits over 50mm dia	m	10		
C	Allow for cutting through slabs, walls and leaving all necessary holes for lighting points	No	20		
D	Ditto for all types of switch points	No	18		
E	Ditto for all types of socket outlet points	No	20		
F	Ditto for all types of floor boxes	No	15		
G	Ditto for TV/date/CCTV points	No	12		
H	Ditto for fire alarm points	No	10		
I	Ditto for consumer units/distribution boards	No	2		
	All builder's work in connection with plumbing and dranage installations including chasing in walls,holes and recesses and making good therewith				
J	Cutting horizontal or vertical chase for small pipes 20-40mm dia	m	30		
K	Ditto for large conduits over 50mm dia	m	4		
L	Allow for cutting through slabs and walls; leaving all necessary holes for WC suites	No	3		
M	Ditto for wash hand basins and urinals	No	4		
N	Ditto for PWD	No	1		
	Carried Forward to Summary				
	ELEMENT NO.13 B.W.I.C				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SUMMARY				
	BILL NO.6				
	GROUND FLOOR		***Page No***		***Amount Kshs***
1	SUBSTRUCTURES		7		
2	R.C. SUPERSTRUCTURE		10		
3	RC STAIRCASE AND STARCASE FINISH		14		
4	WALLING AND PARTITIONS		17		
5	ROOFING		19		
6	DOORS		24		
7	WINDOWS		27		
8	INTERNAL FINISHES		32		
9	EXTERNAL FINISHES		36		
10	BALUSTRADING		37		
11	FIXTURES AND FITTINGS		41		
12	SIGNAGES		42		
13	BUILDER'S WORK IN CONNECTION WITH SERVICES (B.W.I.C)		43		
	Carried to Building Summary				

FIRST FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO.6				
	FIRST FLOOR				
	ELEMENT NO. 1				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	STRUCTURAL CONCRETE WORK				
	Vibrated reinforced concrete class 25/20mm, as described, in:-				
A	Columns	m3	13		
B	Beams	m3	25		
C	Intermediate beams	m3	4		
	Carried to Collection				
	ELEMENT NO.1 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Reinforcement				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
A	Assorted sizes; T8mm - T32mm	kg	7530		
	FAIR FACED FINISHED FORMWORK AS DESCRIBED TO:-				
B	To sides of columns	m2	71		
C	Ditto: Circular columns	m2	37		
D	Sides and soffit of beams;including those curved to plan	m2	231		
E	Sides and soffit of intermediate beams;including those curved to plan	m2	50		
	Carried to Collection				
	ELEMENT NO.1 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.1				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		1		
			2		
	Carried Forward to Summary				
	ELEMENT NO.1 SUPERSTRUCTURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 2				
	GLASS DOME FEATURE				
	Structural Steel				
	Supply and fix structural mild steel to BS 4360 grade 43C in roof structure: allow for 6FW continuous welding : 3mm blanked open ends : on coat zinc chromate primer : including drilling holes in steel: all connections, cleats, bolts, nuts, washers etc; to Engineer's detail				
D	100 x 50 x 4mm thick RHS	Kg	4000		
E	101 x 50.8 x 2mm thick purlins	Kg	2000		
F	200x200x10mm thick mild steel base plate; complete with 4 no. 16mm dia holes	No	150		
G	16mm diameter H.D bolts	No	600		
H	100 x 75 x 4mm thick RHS	Kg	5000		
I	50 x 50 x 3mm thick SHS	Kg	6000		
J	200x200x10mm thick mild steel base plate; complete with 4 no. 16mm dia holes	No	50		
K	900x600x10mm thick mild steel base plate; complete with 4 no. 16mm dia holes	No	50		
L	16mm diameter H.D bolts	No	400		
	Carried to Collection				
	ELEMENT NO.2 GLASS DOME FEATURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.2 GLASS DOME FEATURE **COLLECTION** Total Brought Forward from Page No.		*Page No* 4		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.2 GLASS DOME FEATURE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 3				
	WALLING AND PARTITIONS				
	MASONRY WALLING				
	EXTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
A	200mm Thick external wall	m2	78		
	INTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
B	200mm Thick wall	m2	67		
	Carried to Collection				
	ELEMENT NO.3 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3 WALLING AND PARTITIONS **COLLECTION** Total Brought Forward from Page No.		*Page No* 6		*Amount Ksh*
	Carried Forward to Summary				
	ELEMENT NO.3 WALLING AND PARTITIONS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	ROOF AND RAINWATER DISPOSAL *(All Provisional)*				
	RAINWATER DISPOSAL				
	Unplasticized PVC downpipes and fittings: solvent welded joints				
A	210mm diameter rainwater downpipe: fixed to wall using brackets	m	12		
	Extra Over for:				
B	210mm diameter fulbora roof outlet : with domical gratings : vertical spigots	No	3		
C	210mm diameter x 200mm long UPVC pipe sleeve ; casting into concrete slab	No	3		
D	Bend : including socket adaptor from gutter outlet to downpipes; complete	No	3		
E	Rainwater shoe	No	3		
F	Rainwater outlets: 210mm diameter	No	3		
	Carried to Collection				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4 ROOFING AND RAINWATER DISPOSAL **COLLECTION**		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		8		
	Carried Forward to Summary				
	ELEMENT NO.4 ROOF AND RAIN WATER DISPOSAL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	DOORS				
	PANELLED DOORS				
	50mm thick hardwood panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail : complete with moulded grooves to door leaf on both sides;solid blocking to iron mongery (m/s) to door				
A	Single leaf door overall size 1000 x 2400mm high	No	2		
	DUCT DOORS				
	Supply and fix the following heavy duty powder coated aluminium profiled doors as manufactured by an approved supplier; comprising of 150 x 80 x 3mm thick standard hollow sections: infilled with 50x3mm louvres set at 45 degrees at 50mm centres; including all necessary iron mongery (matching locks): ; including glazing beading; joints sealed using approved silicon compound; fixing to masonry or concrete jambs with appropriate lugs ;including all necessary ironmongery(hinges,locks etc) adjust on completion; including bedding and pointing in cement and sand(1:4) mortar: to				
B	Double leaf door overall size 900 x 2700mm high	No	2		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FRAMES				
	Wrot prime grade mahogany timber frames, well seasoned and pressure impregnated with approved preservative as described in:-				
A	200 x 50mm thick door frame; four labours; counter sunk screws	m	23		
B	Ditto transomes	m	4		
C	75 x 25mm architrave with two labours plugged	m	23		
D	25 x 25mm quadrant beading	m	23		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
E	Surfaces over 200mm but not exceeding 300mm girth	m	23		
F	Ditto: 0-100 mm girth	m	46		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
G	Timber surfaces between 200-300 mm girth	m	23		
H	Ditto: 100-200 mm girth	m	23		
I	Ditto: 0-100mm girth	m	23		
J	Ditto over 300mm girth	m2	9		
K	General timber surfaces of doors	m2	88		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Ironmongery *Supply and fix the following approved quality ironmongery from 'ASSA ABLOY' or other equal and approved manufacturer; including all necessary matching screws:-*				
A	150mm heavy duty ball bearing hinges	Prs	9.00		
B	5-Lever mortice lock complete with aluminium lever handles	No	4		
C	Euro-cylinder lock 72mm centres with brass handle	No	4		
D	Door closer as "Union 8834" or equal and approved	No	4		
E	800 x 200mm high stainless steel kick plate onto both sides to approval	No	2		
F	Stainless steel push plate-100x300mm	No	1		
G	Stainless steel pull plate-100x300mm	No	1		
H	19x225mm high stainless steel conceal fix pull handles	No	2		
I	Oval satin nickel floor mounted door stop fixed with screw to approval	No	4		
J	200x300mm high stainless steel transfer grills	No	1		
	Carried to Collection				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	DOORS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		10		
			11		
			12		
	Carried Forward to Summary				
	ELEMENT NO.5 DOORS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	WINDOWS				
	WINDOW CILL				
	Window cill in reinforced concrete class 20 fair faced all exposed surfaces bedded and jointed cement and sand (1:3) mortar				
A	250 x 50mm thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	m	46		
	WINDOW BOARDS				
	Wrot prime grade mahogany timber, well seasoned and pressure impregnated with approved preservative as described in:-				
B	150 x 25mm Window board	m	46		
C	20 x 25mm Quadrant beading	m	46		
	PAINTING AND DECORATION				
	Prepare and apply one coat aluminium wood primer to back of frames before fixing to:-				
D	Back of wood frames over 100mm but not exceeding 200mm girth	m	46		
E	Ditto: 0-100 mm girth	m	46		
	Prepare, knot, prime, stop and apply primer and two coats of premium polyutherane clear lacquer varnish to wood work as described:-				
F	Timber surfaces between 100-200mm girth	m	46		
G	Ditto: 0-100 mm girth	m	46		
	Carried to Collection				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CURTAIN WALLING				
	Supply, assemble and fix the following weather tight curtain-wall system curved on elevation and plan to form a dome structure; complete with horizontal and vertical visible heavy duty powder coated aluminium frame overall size 150 x 80 x 3mm thick ; structurally glazed 12mm thick laminated glass with polished edges comprising of 6mm thick solar glass (blue colour or other approved colour) plus 1.52mm ultra-safety and security polyvinyl butyral (PVB) film plus 6mm thick self-cleaning clear glass all as manufactured by Saint Gobain – coolite series and supplied locally by Impala Glass or other equal and approved glass; including all necessary accessories such as curved EPDM gaskets, mild steel powder coated fixing brackets, beading and the like; all as per the Architect's design & details				
A	Curtain walling to curved detail	m2	382		
	ALUMINIUM WINDOWS				
	Supply and fix the following heavy duty Aluminium profiled casement windows as manufactured by an approved supplier; curved on elevation and plan to form a dome structure; comprising of 100 x 50 x 3mm thick standard hollow sections; frames mitred at corners; fixing to masonry or concrete jambs with appropriate lugs; including all necessary ironmongery(stays,hinges and locks suitable for curved configuration) and fittings : complete with 6mm thick blue tinted laminated glass; including glazing beading; joints sealed using approved silicon compound : including bedding and pointing in cement and sand(1:4) mortar: oiling and adjusting on completion; Complete with permanent air vent: all in accordance with Architect's details				
B	Window overall size 3400mm x 2000mm high	No	5		
	Carried to Collection				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6 WINDOWS **COLLECTION**		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		14		
			15		
	Carried Forward to Summary				
	ELEMENT NO.6 WINDOWS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	INTERNAL FINISHES				
	WALL FINISHES				
	Plaster; 12mm first coat of cement and sand (1:4); 3mm second coat of cement and lime putty and sand (1:1:6); steel trowelled				
A	Concrete or masonry surfaces internally	m2	642		
	15mm cement and sand (1:4) backing;wood float finish				
B	To receive wall tiles	m2	40		
	PAINTING AND DECORATION				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
C	To plastered masonry and concrete surfaces	m2	642		
	WALL TILING				
	Ceramic wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout				
D	300 x 600 x 10mm thick ceramic tiles	m2	40		
E	12mm girth heavy gauge stainless steel edging strip to corners of tiled walls	m	60		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : to				
A	40mm thick wood floated to receive porcelain tiles	m2	192		
	Porcelain floor tiling				
	Supply and fix non-slip porcelain tiles from an approved source; laid in approved pattern; including fixing with approved waterproof adhesive and spacers; bedding in cement mortar (1:4) and jointing grouting joints with proprietary grouting ; generally to				
B	600 x 600 x 10mm thick granito tiles	m2	192		
C	150 x 10mm thick skirting	m	83		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CEILING FINISHES				
	GYPSUM CEILINGS				
	Suspended gypsum plasterboard ceiling : taped and filled joints and internal corners : on and including proprietary pressed metal brandering system : measured over light fittings : including all cutting and trimming to light fittings and skimming with a gypsum based material to smooth finish before painting : to-				
A	12mm thick gypsum flat ceilings	m2	354		
B	200mm high drop-provisional	m	200		
C	100mm girth polyutherane cornice	m	166		
	PAINTING AND DECORATING				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen emulsion anti-fungal paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D	To general surface of gypsum and bulkheads	m2	394		
	Carried to Collection				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	INTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		17		
			18		
			19		
	Carried Forward to Summary				
	ELEMENT NO.7 INTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	EXTERNAL FINISHES				
	WALL FINISHES				
	20mm thick cement and sand (1:4) plaster : wood float finished : to :				
A	To plastered surfaces of walls and columns to receive textured paint finish (m.s)	m2	145		
	Specialist applied textured finish as 'Marmoran'' supplied by Galaxy Paints Ltd or other equal and approved; 3mm thick (minimum) finish including primer coat before application; applied with a trowel or roller as per manufacturer's recommendation : All to Architect's approval				
B	To plastered surfaces	m2	145		
	Carried to Collection				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.8				
	EXTERNAL FINISH				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		21		
	Carried Forward to Summary				
	ELEMENT NO.8 EXTERNAL FINISH				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.9				
	BALUSTRADING				
	Stainless steel balustrades and railings grade 316; all joints ground smooth and polished to architects detail				
A	Supply and fix 1200mm high raking balustrading comprising of 50mm diameter x 3mm thick stainless steel CHS handrail; 4no. 25mm diameter x 3mm thick horizontal middle rails and 1 no. 40mm diameter x 3mm thick horizontal bottom rails; 1200mm high x 50mm diameter x 3mm thick balusters at 1000mm centres; 80mm long lugs one end fish tailed and built into concrete work; with and including 3mm thick stainless steel plate brackets and any other necessary accessories; to Architect's details at staircase	m	8		
	Carried Forward to Summary				
	ELEMENT NO.9 BALUSTRADING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.10				
	FIXTURES AND FITTINGS (ALL PROVISIONAL)				
	Plain insitu concrete: class 15/20mm				
A	100mm thick plinths	m2	3		
	Sawn formwork to:				
B	Vertical edges: over 75mm but not exceeding 150mm high	m	6		
	Cement and sand(1:4) paving : steel trowelled to				
C	20mm thick to plinths	m2	3		
	Concrete worktops				
D	100mm thick reinforced concrete vanity worktop : 600mm wide x 900mm high: including 100mm thick division walls at every 1000mm centres; complete with plasterwork to worktop to granite (m/s) and wall; including reinforcement and necessary formwork	m	4		
	Worktops: 600mm wide : with round edges : form holes for sink.				
E	600mm wide x 20mm thick granite top fixed with cement sand mortar mix (1:4) : with round edges :allow to form holes for sinks	m2	3		
F	20 x 100 mm granite fascia	m	5		
	Carried to Collection				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Kitchen Cabinets				
	Low level cabinets: comprising of 25mm thick veneered faced MDF from PG Bison or equal and approved in internal shelvings, doors, sides and partitions; including 20 x 50mm hardwood timber runners ; including matching lipping to edges; secret nailing/screwing on prime timber substructures; All exposed surfaces in veneered faced MDF as before described; complete with drawers in 25mm thick veneered faced MDF as before described ; complete with doors in 25mm thick veneered faced MDF as before described; including malpa hinges, aluminium D handle, magnetic ball catches and all other necessary ironmongery. Including making hole for kitchen sink all as per Architect's details				
A	Low level cabinet overall size :overall length 4000mm x 600mm wide x 900mm high	No	1		
	High level cabinets: comprising of 25mm thick veneered faced MDF from PG Bison or equal and approved in sides,doors, divisions and shelves; 25mm thick veneered faced MDF as before described top on 20 x50mm hardwood timber framing; including matching pvc lipping to edges; secret nailing/screwing on prime timber substructures; complete with doors on malpa hinges; with aluminium D handle and magnetic ball catches and all other necessary iron mongery				
B	High level kitchen cabinet : overall size: length 2500mm x 300mm wide x 800mm high	No	1		-
	Carried to Collection				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.10				
	FIXTURES AND FITTINGS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		24		
			25		
	Carried Forward to Summary				
	ELEMENT NO.10 FIXTURES AND FITTINGS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 11				
	SIGNAGES				
	DOOR SIGNAGE				
	Supply the following in high grade brass plate treated with sealer and chemical etching ; graphics and lettering finished in 3M vinyl cut outs as per architect's details; Allow fixing to manufacturer's instructions				
A	Signage plate with engraved names size 450 x 75mm high	No	2		
B	Floor marking signages size 240 x 400mm high	No	1		
C	Directional signages size 400 x 400mm high	No	1		
	Supply and fix 'FIRE EXIT' hanging illuminated signage				
D	Fire exit signages size 300 x 150mm high	No	1		
	Carried Forward to Summary				
	ELEMENT NO.11 SIGNAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 12				
	BUILDERS WORK IN CONNECTION WITH SERVICES				
	All builder's work in connection with electrical installations including chasing in walls,holes and recesses and making good therewith				
A	Cutting horizontal or vertical chase for small conduits 25-32mm dia	m	20		
B	Ditto for large conduits over 50mm dia	m	5		
C	Allow for cutting through slabs, walls and leaving all necessary holes for lighting points	No	10		
D	Ditto for all types of switch points	No	6		
E	Ditto for all types of socket outlet points	No	10		
F	Ditto for cooker points,control unit and connector	No	3		
G	Ditto for all types of floor boxes	No	5		
H	Ditto for TV/date/CCTV points	No	5		
I	Ditto for fire alarm points	No	32		
J	Ditto for consumer units/distribution boards	No	2		
	All builder's work in connection with plumbing and dranage installations including chasing in walls,holes and recesses and making good therewith				
K	Cutting horizontal or vertical chase for small pipes 20-40mm dia	m	10		
L	Ditto for large conduits over 50mm dia	m	6		
M	Allow for cutting through slabs and walls; leaving all necessary holes for kitchen sink	No	1		
	Carried Forward to Summary				
	ELEMENT NO.12 B.W.I.C				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SUMMARY				
	BILL NO.6				
	FIRST FLOOR		***Page No***		***Amount Kshs***
1	R.C. SUPERSTRUCTURE		3		
2	GLASS DOME FEATURE		5		
3	WALLING AND PARTITIONS		7		
4	ROOFING		9		
5	DOORS		13		
6	WINDOWS		16		
7	INTERNAL FINISHES		20		
8	EXTERNAL FINISHES		22		
9	BALUSTRADING		23		
10	FIXTURES AND FITTINGS		26		
11	SIGNAGES		27		
12	BUILDER'S WORK IN CONNECTION WITH SERVICES (B.W.I.C)		28		
	Carried to Building Summary				

BANKING HALL SUMMARY

Note:

1. The rates and prices shall be inclusive of VAT at 16%

PROPOSED CONSTRUCTION OF ELDORET BRANCH FOR THE CENTRAL BANK OF KENYA(CBK)

ITEM	DESCRIPTION	PAGE NO.	AMOUNT FOR TENDERER'S USE	AMOUNT FOR CONSULTANTS' USE
	SUMMARY PAGE			
	Total Brought Forward from Page No.			
1.	GROUND FLOOR	GROUND F./44		
2.	FIRST FLOOR	FIRST F./29		
	Carried to Grand Summary	**Ksh**		
	BANKING HALL SUMMARY			

ACCOMMODATION BUILDING

(APARTMENTS, CARETAKER'S HOUSE, GUEST HOUSE)

Note:

1. The rates and prices shall be inclusive of VAT at 16%

GROUND FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	BILL NO. 7				
	GROUND FLOOR				
	ACCOMODATION				
	ELEMENT NO. 1				
	SUBSTRUCTURES				
A.	Mass excavation to reduce levels starting from existing ground level; ground level not exceeding 1,500 mm deep	C.M.	343		
B.	Excavate foundations trench n.e 1,500 mm deep commencing from reduced level.	C.M.	146		
C.	Ditto column bases.	C.M.	519		
D.	Ditto lift base.	C.M.	24		
E.	Extra over excavation for excavating in any class of rock in any position	C.M.	155		
F.	Returning, filling and ramming within foundations after construction of foundation walls	C.M.	568		
G.	Load and cart away surplus excavated material as necessary; including double and multi - handling where required	C.M.	440		
H.	Allow for keeping the whole of excavations free from all ground and running water by pumping	ITEM	1		
J.	Allow for maintaining and supporting sides of excavations and for keeping free from fallen materials.	ITEM	1		
K.	Imported murram or other equal and approved filling material : compacted in layers of not exceeding 200mm to 105% MDD	C.M.	642		
L.	300mm thick hardcore filling : hand packed : scarify, spread, grade and compact to falls, cross falls and slopes in layers not exceeding 150 mm thick	S.M.	428		
M.	50 mm thick approved quarry dust blinding on surfaces of hardcore	S.M.	428		
N.	Treat surface of hardcore with "Premise 200 SC" or any other equal and approved anti-termite insecticide applied strictly in accordance with manufactures printed instructions including providing a 10 years guarantee period.	S.M.	428		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Substructures *(Cont'd)*				
A.	One layer 1000 gauge polythene sheet damp proofing membrane : under floor bed : 300mm laps	S.M.	428		
	Mass Concrete class 15/20				
B.	50 mm Thick blinding under footings.	S.M.	146		
C.	Ditto but 100 mm thick under column bases.	S.M.	227		
D.	Ditto under lift base.	S.M.	16		
	Insitu reinforced concrete: grade 25/20 : vibrated in:-				
E.	Foundations.	C.M.	37		
F.	Bases	C.M.	91		
G.	Lift Base	C.M.	16		
H.	Stub columns.	C.M.	11		
J.	Stub lift walls.	C.M.	3		
K.	150 mm Thick floor bed.	S.M.	428		
L.	Entrance steps	C.M.	3		
M.	B.R.C. type A142 with minimum 300 mm side and end laps	S.M.	428		
	Fair Faced Finished formwork to:-				
N.	Sides of strip foundations.	S.M.	91		
P.	Sides of bases.	S.M.	240		
Q.	Sides of lift base.	S.M.	16		
R.	Sides of columns.	S.M.	144		
S.	Sides of walls.	S.M.	20		
T.	Edge of ground floor slab girth over 75mm but not exceeding 150mm girth;including those curved to plan	L.M.	171		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Foundations & Floorbeds *(Cont'd)*				
	Reinforcement				
	High Tensile ribbed reinforcement to B.S. 4461 supplied, cut bent and fixed				
A.	In assorted sizes 8 - 32 mm diameter bars.	KG.	11920		
	Walling				
	Quarry dressed stone walling bedded and jointed in cement sand mortar (mix 1:4) and reinforced with hoop iron every alternate course				
B.	200 mm Thick wall.	S.M.	273		
	Bituminous damp proof course under:-				
C.	200 mm Ditto.	L.M.	182		
	Plinth Finish				
D.	12 mm Thick cement and sand (1:4) plinth rendering with wood float finish.	S.M.	69		
E.	Two coats black bituminous paint to plinth rendering.	S.M.	69		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : GF/1				
	From page : GF/2				
	From above				
	SUBSTRUCTURES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 2				
	EXTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25 mm x 3 mm thick hoop iron strip in every alternate course	S.M.	367		
	Bituminous damp proof course under:-				
B.	200 mm Ditto.	L.M.	179		
	Precast Concrete Breeze Ventilation Blocks				
C.	200 x 200 mm wide x 100 mm thick Precast Concrete flower 3D breeze ventilation blocks bedded and jointed in cement and sand (1:4) mortar	S.M.	18		
	EXTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 3				
	INTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25mm x 3mm thick hoop iron strip in every alternate course	S.M.	250		
B.	Ditto but 150 mm thick wall	S.M.	19		
C.	In-situ cast lintel in class 25 concrete size 200 x 200 mm with 4No. T10 and T8 at 200 mm centres including formwork.	L.M.	27		
	Bituminous damp proof course under:-				
D.	200 mm Ditto.	L.M.	110		
	Reinforced Concrete				
	Vibrated reinforced concrete class 25/20 all as per the engineers approved trial mix in:-				
E.	300 mm Thick lift shaft wall	C.M.	6		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
F.	In assorted sizes 8 - 20 mm diameter bars.	KG	2066		
	Marine ply; steel plate or other equal and approved formwork to:				
G.	Vertical sides of lift walls	S.M.	38		
	Fixed glass partitions				
H.	Supply, assemble and fix partition in 10 mm thick toughened clear safety fixed glass panel complete with polished edges; fixed with stainless steel hardware (rails, clamps, seals), and sealed watertight with silicone including all other necessary accessories to Architect's details.	S.M.	17		
	INTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 4				
	FRAME				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Columns	C.M.	14		
B.	Beams	C.M.	19		
	Fair Faced Finished formwork to:-				
C.	Vertical sides of columns	S.M.	206		
D.	Sides and soffits of beams	S.M.	340		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	5610		
	FRAME			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 5				
	SUSPENDED SLABS				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	150 mm thick suspended slab	S.M.	416		
	Fair Faced Finished formwork to:-				
B.	Soffits of slabs	S.M.	416		
C.	Edges of suspended slab (150-225 mm wide)	L.M.	171		
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
D.	In assorted sizes 8 - 32 mm diameter bars.	KG	7613		
	Water proofing admixture				
	Sika-1 WT concrete waterproofing admixture or other equal and approved applied in accordance with the manufacturer's printed instructions as descrided in :-				
E.	Concrete to wet areas	LTRS	57		
	SUSPENDED SLABS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 6				
	STAIRCASE				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Waist and steps	C.M.	2		
B.	150 mm thick landing	S.M.	3		
C.	Downstand beam	C.M.	1		
	Marine ply: steel plate or other equal and approved formwork to:-				
D.	Soffits of landing	S.M.	3		
E.	Sloping soffits of stairs	S.M.	9		
F.	Edges of risers over 75mm but not exceeding 150 mm high	L.M.	20		
G.	Open string 375 mm high (maximum) including forming profile for treads and risers	L.M.	8		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
H.	In assorted sizes 8 - 20 mm diameter bars.	KG	276		
	STAIRCASE			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 7				
	WINDOWS & CURTAIN WALLING				
	Mild Steel Curtain Walling				
	Supply and fix mild-steel framed curtain walling comprising mild-steel mullions and transoms in 100 x 50 x 2 mm sections, including all cleats, brackets, anchors, bolts and fixings;fixed to concrete or blockwork surfaces; steelwork treated with approved anti-corrosion primer; glazed with 6 mm laminated tinted safety glass comprising 3 mm glass + PVB interlayer + 3 mm glass, including glazing beads, EPDM/neoprene gaskets, setting blocks, sealants and all necessary accessories, complete.				
A.	Overall size 5,500 x 2,850 mm high as per the architects schedule.	NO.	1		
	Prepare and apply three coats gloss paint to metal				
B.	Glazed metal curtain wall.	S.M.	32		
	Windows				
	Mild Steel Windows				
	Shop primed, welded standard section french casement windows with 40mm wide inbuilt nylon gauzed permanent vent with draining hood in full width of top or side hung opening light, brass stays and fasteners, including building in frames with pinning lugs into blockwork or concrete and pointing both sides all round in cement mortar (1:3) including ironmongery all to Architectural details.				
C.	Windows size 2,700 x 1,500 mm high; divided into panes of approved size including side hung panels as necessary.	NO	2		
D.	Ditto but size 2,100 x 1,800 mm high window.	NO	8		
E.	Ditto but size 1,800 x 1,200 mm high window.	NO	4		
F.	Ditto but size 1,500 x 1,200 mm high window.	NO	2		
G.	Ditto but size 1,800 x 600 mm high window.	NO	2		
H.	Ditto but size 1,500 x 600 mm high window.	NO	4		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Windows & Curtain walling *(Cont'd)*				
A.	Windows size 1,200 x 600 mm high window.	NO	2		
	Window Cill				
B.	250 x 50 mm Thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	L.M.	50		
	Curtain rods				
C.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	50		
	Window Board				
	Mahogany: selected and kept clean; sanded and varnished to approval.				
D.	200 x 25 mm Window board; plugged	LM	50		
E.	35 x 35 mm decorated beading	LM	50		
	Glazing				
	Clear glass and glazing to metal with putty				
F.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	46		
	Obscured glass to metal as before				
G.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	12		
	Prepare and apply three coats gloss paint to metal				
H.	Glazed metal windows	S.M.	116		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : GF/9				
	From above				
	WINDOWS & CURTAIN WALLING			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 8				
	DOORS				
	Steel Casement Doors				
	Supply, manufacture and fix purpose-made mild-steel casement doors comprising steel frames and opening casements; incorporating glazed panels and/or solid mild-steel sheet panels; formed from 50 x 50 x 3 mm fabricated steel frames, 1.2 mm thick mild steel sheet, including all necessary transoms, mullions, glazing rebates, beads, purpose made heavy duty hinges, handles, locks, bolts, stops, fixing lugs, anchors and other ironmongery. Steelwork shall be accurately fabricated, mitred/welded and dressed smooth, properly aligned and securely fixed to concrete or blockwork surfaces. All steel surfaces shall be thoroughly cleaned and prepared, treated with one coat of approved anti-corrosive primer; Glazed with specified glass using approved glazing beads, gaskets and sealant, including setting blocks and all necessary accessories, complete in all respects, including delivery, hoisting, fixing and making good.				
A.	Double leaves main entrance door overall size 2,100 x 2,400 mm high with two equal and openable leaves complete with ironmongery and all accessories to Architect's details.	NO.	1		
B.	Ditto but single leaf door overall size 1,000 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
C.	Ditto door overall size 900 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
D.	Sliding door overall size 3,000 x 2,400 mm high; comprising 1 No. glazed fixed top size 3,000 x 300 mm high; 2 No. glazed fixed sides size 1,000 x 2,100 mm high and two equal sliding leaves; complete with matching heavy-duty sliding sash sections, ironmongery and all accessories to Architect's details.	NO.	6		
	To collection			**Kshs.**	**-**

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Glazing				
	Clear glass and glazing to metal with putty				
A.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	28		
	Obscured glass to metal as before				
B.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	4		
	Prepare and apply three coats gloss paint to;				
C.	Metal door surfaces.	S.M.	152		
	Curtain rods				
D.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	23		
	Timber Doors				
	Flush Doors				
	Supply and fix the following 45 mm thick (finished) solid core flush doors faced on both side with 6mm thick Mahogany veneered plywood, hard wood lipped all round to the Architects details.				
E.	50 mm Thick door overall size 900 x 2,400 mm high as per the Architect's details.	NO.	8		
F.	Ditto but door overall size 800 x 2,400 mm high; having fixed glazed fanlight size 800 x 300 mm high and 1 No. openable leaf size 800 x 2,100 mm high as per the Architect's details.	NO.	8		
	Frames and Finishings in mahogany				
G.	250 x 50 mm in mahogany frames.	L.M.	104		
H.	75 x 25mm Architrave with two labours.	L.M.	208		
	Mild Steel				
J.	40 x 3mm Thick fixing cramp 240 mm girth as before.	NO.	64		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Prime only back of wood before fixing				
A.	Surfaces not exceeding 100 mm girth.	L.M.	208		
B.	Ditto 200 - 300 mm girth.	L.M.	104		
	Prepare and apply three coats clear polyurethane finish on wood internally				
C.	General surfaces.	S.M.	66		
D.	Surfaces not exceeding 100 mm girth.	L.M.	208		
E.	Ditto 200 - 300 mm girth.	L.M.	104		
	Supply and fix the following Ironmongery as Yale catalogue or other equal and approved				
F.	100 x 75 x 2.5 mm fixed pin butt hinges.	PRS.	32		
G.	Antique brass Yale Cylinder lockset -L94B complete with furniture.	NO.	16		
H.	Half moon floor door stop.	NO.	16		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : GF/11				
	From page : GF/12				
	From above				
	DOORS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 9				
	BALUSTRADES				
	Staircase & Balcony railing				
	Mild Steel				
A.	1,200 mm High balustrading comprising; 60 mm Diameter x 3 mm thick CHS hadrail welded to balusters(m/s); 50 x 50 x 3 mm, 1,200 mm high standards spaced at 1,500 mm c/c and 25 x 25 x 1.5 mm balusters welded on rails spaced at 150 mm c/c ; fishtailed and built into mortice in concrete; all as per Architects details.	L.M.	74		
	Handrail only				
B.	50 mm Diameter x 1.5 mm thick CHS hadrail secured to walls including all necessary accessories.	L.M.	6		
	Prepare and apply one zinc chromate metal primer and 3 coats high quality gloss oil paint				
C.	General surfaces (both sides measured flat).	S.M.	178		
	BALUSTRADES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 10				
	STAIRS FINISHES				
	12 mm Thick gauged 1:2:9 render in:-				
A.	Horizontal soffits.	S.M.	3		
B.	Ditto to sloping soffits.	S.M.	9		
	Cement and sand (1:4)				
C.	20 mm Thick screed in landing.	S.M.	3		
D.	Ditto to tread 300 mm wide.	L.M.	20		
E.	Ditto lining to riser 150 mm high.	L.M.	20		
	Terrazzo finish				
	20 mm Thick homogenous mix terrazzo laid on screed backing; cement sand marble chippings (1:4:8) grinded and polished in :-				
F.	Landing.	S.M.	3		
G.	375 mm string cut to profile of risers	L.M.	6		
H.	150 mm high skirting.	L.M.	10		
J.	To riser 150 mm high.	L.M.	20		
K.	Ditto to tread 300 mm wide.	L.M.	20		
L.	Extra over ditto for incision of non-slip carborundum	L.M.	20		
	Dividing strips				
M.	Coloured plastic strip; 25 x 3 mm thick; set in bed in approved patterns to divide paving.	L.M.	40		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
N.	Plastered soffits of slabs.	S.M.	3		
P.	Plastered sloping soffits.	S.M.	9		
	STAIR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 11				
	EXTERNAL WALL FINISHES				
	Gauged plaster (1:4) :-				
A.	20 mm thick ditto to masonry and concrete surfaces.	S.M.	111		
B.	Extra over ditto for horizontal key pointing.	S.M.	257		
	Painting				
	Prepare and paint three coats exterior silicone paint to:				
C.	Rendered surfaces	S.M.	111		
	EXTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 12				
	INTERNAL WALL FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Masonry and concrete surfaces	S.M.	689		
	Cement and sand (1:4) backings				
B.	12 mm Thick to walls.	S.M.	216		
	400 x 400 x 8 mm Thick ceramic wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout; including stainless steel edging strip and all necessary accessories.				
C.	Ceramic tiles to plaster backing surfaces.	S.M.	216		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen anti-fungal emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D.	Plastered surfaces.	S.M.	689		
E.	Two coats black bituminous paint to lift shaft walls internally.	S.M.	19		
	INTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 13				
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : with and including "Sika 1-WT" or other equal and approved integral waterproofing additive applied to manufacturer's printed instructions				
A.	32 mm Thick to receive ceramic tiles.	S.M.	407		
	Ceramic floor tiles				
B.	400 x 400 x 8 mm Coloured non slip ceramic floor tiles on floor screed and pointed in coloured cement laid to approved pattern.	S.M.	407		
	Tile Skirting				
C.	100 mm High ceramic tile skirting	L.M.	394		
	FLOOR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 14				
	CEILING FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Soffits of suspended slabs.	S.M.	416		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B.	To plastered concrete ceilings	m2	416		
	CEILING FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 15				
	FITTINGS & FIXTURES				
	Kitchen Worktops & Cabinets				
	High and Low level kitchen cupboards securely fixed to walls; comprising moisture-resistant 18 mm thick laminated marine boards to carcasses, shelves, doors and drawer fronts; 25 mm thick laminated marine board to exposed end panels where required; complete with PVC edge lipping to all exposed edges, heavy-duty malpha hinges, telescopic drawer runners, stainless steel bar handles, adjustable shelves, all necessary brackets, fixings and accessories. ; all complete in accordance with the Architect's drawings and specifications.				
A.	Low level kitchen cupboards overall size 6,000 mm long x 600 mm wide x 900 mm high; top finished with 10 mm thick polished granito tiles with eased edges, including cut-outs for sink where required, bedding, jointing, polishing and sealing to details.	NO.	2		
B.	Ditto but 5,000 mm long.	NO.	4		
C.	High level kitchen cabinets overall length 3,000 mm; 450 mm wide and 600 mm high complete.	NO.	6		
	In situ concrete class 15/20				
D.	100 mm Thick plinth.	S.M.	20		
	In cement/sand (1:3) screed				
E.	20 mm Thick bed steel trowelled smooth.	S.M.	20		
	In sawn soft wood formwork				
F.	Ditto to edges 75 - 150 mm girth.	L.M.	32		
	Wardrobes				
	In situ concrete class 15/20				
G.	100 mm Thick plinth.	S.M.	8		
H.	Sawn formwork to edges 75 - 150 mm girth.	L.M.	13		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Fittings & fixtures *(Cont'd)*				
	Wardrobes/ Wall Units				
	Built-in wardrobe constructed from 18 mm thick laminated marine boards to sides, top, bottom, shelves, partitions, drawer fronts and hinged doors; 25 mm thick laminated marine board to exposed end panels where required; finished with matching 2 mm PVC edge lipping to all exposed edges. Wardrobe to comprise hanging sections complete with 20 mm diameter chrome hanging rails, adjustable shelves, internal drawers fitted with heavy-duty telescopic soft-close runners, soft-close concealed hinges, stainless steel handles, lockable door where indicated, all necessary brackets, screws, fixings and accessories; complete with backing boards, factory finished in approved laminate colour and pattern, installed complete in accordance with the Architect's drawings and specifications.				
A.	Wardrobe overall size 1,600 mm long x 600 mm wide x 2,400 mm high complete.	NO.	2		
B.	Wardrobe overall size 1,500 mm long x 600 mm wide x 2,400 mm high complete.	NO.	6		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : GF/20				
	From above				
	FITTINGS & FIXTURES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 16 **BUILDER'S WORK IN CONNECTION WITH SERVICES** **Builder's work incidental to sanitary fittings, ventilation, plumbing, drainage, reticulation, fire fighting, electrical,concealed fixings,structured cabling, security, public address installations etc**				
A.	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including all builder's work of making good all surfaces.	ITEM	1		
	BUILDER'S WORK IN CONNECTION WITH SERVICES				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	SUMMARY				
	GROUND FLOOR				
	SUMMARY				
	BILL NO.7				
1	SUBSTRUCTURES				
2	EXTERNAL WALLS				
3	INTERNAL WALLS				
4	FRAME				
5	SUSPENDED SLABS				
6	STAIRCASE				
7	WINDOWS & CURTAIN WALLING				
8	DOORS				
9	BALUSTRADES				
10	STAIR FINISHES				
11	EXTERNAL WALL FINISHES.				
12	INTERNAL WALL FINISHES.				
13	FLOOR FINISHES.				
14	CEILING FINISHES.				
15	FIXTURES & FITTINGS.				
16	BUILDER'S WORK IN CONNECTION WITH SERVICES				
	TOTAL CARRIED TO BILL SUMMARY			**KSHS.**	

FIRST FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	BILL NO. 7				
	FIRST FLOOR				
	ACCOMODATION				
	ELEMENT NO. 1				
	EXTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25 mm x 3 mm thick hoop iron strip in every alternate course	S.M.	367		
	Precast Concrete Breeze Ventilation Blocks				
B.	200 x 200 mm wide x 100 mm thick Precast Concrete flower 3D breeze ventilation blocks bedded and jointed in cement and sand (1:4) mortar	S.M.	18		
	EXTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 2				
	INTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25mm x 3mm thick hoop iron strip in every alternate course	S.M.	250		
B.	Ditto but 150 mm thick wall	S.M.	19		
C.	In-situ cast lintel in class 25 concrete size 200 x 200 mm with 4No. T10 and T8 at 200 mm centres including formwork.	L.M.	27		
	Reinforced Concrete				
	Vibrated reinforced concrete class 25/20 all as per the engineers approved trial mix in:-				
D.	300 mm Thick lift shaft wall	C.M.	6		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	2066		
	Marine ply; steel plate or other equal and approved formwork to:				
F.	Vertical sides of lift walls	S.M.	38		
	Fixed glass partitions				
G.	Supply, assemble and fix partition in 10 mm thick toughened clear safety fixed glass panel complete with polished edges; fixed with stainless steel hardware (rails, clamps, seals), and sealed watertight with silicone including all other necessary accessories to Architect's details.	S.M.	17		
	INTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 3				
	FRAME				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Columns	C.M.	14		
B.	Beams	C.M.	19		
	Fair Faced Finished formwork to:-				
C.	Vertical sides of columns	S.M.	206		
D.	Sides and soffits of beams	S.M.	340		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	5610		
	FRAME			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 4				
	SUSPENDED SLABS				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	150 mm thick suspended slab	S.M.	416		
	Fair Faced Finished formwork to:-				
B.	Soffits of slabs	S.M.	416		
C.	Edges of suspended slab (150-225 mm wide)	L.M.	171		
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
D.	In assorted sizes 8 - 32 mm diameter bars.	KG	7613		
	Water proofing admixture				
	Sika-1 WT concrete waterproofing admixture or other equal and approved applied in accordance with the manufacturer's printed instructions as descrided in :-				
E.	Concrete to wet areas	LTRS	57		
	SUSPENDED SLABS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 5				
	STAIRCASE				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Waist and steps	C.M.	2		
B.	150 mm thick landing	S.M.	3		
C.	Downstand beam	C.M.	1		
	Marine ply: steel plate or other equal and approved formwork to:-				
D.	Soffits of landing	S.M.	3		
E.	Sloping soffits of stairs	S.M.	9		
F.	Edges of risers over 75mm but not exceeding 150 mm high	L.M.	20		
G.	Open string 375 mm high (maximum) including forming profile for treads and risers	L.M.	8		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
H.	In assorted sizes 8 - 20 mm diameter bars.	KG	276		
	STAIRCASE			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 6				
	WINDOWS & CURTAIN WALLING				
	Mild Steel Curtain Walling				
	Supply and fix mild-steel framed curtain walling comprising mild-steel mullions and transoms in 100 x 50 x 2 mm sections, including all cleats, brackets, anchors, bolts and fixings;fixed to concrete or blockwork surfaces; steelwork treated with approved anti-corrosion primer; glazed with 6 mm laminated tinted safety glass comprising 3 mm glass + PVB interlayer + 3 mm glass, including glazing beads, EPDM/neoprene gaskets, setting blocks, sealants and all necessary accessories, complete.				
A.	Overall size 5,500 x 2,850 mm high as per the architects schedule.	NO.	1		
	Prepare and apply three coats gloss paint to metal				
B.	Glazed metal curtain wall.	S.M.	32		
	Windows				
	Mild Steel Windows				
	Shop primed, welded standard section french casement windows with 40mm wide inbuilt nylon gauzed permanent vent with draining hood in full width of top or side hung opening light, brass stays and fasteners, including building in frames with pinning lugs into blockwork or concrete and pointing both sides all round in cement mortar (1:3) including ironmongery all to Architectural details.				
C.	Windows size 2,700 x 1,500 mm high; divided into panes of approved size including side hung panels as necessary.	NO	2		
D.	Ditto but size 2,100 x 1,800 mm high window.	NO	8		
E.	Ditto but size 1,800 x 1,200 mm high window.	NO	4		
F.	Ditto but size 1,500 x 1,200 mm high window.	NO	2		
G.	Ditto but size 1,800 x 600 mm high window.	NO	2		
H.	Ditto but size 1,500 x 600 mm high window.	NO	4		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Windows & Curtain walling *(Cont'd)*				
A.	Windows size 1,200 x 600 mm high window.	NO	2		
	Window Cill				
B.	250 x 50 mm Thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	L.M.	50		
	Curtain rods				
C.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	50		
	Window Board				
	Mahogany: selected and kept clean; sanded and varnished to approval.				
D.	200 x 25 mm Window board; plugged	LM	50		
E.	35 x 35 mm decorated beading	LM	50		
	Glazing				
	Clear glass and glazing to metal with putty				
F.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	46		
	Obscured glass to metal as before				
G.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	12		
	Prepare and apply three coats gloss paint to metal				
H.	Glazed metal windows	S.M.	116		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : FF/9				
	From above				
	WINDOWS & CURTAIN WALLING			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 7				
	DOORS				
	Steel Casement Doors				
	Supply, manufacture and fix purpose-made mild-steel casement doors comprising steel frames and opening casements; incorporating glazed panels and/or solid mild-steel sheet panels; formed from 50 x 50 x 3 mm fabricated steel frames, 1.2 mm thick mild steel sheet, including all necessary transoms, mullions, glazing rebates, beads, purpose made heavy duty hinges, handles, locks, bolts, stops, fixing lugs, anchors and other ironmongery. Steelwork shall be accurately fabricated, mitred/welded and dressed smooth, properly aligned and securely fixed to concrete or blockwork surfaces. All steel surfaces shall be thoroughly cleaned and prepared, treated with one coat of approved anti-corrosive primer; Glazed with specified glass using approved glazing beads, gaskets and sealant, including setting blocks and all necessary accessories, complete in all respects, including delivery, hoisting, fixing and making good.				
A.	Single leaf door overall size 1,000 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
B.	Ditto door overall size 900 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
C.	Sliding door overall size 3,000 x 2,400 mm high; comprising 1 No. glazed fixed top size 3,000 x 300 mm high; 2 No. glazed fixed sides size 1,000 x 2,100 mm high and two equal sliding leaves; complete with matching heavy-duty sliding sash sections, ironmongery and all accessories to Architect's details.	NO.	6		
	To collection			**Kshs.**	**-**

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Glazing				
	Clear glass and glazing to metal with putty				
A.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	26		
	Obscured glass to metal as before				
B.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	3		
	Prepare and apply three coats gloss paint to;				
C.	Metal door surfaces.	S.M.	142		
	Curtain rods				
D.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	23		
	Timber Doors				
	Flush Doors				
	Supply and fix the following 45 mm thick (finished) solid core flush doors faced on both side with 6mm thick Mahogany veneered plywood, hard wood lipped all round to the Architects details.				
E.	50 mm Thick door overall size 900 x 2,400 mm high as per the Architect's details.	NO.	8		
F.	Ditto but door overall size 800 x 2,400 mm high; having fixed glazed fanlight size 800 x 300 mm high and 1 No. openable leaf size 800 x 2,100 mm high as per the Architect's details.	NO.	8		
	Frames and Finishings in mahogany				
G.	250 x 50 mm in mahogany frames.	L.M.	104		
H.	75 x 25mm Architrave with two labours.	L.M.	208		
	Mild Steel				
J.	40 x 3mm Thick fixing cramp 240 mm girth as before.	NO.	64		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Prime only back of wood before fixing				
A.	Surfaces not exceeding 100 mm girth.	L.M.	208		
B.	Ditto 200 - 300 mm girth.	L.M.	104		
	Prepare and apply three coats clear polyurethane finish on wood internally				
C.	General surfaces.	S.M.	66		
D.	Surfaces not exceeding 100 mm girth.	L.M.	208		
E.	Ditto 200 - 300 mm girth.	L.M.	104		
	Supply and fix the following Ironmongery as Yale catalogue or other equal and approved				
F.	100 x 75 x 2.5 mm fixed pin butt hinges.	PRS.	32		
G.	Antique brass Yale Cylinder lockset -L94B complete with furniture.	NO.	16		
H.	Half moon floor door stop.	NO.	16		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : FF/11				
	From page : FF/12				
	From above				
	DOORS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 8				
	BALUSTRADES				
	Staircase & Balcony railing				
	Mild Steel				
A.	1,200 mm High balustrading comprising; 60 mm Diameter x 3 mm thick CHS hadrail welded to balusters(m/s); 50 x 50 x 3 mm, 1,200 mm high standards spaced at 1,500 mm c/c and 25 x 25 x 1.5 mm balusters welded on rails spaced at 150 mm c/c ; fishtailed and built into mortice in concrete; all as per Architects details.	L.M.	74		
	Handrail only				
B.	50 mm Diameter x 1.5 mm thick CHS hadrail secured to walls including all necessary accessories.	L.M.	6		
	Prepare and apply one zinc chromate metal primer and 3 coats high quality gloss oil paint				
C.	General surfaces (both sides measured flat).	S.M.	178		
	BALUSTRADES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 9				
	STAIRS FINISHES				
	12 mm Thick gauged 1:2:9 render in:-				
A.	Horizontal soffits.	S.M.	3		
B.	Ditto to sloping soffits.	S.M.	9		
	Cement and sand (1:4)				
C.	20 mm Thick screed in landing.	S.M.	3		
D.	Ditto to tread 300 mm wide.	L.M.	20		
E.	Ditto lining to riser 150 mm high.	L.M.	20		
	Terrazzo finish				
	20 mm Thick homogenous mix terrazzo laid on screed backing; cement sand marble chippings (1:4:8) grinded and polished in :-				
F.	Landing.	S.M.	3		
G.	375 mm string cut to profile of risers	L.M.	6		
H.	150 mm high skirting.	L.M.	10		
J.	To riser 150 mm high.	L.M.	20		
K.	Ditto to tread 300 mm wide.	L.M.	20		
L.	Extra over ditto for incision of non-slip carborundum	L.M.	20		
	Dividing strips				
M.	Coloured plastic strip; 25 x 3 mm thick; set in bed in approved patterns to divide paving.	L.M.	40		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
N.	Plastered soffits of slabs.	S.M.	3		
P.	Plastered sloping soffits.	S.M.	9		
	STAIR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 10				
	EXTERNAL WALL FINISHES				
	Gauged plaster (1:4) :-				
A.	20 mm thick ditto to masonry and concrete surfaces.	S.M.	111		
B.	Extra over ditto for horizontal key pointing.	S.M.	257		
	Painting				
	Prepare and paint three coats exterior silicone paint to:				
C.	Rendered surfaces	S.M.	111		
	EXTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 11				
	INTERNAL WALL FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Masonry and concrete surfaces	S.M.	689		
	Cement and sand (1:4) backings				
B.	12 mm Thick to walls.	S.M.	216		
	400 x 400 x 8 mm Thick ceramic wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout; including stainless steel edging strip and all necessary accessories.				
C.	Ceramic tiles to plaster backing surfaces.	S.M.	216		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen anti-fungal emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D.	Plastered surfaces.	S.M.	689		
E.	Two coats black bituminous paint to lift shaft walls internally.	S.M.	19		
	INTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 12				
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : with and including "Sika 1-WT" or other equal and approved integral waterproofing additive applied to manufacturer's printed instructions				
A.	32 mm Thick to receive ceramic tiles.	S.M.	396		
	Ceramic floor tiles				
B.	400 x 400 x 8 mm Coloured non slip ceramic floor tiles on floor screed and pointed in coloured cement laid to approved pattern.	S.M.	396		
	Tile Skirting				
C.	100 mm High ceramic tile skirting	L.M.	394		
	FLOOR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 13				
	CEILING FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Soffits of suspended slabs.	S.M.	416		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B.	To plastered concrete ceilings	m2	416		
	CEILING FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 14				
	FITTINGS & FIXTURES				
	Kitchen Worktops & Cabinets				
	High and Low level kitchen cupboards securely fixed to walls; comprising moisture-resistant 18 mm thick laminated marine boards to carcasses, shelves, doors and drawer fronts; 25 mm thick laminated marine board to exposed end panels where required; complete with PVC edge lipping to all exposed edges, heavy-duty malpha hinges, telescopic drawer runners, stainless steel bar handles, adjustable shelves, all necessary brackets, fixings and accessories. ; all complete in accordance with the Architect's drawings and specifications.				
A.	Low level kitchen cupboards overall size 6,000 mm long x 600 mm wide x 900 mm high; top finished with 10 mm thick polished granito tiles with eased edges, including cut-outs for sink where required, bedding, jointing, polishing and sealing to details.	NO.	2		
B.	Ditto but 5,000 mm long.	NO.	4		
C.	High level kitchen cabinets overall length 3,000 mm; 450 mm wide and 600 mm high complete.	NO.	6		
	In situ concrete class 15/20				
D.	100 mm Thick plinth.	S.M.	20		
	In cement/sand (1:3) screed				
E.	20 mm Thick bed steel trowelled smooth.	S.M.	20		
	In sawn soft wood formwork				
F.	Ditto to edges 75 - 150 mm girth.	L.M.	32		
	Wardrobes				
	In situ concrete class 15/20				
G.	100 mm Thick plinth.	S.M.	8		
H.	Sawn formwork to edges 75 - 150 mm girth.	L.M.	13		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Fittings & fixtures *(Cont'd)*				
	Wardrobes/ Wall Units				
	Built-in wardrobe constructed from 18 mm thick laminated marine boards to sides, top, bottom, shelves, partitions, drawer fronts and hinged doors; 25 mm thick laminated marine board to exposed end panels where required; finished with matching 2 mm PVC edge lipping to all exposed edges. Wardrobe to comprise hanging sections complete with 20 mm diameter chrome hanging rails, adjustable shelves, internal drawers fitted with heavy-duty telescopic soft-close runners, soft-close concealed hinges, stainless steel handles, lockable door where indicated, all necessary brackets, screws, fixings and accessories; complete with backing boards, factory finished in approved laminate colour and pattern, installed complete in accordance with the Architect's drawings and specifications.				
A.	Wardrobe overall size 1,600 mm long x 600 mm wide x 2,400 mm high complete.	NO.	2		
B.	Wardrobe overall size 1,500 mm long x 600 mm wide x 2,400 mm high complete.	NO.	6		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : FF/20				
	From above				
	FITTINGS & FIXTURES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 15 **BUILDER'S WORK IN CONNECTION WITH SERVICES** **Builder's work incidental to sanitary fittings, ventilation, plumbing, drainage, reticulation, fire fighting, electrical,concealed fixings,structured cabling, security, public address installations etc**				
A.	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including all builder's work of making good all surfaces.	ITEM	1		
	BUILDER'S WORK IN CONNECTION WITH SERVICES				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	SUMMARY				
	FIRST FLOOR				
	SUMMARY				
	BILL NO.7				
1	EXTERNAL WALLS				
2	INTERNAL WALLS				
3	FRAME				
4	SUSPENDED SLABS				
5	STAIRCASE				
6	WINDOWS & CURTAIN WALLING				
7	DOORS				
8	BALUSTRADES				
9	STAIR FINISHES				
10	EXTERNAL WALL FINISHES.				
11	INTERNAL WALL FINISHES.				
12	FLOOR FINISHES.				
13	CEILING FINISHES.				
14	FIXTURES & FITTINGS.				
15	BUILDER'S WORK IN CONNECTION WITH SERVICES				
	TOTAL CARRIED TO BILL SUMMARY			**KSHS.**	

SECOND FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	BILL NO. 7				
	SECOND FLOOR				
	ACCOMODATION				
	ELEMENT NO. 1				
	EXTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25 mm x 3 mm thick hoop iron strip in every alternate course	S.M.	367		
	Precast Concrete Breeze Ventilation Blocks				
B.	200 x 200 mm wide x 100 mm thick Precast Concrete flower 3D breeze ventilation blocks bedded and jointed in cement and sand (1:4) mortar	S.M.	18		
	EXTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 2				
	INTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25mm x 3mm thick hoop iron strip in every alternate course	S.M.	250		
B.	Ditto but 150 mm thick wall	S.M.	19		
C.	In-situ cast lintel in class 25 concrete size 200 x 200 mm with 4No. T10 and T8 at 200 mm centres including formwork.	L.M.	27		
	Reinforced Concrete				
	Vibrated reinforced concrete class 25/20 all as per the engineers approved trial mix in:-				
D.	300 mm Thick lift shaft wall	C.M.	6		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	2066		
	Marine ply; steel plate or other equal and approved formwork to:				
F.	Vertical sides of lift walls	S.M.	38		
	Fixed glass partitions				
G.	Supply, assemble and fix partition in 10 mm thick toughened clear safety fixed glass panel complete with polished edges; fixed with stainless steel hardware (rails, clamps, seals), and sealed watertight with silicone including all other necessary accessories to Architect's details.	S.M.	17		
	INTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 3				
	FRAME				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Columns	C.M.	14		
B.	Beams	C.M.	19		
	Fair Faced Finished formwork to:-				
C.	Vertical sides of columns	S.M.	206		
D.	Sides and soffits of beams	S.M.	340		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	5610		
	FRAME			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 4				
	SUSPENDED SLABS				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	150 mm thick suspended slab	S.M.	416		
	Fair Faced Finished formwork to:-				
B.	Soffits of slabs	S.M.	416		
C.	Edges of suspended slab (150-225 mm wide)	L.M.	171		
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
D.	In assorted sizes 8 - 32 mm diameter bars.	KG	7613		
	Water proofing admixture				
	Sika-1 WT concrete waterproofing admixture or other equal and approved applied in accordance with the manufacturer's printed instructions as descrided in :-				
E.	Concrete to wet areas	LTRS	57		
	SUSPENDED SLABS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 5				
	STAIRCASE				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Waist and steps	C.M.	2		
B.	150 mm thick landing	S.M.	3		
C.	Downstand beam	C.M.	1		
	Marine ply: steel plate or other equal and approved formwork to:-				
D.	Soffits of landing	S.M.	3		
E.	Sloping soffits of stairs	S.M.	9		
F.	Edges of risers over 75mm but not exceeding 150 mm high	L.M.	20		
G.	Open string 375 mm high (maximum) including forming profile for treads and risers	L.M.	8		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
H.	In assorted sizes 8 - 20 mm diameter bars.	KG	276		
	STAIRCASE			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 6				
	WINDOWS & CURTAIN WALLING				
	Mild Steel Curtain Walling				
	Supply and fix mild-steel framed curtain walling comprising mild-steel mullions and transoms in 100 x 50 x 2 mm sections, including all cleats, brackets, anchors, bolts and fixings;fixed to concrete or blockwork surfaces; steelwork treated with approved anti-corrosion primer; glazed with 6 mm laminated tinted safety glass comprising 3 mm glass + PVB interlayer + 3 mm glass, including glazing beads, EPDM/neoprene gaskets, setting blocks, sealants and all necessary accessories, complete.				
A.	Overall size 5,500 x 2,850 mm high as per the architects schedule.	NO.	1		
	Prepare and apply three coats gloss paint to metal				
B.	Glazed metal curtain wall.	S.M.	32		
	Windows				
	Mild Steel Windows				
	Shop primed, welded standard section french casement windows with 40mm wide inbuilt nylon gauzed permanent vent with draining hood in full width of top or side hung opening light, brass stays and fasteners, including building in frames with pinning lugs into blockwork or concrete and pointing both sides all round in cement mortar (1:3) including ironmongery all to Architectural details.				
C.	Windows size 2,700 x 1,500 mm high; divided into panes of approved size including side hung panels as necessary.	NO	2		
D.	Ditto but size 2,100 x 1,800 mm high window.	NO	8		
E.	Ditto but size 1,800 x 1,200 mm high window.	NO	4		
F.	Ditto but size 1,500 x 1,200 mm high window.	NO	2		
G.	Ditto but size 1,800 x 600 mm high window.	NO	2		
H.	Ditto but size 1,500 x 600 mm high window.	NO	4		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Windows & Curtain walling *(Cont'd)*				
A.	Windows size 1,200 x 600 mm high window.	NO	2		
	Window Cill				
B.	250 x 50 mm Thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	L.M.	50		
	Curtain rods				
C.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	50		
	Window Board				
	Mahogany: selected and kept clean; sanded and varnished to approval.				
D.	200 x 25 mm Window board; plugged	LM	50		
E.	35 x 35 mm decorated beading	LM	50		
	Glazing				
	Clear glass and glazing to metal with putty				
F.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	46		
	Obscured glass to metal as before				
G.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	12		
	Prepare and apply three coats gloss paint to metal				
H.	Glazed metal windows	S.M.	116		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : SF/9				
	From above				
	WINDOWS & CURTAIN WALLING			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 7				
	DOORS				
	Steel Casement Doors				
	Supply, manufacture and fix purpose-made mild-steel casement doors comprising steel frames and opening casements; incorporating glazed panels and/or solid mild-steel sheet panels; formed from 50 x 50 x 3 mm fabricated steel frames, 1.2 mm thick mild steel sheet, including all necessary transoms, mullions, glazing rebates, beads, purpose made heavy duty hinges, handles, locks, bolts, stops, fixing lugs, anchors and other ironmongery. Steelwork shall be accurately fabricated, mitred/welded and dressed smooth, properly aligned and securely fixed to concrete or blockwork surfaces. All steel surfaces shall be thoroughly cleaned and prepared, treated with one coat of approved anti-corrosive primer; Glazed with specified glass using approved glazing beads, gaskets and sealant, including setting blocks and all necessary accessories, complete in all respects, including delivery, hoisting, fixing and making good.				
A.	Single leaf door overall size 1,000 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
B.	Ditto door overall size 900 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
C.	Sliding door overall size 3,000 x 2,400 mm high; comprising 1 No. glazed fixed top size 3,000 x 300 mm high; 2 No. glazed fixed sides size 1,000 x 2,100 mm high and two equal sliding leaves; complete with matching heavy-duty sliding sash sections, ironmongery and all accessories to Architect's details.	NO.	6		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Glazing				
	Clear glass and glazing to metal with putty				
A.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	26		
	Obscured glass to metal as before				
B.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	3		
	Prepare and apply three coats gloss paint to;				
C.	Metal door surfaces.	S.M.	142		
	Curtain rods				
D.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	23		
	Timber Doors				
	Flush Doors				
	Supply and fix the following 45 mm thick (finished) solid core flush doors faced on both side with 6mm thick Mahogany veneered plywood, hard wood lipped all round to the Architects details.				
E.	50 mm Thick door overall size 900 x 2,400 mm high as per the Architect's details.	NO.	8		
F.	Ditto but door overall size 800 x 2,400 mm high; having fixed glazed fanlight size 800 x 300 mm high and 1 No. openable leaf size 800 x 2,100 mm high as per the Architect's details.	NO.	8		
	Frames and Finishings in mahogany				
G.	250 x 50 mm in mahogany frames.	L.M.	104		
H.	75 x 25mm Architrave with two labours.	L.M.	208		
	Mild Steel				
J.	40 x 3mm Thick fixing cramp 240 mm girth as before.	NO.	64		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Prime only back of wood before fixing				
A.	Surfaces not exceeding 100 mm girth.	L.M.	208		
B.	Ditto 200 - 300 mm girth.	L.M.	104		
	Prepare and apply three coats clear polyurethane finish on wood internally				
C.	General surfaces.	S.M.	66		
D.	Surfaces not exceeding 100 mm girth.	L.M.	208		
E.	Ditto 200 - 300 mm girth.	L.M.	104		
	Supply and fix the following Ironmongery as Yale catalogue or other equal and approved				
F.	100 x 75 x 2.5 mm fixed pin butt hinges.	PRS.	32		
G.	Antique brass Yale Cylinder lockset -L94B complete with furniture.	NO.	16		
H.	Half moon floor door stop.	NO.	16		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : SF/11				
	From page : SF/12				
	From above				
	DOORS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 8				
	BALUSTRADES				
	Staircase & Balcony railing				
	Mild Steel				
A.	1,200 mm High balustrading comprising; 60 mm Diameter x 3 mm thick CHS hadrail welded to balusters(m/s); 50 x 50 x 3 mm, 1,200 mm high standards spaced at 1,500 mm c/c and 25 x 25 x 1.5 mm balusters welded on rails spaced at 150 mm c/c ; fishtailed and built into mortice in concrete; all as per Architects details.	L.M.	74		
	Handrail only				
B.	50 mm Diameter x 1.5 mm thick CHS hadrail secured to walls including all necessary accessories.	L.M.	6		
	Prepare and apply one zinc chromate metal primer and 3 coats high quality gloss oil paint				
C.	General surfaces (both sides measured flat).	S.M.	178		
	BALUSTRADES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 9				
	STAIRS FINISHES				
	12 mm Thick gauged 1:2:9 render in:-				
A.	Horizontal soffits.	S.M.	3		
B.	Ditto to sloping soffits.	S.M.	9		
	Cement and sand (1:4)				
C.	20 mm Thick screed in landing.	S.M.	3		
D.	Ditto to tread 300 mm wide.	L.M.	20		
E.	Ditto lining to riser 150 mm high.	L.M.	20		
	Terrazzo finish				
	20 mm Thick homogenous mix terrazzo laid on screed backing; cement sand marble chippings (1:4:8) grinded and polished in :-				
F.	Landing.	S.M.	3		
G.	375 mm string cut to profile of risers	L.M.	6		
H.	150 mm high skirting.	L.M.	10		
J.	To riser 150 mm high.	L.M.	20		
K.	Ditto to tread 300 mm wide.	L.M.	20		
L.	Extra over ditto for incision of non-slip carborundum	L.M.	20		
	Dividing strips				
M.	Coloured plastic strip; 25 x 3 mm thick; set in bed in approved patterns to divide paving.	L.M.	40		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
N.	Plastered soffits of slabs.	S.M.	3		
P.	Plastered sloping soffits.	S.M.	9		
	STAIR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 10				
	EXTERNAL WALL FINISHES				
	Gauged plaster (1:4) :-				
A.	20 mm thick ditto to masonry and concrete surfaces.	S.M.	111		
B.	Extra over ditto for horizontal key pointing.	S.M.	257		
	Painting				
	Prepare and paint three coats exterior silicone paint to:				
C.	Rendered surfaces	S.M.	111		
	EXTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 11				
	INTERNAL WALL FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Masonry and concrete surfaces	S.M.	689		
	Cement and sand (1:4) backings				
B.	12 mm Thick to walls.	S.M.	216		
	400 x 400 x 8 mm Thick ceramic wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout; including stainless steel edging strip and all necessary accessories.				
C.	Ceramic tiles to plaster backing surfaces.	S.M.	216		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen anti-fungal emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D.	Plastered surfaces.	S.M.	689		
E.	Two coats black bituminous paint to lift shaft walls internally.	S.M.	19		
	INTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 12				
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : with and including "Sika 1-WT" or other equal and approved integral waterproofing additive applied to manufacturer's printed instructions				
A.	32 mm Thick to receive ceramic tiles.	S.M.	396		
	Ceramic floor tiles				
B.	400 x 400 x 8 mm Coloured non slip ceramic floor tiles on floor screed and pointed in coloured cement laid to approved pattern.	S.M.	396		
	Tile Skirting				
C.	100 mm High ceramic tile skirting	L.M.	394		
	FLOOR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 13				
	CEILING FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Soffits of suspended slabs.	S.M.	416		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B.	To plastered concrete ceilings	m2	416		
	CEILING FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 14				
	FITTINGS & FIXTURES				
	Kitchen Worktops & Cabinets				
	High and Low level kitchen cupboards securely fixed to walls; comprising moisture-resistant 18 mm thick laminated marine boards to carcasses, shelves, doors and drawer fronts; 25 mm thick laminated marine board to exposed end panels where required; complete with PVC edge lipping to all exposed edges, heavy-duty malpha hinges, telescopic drawer runners, stainless steel bar handles, adjustable shelves, all necessary brackets, fixings and accessories. ; all complete in accordance with the Architect's drawings and specifications.				
A.	Low level kitchen cupboards overall size 6,000 mm long x 600 mm wide x 900 mm high; top finished with 10 mm thick polished granito tiles with eased edges, including cut-outs for sink where required, bedding, jointing, polishing and sealing to details.	NO.	2		
B.	Ditto but 5,000 mm long.	NO.	4		
C.	High level kitchen cabinets overall length 3,000 mm; 450 mm wide and 600 mm high complete.	NO.	6		
	In situ concrete class 15/20				
D.	100 mm Thick plinth.	S.M.	20		
	In cement/sand (1:3) screed				
E.	20 mm Thick bed steel trowelled smooth.	S.M.	20		
	In sawn soft wood formwork				
F.	Ditto to edges 75 - 150 mm girth.	L.M.	32		
	Wardrobes				
	In situ concrete class 15/20				
G.	100 mm Thick plinth.	S.M.	8		
H.	Sawn formwork to edges 75 - 150 mm girth.	L.M.	13		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Fittings & fixtures *(Cont'd)*				
	Wardrobes/ Wall Units				
	Built-in wardrobe constructed from 18 mm thick laminated marine boards to sides, top, bottom, shelves, partitions, drawer fronts and hinged doors; 25 mm thick laminated marine board to exposed end panels where required; finished with matching 2 mm PVC edge lipping to all exposed edges. Wardrobe to comprise hanging sections complete with 20 mm diameter chrome hanging rails, adjustable shelves, internal drawers fitted with heavy-duty telescopic soft-close runners, soft-close concealed hinges, stainless steel handles, lockable door where indicated, all necessary brackets, screws, fixings and accessories; complete with backing boards, factory finished in approved laminate colour and pattern, installed complete in accordance with the Architect's drawings and specifications.				
A.	Wardrobe overall size 1,600 mm long x 600 mm wide x 2,400 mm high complete.	NO.	2		
B.	Wardrobe overall size 1,500 mm long x 600 mm wide x 2,400 mm high complete.	NO.	6		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : SF/20				
	From above				
	FITTINGS & FIXTURES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 15 **BUILDER'S WORK IN CONNECTION WITH SERVICES** **Builder's work incidental to sanitary fittings, ventilation, plumbing, drainage, reticulation, fire fighting, electrical,concealed fixings,structured cabling, security, public address installations etc**				
A.	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including all builder's work of making good all surfaces.	ITEM	1		
	BUILDER'S WORK IN CONNECTION WITH SERVICES				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	SUMMARY				
	SECOND FLOOR				
	SUMMARY				
	BILL NO.7				
1	EXTERNAL WALLS				
2	INTERNAL WALLS				
3	FRAME				
4	SUSPENDED SLABS				
5	STAIRCASE				
6	WINDOWS & CURTAIN WALLING				
7	DOORS				
8	BALUSTRADES				
9	STAIR FINISHES				
10	EXTERNAL WALL FINISHES.				
11	INTERNAL WALL FINISHES.				
12	FLOOR FINISHES.				
13	CEILING FINISHES.				
14	FIXTURES & FITTINGS.				
15	BUILDER'S WORK IN CONNECTION WITH SERVICES				
	TOTAL CARRIED TO BILL SUMMARY			**KSHS.**	

THIRD FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	BILL NO. 7				
	THIRD FLOOR				
	ACCOMODATION				
	ELEMENT NO. 1				
	EXTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25 mm x 3 mm thick hoop iron strip in every alternate course	S.M.	367		
	Precast Concrete Breeze Ventilation Blocks				
B.	200 x 200 mm wide x 100 mm thick Precast Concrete flower 3D breeze ventilation blocks bedded and jointed in cement and sand (1:4) mortar	S.M.	18		
	EXTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 2				
	INTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25mm x 3mm thick hoop iron strip in every alternate course	S.M.	250		
B.	Ditto but 150 mm thick wall	S.M.	19		
C.	In-situ cast lintel in class 25 concrete size 200 x 200 mm with 4No. T10 and T8 at 200 mm centres including formwork.	L.M.	27		
	Reinforced Concrete				
	Vibrated reinforced concrete class 25/20 all as per the engineers approved trial mix in:-				
D.	300 mm Thick lift shaft wall	C.M.	6		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	2066		
	Marine ply; steel plate or other equal and approved formwork to:				
F.	Vertical sides of lift walls	S.M.	38		
	Fixed glass partitions				
G.	Supply, assemble and fix partition in 10 mm thick toughened clear safety fixed glass panel complete with polished edges; fixed with stainless steel hardware (rails, clamps, seals), and sealed watertight with silicone including all other necessary accessories to Architect's details.	S.M.	17		
	INTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 3				
	FRAME				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Columns	C.M.	14		
B.	Beams	C.M.	19		
	Fair Faced Finished formwork to:-				
C.	Vertical sides of columns	S.M.	206		
D.	Sides and soffits of beams	S.M.	340		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	5610		
	FRAME			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 4				
	SUSPENDED SLABS				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	150 mm thick suspended slab	S.M.	416		
	Fair Faced Finished formwork to:-				
B.	Soffits of slabs	S.M.	416		
C.	Edges of suspended slab (150-225 mm wide)	L.M.	171		
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
D.	In assorted sizes 8 - 32 mm diameter bars.	KG	7613		
	Water proofing admixture				
	Sika-1 WT concrete waterproofing admixture or other equal and approved applied in accordance with the manufacturer's printed instructions as descrided in :-				
E.	Concrete to wet areas	LTRS	57		
	SUSPENDED SLABS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 5				
	STAIRCASE				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Waist and steps	C.M.	2		
B.	150 mm thick landing	S.M.	3		
C.	Downstand beam	C.M.	1		
	Marine ply: steel plate or other equal and approved formwork to:-				
D.	Soffits of landing	S.M.	3		
E.	Sloping soffits of stairs	S.M.	9		
F.	Edges of risers over 75mm but not exceeding 150 mm high	L.M.	20		
G.	Open string 375 mm high (maximum) including forming profile for treads and risers	L.M.	8		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
H.	In assorted sizes 8 - 20 mm diameter bars.	KG	276		
	STAIRCASE			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 6				
	WINDOWS & CURTAIN WALLING				
	Mild Steel Curtain Walling				
	Supply and fix mild-steel framed curtain walling comprising mild-steel mullions and transoms in 100 x 50 x 2 mm sections, including all cleats, brackets, anchors, bolts and fixings;fixed to concrete or blockwork surfaces; steelwork treated with approved anti-corrosion primer; glazed with 6 mm laminated tinted safety glass comprising 3 mm glass + PVB interlayer + 3 mm glass, including glazing beads, EPDM/neoprene gaskets, setting blocks, sealants and all necessary accessories, complete.				
A.	Overall size 5,500 x 2,850 mm high as per the architects schedule.	NO.	1		
	Prepare and apply three coats gloss paint to metal				
B.	Glazed metal curtain wall.	S.M.	32		
	Windows				
	Mild Steel Windows				
	Shop primed, welded standard section french casement windows with 40mm wide inbuilt nylon gauzed permanent vent with draining hood in full width of top or side hung opening light, brass stays and fasteners, including building in frames with pinning lugs into blockwork or concrete and pointing both sides all round in cement mortar (1:3) including ironmongery all to Architectural details.				
C.	Windows size 2,700 x 1,500 mm high; divided into panes of approved size including side hung panels as necessary.	NO	2		
D.	Ditto but size 2,100 x 1,800 mm high window.	NO	8		
E.	Ditto but size 1,800 x 1,200 mm high window.	NO	4		
F.	Ditto but size 1,500 x 1,200 mm high window.	NO	2		
G.	Ditto but size 1,800 x 600 mm high window.	NO	2		
H.	Ditto but size 1,500 x 600 mm high window.	NO	4		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Windows & Curtain walling *(Cont'd)*				
A.	Windows size 1,200 x 600 mm high window.	NO	2		
	Window Cill				
B.	250 x 50 mm Thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	L.M.	50		
	Curtain rods				
C.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	50		
	Window Board				
	Mahogany: selected and kept clean; sanded and varnished to approval.				
D.	200 x 25 mm Window board; plugged	LM	50		
E.	35 x 35 mm decorated beading	LM	50		
	Glazing				
	Clear glass and glazing to metal with putty				
F.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	46		
	Obscured glass to metal as before				
G.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	12		
	Prepare and apply three coats gloss paint to metal				
H.	Glazed metal windows	S.M.	116		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : TF/9				
	From above				
	WINDOWS & CURTAIN WALLING			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 7				
	DOORS				
	Steel Casement Doors				
	Supply, manufacture and fix purpose-made mild-steel casement doors comprising steel frames and opening casements; incorporating glazed panels and/or solid mild-steel sheet panels; formed from 50 x 50 x 3 mm fabricated steel frames, 1.2 mm thick mild steel sheet, including all necessary transoms, mullions, glazing rebates, beads, purpose made heavy duty hinges, handles, locks, bolts, stops, fixing lugs, anchors and other ironmongery. Steelwork shall be accurately fabricated, mitred/welded and dressed smooth, properly aligned and securely fixed to concrete or blockwork surfaces. All steel surfaces shall be thoroughly cleaned and prepared, treated with one coat of approved anti-corrosive primer; Glazed with specified glass using approved glazing beads, gaskets and sealant, including setting blocks and all necessary accessories, complete in all respects, including delivery, hoisting, fixing and making good.				
A.	Single leaf door overall size 1,000 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
B.	Ditto door overall size 900 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
C.	Sliding door overall size 3,000 x 2,400 mm high; comprising 1 No. glazed fixed top size 3,000 x 300 mm high; 2 No. glazed fixed sides size 1,000 x 2,100 mm high and two equal sliding leaves; complete with matching heavy-duty sliding sash sections, ironmongery and all accessories to Architect's details.	NO.	6		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Glazing				
	Clear glass and glazing to metal with putty				
A.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	26		
	Obscured glass to metal as before				
B.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	3		
	Prepare and apply three coats gloss paint to;				
C.	Metal door surfaces.	S.M.	142		
	Curtain rods				
D.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	23		
	Timber Doors				
	Flush Doors				
	Supply and fix the following 45 mm thick (finished) solid core flush doors faced on both side with 6mm thick Mahogany veneered plywood, hard wood lipped all round to the Architects details.				
E.	50 mm Thick door overall size 900 x 2,400 mm high as per the Architect's details.	NO.	8		
F.	Ditto but door overall size 800 x 2,400 mm high; having fixed glazed fanlight size 800 x 300 mm high and 1 No. openable leaf size 800 x 2,100 mm high as per the Architect's details.	NO.	8		
	Frames and Finishings in mahogany				
G.	250 x 50 mm in mahogany frames.	L.M.	104		
H.	75 x 25mm Architrave with two labours.	L.M.	208		
	Mild Steel				
J.	40 x 3mm Thick fixing cramp 240 mm girth as before.	NO.	64		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Prime only back of wood before fixing				
A.	Surfaces not exceeding 100 mm girth.	L.M.	208		
B.	Ditto 200 - 300 mm girth.	L.M.	104		
	Prepare and apply three coats clear polyurethane finish on wood internally				
C.	General surfaces.	S.M.	66		
D.	Surfaces not exceeding 100 mm girth.	L.M.	208		
E.	Ditto 200 - 300 mm girth.	L.M.	104		
	Supply and fix the following Ironmongery as Yale catalogue or other equal and approved				
F.	100 x 75 x 2.5 mm fixed pin butt hinges.	PRS.	32		
G.	Antique brass Yale Cylinder lockset -L94B complete with furniture.	NO.	16		
H.	Half moon floor door stop.	NO.	16		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : TF/11				
	From page : TF/12				
	From above				
	DOORS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 8				
	BALUSTRADES				
	Staircase & Balcony railing				
	Mild Steel				
A.	1,200 mm High balustrading comprising; 60 mm Diameter x 3 mm thick CHS hadrail welded to balusters(m/s); 50 x 50 x 3 mm, 1,200 mm high standards spaced at 1,500 mm c/c and 25 x 25 x 1.5 mm balusters welded on rails spaced at 150 mm c/c ; fishtailed and built into mortice in concrete; all as per Architects details.	L.M.	74		
	Handrail only				
B.	50 mm Diameter x 1.5 mm thick CHS hadrail secured to walls including all necessary accessories.	L.M.	6		
	Prepare and apply one zinc chromate metal primer and 3 coats high quality gloss oil paint				
C.	General surfaces (both sides measured flat).	S.M.	178		
	BALUSTRADES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 9				
	STAIRS FINISHES				
	12 mm Thick gauged 1:2:9 render in:-				
A.	Horizontal soffits.	S.M.	3		
B.	Ditto to sloping soffits.	S.M.	9		
	Cement and sand (1:4)				
C.	20 mm Thick screed in landing.	S.M.	3		
D.	Ditto to tread 300 mm wide.	L.M.	20		
E.	Ditto lining to riser 150 mm high.	L.M.	20		
	Terrazzo finish				
	20 mm Thick homogenous mix terrazzo laid on screed backing; cement sand marble chippings (1:4:8) grinded and polished in :-				
F.	Landing.	S.M.	3		
G.	375 mm string cut to profile of risers	L.M.	6		
H.	150 mm high skirting.	L.M.	10		
J.	To riser 150 mm high.	L.M.	20		
K.	Ditto to tread 300 mm wide.	L.M.	20		
L.	Extra over ditto for incision of non-slip carborundum	L.M.	20		
	Dividing strips				
M.	Coloured plastic strip; 25 x 3 mm thick; set in bed in approved patterns to divide paving.	L.M.	40		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
N.	Plastered soffits of slabs.	S.M.	3		
P.	Plastered sloping soffits.	S.M.	9		
	STAIR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 10				
	EXTERNAL WALL FINISHES				
	Gauged plaster (1:4) :-				
A.	20 mm thick ditto to masonry and concrete surfaces.	S.M.	111		
B.	Extra over ditto for horizontal key pointing.	S.M.	257		
	Painting				
	Prepare and paint three coats exterior silicone paint to:				
C.	Rendered surfaces	S.M.	111		
	EXTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 11				
	INTERNAL WALL FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Masonry and concrete surfaces	S.M.	689		
	Cement and sand (1:4) backings				
B.	12 mm Thick to walls.	S.M.	216		
	400 x 400 x 8 mm Thick ceramic wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout; including stainless steel edging strip and all necessary accessories.				
C.	Ceramic tiles to plaster backing surfaces.	S.M.	216		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen anti-fungal emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D.	Plastered surfaces.	S.M.	689		
E.	Two coats black bituminous paint to lift shaft walls internally.	S.M.	19		
	INTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 12				
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : with and including "Sika 1-WT" or other equal and approved integral waterproofing additive applied to manufacturer's printed instructions				
A.	32 mm Thick to receive ceramic tiles.	S.M.	396		
	Ceramic floor tiles				
B.	400 x 400 x 8 mm Coloured non slip ceramic floor tiles on floor screed and pointed in coloured cement laid to approved pattern.	S.M.	396		
	Tile Skirting				
C.	100 mm High ceramic tile skirting	L.M.	394		
	FLOOR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 13				
	CEILING FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Soffits of suspended slabs.	S.M.	416		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B.	To plastered concrete ceilings	m2	416		
	CEILING FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 14				
	FITTINGS & FIXTURES				
	Kitchen Worktops & Cabinets				
	High and Low level kitchen cupboards securely fixed to walls; comprising moisture-resistant 18 mm thick laminated marine boards to carcasses, shelves, doors and drawer fronts; 25 mm thick laminated marine board to exposed end panels where required; complete with PVC edge lipping to all exposed edges, heavy-duty malpha hinges, telescopic drawer runners, stainless steel bar handles, adjustable shelves, all necessary brackets, fixings and accessories. ; all complete in accordance with the Architect's drawings and specifications.				
A.	Low level kitchen cupboards overall size 6,000 mm long x 600 mm wide x 900 mm high; top finished with 10 mm thick polished granito tiles with eased edges, including cut-outs for sink where required, bedding, jointing, polishing and sealing to details.	NO.	2		
B.	Ditto but 5,000 mm long.	NO.	4		
C.	High level kitchen cabinets overall length 3,000 mm; 450 mm wide and 600 mm high complete.	NO.	6		
	In situ concrete class 15/20				
D.	100 mm Thick plinth.	S.M.	20		
	In cement/sand (1:3) screed				
E.	20 mm Thick bed steel trowelled smooth.	S.M.	20		
	In sawn soft wood formwork				
F.	Ditto to edges 75 - 150 mm girth.	L.M.	32		
	Wardrobes				
	In situ concrete class 15/20				
G.	100 mm Thick plinth.	S.M.	8		
H.	Sawn formwork to edges 75 - 150 mm girth.	L.M.	13		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Fittings & fixtures *(Cont'd)*				
	Wardrobes/ Wall Units				
	Built-in wardrobe constructed from 18 mm thick laminated marine boards to sides, top, bottom, shelves, partitions, drawer fronts and hinged doors; 25 mm thick laminated marine board to exposed end panels where required; finished with matching 2 mm PVC edge lipping to all exposed edges. Wardrobe to comprise hanging sections complete with 20 mm diameter chrome hanging rails, adjustable shelves, internal drawers fitted with heavy-duty telescopic soft-close runners, soft-close concealed hinges, stainless steel handles, lockable door where indicated, all necessary brackets, screws, fixings and accessories; complete with backing boards, factory finished in approved laminate colour and pattern, installed complete in accordance with the Architect's drawings and specifications.				
A.	Wardrobe overall size 1,600 mm long x 600 mm wide x 2,400 mm high complete.	NO.	2		
B.	Wardrobe overall size 1,500 mm long x 600 mm wide x 2,400 mm high complete.	NO.	6		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : TF/20				
	From above				
	FITTINGS & FIXTURES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 15 **BUILDER'S WORK IN CONNECTION WITH SERVICES** **Builder's work incidental to sanitary fittings, ventilation, plumbing, drainage, reticulation, fire fighting, electrical,concealed fixings,structured cabling, security, public address installations etc**				
A.	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including all builder's work of making good all surfaces.	ITEM	1		
	BUILDER'S WORK IN CONNECTION WITH SERVICES				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	SUMMARY				
	THIRD FLOOR				
	SUMMARY				
	BILL NO.7				
1	EXTERNAL WALLS				
2	INTERNAL WALLS				
3	FRAME				
4	SUSPENDED SLABS				
5	STAIRCASE				
6	WINDOWS & CURTAIN WALLING				
7	DOORS				
8	BALUSTRADES				
9	STAIR FINISHES				
10	EXTERNAL WALL FINISHES.				
11	INTERNAL WALL FINISHES.				
12	FLOOR FINISHES.				
13	CEILING FINISHES.				
14	FIXTURES & FITTINGS.				
15	BUILDER'S WORK IN CONNECTION WITH SERVICES				
	TOTAL CARRIED TO BILL SUMMARY			**KSHS.**	

FOURTH FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	BILL NO. 7				
	FOURTH FLOOR				
	ACCOMODATION				
	ELEMENT NO. 1				
	EXTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25 mm x 3 mm thick hoop iron strip in every alternate course	S.M.	367		
	Precast Concrete Breeze Ventilation Blocks				
B.	200 x 200 mm wide x 100 mm thick Precast Concrete flower 3D breeze ventilation blocks bedded and jointed in cement and sand (1:4) mortar	S.M.	18		
	EXTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 2				
	INTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25mm x 3mm thick hoop iron strip in every alternate course	S.M.	250		
B.	Ditto but 150 mm thick wall	S.M.	19		
C.	In-situ cast lintel in class 25 concrete size 200 x 200 mm with 4No. T10 and T8 at 200 mm centres including formwork.	L.M.	27		
	Reinforced Concrete				
	Vibrated reinforced concrete class 25/20 all as per the engineers approved trial mix in:-				
D.	300 mm Thick lift shaft wall	C.M.	6		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	2066		
	Marine ply; steel plate or other equal and approved formwork to:				
F.	Vertical sides of lift walls	S.M.	38		
	Fixed glass partitions				
G.	Supply, assemble and fix partition in 10 mm thick toughened clear safety fixed glass panel complete with polished edges; fixed with stainless steel hardware (rails, clamps, seals), and sealed watertight with silicone including all other necessary accessories to Architect's details.	S.M.	17		
	INTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 3				
	FRAME				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Columns	C.M.	14		
B.	Beams	C.M.	19		
	Fair Faced Finished formwork to:-				
C.	Vertical sides of columns	S.M.	206		
D.	Sides and soffits of beams	S.M.	340		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	5610		
	FRAME			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 4				
	SUSPENDED SLABS				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	150 mm thick suspended slab	S.M.	416		
	Fair Faced Finished formwork to:-				
B.	Soffits of slabs	S.M.	416		
C.	Edges of suspended slab (150-225 mm wide)	L.M.	171		
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
D.	In assorted sizes 8 - 32 mm diameter bars.	KG	7613		
	Water proofing admixture				
	Sika-1 WT concrete waterproofing admixture or other equal and approved applied in accordance with the manufacturer's printed instructions as descrided in :-				
E.	Concrete to wet areas	LTRS	57		
	SUSPENDED SLABS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 5				
	STAIRCASE				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Waist and steps	C.M.	2		
B.	150 mm thick landing	S.M.	3		
C.	Downstand beam	C.M.	1		
	Marine ply: steel plate or other equal and approved formwork to:-				
D.	Soffits of landing	S.M.	3		
E.	Sloping soffits of stairs	S.M.	9		
F.	Edges of risers over 75mm but not exceeding 150 mm high	L.M.	20		
G.	Open string 375 mm high (maximum) including forming profile for treads and risers	L.M.	8		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
H.	In assorted sizes 8 - 20 mm diameter bars.	KG	276		
	STAIRCASE			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 6				
	WINDOWS & CURTAIN WALLING				
	Mild Steel Curtain Walling				
	Supply and fix mild-steel framed curtain walling comprising mild-steel mullions and transoms in 100 x 50 x 2 mm sections, including all cleats, brackets, anchors, bolts and fixings;fixed to concrete or blockwork surfaces; steelwork treated with approved anti-corrosion primer; glazed with 6 mm laminated tinted safety glass comprising 3 mm glass + PVB interlayer + 3 mm glass, including glazing beads, EPDM/neoprene gaskets, setting blocks, sealants and all necessary accessories, complete.				
A.	Overall size 5,500 x 2,850 mm high as per the architects schedule.	NO.	1		
	Prepare and apply three coats gloss paint to metal				
B.	Glazed metal curtain wall.	S.M.	32		
	Windows				
	Mild Steel Windows				
	Shop primed, welded standard section french casement windows with 40mm wide inbuilt nylon gauzed permanent vent with draining hood in full width of top or side hung opening light, brass stays and fasteners, including building in frames with pinning lugs into blockwork or concrete and pointing both sides all round in cement mortar (1:3) including ironmongery all to Architectural details.				
C.	Windows size 2,700 x 1,500 mm high; divided into panes of approved size including side hung panels as necessary.	NO	2		
D.	Ditto but size 2,100 x 1,800 mm high window.	NO	8		
E.	Ditto but size 1,800 x 1,200 mm high window.	NO	4		
F.	Ditto but size 1,500 x 1,200 mm high window.	NO	2		
G.	Ditto but size 1,800 x 600 mm high window.	NO	2		
H.	Ditto but size 1,500 x 600 mm high window.	NO	4		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Windows & Curtain walling *(Cont'd)*				
A.	Windows size 1,200 x 600 mm high window.	NO	2		
	Window Cill				
B.	250 x 50 mm Thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	L.M.	50		
	Curtain rods				
C.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	50		
	Window Board				
	Mahogany: selected and kept clean; sanded and varnished to approval.				
D.	200 x 25 mm Window board; plugged	LM	50		
E.	35 x 35 mm decorated beading	LM	50		
	Glazing				
	Clear glass and glazing to metal with putty				
F.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	46		
	Obscured glass to metal as before				
G.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	12		
	Prepare and apply three coats gloss paint to metal				
H.	Glazed metal windows	S.M.	116		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : 4TH/9				
	From above				
	WINDOWS & CURTAIN WALLING			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 7				
	DOORS				
	Steel Casement Doors				
	Supply, manufacture and fix purpose-made mild-steel casement doors comprising steel frames and opening casements; incorporating glazed panels and/or solid mild-steel sheet panels; formed from 50 x 50 x 3 mm fabricated steel frames, 1.2 mm thick mild steel sheet, including all necessary transoms, mullions, glazing rebates, beads, purpose made heavy duty hinges, handles, locks, bolts, stops, fixing lugs, anchors and other ironmongery. Steelwork shall be accurately fabricated, mitred/welded and dressed smooth, properly aligned and securely fixed to concrete or blockwork surfaces. All steel surfaces shall be thoroughly cleaned and prepared, treated with one coat of approved anti-corrosive primer; Glazed with specified glass using approved glazing beads, gaskets and sealant, including setting blocks and all necessary accessories, complete in all respects, including delivery, hoisting, fixing and making good.				
A.	Single leaf door overall size 1,000 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
B.	Ditto door overall size 900 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
C.	Sliding door overall size 3,000 x 2,400 mm high; comprising 1 No. glazed fixed top size 3,000 x 300 mm high; 2 No. glazed fixed sides size 1,000 x 2,100 mm high and two equal sliding leaves; complete with matching heavy-duty sliding sash sections, ironmongery and all accessories to Architect's details.	NO.	6		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Glazing				
	Clear glass and glazing to metal with putty				
A.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	26		
	Obscured glass to metal as before				
B.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	3		
	Prepare and apply three coats gloss paint to;				
C.	Metal door surfaces.	S.M.	142		
	Curtain rods				
D.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	23		
	Timber Doors				
	Flush Doors				
	Supply and fix the following 45 mm thick (finished) solid core flush doors faced on both side with 6mm thick Mahogany veneered plywood, hard wood lipped all round to the Architects details.				
E.	50 mm Thick door overall size 900 x 2,400 mm high as per the Architect's details.	NO.	8		
F.	Ditto but door overall size 800 x 2,400 mm high; having fixed glazed fanlight size 800 x 300 mm high and 1 No. openable leaf size 800 x 2,100 mm high as per the Architect's details.	NO.	8		
	Frames and Finishings in mahogany				
G.	250 x 50 mm in mahogany frames.	L.M.	104		
H.	75 x 25mm Architrave with two labours.	L.M.	208		
	Mild Steel				
J.	40 x 3mm Thick fixing cramp 240 mm girth as before.	NO.	64		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Prime only back of wood before fixing				
A.	Surfaces not exceeding 100 mm girth.	L.M.	208		
B.	Ditto 200 - 300 mm girth.	L.M.	104		
	Prepare and apply three coats clear polyurethane finish on wood internally				
C.	General surfaces.	S.M.	66		
D.	Surfaces not exceeding 100 mm girth.	L.M.	208		
E.	Ditto 200 - 300 mm girth.	L.M.	104		
	Supply and fix the following Ironmongery as Yale catalogue or other equal and approved				
F.	100 x 75 x 2.5 mm fixed pin butt hinges.	PRS.	32		
G.	Antique brass Yale Cylinder lockset -L94B complete with furniture.	NO.	16		
H.	Half moon floor door stop.	NO.	16		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : 4TH/11				
	From page : 4TH/12				
	From above				
	DOORS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 8				
	BALUSTRADES				
	Staircase & Balcony railing				
	Mild Steel				
A.	1,200 mm High balustrading comprising; 60 mm Diameter x 3 mm thick CHS hadrail welded to balusters(m/s); 50 x 50 x 3 mm, 1,200 mm high standards spaced at 1,500 mm c/c and 25 x 25 x 1.5 mm balusters welded on rails spaced at 150 mm c/c ; fishtailed and built into mortice in concrete; all as per Architects details.	L.M.	74		
	Handrail only				
B.	50 mm Diameter x 1.5 mm thick CHS hadrail secured to walls including all necessary accessories.	L.M.	6		
	Prepare and apply one zinc chromate metal primer and 3 coats high quality gloss oil paint				
C.	General surfaces (both sides measured flat).	S.M.	178		
	BALUSTRADES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 9				
	STAIRS FINISHES				
	12 mm Thick gauged 1:2:9 render in:-				
A.	Horizontal soffits.	S.M.	3		
B.	Ditto to sloping soffits.	S.M.	9		
	Cement and sand (1:4)				
C.	20 mm Thick screed in landing.	S.M.	3		
D.	Ditto to tread 300 mm wide.	L.M.	20		
E.	Ditto lining to riser 150 mm high.	L.M.	20		
	Terrazzo finish				
	20 mm Thick homogenous mix terrazzo laid on screed backing; cement sand marble chippings (1:4:8) grinded and polished in :-				
F.	Landing.	S.M.	3		
G.	375 mm string cut to profile of risers	L.M.	6		
H.	150 mm high skirting.	L.M.	10		
J.	To riser 150 mm high.	L.M.	20		
K.	Ditto to tread 300 mm wide.	L.M.	20		
L.	Extra over ditto for incision of non-slip carborundum	L.M.	20		
	Dividing strips				
M.	Coloured plastic strip; 25 x 3 mm thick; set in bed in approved patterns to divide paving.	L.M.	40		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
N.	Plastered soffits of slabs.	S.M.	3		
P.	Plastered sloping soffits.	S.M.	9		
	STAIR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 10				
	EXTERNAL WALL FINISHES				
	Gauged plaster (1:4) :-				
A.	20 mm thick ditto to masonry and concrete surfaces.	S.M.	111		
B.	Extra over ditto for horizontal key pointing.	S.M.	257		
	Painting				
	Prepare and paint three coats exterior silicone paint to:				
C.	Rendered surfaces	S.M.	111		
	EXTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 11				
	INTERNAL WALL FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Masonry and concrete surfaces	S.M.	689		
	Cement and sand (1:4) backings				
B.	12 mm Thick to walls.	S.M.	216		
	400 x 400 x 8 mm Thick ceramic wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout; including stainless steel edging strip and all necessary accessories.				
C.	Ceramic tiles to plaster backing surfaces.	S.M.	216		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen anti-fungal emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D.	Plastered surfaces.	S.M.	689		
E.	Two coats black bituminous paint to lift shaft walls internally.	S.M.	19		
	INTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 12				
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : with and including "Sika 1-WT" or other equal and approved integral waterproofing additive applied to manufacturer's printed instructions				
A.	32 mm Thick to receive ceramic tiles.	S.M.	396		
	Ceramic floor tiles				
B.	400 x 400 x 8 mm Coloured non slip ceramic floor tiles on floor screed and pointed in coloured cement laid to approved pattern.	S.M.	396		
	Tile Skirting				
C.	100 mm High ceramic tile skirting	L.M.	394		
	FLOOR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 13				
	CEILING FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Soffits of suspended slabs.	S.M.	416		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B.	To plastered concrete ceilings	m2	416		
	CEILING FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 14				
	FITTINGS & FIXTURES				
	Kitchen Worktops & Cabinets				
	High and Low level kitchen cupboards securely fixed to walls; comprising moisture-resistant 18 mm thick laminated marine boards to carcasses, shelves, doors and drawer fronts; 25 mm thick laminated marine board to exposed end panels where required; complete with PVC edge lipping to all exposed edges, heavy-duty malpha hinges, telescopic drawer runners, stainless steel bar handles, adjustable shelves, all necessary brackets, fixings and accessories. ; all complete in accordance with the Architect's drawings and specifications.				
A.	Low level kitchen cupboards overall size 6,000 mm long x 600 mm wide x 900 mm high; top finished with 10 mm thick polished granito tiles with eased edges, including cut-outs for sink where required, bedding, jointing, polishing and sealing to details.	NO.	2		
B.	Ditto but 5,000 mm long.	NO.	4		
C.	High level kitchen cabinets overall length 3,000 mm; 450 mm wide and 600 mm high complete.	NO.	6		
	In situ concrete class 15/20				
D.	100 mm Thick plinth.	S.M.	20		
	In cement/sand (1:3) screed				
E.	20 mm Thick bed steel trowelled smooth.	S.M.	20		
	In sawn soft wood formwork				
F.	Ditto to edges 75 - 150 mm girth.	L.M.	32		
	Wardrobes				
	In situ concrete class 15/20				
G.	100 mm Thick plinth.	S.M.	8		
H.	Sawn formwork to edges 75 - 150 mm girth.	L.M.	13		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Fittings & fixtures *(Cont'd)*				
	Wardrobes/ Wall Units				
	Built-in wardrobe constructed from 18 mm thick laminated marine boards to sides, top, bottom, shelves, partitions, drawer fronts and hinged doors; 25 mm thick laminated marine board to exposed end panels where required; finished with matching 2 mm PVC edge lipping to all exposed edges. Wardrobe to comprise hanging sections complete with 20 mm diameter chrome hanging rails, adjustable shelves, internal drawers fitted with heavy-duty telescopic soft-close runners, soft-close concealed hinges, stainless steel handles, lockable door where indicated, all necessary brackets, screws, fixings and accessories; complete with backing boards, factory finished in approved laminate colour and pattern, installed complete in accordance with the Architect's drawings and specifications.				
A.	Wardrobe overall size 1,600 mm long x 600 mm wide x 2,400 mm high complete.	NO.	2		
B.	Wardrobe overall size 1,500 mm long x 600 mm wide x 2,400 mm high complete.	NO.	6		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : 4TH/20				
	From above				
	FITTINGS & FIXTURES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 15 **BUILDER'S WORK IN CONNECTION WITH SERVICES** **Builder's work incidental to sanitary fittings, ventilation, plumbing, drainage, reticulation, fire fighting, electrical,concealed fixings,structured cabling, security, public address installations etc**				
A.	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including all builder's work of making good all surfaces.	ITEM	1		
	BUILDER'S WORK IN CONNECTION WITH SERVICES				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	SUMMARY				
	FOURTH FLOOR				
	SUMMARY				
	BILL NO.7				
1	EXTERNAL WALLS				
2	INTERNAL WALLS				
3	FRAME				
4	SUSPENDED SLABS				
5	STAIRCASE				
6	WINDOWS & CURTAIN WALLING				
7	DOORS				
8	BALUSTRADES				
9	STAIR FINISHES				
10	EXTERNAL WALL FINISHES.				
11	INTERNAL WALL FINISHES.				
12	FLOOR FINISHES.				
13	CEILING FINISHES.				
14	FIXTURES & FITTINGS.				
15	BUILDER'S WORK IN CONNECTION WITH SERVICES				
	TOTAL CARRIED TO BILL SUMMARY			**KSHS.**	

FIFTH FLOOR

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	BILL NO. 7				
	FIFTH FLOOR				
	ACCOMODATION				
	ELEMENT NO. 1				
	EXTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25 mm x 3 mm thick hoop iron strip in every alternate course	S.M.	367		
	Precast Concrete Breeze Ventilation Blocks				
B.	200 x 200 mm wide x 100 mm thick Precast Concrete flower 3D breeze ventilation blocks bedded and jointed in cement and sand (1:4) mortar	S.M.	18		
	EXTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 2				
	INTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25mm x 3mm thick hoop iron strip in every alternate course	S.M.	250		
B.	Ditto but 150 mm thick wall	S.M.	19		
C.	In-situ cast lintel in class 25 concrete size 200 x 200 mm with 4No. T10 and T8 at 200 mm centres including formwork.	L.M.	27		
	Reinforced Concrete				
	Vibrated reinforced concrete class 25/20 all as per the engineers approved trial mix in:-				
D.	300 mm Thick lift shaft wall	C.M.	6		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	2066		
	Marine ply; steel plate or other equal and approved formwork to:				
F.	Vertical sides of lift walls	S.M.	38		
	Fixed glass partitions				
G.	Supply, assemble and fix partition in 10 mm thick toughened clear safety fixed glass panel complete with polished edges; fixed with stainless steel hardware (rails, clamps, seals), and sealed watertight with silicone including all other necessary accessories to Architect's details.	S.M.	17		
	INTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 3				
	FRAME				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Columns	C.M.	14		
B.	Beams	C.M.	19		
	Fair Faced Finished formwork to:-				
C.	Vertical sides of columns	S.M.	206		
D.	Sides and soffits of beams	S.M.	340		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	5610		
	FRAME			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 4				
	SUSPENDED SLABS				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	150 mm thick suspended slab	S.M.	416		
	Fair Faced Finished formwork to:-				
B.	Soffits of slabs	S.M.	416		
C.	Edges of suspended slab (150-225 mm wide)	L.M.	171		
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
D.	In assorted sizes 8 - 32 mm diameter bars.	KG	7613		
	Water proofing admixture				
	Sika-1 WT concrete waterproofing admixture or other equal and approved applied in accordance with the manufacturer's printed instructions as descrided in :-				
E.	Concrete to wet areas	LTRS	57		
	SUSPENDED SLABS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 5				
	STAIRCASE				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Waist and steps	C.M.	2		
B.	150 mm thick landing	S.M.	3		
C.	Downstand beam	C.M.	1		
	Marine ply: steel plate or other equal and approved formwork to:-				
D.	Soffits of landing	S.M.	3		
E.	Sloping soffits of stairs	S.M.	9		
F.	Edges of risers over 75mm but not exceeding 150 mm high	L.M.	20		
G.	Open string 375 mm high (maximum) including forming profile for treads and risers	L.M.	8		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
H.	In assorted sizes 8 - 20 mm diameter bars.	KG	276		
	STAIRCASE			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 6				
	WINDOWS & CURTAIN WALLING				
	Mild Steel Curtain Walling				
	Supply and fix mild-steel framed curtain walling comprising mild-steel mullions and transoms in 100 x 50 x 2 mm sections, including all cleats, brackets, anchors, bolts and fixings;fixed to concrete or blockwork surfaces; steelwork treated with approved anti-corrosion primer; glazed with 6 mm laminated tinted safety glass comprising 3 mm glass + PVB interlayer + 3 mm glass, including glazing beads, EPDM/neoprene gaskets, setting blocks, sealants and all necessary accessories, complete.				
A.	Overall size 5,500 x 2,850 mm high as per the architects schedule.	NO.	1		
	Prepare and apply three coats gloss paint to metal				
B.	Glazed metal curtain wall.	S.M.	32		
	Windows				
	Mild Steel Windows				
	Shop primed, welded standard section french casement windows with 40mm wide inbuilt nylon gauzed permanent vent with draining hood in full width of top or side hung opening light, brass stays and fasteners, including building in frames with pinning lugs into blockwork or concrete and pointing both sides all round in cement mortar (1:3) including ironmongery all to Architectural details.				
C.	Windows size 2,700 x 1,500 mm high; divided into panes of approved size including side hung panels as necessary.	NO	2		
D.	Ditto but size 2,100 x 1,800 mm high window.	NO	8		
E.	Ditto but size 1,800 x 1,200 mm high window.	NO	4		
F.	Ditto but size 1,500 x 1,200 mm high window.	NO	2		
G.	Ditto but size 1,800 x 600 mm high window.	NO	2		
H.	Ditto but size 1,500 x 600 mm high window.	NO	4		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Windows & Curtain walling *(Cont'd)*				
A.	Windows size 1,200 x 600 mm high window.	NO	2		
	Window Cill				
B.	250 x 50 mm Thick insitu concrete once rebated and throated window cill laid and jointed in cement and sand 1:3 mortar	L.M.	50		
	Curtain rods				
C.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	50		
	Window Board				
	Mahogany: selected and kept clean; sanded and varnished to approval.				
D.	200 x 25 mm Window board; plugged	LM	50		
E.	35 x 35 mm decorated beading	LM	50		
	Glazing				
	Clear glass and glazing to metal with putty				
F.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	46		
	Obscured glass to metal as before				
G.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	12		
	Prepare and apply three coats gloss paint to metal				
H.	Glazed metal windows	S.M.	116		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : 5TH/9				
	From above				
	WINDOWS & CURTAIN WALLING			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 7				
	DOORS				
	Steel Casement Doors				
	Supply, manufacture and fix purpose-made mild-steel casement doors comprising steel frames and opening casements; incorporating glazed panels and/or solid mild-steel sheet panels; formed from 50 x 50 x 3 mm fabricated steel frames, 1.2 mm thick mild steel sheet, including all necessary transoms, mullions, glazing rebates, beads, purpose made heavy duty hinges, handles, locks, bolts, stops, fixing lugs, anchors and other ironmongery. Steelwork shall be accurately fabricated, mitred/welded and dressed smooth, properly aligned and securely fixed to concrete or blockwork surfaces. All steel surfaces shall be thoroughly cleaned and prepared, treated with one coat of approved anti-corrosive primer; Glazed with specified glass using approved glazing beads, gaskets and sealant, including setting blocks and all necessary accessories, complete in all respects, including delivery, hoisting, fixing and making good.				
A.	Single leaf door overall size 1,000 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
B.	Ditto door overall size 900 x 2,400 mm high complete with ironmongery and all accessories to Architect's details.	NO.	6		
C.	Sliding door overall size 3,000 x 2,400 mm high; comprising 1 No. glazed fixed top size 3,000 x 300 mm high; 2 No. glazed fixed sides size 1,000 x 2,100 mm high and two equal sliding leaves; complete with matching heavy-duty sliding sash sections, ironmongery and all accessories to Architect's details.	NO.	6		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Glazing				
	Clear glass and glazing to metal with putty				
A.	5 mm Thick in panes 0.10 - 0.50m2.	S.M.	26		
	Obscured glass to metal as before				
B.	5 mm Thick in panes 0:10 - 0.50m2.	S.M.	3		
	Prepare and apply three coats gloss paint to;				
C.	Metal door surfaces.	S.M.	142		
	Curtain rods				
D.	30 mm Diameter heavy gauge polished brass double curtain rods complete with rollers, end stops and brackets screwed all to Architect's details.	L.M.	23		
	Timber Doors				
	Flush Doors				
	Supply and fix the following 45 mm thick (finished) solid core flush doors faced on both side with 6mm thick Mahogany veneered plywood, hard wood lipped all round to the Architects details.				
E.	50 mm Thick door overall size 900 x 2,400 mm high as per the Architect's details.	NO.	8		
F.	Ditto but door overall size 800 x 2,400 mm high; having fixed glazed fanlight size 800 x 300 mm high and 1 No. openable leaf size 800 x 2,100 mm high as per the Architect's details.	NO.	8		
	Frames and Finishings in mahogany				
G.	250 x 50 mm in mahogany frames.	L.M.	104		
H.	75 x 25mm Architrave with two labours.	L.M.	208		
	Mild Steel				
J.	40 x 3mm Thick fixing cramp 240 mm girth as before.	NO.	64		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Doors *(cont'd)*				
	Prime only back of wood before fixing				
A.	Surfaces not exceeding 100 mm girth.	L.M.	208		
B.	Ditto 200 - 300 mm girth.	L.M.	104		
	Prepare and apply three coats clear polyurethane finish on wood internally				
C.	General surfaces.	S.M.	66		
D.	Surfaces not exceeding 100 mm girth.	L.M.	208		
E.	Ditto 200 - 300 mm girth.	L.M.	104		
	Supply and fix the following Ironmongery as Yale catalogue or other equal and approved				
F.	100 x 75 x 2.5 mm fixed pin butt hinges.	PRS.	32		
G.	Antique brass Yale Cylinder lockset -L94B complete with furniture.	NO.	16		
H.	Half moon floor door stop.	NO.	16		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : 5TH/11				
	From page : 5TH/12				
	From above				
	DOORS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 8				
	BALUSTRADES				
	Staircase & Balcony railing				
	Mild Steel				
A.	1,200 mm High balustrading comprising; 60 mm Diameter x 3 mm thick CHS hadrail welded to balusters(m/s); 50 x 50 x 3 mm, 1,200 mm high standards spaced at 1,500 mm c/c and 25 x 25 x 1.5 mm balusters welded on rails spaced at 150 mm c/c ; fishtailed and built into mortice in concrete; all as per Architects details.	L.M.	74		
	Handrail only				
B.	50 mm Diameter x 1.5 mm thick CHS hadrail secured to walls including all necessary accessories.	L.M.	6		
	Prepare and apply one zinc chromate metal primer and 3 coats high quality gloss oil paint				
C.	General surfaces (both sides measured flat).	S.M.	178		
	BALUSTRADES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 9				
	STAIRS FINISHES				
	12 mm Thick gauged 1:2:9 render in:-				
A.	Horizontal soffits.	S.M.	3		
B.	Ditto to sloping soffits.	S.M.	9		
	Cement and sand (1:4)				
C.	20 mm Thick screed in landing.	S.M.	3		
D.	Ditto to tread 300 mm wide.	L.M.	20		
E.	Ditto lining to riser 150 mm high.	L.M.	20		
	Terrazzo finish				
	20 mm Thick homogenous mix terrazzo laid on screed backing; cement sand marble chippings (1:4:8) grinded and polished in :-				
F.	Landing.	S.M.	3		
G.	375 mm string cut to profile of risers	L.M.	6		
H.	150 mm high skirting.	L.M.	10		
J.	To riser 150 mm high.	L.M.	20		
K.	Ditto to tread 300 mm wide.	L.M.	20		
L.	Extra over ditto for incision of non-slip carborundum	L.M.	20		
	Dividing strips				
M.	Coloured plastic strip; 25 x 3 mm thick; set in bed in approved patterns to divide paving.	L.M.	40		
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion paint: to				
N.	Plastered soffits of slabs.	S.M.	3		
P.	Plastered sloping soffits.	S.M.	9		
	STAIR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 10				
	EXTERNAL WALL FINISHES				
	Gauged plaster (1:4) :-				
A.	20 mm thick ditto to masonry and concrete surfaces.	S.M.	111		
B.	Extra over ditto for horizontal key pointing.	S.M.	257		
	Painting				
	Prepare and paint three coats exterior silicone paint to:				
C.	Rendered surfaces	S.M.	111		
	EXTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 11				
	INTERNAL WALL FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Masonry and concrete surfaces	S.M.	689		
	Cement and sand (1:4) backings				
B.	12 mm Thick to walls.	S.M.	216		
	400 x 400 x 8 mm Thick ceramic wall tiles to regular pattern laid onto cement sand backing mix 1:4 (m/s) including fixing with approved waterproof adhesive; jointed and flush pointed in matching colour grout; including stainless steel edging strip and all necessary accessories.				
C.	Ceramic tiles to plaster backing surfaces.	S.M.	216		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen anti-fungal emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D.	Plastered surfaces.	S.M.	689		
E.	Two coats black bituminous paint to lift shaft walls internally.	S.M.	19		
	INTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 12				
	FLOOR FINISHES				
	Cement and sand (1:4) screed : wood float finish : to receive floor finish : with and including "Sika 1-WT" or other equal and approved integral waterproofing additive applied to manufacturer's printed instructions				
A.	32 mm Thick to receive ceramic tiles.	S.M.	396		
	Ceramic floor tiles				
B.	400 x 400 x 8 mm Coloured non slip ceramic floor tiles on floor screed and pointed in coloured cement laid to approved pattern.	S.M.	396		
	Tile Skirting				
C.	100 mm High ceramic tile skirting	L.M.	394		
	FLOOR FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 13				
	CEILING FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Soffits of suspended slabs.	S.M.	416		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B.	To plastered concrete ceilings	m2	416		
	CEILING FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 14				
	FITTINGS & FIXTURES				
	Kitchen Worktops & Cabinets				
	High and Low level kitchen cupboards securely fixed to walls; comprising moisture-resistant 18 mm thick laminated marine boards to carcasses, shelves, doors and drawer fronts; 25 mm thick laminated marine board to exposed end panels where required; complete with PVC edge lipping to all exposed edges, heavy-duty malpha hinges, telescopic drawer runners, stainless steel bar handles, adjustable shelves, all necessary brackets, fixings and accessories. ; all complete in accordance with the Architect's drawings and specifications.				
A.	Low level kitchen cupboards overall size 6,000 mm long x 600 mm wide x 900 mm high; top finished with 10 mm thick polished granito tiles with eased edges, including cut-outs for sink where required, bedding, jointing, polishing and sealing to details.	NO.	2		
B.	Ditto but 5,000 mm long.	NO.	4		
C.	High level kitchen cabinets overall length 3,000 mm; 450 mm wide and 600 mm high complete.	NO.	6		
	In situ concrete class 15/20				
D.	100 mm Thick plinth.	S.M.	20		
	In cement/sand (1:3) screed				
E.	20 mm Thick bed steel trowelled smooth.	S.M.	20		
	In sawn soft wood formwork				
F.	Ditto to edges 75 - 150 mm girth.	L.M.	32		
	Wardrobes				
	In situ concrete class 15/20				
G.	100 mm Thick plinth.	S.M.	8		
H.	Sawn formwork to edges 75 - 150 mm girth.	L.M.	13		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Fittings & fixtures *(Cont'd)*				
	Wardrobes/ Wall Units				
	Built-in wardrobe constructed from 18 mm thick laminated marine boards to sides, top, bottom, shelves, partitions, drawer fronts and hinged doors; 25 mm thick laminated marine board to exposed end panels where required; finished with matching 2 mm PVC edge lipping to all exposed edges. Wardrobe to comprise hanging sections complete with 20 mm diameter chrome hanging rails, adjustable shelves, internal drawers fitted with heavy-duty telescopic soft-close runners, soft-close concealed hinges, stainless steel handles, lockable door where indicated, all necessary brackets, screws, fixings and accessories; complete with backing boards, factory finished in approved laminate colour and pattern, installed complete in accordance with the Architect's drawings and specifications.				
A.	Wardrobe overall size 1,600 mm long x 600 mm wide x 2,400 mm high complete.	NO.	2		
B.	Wardrobe overall size 1,500 mm long x 600 mm wide x 2,400 mm high complete.	NO.	6		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : 5TH/20				
	From above				
	FITTINGS & FIXTURES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 15 **BUILDER'S WORK IN CONNECTION WITH SERVICES** **Builder's work incidental to sanitary fittings, ventilation, plumbing, drainage, reticulation, fire fighting, electrical,concealed fixings,structured cabling, security, public address installations etc**				
A.	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including all builder's work of making good all surfaces.	ITEM	1		
	BUILDER'S WORK IN CONNECTION WITH SERVICES				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	SUMMARY				
	FIFTH FLOOR				
	SUMMARY				
	BILL NO.7				
1	EXTERNAL WALLS				
2	INTERNAL WALLS				
3	FRAME				
4	SUSPENDED SLABS				
5	STAIRCASE				
6	WINDOWS & CURTAIN WALLING				
7	DOORS				
8	BALUSTRADES				
9	STAIR FINISHES				
10	EXTERNAL WALL FINISHES.				
11	INTERNAL WALL FINISHES.				
12	FLOOR FINISHES.				
13	CEILING FINISHES.				
14	FIXTURES & FITTINGS.				
15	BUILDER'S WORK IN CONNECTION WITH SERVICES				
	TOTAL CARRIED TO BILL SUMMARY			**KSHS.**	

ROOF SLAB

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ROOF TERRACE				
	ELEMENT NO. 1				
	EXTERNAL WALLS				
A.	200 mm Thick approved machine cut walling (minimum strenth 7N/m^2) bedded and jointed in cement and sand (1:3) mortar, reinforced with 25 mm x 3 mm thick hoop iron strip in every alternate course	S.M.	92		
B.	Ditto parapet wall	S.M.	165		
	Precast concrete class 30/20 including formwork and finished fair on all exposed surfaces as describeed in:-				
C.	300 x 50 mm Coping twice weathered and throated with a nosing over 200 mm walling jointed in cement/sand (1:3) mortar.	L.M.	110		
	EXTERNAL WALLS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 2				
	FRAME				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	Columns	C.M.	5		
B.	Beams	C.M.	11		
	Fair Faced Finished formwork to:-				
C.	Vertical sides of columns	S.M.	55		
D.	Sides and soffits of beams	S.M.	135		
	Reinforcement				
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 20 mm diameter bars.	KG	2720		
	FRAME			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 3				
	SUSPENDED SLABS				
	Vibrated reinforced concrete class 25 all as per the engineers approved trial mix in:-				
A.	200 mm thick suspended slab	S.M.	109		
	Fair Faced Finished formwork to:-				
B.	Soffits of slabs; strutting height of 3.2 m	S.M.	109		
C.	Edges of suspended slab (150-225 mm wide)	L.M.	85		
D.	Ditto but edges of perforated slab.	L.M.	144		
	High tensile ribbed steel reinforcement to B.S. 4461 including cutting, bending, overlaps, spacer blocks and tying stirrups				
E.	In assorted sizes 8 - 32 mm diameter bars.	KG	2660		
	SUSPENDED SLABS			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 4				
	EXTERNAL WALL FINISHES				
	Gauged plaster (1:4) :-				
A.	20 mm thick ditto to masonry and concrete surfaces.	S.M.	127		
B.	Extra over ditto for horizontal key pointing.	S.M.	296		
	Painting				
	Prepare and paint three coats exterior silicone paint to:				
C.	Rendered surfaces	S.M.	127		
	EXTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 5				
	INTERNAL WALL FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Masonry and concrete surfaces	S.M.	92		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler; apply undercoat and three coats first quality silk vinyl sheen anti-fungal emulsion paint as 'Basco Paints' or 'Crown Paints' or equal and approved to:-				
D.	Plastered surfaces.	S.M.	92		
	INTERNAL WALL FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 6				
	CEILING FINISHES				
	12 mm Thick gauged Plaster (1:2:9) to;				
A.	Soffits of suspended slabs.	S.M.	109		
	Painting				
	Prepare surface by sanding; apply skimming coat to smoothen surface using approved filler and apply one undercoat and three coats of first quality matt emulsion anti-fungal paint: to				
B.	To plastered concrete ceilings	m2	109		
	CEILING FINISHES			**KSHS.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 7				
	ROOF FINISHES				
	Cement and sand(1:4) screed				
A.	40 mm Thick screed laid to falls on the roof slab.	S.M.	525		
	Water proofing				
	Works to be executed by an approved specialist				
	Supply and apply 5mm thick APP modified bituminous membrane; from an approved manufacturer; one coat bituminous anti-dust primer, one layer APP membrane with mineral finish; torch bonded ; executed by specialist under 10 years guarantee:				
B.	Floors; horizontal; over 300 mm	S.M.	525		
C.	Ditto but to plastered parapet wall surfaces n.e 300 mm.	L.M.	110		
	Terrazzo finish				
E.	20 mm Thick homogenous mix terrazzo laid on screed backing; cement sand marble chippings (1:4:8) grinded and polished	S.M.	525		
	Skirting				
F.	300 mm High terrazzo skirting	L.M.	110		
	Dividing strips				
G.	Coloured plastic strip; 25 x 3 mm thick; set in bed in approved patterns to divide paving.	L.M.	1050		
	To collection			**Kshs.**	

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	Roof Finishes *(Cont'd)*				
	Rainwater Drainage				
A.	100 mm diameter fulbora roof outlet : with domical gratings	NO.	8		
B.	100 mm diameter x 200 mm long UPVC pipe sleeve ; casting into concrete slab	NO.	8		
C.	100 mm Diameter uPVC rain water down pipe with and including fixing to wall with holder bats at 900 mm centres.	L.M.	128		
D.	Bend : including socket adaptor from gutter outlet to downpipes; complete	NO.	8		
E.	Ditto for 100 x 150 mm outlet.	NO.	8		
F.	Extra over for shoe.	NO.	8		
	To collection below			**Kshs.**	
	COLLECTION				
	From page : RT/7				
	From above				
	ROOF FINISHES				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	ELEMENT NO. 8 **BUILDER'S WORK IN CONNECTION WITH SERVICES** **Builder's work incidental to sanitary fittings, ventilation, plumbing, drainage, reticulation, fire fighting, electrical,concealed fixings,structured cabling, security, public address installations etc**				
A.	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including all builder's work of making good all surfaces.	ITEM	1		
	BUILDER'S WORK IN CONNECTION WITH SERVICES				

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS. CTS
	SUMMARY				
	ROOF TERRACE				
	SUMMARY				
	BILL NO.7				
1	EXTERNAL WALLS				
2	FRAME				
3	SUSPENDED SLABS				
4	EXTERNAL WALL FINISHES.				
5	INTERNAL WALL FINISHES.				
6	CEILING FINISHES.				
7	ROOF FINISHES.				
8	BUILDER'S WORK IN CONNECTION WITH SERVICES				
	TOTAL CARRIED TO BILL SUMMARY			**KSHS.**	

ACCOMMODATION BUILDING SUMMARY

(APARTMENTS, CARETAKER'S HOUSE, GUEST HOUSE)

Note:

1. The rates and prices shall be inclusive of VAT at 16%

PROPOSED CONSTRUCTION OF ELDORET BRANCH FOR THE CENTRAL BANK OF KENYA(CBK)

ITEM	DESCRIPTION	PAGE NO.	AMOUNT FOR TENDERER'S USE	AMOUNT FOR CONSULTANTS' USE
	SUMMARY PAGE			
	Total Brought Forward from Page No.			
1.	GROUND FLOOR			
2.	FIRST FLOOR			
3.	SECOND FLOOR			
4.	THIRD FLOOR			
5.	FOURTH FLOOR			
6.	FIFTH FLOOR			
7.	ROOF SLAB			
	Carried to Grand Summary	**Ksh**		
	ACCOMMODATION BUILDING			

EXTERNAL WORKS

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO. 8				
	EXTERNAL WORKS				
	ELEMENT NO. 1				
	SITE PREPARATION (ALL PROVISIONAL)				
A	Clear the construction sites of all bushes, shrub, vegetation, weeds, undergrowth, hedges and the like including cutting down small trees between 0-300mm girth, grubbing up roots and removing from site as necessary	m2	40500		
	Cut down trees including grubbing roots and removing from site, as described				
B	Cut down trees between 300 - 600mm girth, grub up their roots and cart away arisings	No	20		
C	Ditto 600 - 900mm girth ditto	No	20		
D	Ditto 900 - 1200mm girth ditto	No	20		
E	Ditto 1200 - 1500mm girth ditto	No	20		
F	Ditto 1500 - 1800mm girth ditto	No	20		
	Existing permanent structures				
G	Carefully demolish existing dwelling unit block as directed by the project manager; Approximate plinth area of 200m2 x 2.8m high constructed of 200mm thick stone walling, reinforced concrete frame and timber roof structure with iron sheet roof covering, including removal of doors and windows ; hand over salvaged materials to employer and cart away debris material from site	No	8		
H	Carefully demolish existing gate house as directed by the project manager; Approximate plinth area of 25m2 x 2.8m high constructed of 200mm thick stone walling, reinforced concrete frame and slab, including removal of doors and windows ; hand over salvaged materials to employer and cart away debris material from site	No	1		
I	Carefully remove existing mild steel gate and pedestrian as directed by the project manager; Approximate length of 6m x 2.4m high constructed for the main gate and 1.5m length x 2.4m high for the pedestrian gate; hand over salvaged materials to employer and cart away debris material from site	No	1		
	Carried Forward to Summary				
	EXTERNAL WORKS ELEMENT NO.1 SITE PREPARATION				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 2				
	DRIVEWAY AND PARKING				
	EXCAVATION AND EARTHWORK				
A	Excavate to reduce levels starting from existing ground level: over 300mm deep	m3	4420		
	Disposal				
B	Load and cart away surplus excavated material as necessary	m3	4420		
	Surface treatment				
C	Grade and compact to falls, cross falls, and slopes, bottom of excavations or filling : compact to 95% M.D.D (Standard compaction)	m2	8840		
	Approved filling to make up levels				
D	Use selected excavated material to make up levels under roads and compacted in layers not exceeding 200mm to 105% MDD	m3	2185		
E	Imported murram or other equal and approved material : compacted in layers of not exceeding 200mm to 105% MDD	m3	4370		
F	300mm thick stone base course hand packed and graded to falls, cross falls and slopes : levelling and compact by rolling	m2	8740		
G	50 mm thick approved quarry dust blinding on surfaces of hardcore	m2	8740		
	Herbicide				
H	Prepare and apply persistent herbicide as HYVARX 80WP or equal and approved;provide 10 year guarantee	m2	8740		
	Concrete block paving				
I	80 mm thick polished cabro stone concrete pavers: load bearing capacity 45 N/mm2: in approved patterns as directed: Laid by specialists: to falls and cross falls on 50mm thick quarry sand bed (m/s) : to Engineer's approval	m2	8740		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.2 DRIVE WAY AND PARKING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Kerbs and channels				
	Precast concrete class 25/12 mm including all necessary formwork, finishing fair on all exposed surfaces and jointing and pointing in cement and sand (1:3) mortar:-				
A	Provide and lay combined kerb and channel; comprising of 250 x 125mm splayed kerb, 125 x 100mm flush channel block, laid on and including 450 x 350mm concrete (1:3:6) bed and haunch and any necessary formwork	m	1670		
B	Ditto but curved to various radii	m	200		
C	100 x 125mm flush channel block laid on and including 325 x 100mm concrete (1:3:6) bed	m	200		
	Road Marking				
D	Prepare and apply one undercoat three coats of first grade long lasting reflective road marking paint black and white colour in kerbs-620mm girth	m	1870		
E	Prepare and apply one undercoat three coats of first grade long lasting reflective road marking paint, yellow in colour on road surfaces-150mm girth	m	300		
	Bollards				
F	Supply and fix 150mm x 4mm thick dia GI bollards; 1.6m length; with and including excavation, loadcart away	No	20		
	Vibrated Reinforced mass concrete class 25/20mm in:-				
G	To GI pipes	m3	2		
	Prepare, touch up primer and apply zinc chromate primer and two coats of gloss oil paint finish				
H	General surface of steel	m2	16		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.2 DRIVE WAY AND PARKING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.2				
	DRIVEWAY AND PARKING				
	COLLECTION		*Page No*		*Amount* **Ksh**
	Total Brought Forward from Page No.		2		
			3		
	Carried Forward to Summary				
	EXTERNAL WORKS ELEMENT NO.2 DRIVE WAY AND PARKING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 3				
	FOOTPATHS				
	EXCAVATION AND EARTHWORK				
A	Excavate to reduce levels starting from existing ground level: over 300mm deep	m3	500		
	Disposal				
B	Load and cart away surplus excavated material as necessary	m3	500		
	Surface treatment				
C	Grade and compact to falls, cross falls, and slopes, bottom of excavations or filling : compact to 95% M.D.D (Standard compaction)	m2	500		
	Approved filling to make up levels				
D	Use selected excavated material to make up levels under roads and compacted in layers not exceeding 200mm	m3	500		
E	Imported murram or other equal and approved material : compacted in layers of not exceeding 200mm to 105% MDD	m3	500		
F	200mm thick stone base course hand packed and graded to falls, cross falls and slopes : levelling and compact by rolling	m2	500		
G	50 mm thick approved quarry dust blinding on surfaces of hardcore	m2	500		
	HERBICIDE				
H	Prepare and apply persistent herbicide as HYVARX 80WP or equal and approved; provide 10 years guarantee	m2	500		
	Concrete block paving				
I	60 mm thick Cabro stone concrete pavers: load bearing capacity 35 N/mm2: in approved patterns as directed: Laid by specialists: to falls and cross falls on 50mm thick quarry sand bed (m/s) : to Engineer's approval	m2	500		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.3 FOOTPATHS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Kerbs and channels				
	Precast concrete class 25/12 mm including all necessary formwork, finishing fair on all exposed surfaces and jointing and pointing in cement and sand (1:3) mortar:-				
A	Provide and lay combined kerb and channel; comprising of 250 x 125mm splayed kerb, 125 x 100mm flush channel block, laid on and including 450 x 350mm concrete (1:3:6) bed and haunch and any necessary formwork	m	433		
B	Ditto but curved to various radii	m	50		
C	100 x 125mm flush channel block laid on and including 325 x 100mm concrete (1:3:6) bed	m	100		
	Kerbs Marking				
D	Prepare and apply one undercoat three coats of first grade long lasting reflective road marking paint black and white colour in kerbs-620mm girth	m	433		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.3 FOOTPATHS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3				
	FOOTPATHS				
	COLLECTION		*Page No*		*Amount Ksh*
	Total Brought Forward from Page No.		5		
			6		
	Carried Forward to Summary				
	EXTERNAL WORKS ELEMENT NO.3 FOOTPATHS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 4				
	FOUL WATER DRAINAGE				
	(ALL PROVISIONAL)				
	Excavate the following trenches : backfill after laying and compact selected excavated material : remove surplus spoil from site : grade and compact bottoms : planking and strutting : including excavation in compacted fill :				
A	For 150mm diameter pipe depth not exceeding 1.5m deep	m	700		
	Plain in situ concrete : class 15 : as per Engineer's detail				
B	150mm bed and surround to150mm diameter pipe : including all necessary formwork	m	700		
	Supply and fix UPVC soil and waste system with fittings fixed to manufacturer's printed instructions manufactured by 'Key Terrain' as described : allow for pipe work, bends, branches, sweep tees and any other fittings necessary for connection or termination of drainage pipe work to new invert chamber or septic tank				
C	150mm Diameter pipe	m	700		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.4 FOUL DRAINAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	MANHOLES				
	Rectangular manhole as per Engineer's details : consisting of 150mm class 25/20 concrete bed : 50mm class 10 concrete blinding : 250mm (average) benching : 150mm thick masonry, blockwork : 150mm thick class 15/20 concrete surround to pipes extending 200mm from external face of the wall : 125mm class 25 concrete haunching to manhole cover frame reinforced with 16mm diameter tensile bars at 80mm centres bothways : 12mm thick render (1:3) to sides of walls and to benching : step irons build into wall at 300mm centres : reinforcement : channels and bends : excavation and disposal from site : formwork (cover and frame measured separately)				
A	600 x 450mm Internal dimensions x 1500mm deep to invert level	No	59		
	Manhole covers				
B	600 x 450mm A50 polysynthetyic manhole cover and frame from "Kenbro Industries Ltd" double seal recessed inspection cover and frame ; bedding frame in cement and sand (1:3) mortar : cover set in grease : with two coats black bituminous paint before setting in position	No	59		
	Gulley Traps				
	Gulley trap chamber as per Engineer details : consisting of ; 150mm class 20 reinforced concrete bed and cover slab :150mm thick masonry wall 150mm (average) benching :50mm class 7 concrete blinding : 150mm masonry walls ; 20mm thick (1:3) cement and sand render to sides of walls and benching : 50mm thick precast concrete cover reinforced with BRC A66 : including all necessary formwork, excavation, backfilling and disposal				
C	450 x 450mm internally ; 500mm deep	No	10		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.4 FOUL DRAINAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	FOUL WATER DRAINAGE				
	COLLECTION		*Page No*		*Amount* **Ksh**
	Total Brought Forward from Page No.		8		
			9		
	Carried Forward to Summary				
	EXTERNAL WORKS ELEMENT NO.4 FOUL DRAINAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	STORM WATER DRAINAGE				
	(ALL PROVISIONAL)				
	EXCAVATION				
	Excavate the following trenches : backfill after laying and compact selected excavated material : remove surplus spoil from site : grade and compact bottoms : planking and strutting : including excavation in compacted fill :				
A	For 700mm wide IBD drain: depth not exceeding 1500mm deep: 1000mm (average) deep	m	1300		
B	For 600mm open 'U' drain: depth not exceeding 1500mm deep: 1000mm (average) deep	m	200		
C	For precast concrete culvert 900mm diameter, depth not exceeding 1500mm; 1000(average) deep	m	100		
	Precast Concrete Invert Block Drains Class 20/20				
D	Provide 300mm diameter x 225mm deep precast concrete invert block drain : jointed and pointed in cement and sand 1:3 mortar ; on and including 100mm thick murram base ;	m	1300		
E	600 x 225 x 75mm thick side slabs : jointed and pointed in cement and sand 1:3 mortar : on and including compacted murram : as per Engineer's details	m2	3120		
	Open 'U' drainage				
F	400mm wide(internal) open "U" drainage in rectangular fair faced insitu vibrated reinforced concrete class 25/20;comprising of 400mm high(internal) x 150 mm thick reinforced concrete walling in T10 at 200mm c/c, 150 mm thick bottom slab reinforced in T10 at 200mm c/c; ,50mm concrete class 15/20 blinding on 100mm hardcore filling; including all necessary strutting,reinforcement, formwork,waterproofing plaster to all internal surfaces and exposed exposed external surfaces all as per Eng details.	m	200		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.5 STORM WATER DRAINAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Mild steel grating				
A	supply and fix 400mm wide mild steel channel grating : comprising 40 x 40 x 6mm edge frame : infilled with 40 x 6mm flats at 50mm centres : 40 x 40 x 6mm frame set in concrete with 150mm long mild steel end split lugs : smooth weld joints; with and including zinc chromate primer and two coats gloss paint finish :	m	100		
	Precast cover slab				
	Precast concrete units; grade 25/20mm; vibrated; reinforced with T10 AT 200mm c/c;				
B	Supply and fix slotted concrete drain cover slabs size 600 x 600 x 100mm thick	m	100		
	Precast Concrete pipes to BS 556 (part 2) in the running length ; standard BS 556 cement and sand mortar (1:3) joints				
C	900 mm diameter culverts	m	100		
	Plain in situ concrete : class 15 : as per Engineer's detail				
D	900mm dia bed and surround to 900mm dia culvert : including all necessary formwork	m	100		
	Culvert Headwall				
E	Headwall comprising of 6000mm long x 2000mm high x 350mm thick insitu vibrated reinforced concrete class 25/20 on and inlcuding concrete class 25/20 base size 3700 x 950 x 400mm thick on 50mm concrete class 15/20 blinding;with 100mm thick quarry dust blinding on 150mm hardcore filling; including all necessary excavations,strutting, formwork, reinforcements; all as per Eng details.	No	20		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.5 STORM WATER DRAINAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.5				
	STORM WATER DRAINAGE				
	COLLECTION		*Page No*		*Amount* **Ksh**
	Total Brought Forward from Page No.		11		
			12		
	Carried Forward to Summary				
	EXTERNAL WORKS ELEMENT NO.5 STORM WATER DRAINAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	LANDSCAPING				
	(ALL PROVISIONAL)				
	GARDEN WORKS				
	Excavations				
A	Clear the site of all unwanted wastes including existing unwanted palnt materials, grubbing up their roots and excavate oversite commencing from ground level to an average 150 mm deep to remove all turf, weed and any deleterious materials; including carting away arising wastes, raking and fine levelling of the ground.	m3	2670		
	Imported soil				
B	Imported top soil, wheeling, depositing, spreading, scarifying, compacting, trimming, grading to levels, falls, or contour surfaces of deposited topsoil and existing subsoil under, ready to receive plants (m.s)	m3	2670		
C	Supply selective broad leaf herbicide as badge or equally approved and apply to manufacturers specification (To all existing lawn areas).	Item	1		
	Manure				
D	Supply of manure, spreading it in all the areas to be landscaped, and mix thoroughly ready for planting of grass and groundcovers incuding shrubs and flowering plants.	m3	500		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.6 LANDSCAPING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	TREES *Planting includes maintaining, watering, weeding and replacing dead ones upto the end of defect liability period.* Supply (at least 800mm in height), store in approved condition, plant and maintain the following trees including forming pit size 1000x1000x1000mm deep removing all excavated materials and backfilling with cow manure and top soil (1:2) compacted in 300mm layers and providing 1 No. 10mm diameter support poles with 2 No. rubber tie bands as described in:-				
A	Royal Palms	No	39		
B	Canary Date Palm	No	5		
C	Thika Palm	No	60		
D	Nandi flame	No	2		
E	Yellow Jacaranda	No	10		
F	Jacaranda	No	5		
G	Umbrella tree	No	18		
H	Ashoka Tree	No	10		
I	Italian cypress	No	12		
J	Madagascar almond tree	No	8		
K	Golden palm tree	No	5		
K	Araucaria tree	No	4		
L	Weeping fig tree	No	8		
M	Greenheart tree	No	5		
N	Lemon bottlebrush	No	13		
L	Heliconia	No	7		
M	Giant bird of paradise	No	4		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.6 LANDSCAPING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SHRUBS *Planting includes maintaining, watering, weeding and replacing dead ones upto the end of defect liability period.* Supply, store in approved condition, plant and maintain the following shrubs including forming pit size 800x800x1000mm deep removing all excavated materials and backfilling with cow manure and top soil (1:2) compacted in 300mm layers and providing 10mm diameter support poles with 2 No. rubber tie bands, cedar posts, barbed wire and nailes as described in:-				
A	*Hibiscus Yellow*	No	50		
B	*Hibiscus Pink*	No	50		
C	*Crown of Thorns*	No	40		
D	*Blue plumbago*	No	40		
E	*Agapanthus white*	No	50		
F	*Lavender*	No	60		
G	*Fountain grass*	No	60		
H	*Eugenia*	No	60		
J	*Agave angustifolia*	No	60		
K	*Coleus*	No	40		
L	*Russelia*	No	50		
M	*Hemerocallis*	No	50		
N	*Ctenanthe*	No	40		
O	*Split-leaf philodendron*	No	40		
P	*French Marigold*	No	50		
Q	*Bird of paradise*	No	60		
R	*Canna lily*	No	60		
S	*Sword Fern*	No	60		
T	*Garden balsam*	No	60		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.6 LANDSCAPING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	*Star Jasmine*	No	40		
B	*Diamond frost*	No	50		
C	*Agapanthus purple*	No	50		
D	*Cuphea*	No	40		
	LAWN				
	Planting includes maintaining, watering, weeding and replacing dead ones upto the end of defect liability period.				
	Dig the soil to a depth of 300mm, removing all roots and weeds and mixing 100mm top soil layer with cow manure (1:2) to a fine tilth; rake to adepth of 50mm to receive:-				
E	Planting paspalum grass	m2	5199		
	GROUND COVER				
	Planting includes maintaining, watering, weeding and replacing dead ones upto the end of defect liability period.				
	Dig the soil to a depth of 200mm, removing all roots and weeds and mixing 100mm top soil layer with cow manure (1:2) to a fine tilth; spread seeds and rake to adepth of 50mm to receive:-				
	Ground covers:				
F	*Ophipogon japonicus*	No	50		
G	*Persian Shield*	No	50		
H	*Carex*	No	50		
I	*Geraniums*	No	50		
J	*Baby sun rose*	No	50		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.6 LANDSCAPING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	LANDSCAPE MAINTENANCE				
A	Provide landscape maintenance service to the landscaped garden for twelve (12) months upon practical completion in order to monitor plants growth; Maintenance works for plants and grass shall include; watering,weeding, spraying against pests and diseases, and mowing grass to acceptable height as outlined in the Landscape Specification document.	Months	12		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.6 LANDSCAPING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.6				
	LANDSCAPING				
	COLLECTION		*Page No*		*Amount* **Ksh**
	Total Brought Forward from Page No.		14		
			15		
			16		
			17		
			18		
	Carried Forward to Summary				
	EXTERNAL WORKS ELEMENT NO.6 LANDSCAPING				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 7				
	BOUNDARY WALL				
	EXCAVATION AND EARTHWORK				
	BULK EXCAVATION				
A	Mass excavation to reduce levels not exceeding 1.50m deep starting from existing ground level	m3	77		
B	Excavation for foundation trenches between 0.00-1.50m deep starting from reduced level	m3	576		
C	Excavation pit for bases between 0.00-1.50m deep starting from reduced level	m3	51		
D	Extra over excavation for excavating in any class of rock in any position	m3	10		
	PLUNKING AND STRUTTING				
E	Allow for maintaining and supporting sides of excavations and for keeping free from fallen materials.	Item	1		
	DISPOSAL OF WATER				
F	Allow for keeping the whole of excavations free from all ground and running water by pumping	Item	1		
	DISPOSAL AND BACKFILLING				
G	Returning, filling and ramming within foundations after construction of foundation walls	m3	408		
H	Load and cart away surplus excavated material as necessary; including double and multi - handling where required	m3	306		
	CONCRETE WORK				
	Plain concrete class 15/20 as described in:				
I	50mm Thick blinding to receive strip foundation	m2	384		
J	Ditto: Column bases	m2	34		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.7 BOUNDARY WALL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Vibrated Reinforced concrete class 25/20mm in:-				
A	Foundations strips	m3	77		
B	Column bases	m3	14		
C	Columns	m3	2		
	REINFORCEMENT				
	Supply and fix steel bar reinforcement including bending, hooking, tying wire, cutting and spacers blocks all in position				
	High tensile deformed steel bars to BS 4449: 2005 as described in:-				
E	Assorted sizes; T8mm-T25mm	kg	5265		
	WROT FORMWORK AS DESCRIBED TO:-				
F	Sides of strip foundations	m2	256		
G	Sides of column bases	m2	36		
H	Ditto: Rectangular columns	m2	23		
	FOUNDATION WALLING				
	Selected and approved natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
I	200mm thick wall	m2	960		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.7 BOUNDARY WALL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	REINFORCED CONCRETE SUPERSTRUCTURE				
	Vibrated reinforced concrete class 25/20mm, as described, in:-				
A	Columns	m3	2		
	REINFORCEMENT				
	Supply and fix steel bar reinforcement including High tensile deformed steel bars to BS 4449: 2005 as described in:-				
B	Assorted sizes; T8mm-T25mm	kg	400		
	WROT FORMWORK AS DESCRIBED TO:-				
C	Sides of rectangular columns	m2	36		
	MASONRY WALLING				
	EXTERNAL WALLING				
	Selected and approved Machine cut natural Stone walling or concrete blocks : load bearing capacity 7.0 N/mm2 reinforced with hoop iron strips laid horizontally every alternate course: bedded and jointed in matching colour cement and sand (1:3) mortar				
D	200mm Thick external wall	m2	320		
	Hessian based bituminous felt damp proofing course laid on cement and sand (1:4) mortar				
E	200mm wide	m	640		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.7 BOUNDARY WALL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	WALL FINISHES				
	20mm thick cement and sand (1:4) plaster : wood float finished : to :				
A	To plastered surfaces of walls and columns(m.s)	m2	676		
	SHS FENCING GRILLES				
	Supply and fix mild steel grille comprising of 50 x 50 x 2mm SHS main members running vertically at 400mm c/c fixed to masonary wall(m/s), welded to 25 x 25 x 2mm SHS members running horizontally at 400mm c/c; including touch up primer and one coat of zinc chromate primer and two coats of gloss oil paint finish				
B	To decorative grilles	m2	526		
	Vehicular Gate				
C	Top hang double leaf door overall size 6000 x 2100mm high; each leaf measuring 3000 x 5500 high; 50 x 50 x 3mm RHS stiles and rails at 600mm centres welded over with 2mm thick mild steel plate both sides: 4No. 75 x 75 x 6mm lock plate welded to steel columns and drilled with 6mm diameter hole padlock; 12000mm long top rail/channel and 12000mm long bottom guiding rail/channel set in concrete slab including metal lugs; approved rollers; complete with all necessary ironmongery;apply zinc chromate primer and two coats of gloss oil paint finish; to architect's detail	No	12		
	Pedestrian Gate				
D	1200 x 2100mm high pedestrian gate in 50x 50 x 3mm framing and 25 x 25 x 3mm internals at 75mm centres;apply zinc chromate primer and two coats of gloss oil paint finish; to architect's detail	No	12		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.7 BOUNDARY WALL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CHAIN LINK FENCE				
A	Supply and fix 2400mm high 12 gauge chain-link fence complete with and including 12.5 gauge x 6 stranded galvanized barbed wire fencing with and including 100mmx125mmx2400mm high cranked reinforced concrete posts class 25/20 at 3000mm c/c; including all excavations,formwork, reinforcement,concrete,cart away etc	m	172		
	Carried to Collection				
	EXTERNAL WORKS ELEMENT NO.7 BOUNDARY WALL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.7				
	BOUNDARY WALL				
	COLLECTION		*Page No*		*Amount* **Ksh**
	Total Brought Forward from Page No.		20		
			21		
			22		
			23		
			24		
	Carried Forward to Summary				
	EXTERNAL WORKS ELEMENT NO.7 BOUNDARY WALL				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 8				
	EXTERNAL SIGNAGE				
	Parking signages				
A	Fabrication made of MS structure inside ;3mm ACP on top and automative PU paint 3M retro cut vinyl Type IX to pasted on front lit with LED modules size 1200 x 350mm high	No	2		
B	Signage made with 3mm ACP pasted with 3M plotted cut vinyl reflective 1800 x 300mm high	No	10		
C	Ditto 600 x 600mm high	No	10		
D	Ditto 1000 x 600mm high	No	10		
E	Ditto 350 x 350mm high-parking signages	No	200		
	Caution signages				
F	Plotter cut 3m reflective vinyl pasted on and including 3M thick ACM panel size 500 X 800mm high	No	5		
G	Ditto 200 x 250mm high	No	5		
H	600mm dia	No	5		
	Fire Exit Signages				
I	300 x 150 mm 'FIRE EXIT' hanging illuminated signage	No	5		
	Fire Action Sign				
J	Plotter cut 3M reflective vinyl UV printed pasted on and including 3mm ACP panel A3 size	No	5		
	Fire Assembly point with pole				
K	Signage in 3mm router cut ACP and print vinyl pasted on and including ACP sheet site mounted on and including 50mm CHS painted pole height 1800mm	No	10		
	Carried Forward to Summary				
	EXTERNAL WORKS ELEMENT NO.8 EXTERNAL SIGNAGE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 9				
	SERVICE DUCTS				
	Excavate the following trenches : backfill after laying and compact selected excavated material : remove surplus spoil from site : grade and compact bottoms : planking and strutting : including excavation in compacted fill :				
A	For 150mm diameter pipe depth not exceeding 1.5m deep	m	250		
	CONCRETE WORK				
	Plain concrete class 15/20 as described in:				
B	To surround	m3	63		
	MANHOLES				
	Rectangular manhole as per Engineer's details : consisting of 150mm class 25/20 concrete bed : 50mm class 10 concrete blinding : 250mm (average) benching : 150mm thick masonry, blockwork : 150mm thick class 15/20 concrete surround to pipes extending 200mm from external face of the wall : 125mm class 25 concrete haunching to manhole cover frame reinforced with 16mm diameter tensile bars at 80mm centres bothways : 12mm thick render (1:3) to sides of walls and to benching : step irons build into wall at 300mm centres : reinforcement : channels and bends : excavation and disposal from site : formwork (cover and frame measured separately)				
C	600 x 450mm Internal dimensions x 1500mm deep to invert level	No	21		
	Manhole covers				
D	600 x 450mm A50 polysynthetyic manhole cover and frame from "Kenbro Industries Ltd" double seal recessed inspection cover and frame ; bedding frame in cement and sand (1:3) mortar : cover set in grease : with two coats black bituminous paint before setting in position	No	21		
	Carried Forward to Summary				
	EXTERNAL WORKS ELEMENT NO.9 SERVICE DUCTS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SUMMARY				
	BILL NO. 8				
	EXTERNAL WORKS		***Page No***		***Amount*** **Kshs**
1	SITE CLEARANCE		1		
2	DRIVEWAY AND PARKING		4		
3	FOOTPATHS		7		
4	FOUL WATER DRAINAGE		10		
5	STORM WATER DRAINAGE		13		
6	LANDSCAPING		19		
7	BOUNDARY WALL		25		
8	EXTERNAL SIGNAGE		26		
9	SERVICE DUCTS		27		
	Carried to General Summary				

PROVISIONAL SUMS

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO. 9				
	PROVISIONAL SUMS/PROFIT AND ATTENDANCE				
	PROVISIONAL SUMS				
	The contractor shall include in his tender the following to be deducted in whole or in part as directed by the Project Manager				
	The following provisional items are to be measured on completion of the works and priced in accordance with rates contained in these Bills of Quantities or pro-rata thereto or deducted in whole if not required.				
	Contingencies				
A	Allow a Provisional Sum of Kenya Shillings Forty Five Million (45,000,000.00) only for **Contingencies**	Sum	1		45,000,000.00
	Fluctuations				
B	Allow a Provisional Sum of Kenya Shillings Thirty Million (30,000,000.00) only for **Fluctuations**	Sum	1		30,000,000.00
	GATE HOUSES AND CIT LOUNGE				
C	Allow a Provisional Sum of Kenya Shillings Fifteen Million (15,000,000.00) only for **Gate Houses and CIT lounge**	Sum	1		15,000,000.00
	POLICE STATION				
D	Allow a Provisional Sum of Kenya Shillings Twelve Million (12,000,000.00) only for Police Station	Sum	1		12,000,000.00
	SERVICE BUILDING				
E	Allow a Provisional Sum of Kenya Shillings Ten Million (10,000,000.00) only for Service Building	Sum	1		10,000,000.00
	Carried to Collection				**112,000,000.00**
	PROVISIONAL SUMS/PROFIT AND ATTENDANCE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	PROFIT AND ATTENDANCE *Contractor to ONLY quote for Profit and Attendance not the PC SUM*				
	LIFT INSTALLATIONS(PC SUM OF Ksh 12,000,000)				
A	Allow for Profit for main contractor	%			
B	Allow for general attendance and special attendance	ITEM	1		
	BOREHOLE INSTALLATIONS (PC SUM OF Ksh 16,000,000)				
C	Allow for Profit for main contractor	%			
D	Allow for general attendance and special attendance	ITEM	1		
	SOLAR PV INSTALLATIONS (PC SUM OF Ksh 21,000,000)				
E	Allow for Profit for main contractor	%			
F	Allow for general attendance and special attendance	ITEM	1		
	KITCHEN AND LPG INSTALLATIONS (PC SUM OF Ksh 50,000,000)				
G	Allow for Profit for main contractor	%			
H	Allow for general attendance and special attendance	ITEM	1		
	EXTERNAL FIRE HYDRANT INSTALLATIONS (PC SUM OF Ksh 11,000,000)				
I	Allow for Profit for main contractor	%			
J	Allow for general attendance and special attendance	ITEM	1		
	IRRIGATION SYSTEN INSTALLATIONS (PC SUM OF Ksh 7,000,000)				
K	Allow for Profit for main contractor	%			
L	Allow for general attendance and special attendance	ITEM	1		
	Carried to Collection				
	PROVISIONAL SUMS/PROFIT AND ATTENDANCE				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	PROVISIONAL SUMS/PROFIT AND ATTENDANCE				
	COLLECTION		*Page No*		*Amount* **Ksh**
	Total Brought Forward from Page No.		1		112,000,000.00
			2		
	Carried to General Summary			**KSHS**	

DAY WORKS AND SHEDULE OF RATES

Note:

1. The rates and prices shall be inclusive of VAT at 16%

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	BILL NO. 10 **DAYWORKS AND SCHEDULE OF RATES** **The rates for dayworks where appropriate shall be used to price variations for any items similar to those listed in the dayworks schedule even where the dayworks are not ordered (i.e shall serve as a schedule of rates)** **ELEMENT NO. 1** **PLANT** *Rate to include all operational costs , maintenance, fuel, idle time, travelling, overtime, profits and overheads. Payment will be made for time employed upon the works only. Where unrealistically high rates are used, the Project Quantity Surveyor will have the discretion to make any suitable adjustments to reflect the going market rates. All items must be priced.*				
A	D4 tractor with P.C.U	Hrs	1		
B	Ditto dozer attachment	Hrs	1		
C	Motor grader Cat. 14 or equivalent complete with scarifier	Hrs	1		
D	Vibrating roller	Hrs	20		
E	8-10 ton pneumatic self propelled roller	Hrs	20		
F	Small hand propelled vibrating roller	Hrs	20		
G	Whacker hand compactor or equivalent	Hrs	1		
	Carried to Collection			**KSHS**	
	DAY WORKS AND SCHEDULE OF RATES ELEMENT NO.1 PLANT				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	PLANT (cont'd)				
A	Tractor excavator (2m3) with loader attachments	Hrs	20		
B	3 ton tipper lorry	Hrs	1		
C	5 ton ditto	Hrs	1		
D	7 ton ditto	Hrs	20		
E	9 ton ditto	Hrs	20		
F	Half ton delivery van	Hrs	1		
G	Compressor (250cfm)	Hrs	1		
H	2" water pump with motor	Hrs	1		
J	3" ditto	Hrs	1		
K	Concrete mixer 14/10	Hrs	1		
L	Concrete mixer 10/7	Hrs	1		
M	Concrete vibrator (poker type)	Hrs	1		
N	Mechanical excavator 22 cu ft bucket	Hrs	1		
P	Self propelled 2000 gallons water tank complete with pump	Hrs	1		
Q	1000 gallons Pressure bitumen distributor	Hrs	1		
	Carried to Collection			**KSHS**	
	DAY WORKS AND SCHEDULE OF RATES ELEMENT NO.1 PLANT				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.1				
	PLANT				
	COLLECTION		*Page No*		*Amount* **Ksh**
	Total Brought Forward from Page No.		1		
			2		
	Carried Forward to Summary			**KSHS**	
	DAY WORKS AND SCHEDULE OF RATES ELEMENT NO.1 PLANT				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO. 2				
	LABOUR				
	Rate to include all accommodation, transport, insurances travelling time, small tools of trade, overtime, profits and overheads. Payment will be made for time employed upon the works only. All items must be priced.				
A	Watchman (including lights, days, night, Sunday or Public holiday watching)	Hrs	1		
B	Unskilled labour	Hrs	1		
C	Skilled labour	Hrs	1		
D	Mason	Hrs	1		
E	Carpenter	Hrs	1		
F	Concretor	Hrs	1		
G	Blaster (certified)	Hrs	1		
H	Joiner	Hrs	1		
I	Pipe layer	Hrs	1		
J	Painter	Hrs	1		
	Carried Forward to Summary			**KSHS**	

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.3				
	MATERIALS				
	All materials must comply with the specifications. Rates to include delivery to site, handling, storage, profits and overheads				
A	Coarse aggregate	m3	1		
B	Fine aggregate	m3	1		
C	Murram	m3	1		
D	Hardcore	m3	1		
E	Quarry chips	m3	1		
F	Building sand	tonne	1		
G	Cement 32.5	tonne	1		
H	9" Foundation stone	feet	1		
I	9" machine cut stone	Pcs	1		
J	6" machine cut stone	Pcs	1		
K	4" machine cut stone	Pcs	1		
	Carried Forward to Summary			**KSHS**	
	DAY WORKS AND SCHEDULE OF RATES ELEMENT NO.3 MATERIALS				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	SCHEDULE OF RATES				
	Rate to include all operational costs , maintenance, fuel, idle time, travelling, overtime, profits and overheads. Payment will be made for time employed upon the works only. Where unrealistically high rates are used, the Project Quantity Surveyor will have the discretion to make any suitable adjustments to reflect the going market rates. All items must be priced.				
A	150 x 50mm cypress roof timber	m	1		
B	100 x 50mm ditto	m	1		
C	75 x 50mm ditto	m	1		
D	50mm Thick Gypsum partition	m2	1		
E	Venetian window blinds	m2	1		
F	20mm thick blockboard	m2	1		
G	20mm laminated MDF	m2	1		
H	18mm laminated MDF Board	m2	1		
I	Ditto mahogany veneered on one side	m2	1		
J	Ditto mahogany veneered on both sides	m2	1		
K	6mm plywood	m2	1		
L	1.6mm Formica sheeting	m2	1		
M	450mm girth 24 gauge mild steel gutter	m	1		
N	250x3mm thick mild steel fascia welded rafters	m	1		
	Carried to collection			**KSHS**	
	DAY WORKS AND SCHEDULE OF RATES ELEMENT NO.4 SCHEDULE OF RATES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
A	300 x 600 x 10mm marble wall tiles	m2	1		
B	Brick facing	m2	1		
C	PVC floor tiles	m2	1		
D	12mm Thick "celotex" softboard ceiling	m2	1		
E	5mm Thick obscured glass	m2	1		
F	6mm Thick obscured glass	m2	1		
G	6mm Thick georgian wired glass	m2	1		
H	10mm Thick laminated glass	m2	1		
I	2mm Thick synthetic vinyl (padding)	m2	1		
J	Decra roofing tiles	m2	1		
K	Gauge 26 versatile roofing sheets	m2	1		
L	Concrete roofing tiles	m2	1		
M	Clay roofing tiles	m2	1		
N	Transluscent roofing sheets	m2	1		
O	Double layer polycarbonate roofing sheet	m2	1		
P	2mm thick marmoran finish-with resinin	m2	1		
Q	Class 20/20 reinforced conccrete	m3	1		
R	Class 35/20 reinforced conccrete	m3	1		
	Carried to collection			**KSHS**	
	DAY WORKS AND SCHEDULE OF RATES ELEMENT NO.4 SCHEDULE OF RATES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	ELEMENT NO.4				
	SCHEDULE OF RATES				
	COLLECTION		*Page No*		*Amount* **Ksh**
	Total Brought Forward from Page No.		6		
			7		
	Carried Forward to Summary			**KSHS**	
	DAY WORKS AND SCHEDULE OF RATES ELEMENT NO.4 SCHEDULE OF RATES				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SUMMARY				
	BILL NO. 11				
	DAYWORKS AND SCHEDULE OF RATES		***Page No***		**Amount *Kshs***
1	PLANT		3		
2	LABOUR		4		
3	MATERIAL		5		
4	SCHEDULE OF RATES		8		
	Carried to General Summary			**KSHS**	

ELECTRICAL WORKS

Note:

1. The rates and prices shall be inclusive of VAT at 16%

PROPOSED CONSTRUCTION OF ELDORET BRANCH FOR THE CENTAL BANK OF KENYA IN ELDORET, UASIN GISHU COUNTY

SPECIFICATIONS FOR ELECTRICAL SERVICES INSTALLATIONS

PART A 7

ELECTRICAL ENGINEERING SERVICES 7

GENERAL SPECIFICATION 7

1.0 SECTION 1 - GENERAL 8

1. General 8

1.1. Regulation and Standards 8

1.2. Quality of Materials and Manufacturing Standards 8

1.3. Installation Requirements - General and Liaison 9

1.4. Installation and Commissioning 9

1.5. Labelling 9

SECTION 2 H.V. SWITCHGEAR 10

2.0 H.V. SWITCHGEAR 10

2.0.1. General 10

2.0.2. Supply System 10

2.0.3. Type of Switchgear 10

2.0.4. Bus-Bars 10

2.0.5. Extensibility 11

2.0.6. Cable Boxes 11

2.0.7. Special Tropical Finish 11

2.0.8. Labels 11

2.0.9. Relays 12

2.1 Instrument Panels 12

2.2 Test Link Blocks 12

2.3 Small Wiring 12

2.4 Current Transformers 13

2.5 Voltage Transformers 13

2.6 Drawings for Approval 13

2.7 Miscellaneous 14

2.8 D.C. Tripping Equipment 14

SECTION 3- POWER TRANSFORMERS 15

3.1 General 15

3.01 Dry-Type Transformers 15

3.02 Transformer Tests and Inspections 15

3.03 Transformer Tests on Site 16

SECTION - 4 17

L.V. SWITCHBOARD AND GEAR 17

4.01 General 17

4.02 Switchboard Cubicle Construction 17

4.03 Bus-bars 18

4.04 Circuit Breakers 19

4.05 Oil Switches 21

4.06 Air Break Switches 21

4.07 Fuse Switches 21

4.08 Earth Bars 22

4.09 Neutral Bars 22

4.10 Phase Failure Relays 23

4.11 Air Break Switches *23*
4.12 Switch Fuses *23*
4.13 Cabling *24*
4.14 Distribution Boards *24*
4.15 Labelling of Switchgear and Distribution Boards *25*
4.16 Drawings for Approval *25*
SECTION 5 ..... *27*
POWER CABLES *27*
5.01 Paper Insulated Cables *27*
5.02 Jointing *27*
5.03 PVC Insulated and Sheathed Single Wire Armoured or Unarmoured Cables with Stranded Copper Conductors *28*
5.04 PVC Insulated and Sheathed Aluminium Strip Armoured or unarmoured Cables with Solid Aluminiun Conductors *28*
5.05 Gland for PVC Insulated Armored and PVC Sheathed Cables *29*
5.06 Installation *29*
5.07 Cable Supports *30*
5.08 Cable Identification Discs *31*
5.09 Cable Ducts *31*
5.10 Terminal Sealing Boxes *32*
5.11 Trenching *32*
5.12 Testing *33*
5.13 Cable Length, Types and Sizes *33*
5.14 Mineral Insulated Copper Sheathed Cables *33*
SECTION 6 ..... *36*
APPROVED WIRING SYSTEMS *36*
6.01 System A - Cables enclosed in Concealed Steel Screwed Conduit or Trunking *36*
6.02 System B - Cables enclosed in Steel Screwed Conduit or Trunking fixed to the surfaces of Walls and Ceilings. *36*
6.03 System C - PVC Insulated Cables with Insulated Earth Continuity Conductor Enclosed in Concealed Non Metallic Conduit or Trunking *36*
6.04 System D - PVC Insulated Cables with Insulated Earth Continuity Conductor enclosed in Non-Metallic Conduit or Trunking fixed to the Surfaces of Walls and Ceilings *36*
6.05 System E - Mineral Insulated Copper Sheathed Cables *37*
6.06 System F - PVC Insulated and Sheathed Cables, Clipped to the Surface of the Walls and Roof Members or to the Ceilings *37*
6.07 System G - PVC Insulated and Sheathed Cables Clipped to Roof Members and Run in Metal or Plastic Conduit Drops Concealed in Walls *37*
6.08 System H _ PVC Insulated Single Wire Armoured and PVC Sheathed or Paper Insulated Lead Sheathed Single Wire Armoured and Served Cables Laid in Ducts, Trenches and Saddled to walls *38*
SECTION 7 ..... *39*
CONDUITS, TRUNKING AND ASSOCIATED FITTINGS *39*
7.01 Steel Conduits - Steel Trunking *39*
7.02 Flexible Conduit *41*
7.03 Plastic Compound *42*
7.04 Telephone Conduit *42*
7.05 Television Conduit *42*
7.06 Cable Tray *42*
7.07 Rising Main Bus-Bars *43*

7.08 Under floor Ducting 44
SECTION 8 45
CABLES IN CONDUIT OR TRUNKING 45
8.01 General 45
8.02 PVC Cable in Conduits 45
SECTION 9 47
TESTING ON SITE 47
9.01 Installation Tests 47
9.02 Testing Equipment 47
9.03 Attendance on Other Contractors 47
9.04 Equipment, Plant, Apparatus and Systems 47
SECTION 10 49
EARTHING 49
10.01 Earthing 49
10.01 Earthing System for High Voltage Supply 49
10.02 Earthing System for L.V. Supply 50
10.03 Protective Multiple Earthing 50
10.04 Consumer's Earth 51
10.05 Bonding 51
SECTION 11 52
INSTALLATION OF LIGHTING FITTINGS 52
11.01 Fixings 52
11.02 Alignment 52
11.03 Enclosures 52
11.04 Earthing of Lighting Fittings 52
11.05 Programme for Erection of Lighting Fittings 52
SECTION 12 53
LIGHTING AND SINGLE PHASE POWER ACCESSORIES 53
12.01 General 53
12.02 Special Accessories 53
SECTION 13 54
PLANT POWER WIRING 54
13.01 General 54
13.02 Power Outlets for Lifts 54
SECTION 14 55
NON-METALLIC CONDUIT 55
14.01 General 55
14.02 Manipulation 55
14.03 Joint of Plain Conduit 55
14.04 Conduit Fittings 55
14.05 Fixing of Conduit 56
14.06 Circular Inspection Boxes 57
14.07 Stopping Plugs 57
14.08 Continuity 57
PART B **58**
ELECTRICAL ENGINEERING SERVICES **58**
PARTICULAR SPECIFICATION **58**

SECTION 1 59
PARTICULAR CONDITIONS 59
1.01 Location of Site 59
1.02 Description of Project 59
1.03 Commencement of Works 59
1.04 Climatic Conditions 59
1.05 Scope of Sub-Contract Works 60
1.06 Ordering 61
1.07 Builder's Work Requirements 61
1.08 Statement of Compliance 61
1.09 Storage of Materials 61
1.10 Labour Camps 61
1.11 Site Visit 61
SECTION 2 62
INCOMING ELECTRICITY SUPPLIES 62
2.01 General 62
2.02 Earthing 62
2.03 Metering Power Supplies. 62
2.04 Attendance 63
SECTION 3 64
MAIN L.V. SWITCHBOARD 64
3.01 Scope of Work 64
3.02 Contract Drawings 64
3.03 Low Voltage Switchboard General Requirements 64
3.04 Fuse Switches 64
3.05 M.C.C.B.'s 65
SECTION 4 66
ELECTRICAL DISTRIBUTION SYSTEM 66
4.01 Scope of Work 66
4.02 Sub-main Cables 66
4.03 Distribution Boards and Consumer Units 66
4.04.1 Scope of Work 67
4.05 Fuse Switches (Loose Equipment) 67
4.06 Isolator (Loose Equipment) 67
4.07 Cable Tray 68
4.08 Cable Schedule 68
4.09 Rising Main Bus bars 68
4.10 Fire Barriers 68
4.11.0 Power Factor Correction Equipment 69
4.11.1 Scope of Works 69
SECTION 5 70
LIGHTING AND POWER INSTALLATION 70
5.01 Scope of Work 70
5.02 Wiring System 70
5.03 Lighting Luminaries 70
5.04 Lighting Switches and Socket Outlets 70
5.05 Cooker Control Units 70
5.06 Connector Boxes 70

5.07 Ramp Lighting 71
5.08 External lighting 71
5.09 Adaptor Boxes 71
5.10 Sub-Main Cables 71
SECTION 6 72
LIGHTNING PROTECTION SYSTEM 72
6.01 Scope of Work 72
6.02 Description of Installation 72
6.03 Bonding of Roof Copper Tapes 72
6.04 Earthing of Lightning Protection System 72
6.05 Earth Continuity Test for Down Conductors 73
SECTION 7 74
TELEPHONE/COMMUNICATION DISTRIBUTION SYSTEM 74
7.01 Scope of Works 74
7.02 Distribution System 74
7.03 Wiring System 74
SECTION 8 76
FIRE ALARM AND DETECTION SYSTEM 76
8.01 Scope of Work 76
8.02 Operation 76
8.03 Wiring System 76
8.04 Battery/Charger Unit 77
8.05 Annunciator Panels 77
8.06 Break Glass Contacts 77
8.07 Alarm Bells 78
8.08 Smoke Detectors 78
8.09 Heat Detectors 78

PART A

ELECTRICAL ENGINEERING SERVICES

GENERAL SPECIFICATION

1.0 SECTION 1 - GENERAL

1. General

This section specified the general requirements for plant, equipment and materials forming part of the Electrical Sub-Contract Works and shall apply except where otherwise specified. The Sub-Contract Works shall comply with the General Specification when read in conjunction with the Particular Specification and any other requirements of the Specification as previously defined.

1.1. Regulation and Standards

The Sub-Contract Works shall comply with the current Kenya Government Electrical Regulations, the current edition of the Institution of Electrical Engineers Regulations for the Electrical Equipment of Buildings, hereinafter referred to as the I.E.E. Regulations, and the Bye-Laws of the Electricity Supply Authority. The Sub-Contract Works shall also comply where applicable to Kenya Standards as published by Kenya Bureau of Standards or current edition IEC (International Electro Technical Commission) and British Standards Codes of Practice where Kenya Standards have not been published.

1.2. Quality of Materials and Manufacturing Standards

Materials and apparatus required for the complete installation as called for in the Particular Specification or Contract Drawings shall be supplied by the Sub-Contractor unless special mention is made otherwise.
Materials or apparatus supplied by others for installation or connection by the Sub-Contractor shall be carefully examined on receipt. Should any defects be noted the Sub-Contractor shall immediately notify the Engineer.

Unless otherwise specified all materials, including equipment, fittings, cables, etc., shall be in new condition and manufactured to appropriate standards of the Kenya Bureau of Standards, the British Standards Institution, the I.E.E. Regulations or other equivalent and approved standards.

Defective equipment or that damaged in course of installation or test shall be replaced or repaired to the approval of the Engineer.

Materials and apparatus supplied by the Sub-Contractor shall be as specified and no variations will be permitted without the written consent of the Engineer. Should any replacement be necessary the Sub-Contractor shall bear the cost of any associates Builder's Work and making good finishes.

1.3. Installation Requirements - General and Liaison

The starting currents of all electric motors and equipment supplied under the Specification shall be limited so as not to exceed the maximum permissible starting currents described in the Electricity Supply Authority's (KPLC)Bye-Laws.
Attention is drawn to the fact that all the Sub-Contractor's work is subject to the Engineer's approval.

1.4. Installation and Commissioning

The Sub-Contractor shall be deemed to have included in the Sub-Contractor Sum for the services of a specialist or manufacturer's engineer or technician to assist in the installation and commissioning of the Sub-Contract Works or any part thereof if the Sub-Contractor has not his own suitable and competent staff available at the site of the works to carry out such functions.

1.5. Labelling

All plant, apparatus, equipment, distribution boards, distribution cases, terminals and cable cores shall be securely and properly labelled to the approval of the Engineer. The labelling shall be such as to show clearly the identification of the item and if applicable its control function and the part of the system controlled.

SECTION 2 H.V. SWITCHGEAR
2.0 H.V. SWITCHGEAR

2.0.1. General

The units which together comprise the switchboards are to be provided in accordance with the Contract Drawings and Schedules of equipment.

The switchboards shall be manufactured in accordance with B.S.162 and all equipment and material used in the switchboards is to be in accordance with the appropriate British Standards. The switchboards shall be flush fronted in appearance with the breaker operating mechanism easily accessible but behind the hinged door.
The Sub-Contractor shall allow for the supply of a complete set of Record Drawings relating to the switchboard, made in ink on tracing cloth.

Four sets of instruction manuals are to be provided describing the method of operating the equipment together with instructions for maintenance and adjustment
and giving full details of all connections brought out to the Test Link Blocks.

2.0.2. Supply System

1.25 mVA, 415V, 3 phase, 50Hz, earthed system.

2.0.3. Type of Switchgear

The switchgear shall consist of oil circuit breakers or oil switches as indicated on the Contract Drawings. They shall be of the fully interlocked, metal clad, vertical isolation type, incorporating integral earthing facilities manufactured to the current edition of B.S. 5211 and B.S. 5463. Circuit breakers shall be fitted with manually charged spring closing mechanisms.

2.0.4. Bus-Bars

The bus-bars for each switchboard may be air insulated provided that all primary circuits in the fixed portion of the units are insulated with Epoxy Resin.

Bus-bars and current transformer joints and connections are to be insulated by epoxy resin shrouds which shall be mechanically jointed, or PVC sleeved and filled with encapsulating compound, otherwise the

switchboard shall be compound insulated. The bus-bars and connections shall be constructed from high conductivity solid copper.
The bus-bars and bus-bar supports shall be arranged to withstand, without damage, the effects of any fault current up to and including the maximum rated breaking capacity of the switchgear.
Bus-bars and connections shall be suitably and adequately colour coded for phase identification.

2.0.5. Extensibility

All units shall be so designed and the bus-bars drilled so that further extension units can be added without difficulty. Space and full provision for fitting future units shall be allowed in accordance with the instructions in the Schedule of Equipment.

2.0.6. Cable Boxes

Where required, cable boxes manufactured from close grained cast iron to B.S. 2562, Part 1 where applicable, shall be provided suitable for the reception of the cable specified.

2.0.7. Special Tropical Finish

The switchgear shall be designed for use in the tropics and the following requirements shall be incorporated:

a) All parts of the switchgear shall be totally enclosed and enclosures shall be vermin proof.
b) Gaskets shall be Neoprene or similar material.

2.1.2 All steelwork shall be treated with a phosphoric base etching primer containing a resign bond and finished with two coats of paint.

2.1.3 The interior of all gear not having oil, compound or other insulation, and all exposed current carrying metalwork (other than contact faces) shall be sprayed with an approved type of bakelite varnish.
The final coat of paint shall be of a colour taken from B.S. 3810 or B.S. 4800 to be chosen by the Engineer.

2.0.8. Labels

Each switch shall have a designation label of Traffolyte with 10mm high black lettering on a white background. They shall be screwed to the equipment, adhesive only is not acceptable. A small similar designation label shall also be fixed to the rear of each fixed portion.

2.0.9. Relays

Protection relays shall be of the type and number listed in the schedule of requirements for HV switchgear in the Particular Specification.
All relays shall be flush mounted, and where required, shall be provided with additional contacts for remote indication etc., Bezels shall be finished in black gloss.
The relays shall have their secondary connections brought out to studs on the rear and firmly secured by suitable washers, nuts and locknuts. The relays shall have hand reset features.

2.0.9.1. Instrumentation

Instruments shall be fitted on the switchboard as shown on the drawings and in the schedules of requirements for HV switchgear in the Particular Specification.
Ammeters shall be MICS 100mm square dial flush mounting pattern with rotary selection switch.
Voltmeters shall be MICS 100mm square dial flush mounting pattern with rotary selector switch.
The construction of the instruments shall be in accordance with B.S. 89 and shall be of industrial grade.

2.1 Instrument Panels

Instrument panels shall be mounted at the same height on each unit and have suitably hinged front panels.

2.2 Test Link Blocks

Test link blocks shall be connected to all protection and instrumentation current transformer connections.

2.3 Small Wiring

All small wiring necessary for connecting the instruments, relays and other devices shall be included and shall have a conductor size of not less than 7/.085mm with a thermoplastic flame retarding type of insulation.
The wiring shall be distinctly colored and marked with ferrules of an approved type at each end.
All wiring within each switchboard, not installed in conduits, shall be neatly laced and cleated to the panel structure of each switchboard and its auxiliary equipment.

Where wiring passes through a hole in the metal work, thermoplastic grommets shall be used and in no case shall cables be unprotected where they come into contact with the edge of a piece of metal work.

2.4 Current Transformers

Separate current transformers shall be provided for protection and instrumentation.
Current transformers shall have a secondary rating of 5 amps. The primary currents are indicated on the drawings. Current transformers shall have overcurrent factors suitable for the prospective short circuit current of the system. Current transformers shall have overcurrent factors suitable for the respective short circuit current of the system. Current transformers required for operating relays shall have a one-second rating as defined in B.S. 3938, be suitable for the characteristics of the relay concerned and have a minimum output of 15 Va.
Current transformers shall be of the bar primary or wound primary type according to the transformer ratio with jointress ring core of either hot or cold rolled silicon iron.

2.5 Voltage Transformers

Voltage transformers shall be of the dry type with hinge isolation and in accordance with B.S. 3941. The rated output and accuracy offered should be stated. Cartridge type fuses shall be provided for protection of both primary and secondary windings.

2.6 Drawings for Approval

The following drawings shall be submitted for each switchboard for approval as soon as possible after receipt of instructions from the Engineers to proceed:

Plans and elevations showing position of instruments, relays, current transformers, voltage transformers, fuses, cable boxes and other accessories.
Foundation plan showing fixing bolt centres, cables centres and other relevant dimensions.

i) Wiring and connection diagrams.

i i) Schematic diagrams.

Three copies of each drawing as finally approved shall be supplied to the Engineer.

In addition, the Sub-Contractor shall provide any other drawings or information required by the Engineer in order that the Engineer may satisfy himself as to the design of the plant. Manufacture shall not be commenced until all relevant drawings have been approved by the Engineer.

2.7 Miscellaneous

A tinned copper bonding bar shall be provided for the full length of the switchboard to which each unit shall be bonded.
A wall chart mounted on metal, with instructions for the treatment of electric shock, shall be supplied and fixed in the switch rooms.
Six in number heavy brass non-interchangeable padlocks, for locking switchgear, spout covers and operating mechanisms, shall be provided each with two keys.
A framed diagram showing clearly the layout of the high voltage distribution system shall be provided and fixed in the switch rooms.

2.8 D.C. Tripping Equipment

A nickel cadmium type battery adequately rated to operate the D.C. tripping circuit of the breakers shall be supplied with each switchboard. The battery shall be complete with floor mounting stand and a suitable trickle charger having a 240-volt single phase input.
From the output terminals of the battery unit wiring shall be taken to the trip terminals located at the rear of the switchboard.

SECTION 3- POWER TRANSFORMERS

3.1 General

Power transformers shall be dry type and of voltage ratio and rating called for in the Specification.
There will be 1No. 1.0MVA, 11kV/415V indoor power transformers.

3.01 Dry-Type Transformers

Dry-type transformers shall have Class AN cooling, windings vector group DY.11, insulation Class `C'. The arrangements and connection of windings, tap-changing, loading and terminal boxes shall be as previously detailed in Clause

Temperature rise shall not exceed that listed in Table 13 of B.S.171 with the reduction factor listed in Table 15 applied for the climatic conditions described in the Specification.

a) The transformer shall be complete with the following fittings:-

b) Rating plate,

c) Terminal marking plate,

d) Lifting lugs

e) Earthing terminal for frame.

3.02 Transformer Tests and Inspections

The Engineer shall be invited to inspect the transformers at the manufacturer's works during the erection of cores and windings, and to witness final tests when the transformers are fully assembled. It will be the Sub-Contractor's responsibility to inform the Engineer and give reasonable notice of the manufacturer's intention to carry out the above assemblies and tests. The tests shall be as described in clause 1802 of B.S. 171:1959.

The Sub-Contractor shall submit three copies of all relevant test certificates (B.S. 171 Clause 1802(a)) to the Engineer for approval prior to shipment of the transformers. Certificates of type tests (B.S. 171, Clause 1802 (b)) will be

acceptable subject to the Engineer's approval except where specified elsewhere in the specification.

3.03 Transformer Tests on Site

The Sub-Contractor shall carry out all necessary tests to the satisfaction of the Engineer to ensure that the transformer has not been damaged in transit and is ready for service, such tests shall be made before setting to work and shall include but not limited to: -

Continuity and polarity tests,

Insulation resistance tests,

Oil moisture and acidity tests

SECTION - 4

L.V. SWITCHBOARD AND GEAR

4.01 General

The switch gear shall be designed throughout to ensure safety during operation, inspection, cleaning and Maintenance and shall be so arranged as to minimize the risk of fire arising and spreading.

The switchboard shall be manufactured in accordance with B.S. 162 which co-ordinates the requirements for electric power switch gear and associated apparatus.
It is not intended that B.S. 162 should cover the requirements for specific apparatus for which separate British Standards exist. All equipment and material used in the switchboard shall be in accordance with the appropriate British Standard.

4.02 Switchboard Cubicle Construction

The switchboard shall be a cubicle type of flat front, back connected, sectional, painted, all steel construction of neat appearance.

It shall be floor mounted and have ring bolts, lifting lugs or other approved means of transporting and lifting.

Each switchboard section shall be completed, fully wired and checked out at the factory and shall require a minimum of installation work at the Site of the Works. Modula construction shall be used wherever practicable and provision shall be made for simplifying servicing, replacement and maintenance throughout without major dismantling.

The switchboard shall be constructed from not less than 10 gauge welded bright mild steel for framework and structural sections and 16 gauge for doors and panels which shall be adequately stiffened by folding or welded stiffeners. The switchboard base shall be of heavy gauge tube or structural section to allow moving on rollers. All doors shall be properly stiffened and fitted with heavily cadmium plated concealed hinges and flush catches.

Removable stiffened steel covers shall be provided elsewhere on the switchboard for full access. All doors and covers shall be fitted with cemented resilient gasket seals to provide a dust proof enclosure. All hardware and

fastening shall be heavily cadmium plated. No self-tapping screws shall be used.

All steelwork shall be clean and free of burrs, scale and blemishes, with all raw edges hidden and shall be finished with a rust inhibiting treatment one primer or undercoat and final coat of first quality sprayed baking enamel the colour of which shall be to approval.

The switchboard shall be arranged to provide the maximum of safety to personnel and equipment. All electrical wiring and bus-bars shall be completely enclosed. Closure panels, isolating and insulating barriers and interlocks shall be provided as required for maximum safeguard. All fuse switches shall be capable of being padlocked in the `OFF' and the `ON' positions.

Adequate supports shall be provided for all bus-bars and wiring and incoming and outgoing cables shall be provided with glands, cable boxes and other necessary terminations in a cable area separate from the bus bars.
All switches shall be operable from floor level, all fuses shall be within 2000mm of the floor and flush mounted indicating meters within 1650mm.
The main switchboard in 11/415KV Substation shall be IP-32 Form-3B complete with 1No 1000A Incomer MCCB, 1No 800A Outgoing breaker– to riser copper busbars, 1No 250A Outgoing breaker– to Essential loads panel, 2No 125A Outgoing breakers– to Lift board and mechanical plant room board, 1No 400A Outgoing breaker– to power factor correction bank, 2No 63A Outgoing breakers– to switch room electric board and control pillar board and 2No. spare spaces
Where spaces on the switchboard are provided for future circuit components to be installed, as shown on the drawings, all ancillary parts shall be provided and installed so that future components may be installed and connected in the least time possible. Full safety precautions shall be provided with all such spaces.

The mild steel angle or channel forming the bottom rear edge of the switchboard shall be made up in sections and bolted into position such that any one section may be removed to facilitate installation of cables.

4.03 Bus-bars

All bus-bars shall be of high conductivity copper and shall be manufactured and tested in accordance with B.S. 158 and B.S. 159. They shall be mounted fully enclosed within the main enclosure of the switchboard in separate

chambers in accordance with B.S. 162. The bus-bars shall be fully separated from the incoming and out-going cable areas.

Except for instruments, potential or current connections, which shall be clamped in position and be of minimum length, no circuit wiring shall be within the bus-bar chamber.

Bus-bars shall be sheathed in approved insulating material, in their respective phase colours, and secondary insulation shall be provided where bus-bars pass through supports to prevent tracing paths. Supports shall be such that the required clearances between phases, neutral and earth are maintained under rated continuous current and under fault conditions.

Provisions shall be made for expansion and contraction of the bus-bars and connections, with variations in temperature.

Interconnections between bus-bars and switchgear shall be of minimum length, properly insulated and rigidly supported.

All contact areas of the bus-bar and the connections fastened to the bus-bars shall be heavily silver-plated. Joints and connections shall be rigidly made with clamps and high tensile steel bolts and nuts used with spring washers to maintain uniform pressure and flat washers to prevent cupping. Ready access to all joints and connections shall be provided.

4.04 Circuit Breakers

Where oil circuit breakers are called for on the drawings, they shall be suitable for the current rating and system conditions indicated and shall be in strict accordance with B.S. 116. They shall have a minimum breaking capacity of 26 MVA at 415V and shall carry a Certificate of Rating to B.S. 5311 issued by any approved testing Authority.

Where air circuit breakers are called for on the drawings, they shall be suitable for the current rating and system conditions indicated and shall be in strict accordance with B.S. 5311. They shall have a minimum breaking capacity of 31 MVA at 415V and shall carry a Certificate of Rating to B.S. 5311 issued by an approved testing Authority.
The main switchboard in 11/415KV Substation shall be IP-32 Form-3B complete with 1No 1000A Incomer MCCB, 1No 800A Outgoing breaker– to riser copper busbars, 1No 250A Outgoing breaker– to Essential loads panel, 2No 125A Outgoing breakers– to Lift board and mechanical plant room board, 1No 400A Outgoing breaker– to power factor correction bank, 2No 63A

Outgoing breakers– to switch room electric board and control pillar board and 2No. spare spaces

Each circuit breaker shall be fitted with telescopic rails to allow the breaker to be withdrawn clear of the cubicle and a racking mechanism. Safety shutters shall be provided to protect against accidental contact with the stationary isolating contacts when the breaker is withdrawn.

Interlocks shall be provided to ensure that: -

a. The cubicle door is closed and the slide rails locked before the circuit breaker can be racked in.

b. The trip button must be depressed before the racking mechanism can be operated in either direction.

c. The circuit breaker cannot be pushed into the racket in position without the use of the racking mechanism.

d. The cubicle cannot be opened when the circuit breaker is in the racked in or fully racked out position.

e. The circuit breaker can be operated only when it is in the fully racked in or fully racked out position.

The circuit breakers shall have a stored energy, single shot, trip free, closing mechanism.

Inverse definite minimum time lag over current relay protection shall be provided on each circuit breaker.

Tripping under fault conditions shall be effected by a 30V D.C. trip coil energised by a 30V nickel cadmium battery and charger set. The battery and its trickle charger shall be mounted in a naturally ventilated, floor mounted, steel cubicle and located as shown on the drawings. This battery shall be suitable for tripping two low voltage circuit breakers. A manual trip push button which shall be independent of the operator's speed of operation shall also be provided.

The trip coil latching lever and the roller mechanism shall be made from anti corrosive metal.

The contacts shall be silver plated, shrouded and renewable. Barriers shall be provided between phases and recessed into the base.

A mechanically operated semaphore shall be used to indicate the condition the circuit breaker using the words `ON' AND `OFF'.

Each circuit breaker shall be provided with the facility of locking the breaker in the`OFF' position.

4.05 Oil Switches

Oil switches shall be identical to the oil circuit breakers, B.S. 5311 except that tripping devices are not required. Means of locking the switches in the `OFF'position shall be provided.

4.06 Air Break Switches

Air break switches shall be suitable for the system conditions, indicated and shall be in strict accordance with B.S. 5419. Class II switches. Means of locking the switches in the `OFF' position shall be provided.

4.07 Fuse Switches

All fused switches shall be supplied and installed complete with Class Q1 H.R.C. Cartridge Fuse Links complying with B.S. 88, as shown on the drawings and shall be contained in metal clad, dust proof, gasket sealed individual enclosures with non-detachable steel operating handles which shall be capable of being locked in either the `ON' or the `OFF' position.

The fuse switch units shall comply with B.S. 5419 and shall be withdrawable.

The fuse switch units shall have fault rating at least equal to the fault rating of the switchboard in which they are to be installed.

The fuse switch units shall be of fast make break design suitable for on load operation and shall be arranged operation of the switch when the cover is open and to prevent opening of the cover when the switch is in the `ON' position. The H.R.C. fuse links shall be carried on the moving contact mechanism and shall be isolated from the line and load contacts when in the `OFF' position. In the `ON' position a barrier shall be interposed between the fuse links.

The switch contacts shall be separately and fully shrouded and shall be renewable.

Moving or fixed indicators shall use the words `ON' and `OFF to indicate the fused switch condition. Indicators shall be mechanically locked with the moving
contact assembly and shall operate in such a manner that all phases shall be broken before the `OFF' position is indicated.

4.08 Earth Bars

A high conductivity copper earth bar of not less than 50mm x 6mm section, adequately rated for the anticipated earth fault current, shall be installed the full length of the switchboard in the outgoing cable area within the switchboard enclosure.

Connection to the earth bar shall be made with approved cable lugs and high tensile steel nuts and bolts with washers as specified for the phase bus-bars.

The points of contacts on the earth bars shall be silver plated.

4.09 Neutral Bars

A high conductivity copper neutral bar adequately rated and supported for normal and fault conditions shall be installed in the outgoing cable area in the switchboard enclosure. This bar shall be mounted on insulators and shall be divided into sections according to the design of the switchboard. The sections shall be connected by copper links double bolted to each section.

Voltmeters shall be MICS 150mm square dial, flush mounting pattern with rotary selector switch enabling phase to phase and phase to neutral volts to be read.

Voltmeters shall be protected by means of cartridge fuses, category of duty A.C. 46 and fusing factor, 1.5. The construction of the instruments shall be in accordance with B.S. 89 and shall be of industrial grade.

The current transformers shall be of an approved type to B.S. 3938.

The Sub-Contractor shall agree with the Engineer, the arrangement of the indicating instruments, their scale deflections C.T. ratios and all information that

the switchboard manufacturers may require, prior to manufacture of the switchboard.

4.10 Phase Failure Relays

Where the requirement is shown on the Drawings phase failure relays shall be installed for the operation of the emergency lighting.

Phase failure relays shall be connected across each phase and neutral of the supplies as indicated on the distribution diagram.

Relays shall be protected by means of cartridge fuses, category of duty A.C. 46 and fusing factor 1.5.

In addition, test buttons shall be provided. The test buttons shall be connected in series with each phase failure relay coil so that when any one of the test buttons is operated the emergency lighting shall come on automatically.

Test buttons and relays shall be housed in the instrument section of the switchboard.

4.11 Air Break Switches

All individually mounted air-break switches shall be of 660 volt metal clad type, single pole and neutral, or triple pole and neutral as required, fitted with interlocking handles so that the cases cannot be opened when the handle is in the`ON' position. All insulating material employed in the construction must be of non-hygroscopic type and to the approval of the Engineer.

The construction and performance of the airbreak switch shall be in accordance with B.S.5419 : Parts 1 and 2.

4.12 Switch Fuses

All individually mounted switch fuses shall be of the metal clad type, the number of poles with or without neutral, as required, fitted with interlocking handles so
that the case cannot be opened when the handle is in the `ON' position. All insulating material employed in the construction must be of non-hygroscopic type and to the Engineer's approval.

The construction and performance of the switch fuses shall be in accordance with the relevant British Standard indicated below.

i) Units rated not in excess of 100 amps and for a system voltage not in excess of 250 volts to earth shall be in accordance with B.S. 5419 unless specifically amended by the Engineer.

ii) Units rated in excess of 100 amps and for a system voltage not in excess of 380 volts to earth shall be in accordance with B.S. 5419.

Fuses shall be of the cartridge type, to B.S. 88 category A.C. 46, Class Q1 and fusing factor 1.5 graded to suit the loads carried.

Sub-contractor's attention is drawn to the fact that all fusing in single phase circuits shall be on the "Single pole" principle with solid link in the neutral unless otherwise noted.

4.13 Cabling

A cabling zone clear of busbars, fused switch and circuit breaker chamber, etc., shall be provided in such a manner to give minimum difficulty in connecting submain cables entering the switchboard for connection to fuses switch units or circuit breakers. The cabling zone shall be fully insulated from any live metal part so that future cabling and alterations can be carried out in complete safety without the necessity of shutting down the complete switchboard.

4.14 Distribution Boards

Distribution boards shall be clad, surface or recessed pattern with the number of ways, rating and phase arrangement (single or three phase) indicated on the drawings.Cases shall be zinc coated sheet steel of substantial construction with hinged lids fitted with foam rubber gasket, enamelled finish. Where called for in the specification the cases shall be provided with locks. For ratings of 60 amp. and over detachable drilling plates and soldering lugs for incoming cable terminations shall be provided.
Where the requirement for fuses is indicated on the Contract Drawing the Distribution Boards shall be fitted with the high quality porcelain fuse carriers and bases, removable insulated shields to provide adequate protection against accidental contact with live metal, and circuit indicating labels fixed inside the cover.

The Distribution Boards shall be complete with HRC fuses to B.S. 88 1952, category 440 volts, A.C.5.

Where the requirement for miniature circuit breakers is indicated on the Contract Drawings, the Distribution Boards shall be fitted with moulded thermoplastic units of the combined thermal overload and magnetic short circuit

tripping type to B.S. 3871, Part 1. MCB's of all ratings shall have a minimum short circuit current breaking capacity of 3,000 amps.

Where the prospective fault current exceeds 2500 amps. or where specified, careful consideration shall be given to back-up protection or the installation of miniature circuit breakers of a short circuit capacity in excess of 300 amps. Although short circuit calculations were carried out when the Contract Drawings were prepared, the Sub-Contractor is advised to make his own calculations and assure himself that the prospective fault currents at each protection level does not exceed the short circuit capability of the switch or distribution gear he intends to install as it is his responsibility to sign the appropriate declaration in accordance with the I.E.E. Regulations.

4.15 Labelling of Switchgear and Distribution Boards

All switchgear shall have engraved labels indicating the services fed from them. The inscription shall be in white 10mm. high letters on black `Traffolite' sheet or equal and shall be fixed on or adjacent to the apparatus by screws or rivets.

Each Distribution Board shall bear a number or inscription as called for on the Contract Drawings which shall correspond to that shown on the Record Drawings. The circuits fed from each Distribution Board shall be marked on a card or identification plate fixed to the inside of the Board or where provided for. This information must include the outlets (with cross reference to the reference numbers on Contract Drawings) fed from each fuseway or MCB and the size of the fuse or circuit breaker rating.

4.16 Drawings for Approval

The following drawings shall be submitted for L.V. each switchboard for approval as soon as possible after receipt of instructions from the Engineer to proceed: -

i) Plans and elevations showing position of instruments relays, current transformers, voltage transformers, fuses, cable boxes and other accessories.

ii) Foundation plan showing fixing bolt centres, cables centres and other relevant Dimensions.

iii) Wiring and connection diagrams.

iv) Schematic diagrams.

The copies of each drawing as finally approved shall be supplied to the Engineer. In addition, the Sub-Contractor shall provide any other drawings on information required by the Engineer in order that the Engineer may satisfy himself as to the design of the plant. Manufacture shall not be commenced until all relevant drawings have been approved by the Engineer.

SECTION 5

POWER CABLES

5.01 Paper Insulated Cables

These shall be 1100 volt, 3300 volt, 6600 volt, or 11000 volt grade, according to operating voltage and manufactured and tested in accordance with B.S. 6480 for cables with copper conductors.

E.H.V. cables shall be suitable for operation on an earth system, and shall be of the belted type.

Multi core cables shall be paper insulated, lead sheathed, single wire armoured and served with hesian or PVC or left bright as indicated on the diagram of distribution. Single core cables shall be lead sheathed and served. All paper insulated cables shall be of the fully impregnated non-draining type.

Sizes of cables shall be in accordance with the details given on the Contract Drawings.

5.02 Jointing

Where possible the core of the paper insulated cable shall be taken direct to the terminal of the apparatus. The conductor shall be sweated into a cast pattern cable socket that has been drilled to receive the conductor without excessive clearance. A cable spreader box shall be fitted to and below the apparatus and filled with compound after the cables have been installed. Alternatively, a system of compression jointing, approved by the Engineer may be employed. All cables tails shall be taped with double lapped Empire tape and after grade insulating varnish. VRL/PVC tails shall not be fitted without the approval of the Engineer in writing. If such approval is given the tails shall be of the same cross section as the PILC cable cores. The entire responsibility for the work involved in measuring, proper cutting, jointing and sealing paper insulated cables shall be borne by the Sub-Contractor who shall employ fully qualified, certified and experienced jointers for this work. This applies particularly to the jointers working on E.H.V. jointing.

Whenever a paper insulated cable is cut prior to jointing the joint shall be commenced forthwith and completed without interruption. All necessary precautions shall be taken against the ingress of moisture and impurities during the preparation of the joint. Should the cable be cut and circumstances prevent

a joint being made the ends shall be suitably sealed by means of plumbers lead caps pending the completion of the jointing work. The seals of the cables must not be removed until all preparations for jointing are complete and adequate protection from the weather arranged by the Sub-Contractor.

Before rejointing cable ends shall be tested from moisture content in an approved manner. If any moisture is discovered the wet cable or cables shall be cut out.

Care shall be taken when making off cable ends to phase out the cores to agree with the transformer terminals. No cross overs will be permitted in the leads. Phase colours shall be clearly indicated at all points of connections and shall comply with B.S. 158, Table I.

It shall be ensured that all times straight through joints are from an A end to a Z end. Under no circumstances will core cross overs resulting from joints of the same end of the cable be permitted.

5.03 PVC Insulated and Sheathed Single Wire Armoured or Unarmoured Cables with Stranded Copper Conductors

PVC insulated, single wire armoured and PVC sheathed multi core cable shall be 660/1000 volt grade, manufactured in accordance with B.S. 6346.

The cables shall be sized to comply with the current edition of the I.E.E. Regulations except where specific sizes of cables are shown on the Contract Drawings or detailed in other sections of the Specification.

5.04 PVC Insulated and Sheathed Aluminium Strip Armoured or unarmoured Cables with Solid Aluminiun Conductors

PVC insulated, aluminium strip armoured and PVC sheathed multicore cables shall be 660/1000 volt grade, manufactured in accordance with B.S. 6346.

The cables shall be sized to comply with the current edition of the I.E.E. Regulations, except where specific sizes of cables are shown on the Contract Drawings or detailed in other sections of the Specification.

The cable cores shall be identified in accordance with B.S. 6346.

An approved system of compression terminations secured to the conductor by indentation made with a special dies and a portable hydraulic compressor as recommended by the cable manufacturer shall be used.

Alternatively, in the appropriate conductor sizes and, where tunnel type terminals are used, connection may be made by means of "Swage" process whereby the shape of the conductor end is rounded to fit the terminal.

To eliminate the possibility of damage to cables due to thermal expansion, allowance for movement shall be made by the introduction of a bend or set in each core adjacent to the terminal.

Aluminium armour may be used as the earth continuity conductor where the Cross section is adequate for the purpose, but under no other circumstances shall the armour be used as a neutral conductor.

5.05 Gland for PVC Insulated Armored and PVC Sheathed Cables

The cables shall be terminated on a mechanical type cable gland. The glands shall be complete with armouring clamp suitable for bonding the armouring to equipment by means of an earth continuity conductor of adequate cross section and the bend shall be carried out at the time of making the joint. PVC shrouds shall be fitted over terminal cable gland and clamp.

5.06 Installation

Cable routes were indicated on the Contract Drawings for tender purposes only. The exact final routing shall be agreed with the Engineer.

All work except Builders Work shall be carried out by the Sub-Contractor, who shall include for the supply and installation of all jointing material, cable supports, steel racking and making all the necessary cable joints. The cable shall be installed and tested in strict accordance with the appropriate clauses of the current edition of the I.E.E. Regulations, the Factories Act, B.S. 6480 - Paper Insulated cables, and B.S. 6346 - PVC Insulated Cables.

Cables shall at all times be handled with care and every effort made to avoid damage. Unloading, rolling to position and mounting of cable drums shall be carried out efficiently and carefully in the recognised manner and cable shall be pulled from the top of the drum and twisting shall at all times be avoided.

Adequate numbers of drum jacks, rollers and other handling accessories shall be used and make shift arrangements will not be permitted. In all cases care shall not be fragged over loose earth, concrete or any surface but shall be adequately supported on rollers or manhandled into position.

The Sub-Contractor shall take particular care to avoid damage to other services which may run adjacent to or across the route of the cable being installed. The Sub-Contractor shall take particular care to avoid damage to other services which may run adjacent to or across the route of the cable being installed.

Cables shall be installed with a minimum of 300mm clearance form any equipment or pipework including lagging associated with other services. Where this condition is unavoidable or difficult to maintain, the Engineer shall be informed prior to the installation being commenced, otherwise the Sub-Contractor may be called upon to divert or adjust the route of any cable to the Engineer's satisfaction.

Cables passing through structural slabs shall be tightly wrapped with asbestos tape and grouted in. A hard wood surround below shaped to suite the cables passing through shall be fitted below the slab. Where cables are run vertical heavy gauge sheath metal guards shall be supplied and fixed to the wall. The casing shall be fixed from floor level to the underneath side of the appropriate and dividing box or to a height of 1.5m above floor level.

Detailed drawings showing dimensions and method of manufacture of the cable guards shall be submitted for the approval of the Engineer.

All cables shall be firmly and adequately supported from cable hangers for the whole of their length except when they are run through stoneware or pitch fibre pipes or are buried directly in the ground.

Continuity, phasing and insulation tests shall be carried out and the record of all tests shall be sent to the Engineer within 7 days of the cables being installed and jointed.

5.07 Cable Supports

Where cables run through service ducts or cable trenches they shall be fixed by means of purpose made cable hangers which shall be of the Unistrut pattern or equal and approved. Hangers shall be of non-ferrous metal or of steel and shall be treated with one coat of zinc primer and two coats of anti-corrosive paint and shall be suitable for horizontal and vertical mounting, either cased in, or secured to concrete structure using such brackets and adapters as are available from the manufacturers.

Hangers for the support of the cables shall be spaced according to the current edition of the I.E.E. Regulations, Table B.2M or to the manufacturers recommendations as appropriate. The Sub-Contractor shall take particular care to avoid sagging of stress on any cable by wrong positioning or inadequately spaced hangers. Single and multiway cleats shall be of cast alloy, interlocking pattern, for mounting either on the steel channels or directly to concrete structure in the case of single way cleats.

The sizes of cleats shall be selected such that all cleats can be tightened down without exerting undue pressure or strain on the cables.

In the case of vertical cables the cleats shall be so designed and of sufficient number to grip the cable firmly to prevent creeping. No cable shall be run without fixing and all cable hangers and racks shall be approved by the Engineer before installation.

Where cable routes are subject to numerous changes in level and direction, additional cable hangers shall be provided to satisfactorily negotiate all such obstructions. Where cables are spaced some distance from a supporting services, the cable racks shall be separately bolted to additional lengths of channel section which in turn shall be fixed to brackets bolted and fixed into the structure.

5.08 Cable Identification Discs

Identification discs shall be supplied for cables installed within buildings and attached with galvanised wire to each cable at intervals not greater than 12m and at all conspicuous positions such as within cable trenches, manholes, and at all cable terminations.

Discs shall be machine engraved from non-deteriorating black traffolite or similar material displaying white engraved indicating the design voltage, the description of load, and the number of cross sectional area of the cores. The characters shall not be less than 3mm high and shall be clearly legible.

5.09 Cable Ducts

The Sub-Contractor shall provide and lay asbestos cement or pitch fibre cable ducts under roadways or concrete walkways under which cables are to be routed.
The Main Contractor will supply and install ducts where required in the footings of buildings, but it will be the Sub-Contractor's responsibility to provide accurate details to the Main Contractor of the required positions of these ducts, and to ascertain that they are laid to the correct falls. After the installation of cables all ducts shall be adequately sealed to restrict the ingress of moisture.

The number of ducts to be provided shall be as follows:-

1 cable	-	2 ducts
2 cables	-	3 ducts
3 cables	-	4 ducts
4 or 5 cables	-	6 ducts
6, 7 or 8 cables	-	9 ducts

All cable ducts entering or within buildings including spare ways, shall be sealed at each end with Densoplast or other approved sealing substance to the satisfaction of the Engineer.

5.10 Terminal Sealing Boxes

All sealing boxes shall be of an approved make and design. The casting shall be of the split type secured together by bolts and nuts and treated inside and out with a suitable preservation compound and shall be complete with brass wiping gland. The castings shall be made of close grounded cast iron free from all holes and flaws. The halves of the casting shall be machined and so arranged to form an effective seal.

The box shall be provided with an external armour clamp.The lead sheathing of the cable shall be firmly secured to the interior of the box by clamping and where necessary by lead packing to form an additional support for the cable.

The lead sheathing shall be plumbed to the brass wiping gland and the armouring neatly fixed by means of binding wire and the external clamp. The Sub-Contractor shall ensure that the lead sheath and wire armouring is efficiently bonded to the metal parts of the apparatus served, with 300mm x 10mm copper tape. This bond shall be fitted at the time the joint is made.

An adequate compound filling gland shall be provided on each box and shall be so placed that the compound can be poured when the sealing end box is bolted into position.

Sealing compound shall be a blend of natural bitumen base containing no coal tar derivatives of any kind and having no deleterious action whatever on the materials used in cable manufacture.

The compound shall be in accordance with B.S. 1858.

5.11 Trenching

Trenching and backfilling will be carried out by the Main Contractor, but the Sub-Contractor shall be responsible for marking out the cable routes and for the supervision of the backfilling in so far as the prevention of damage to the cables in this process is concerned.
Cables in trenches shall be laid at a minimum depth of 600mm for L.V. cables and 700mm for 11KV cables and shall be on a 75mm pad of shift soil or sand and a further 75mm shall be added before placing cable covers in position. Where laid in

trenches the cables shall be completely protected by inter-locking concrete or other approved cable covers indelibly marked "DANGER, HATARI".

Cable marker posts fabricated in precast concrete, shall be installed at each cable entry into the building, each change of direction, each road or pathway crossing and throughout the length of the cable at intervals not exceeding 40m.

The marker posts shall indicate the voltage, depth and distance from the face of post of each cable installed.

Marker posts shall be provided at the position of all underground, through or tee joints and shall, in addition, to those functions detailed above, indicate the type of joint. The position of all marker posts shall be agreed with the Engineer before installation.

5.12 Testing

Before backfilling trenches and subsequent to all terminal jointing having been completed, H.V. cables shall be tested in accordance with B.S. 6480, 1966. L.V. cables shall be subjected to all insulation test at pressure of 1000 volts between cores and to earth and the results of these tests shall be recorded and communicated to the Engineer.

5.13 Cable Length, Types and Sizes

The Sub-Contractor shall be deemed to have allowed in the Sub-Contract Sum for supplying sufficient cable lengths of each type and size to complete the system and for making allowances for any additional lengths for cutting and waste.

5.14 Mineral Insulated Copper Sheathed Cables

Mineral insulated copper sheathed cables shall be manufactured in accordance with B.S. 6207 by an approved manufacturer. Where installed in corrosive situations, they shall be PVC sheathed. No cable shall have conductors less than 1.5mm² cross section.

All main and sub-main cables shall be sized as shown on the Contract Drawings.

All final sub-circuit and control cables shall be sized in accordance with the current edition of the I.E.E. Regulations unless specifically noted on the Contract Drawings or the Specification.

All mineral insulated copper sheathed cable glands shall be of the same manufacture as the cable and shall be of the compression type.

The choice of cable seal type shall be based on the manufacturer recommendation for the particular application.
In areas where a flameproof installation is specified, the glands shall be of flame proof type.

The cable glands and seals for PVC covered mineral insulated copper sheathed cables shall be of the same type as those specified in the preceding paragraph. They shall, however, be fitted with rigid impact resistant hoods and shall be filled with plastic compound as used for sealing the 44^0C cable seals.

Connection of mineral insulated copper sheathed cables of $4mm^2$ cross section and larger to apparatus shall in general be by means of cone grip type cable lugs. At a termination, each core shall be identified by colour tapes or sleeves. Where this is not practicable, the Sub-Contractor shall advise the Engineer in writing and shall obtain his decision regarding the type of connection to be provided.

Where MICS cables are fixed direct to the structure of the building, the fixings shall be by means of copper saddles, brass screws and rawl plugs.

Where MICS cables are fixed to cable tray the fixing shall be by means of copper saddles and brass bolts and nuts.

PVC covered copper saddles shall be used with PVC covered MICS cables.

Under no circumstances shall bare MICS cables be fixed to galvanised steel cable tray, galvanised steel brackets or galvanised structural steelwork.

Bare MICS cables shall only be fixed direct to painted structural steelwork and brackets or to painted PVC/Plastic coated steel cable trays as specified later.

All MICS cable fixings shall be installed 75mm either side of a fitting, accessory or right angle bend and subsequently spaced in accordance with the current edition of the I.E.E. Regulations.

All persons employed to make terminations on MICS cables shall have attended a course of instruction approved by the Engineer. Prior to commencing work, they shall demonstrate to the Engineer their ability to make a satisfactory seal. The greatest care shall be taken at all times when terminating MICS cables and insulation tests shall be performed 24 hours after the cable has been sealed.

Where single core MICS cables are used, all necessary precautions shall be taken to prevent hysteresis and eddy currents.

Ferrous plates or structures through which the cables pass shall be slotted and brass glands and sockets shall be used.

SECTION 6

APPROVED WIRING SYSTEMS

The system of wiring has been specified in the BoQ and shall be one or more of the following systems: -

6.01 System A - Cables enclosed in Concealed Steel Screwed Conduit or Trunking

The wiring shall be carried out in an approved type of single core, plastic insulated cable, enclosed in steel screwed conduit or trunking mechanically and electrically continuous throughout.

Conduit shall be buried in the wall and floors of the building, and either run in roof space or buried in structural slabs.

6.02 System B - Cables enclosed in Steel Screwed Conduit or Trunking fixed to the surfaces of Walls and Ceilings.

The wiring shall be carried out in an approved type of single core, plastic insulated cable enclosed in steel screwed conduit or trunking, mechanically and electrically continuous throughout.

Conduit and trunking shall be run on the surface of the walls and ceilings, or in false ceiling spaces. Conduit shall be secured in position by means of spacer bar saddles, and counter sunk brass screws. Conduit shall be run horizontally on the walls or vertically to switches or outlets.

6.03 System C - PVC Insulated Cables with Insulated Earth Continuity Conductor Enclosed in Concealed Non Metallic Conduit or Trunking

Wiring shall be carried out in an approved type single core, plastic insulated cable with earth continuity conductor enclosed in high impact, heavy gauge, non-metallic conduit or trunking.

Conduit shall be buried in the walls and floors of building, and either run in roof space or buried in structural slabs.

6.04 System D - PVC Insulated Cables with Insulated Earth Continuity Conductor enclosed in Non-Metallic Conduit or Trunking fixed to the Surfaces of Walls and Ceilings

Wiring shall be carried out in an approved type single core plastic insulated cable with earth continuity conductor enclosed in high impact, heavy gauge, non-metallic conduit or trunking.

Conduit and trunking shall be run on the surface of the walls and ceilings or in false ceiling spaces. Conduit shall be secured in position by means of spacer bar saddles. Conduit shall be run horizontally on the walls or vertically to switches or outlets.

6.05 System E - Mineral Insulated Copper Sheathed Cables

The wiring shall be carried out in single core or multi-core mineral insulated copper sheathed cables run on the surfaces of walls and ceilings, in the roof space or concealed in walls and floors.

6.06 System F - PVC Insulated and Sheathed Cables, Clipped to the Surface of the Walls and Roof Members or to the Ceilings

The installation shall be carried out in an approved type twin or three-core PVC insulated and sheathed cable. Cables shall be securely fixed to the surface of the walls and in the roof spaces, and shall be fixed to the underside of ceilings, only when three is no reasonable access from above. They shall be fixed to walls and the sides of roof members or in such other positions as may be approved by means of non-corrodible, saddles or buckle clips with non-corrodible fixings spaced at intervals not exceeding 225mm. Where cables pass through holes they shall be bushed.

Under no circumstances will joints be permitted in the run of a cable. Wires shall be connected together only by looping into the terminals of accessories or by approved mechanical connectors in suitable joint boxes. Under no circumstances will taped joints be permitted.

The cables sheathing shall be carried into the switch, ceiling rose or other accessories.

Cables shall not be installed within 300mm of a metal roof, unless clipped to the lower side of wooden joints or otherwise protected from radiant heat.

6.07 System G - PVC Insulated and Sheathed Cables Clipped to Roof Members and Run in Metal or Plastic Conduit Drops Concealed in Walls

The wiring shall be carried out as for System F except that cables shall be enclosed in steel or plastic conduit where drops are required to switches, distribution boards or accessories.

6.08 System H _ PVC Insulated Single Wire Armoured and PVC Sheathed or Paper Insulated Lead Sheathed Single Wire Armoured and Served Cables Laid in Ducts, Trenches and Saddled to walls

Cables shall be suspended on purpose - made frame and hangers, drawn through ducts or laid in trenches. Cables suspended on multiple hangers shall be so arranged that one cable can be removed without disturbing the others. Frames and hangers shall be galvanised or of non-ferrous material and shall not be fixed in contact with other metals with which they are liable to set up electrolytic action. All spacings of cable hangers and supports shall not exceed those laid down for the relevant size and type of cable in the current edition of the I.E.E. Regulations.

SECTION 7

CONDUITS, TRUNKING AND ASSOCIATED FITTINGS

7.01 Steel Conduits - Steel Trunking

Conduits shall be of welded heavy gauge Class B to British Standard Specification B.S.31. In no case will conduits smaller than 19mm diameter be used on the Sub-Contract Works. Conduits installed within buildings shall be of black enamelled finish except where specified otherwise. Where installed externally, 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 Engineer.

Metal trunking shall be fabricated from mild steel of not less than 18 swg. similar in pattern to that manufactured by M.S Walsall Conduits Ltd. All sections of trunking shall be rigid fixed together and attached to the framework or fabric of the building at intervals of not less than 1200mm. Joints in trunking shall not overhang fixing points by more than 600mm.

All trunking shall be made electrically continuous by means of 25mm x 3mm copper links across each joint in the system. Connection shall be made by means of electro-tinned bolts (head inside trough) nuts (6mm dia. minimum) flat washers and spring washers, and where the trunking is galvanised, the galvanising shall be removed within 6mm of the jointing strap, and the area painted.

All trunking fittings (i.e. bends, tees, etc) shall leave the main trough completely clear of obstruction and continuously open except through walls and floors, at which points suitable fire resisting barriers shall be provided as may be necessary.

Where trunking passes through ceilings and walls the cover shall be solidly fixed 150mm either side of ceilings and floors and 25mm 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 or fuseboards, such connections shall be made by trunking fittings manufactured for this purpose and not by multiple conduit couplings.

Where boxes and bends or similar fittings are used, particular attention shall be given to avoid damage to cables on corners.

Where vertical sections of trunking are used which exceed 900mm in length, staggered tie off points shall be provided at 900mm intervals to support the weight of cables.

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 insulating substance shall be removed from the screw threads. Where conduits terminate in fusegear distribution boards, adaptable boxes, non spouted switchboxes, etc., they shall 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 enamelled tubing and galvanising paint such as `Rust Anodi' manufactured by C.P. Development Co. (London) Ltd., for galvanised tubing immediately after the conduit are erected. All bends and sets shall be made cold without altering the section of the conduit, the inner radius of the bend shall not be less than 2½ times the outside diameter of the conduit. Not more than two right angle bends will be permitted without the inter-position of draw-in box. Where straight runs of conduit are installed, draw-in boxes shall be provided at distances not exceeding 12 metres. No tees, elbows, sleeves, either of inspection or solid type, will be permitted.

Conduit throughout shall be of sufficient section and so arranged with draw-in boxes to allow easy drawing in and out of any one or all of the cables in the conduit.

All metallic and non-metallic conduit shall be swabbed out prior to drawing in cables, and they shall be laid so as to drain off all condensed moisture without injury to end connections.

Conduit and trunking shall be run below and kept at least 150mm clear of hot water and steam pipes, and at least 150mm clear of cold water and other services unless otherwise approved by the Engineer.

Conduit installed and buried in walls shall allow a minimum of 10mm cover. These conduits and those cast `in-situ' in concrete slabs shall be given one coat of rust prevention paint before installation of conduit and before concrete is placed. Sunk circular conduit boxes shall be provided with break joint rings of white moulded material or metal.

Surfaces conduit shall be run in square symmetrical lines and shall be marked on site for approval before installation. Conduit shall be fixed by means of distance saddles spaced at not more than 1200mm, for 19mm and 25mm conduit and 1.5 metres for larger sizes. Conduit shall be fixed each side of conduit boxes at a distance not exceeding 600mm.

Where conduit runs enter specified areas requiring flameproof equipment, barrier boxes shall be inserted immediately before the conduit enters the flameproof area. All conduit installed within this area shall be solid drawn galvanised, as shall be conduit fittings and

accessories and Buxton Certified as suitable for Group II hazards. Equipment shall comply with B.S. 229, B.S. 889 and Code of Practice C.P. 1003.

In no case shall conduit from different distribution boards be connected at one junction box, likewise cables from different distribution boards shall not be housed in the same conduit.

All boxes shall conform to B.S. 31, shall be of malleable iron, and black enamelled or galvanised according to the type of conduit specified.

All conduit boxes, except loop-in pattern in concrete floors shall be fixed direct to the structure apart from the support provided by the conduit.

Both lids where required shall be heavy gauge secured by means of brass screws.

Draw-in through boxes shall be provided in all conduit systems for the drawing in or out of any cables after installation is completed.

All adaptable boxes and lids of the same size shall be inter-changeable.

Boxes used on surface work shall 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.

Draw-in boxes in the floors shall be avoided except where they are essential when they shall be grouped in positions approved by the Engineer and covered by suitable floor traps, with non-ferrous trays and covers.

The floor trap covers shall be recessed and filled in with a material to match the floor surface.

The Sub-Contractor shall take full responsibility for the filling in of all covers, but the filling in materials will be supplied and the filling carried out by the Main Contractor.

Where buried in the ground outside the building the whole of the buried conduit shall be painted with two coats of approved bitumastic composition before covering up. Paint damage and joints under screed or cast in-situ shall be similarly treated.

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.

7.02 Flexible Conduit

Conduit connections to motors and equipment shall be made using a minimum of 300mm waterproof flexible conduit. The solid conduit shall be terminated in a large BESA or adaptable box enclosing sufficient coils of motor cables to enable "Tong Test" readings to be taken in each conductor. Earth continuity shall be maintained by means of a copper conductor seized in accordance with the appropriate table of current edition of the I.E.E. Regulations and insulated with Green and Yellow PVC. This conductor shall be run

externally to the flexible conduit connecting apparatus to solid conduit and shall be secured to the connecting adaptors by an approved means.

All connecting adaptors shall be solid bronze or brass pattern with standard thread for conduit connection and a thread for conduit connection and a thread to receive the flexible conduit. The adaptor shall be sweated solid to the flexible conduit and the rub screw fully tightened.

7.03 Plastic Compound

All galvanised boxes and boxes in a situation where the air flow is likely to cause excessive condensation shall be filled with a plastic compound which fulfills the following conditions:-
No effect on the physical properties of insulation at any temperature.

No effect on metals, porcelain, synthetic resins, etc.,

Unaffected by atmospheric and temperature extremes.

Remains plastic indefinitely.

Has a high insulation value.

7.04 Telephone Conduit

The arrangement and size of telephone conduit shall be such as to accommodate the number of circuits as indicated on the Contract Drawings. Conduit shall terminate in standard metal boxes to B.S. 1363 with flush fitting cover plate. Draw wires of piano quality steel wire of not less than 22 swg. shall be left in all telephone conduit Draw-in boxes shall be provided in telephone conduit on the same basis as laid down for power and lighting conduit.

Telephone outlet boxes, draw-in boxes and the telephone distribution boxes shall be marked internally with yellow paint to distinguish them from boxes provided for other services.

7.05 Television Conduit

Television conduit shall be 19mm diameter thermo-plastic type installed vertically from each outlet point terminating 300mm above finished roof surface. A purpose made bend shall be screwed on to the conduit at its roof termination. Outlet points shall be the conduit at its roof termination. Outlet points shall be Belling and Lee Type 1480 complete with plug type L734/PAl, or other similar and approved, fitted to a flush plastic box to B.S. 1363. Draw-in wires as provided for telephone conduit shall be installed.

7.06 Cable Tray

Cable tray shall be fabricated from perforated mild steel tray of 150mm minimum width and 14 swg. with return flanges and coupling pieces for rigidity and strength similar to that manufactured by Messrs H. Greening (Wolverhampton) Ltd., Catalogue No. R.F. 7 type.

The cable tray shall be painted grey enamel for indoor use and shall be hot dipped galvanised for outdoor locations.

Cable tray shall be appropriately fixed on robust and substantial brackets fixed into the walls or shall be suspended on rods securely fixed to the structure together with a bracket arrangement as required to facilitate the support of the cable tray. Suspension rods shall be minimum 10mm. dia. mild steel, Brackets or suspension supports shall be provided as necessary, the spacing of which shall not exceed 1800mm.

Where the cable tray changes direction the minimum radius of bends shall not be less than 300mm on the inside of the bend and in no case shall be less than the bending radius of the cable supported.

All brackets, suspension rods and attachments shall be finished as the cable tray supported.

7.07 Rising Main Bus-Bars

The rising main bus-bar system shall comprise a sheet metal enclosure containing copper bus-bars rising through the building via the riser duct, and supplying the distribution system at suitable tap-off position.

The bus-bars shall be contained in a trunking of not less than 16 gauge sheet steel with detachable cover plates providing a reasonably dustproof enclosure. The covers shall be in sections the length of which shall be approved by the Engineer prior to manufacture.

Fixing brackets for wall fixing shall be provided at not less than 1800mm intervals

All steel work shall be given a rust preventative undercoat, and finished, in gloss enamel in an approved colour. All screws, bolts, nuts and washers shall be rustproofed.

Bus-bars shall be 4 pole 2 pole with full size neutral rated at the current indicated on the Contract Drawings, and shall consist of hard drawn, high conductivity copper bars.

Current ratings shall comply with B.S. 159 for a temperature rise not exceeding 50oC.

Copper fishplates shall be used for connection between the lengths of bars, and a high degree of conductivity shall be maintained.

The bus-bars shall be anchored rigidly in the vertical run, and approved means of taking up the maximum expansion and contraction likely to occur in the bars under normal

conditions shall be incorporated. The recommendations of the manufacturers in this respect shall be closely observed.

Phase colours shall be clearly marked.

Bus-bars shall be supported and anchored by means of suitable high grade non-hygroscopic and non-tracking insulation and designed to withstand the stresses set up under fault conditions.

Where the rising bus bar systems are carried through floors, a barrier of fire resisting material shall be incorporated in the trunking at each floor level to prevent the possible spread of fire between floors.

End covers shall be fitted at the top of the run.

A suitable cable entry with terminal type scaling end box shall be provided at the lower end of the system to accommodate the main cable, the size of which is shown on the Contract Drawings.

Tap-off units shall be of the type and current rating indicated on the Contract drawings. All connections to bus-bars shall be made by means of bolted type clamps designed to ensure maximum conductivity at all times, and drilling of bus-bars will not be permitted.

A 25mm x 3mm copper tape shall be installed externally for the full length of the bus-bar trunking. The tape shall be bonded to each section at intervals not exceeding 1200mm, by means of 20mm brass bolts, washers and lock nuts.

7.08 Under floor Ducting

Where under floor ducting is specified, it shall be of two or three compartment type manufactured from 16 gauge zinc coated steel with base plate and badly welded together to make a single unit. The capacity of each section shall be adequate for the number of conductors to be drawn in and the space factor as required for compliance with the current edition of the I.E.E. Regulations shall not be exceeded.

SECTION 8

CABLES IN CONDUIT OR TRUNKING

8.01 General

The wiring throughout shall be carried out by looping cables progressively from point to point and no tee or other joint will be permitted. Conductors of the same circuit shall be contained in the same conduit or trunking. At distribution boards, the neutral bar in the same sequence as the live conductors are connected to the fuses or circuit breakers so that they can be readily identified.

8.02 PVC Cable in Conduits

Unless otherwise specified cables shall conform to B.S. 6004. They shall be 600/1000 volt grade, single-core. No cable smaller than 1/1.38mm (1.5^2) shall be used. Cable size shall comply with circuit details as indicated on the Contract Drawings. Slack cable shall be left at all points of connection.

When used with pinch type terminals cable ends shall be prepared as follows:-

i) 1/1.38mm. ($1.5mm^2$) and 1/1.78mm. ($2.5mm^2$) - the conductor doubled back on itself to present a double thickness.

ii) 7/0.85mm ($4.0mm^2$) to 7/1.70mm. ($15mm^2$) - the strands well twisted together to make as solid a conductor as possible.

iii) 7/2.14mm. ($70mm^2$) and above - the strands sweated solid or fitted with purpose made soldering thimbles.

Cables shall be delivered to the site with seals intact and offered to the Engineer for inspection prior to installation.

Care shall be drawn in after the erection of the complete conduit and trunking system, or completed section if approved by the Engineer and all plaster has dried out. Draw wires, tapes or cables shall not be threaded in at the time conduit is being installed.

The live and neutral conductors of a circuit shall be drawn in the same conduit or enclosure.

Cable sizes shall be selected to allow for a 20% increase in load on every final sub-circuit.

Space shall be left in conduit and trunking for drawing in at some future date two additional cables of size not less than the largest cable enclosed in the conduit or trunking being considered.

Not more than six final sub-circuit cables shall run in conduit feeding outlet boxes, without the approval of the Engineer. Not more than eight cables running straight back to the distribution board shall be enclosed in any one conduit. Flexible cords shall be of 300/500 volt grade VR or PVC insulated and shall comply with B.S. 6500. No flexible cord smaller than 0.75mm² shall be used. Flexible cords for pendant fittings shall be circular heat resistant type, white finish.

SECTION 9

TESTING ON SITE

9.01 Installation Tests

The Sub-Contractor shall conduct testing 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 I.E.E. Regulations, the Government Electrical Specification and KPLC Bye-Laws.

Tests shall be carried out to prove that all single pole switches are installed in the 'live' conductor.

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 every earth terminal is effectively bonded to the earth continuity system. Tests shall be carried out to verify the continuity of all conductors of each 'ring' circuits.

Phase tests shall be carried out on completion of the installation to ensure that correct phase sequence is maintained throughout the installation.

The Sub-Contractor shall prepare and hand over to the Engineer within 14 days of the witnessed tests three copies of the results of the above tests. The Sub-Contractor shall be required to issue to the Engineer the requisite certificates upon completion as required by the current edition of the I.E.E. Regulations.

Any faults, defects, omissions, faulty workmanship or incorrectly positioned or installed parts of the installation made apparent by such inspections or tests shall be rectified by the Sub-Contractor at his own expense.

9.02 Testing Equipment

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 Engineer to enable him to carry out such tests as he may require.

9.03 Attendance on Other Contractors

The Sub-Contractor shall generally attend on other Contractors employed on the Works and carry out such electrical tests as may be necessary.

9.04 Equipment, Plant, Apparatus and Systems

The Sub-Contractor shall test to the Engineer's approval and as specified, all equipment, plant and apparatus forming part of the Works and before connecting to any power supply and setting to work.

Where such equipment, etc., forms part of, or is connected to, a system whether primarily 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 the Works, shall balance, regulate, test and commission the system to the Engineer's approval.

SECTION 10

EARTHING

10.01 Earthing

The extent of earthing equipment to be installed as part of the Sub-Contract Works shall be as follows:-

10.01 Earthing System for High Voltage Supply

A main earth bus-bar of 55mm. x 6mm. of high conductivity hard drawn copper shall be mounted on insulators on the wall of the Sub-station at the position indicated on the Contract Drawings. The following connections shall be made to this bus-bar:

1. Insulated stranded cable connection to the transformer neutral

2. Bare conductors to the transformer frame.

3. Bare conductor to H.V. switchgear frame.

4. Bare conductor to L.V. Switchgear frame.

5. Insulated stranded conductor to sub-station earth electrodes.

The size of the earth continuity conductors shall be as follows:

Maximum Prospective Fault Current	Insulated Stranded Conductor	Bare Copper Conductor
14 KA	19/2.52 (95mm^2)	25mm x 9mm
9 KA	19/2.14 (70mm^2)	25mm x 3mm

Where necessary, earthing connections shall be protected against mechanical damage and corrosion.
Where connections are made to the earth bus-bars, contacting surfaces shall be tinned.

The earth electrodes shall comprise 8 earth rods, installed in pairs, each pair connected together and to the earth bus-bar by an insulated stranded conductor. The earth rods shall be 1.5m long by 15mm. dia, extensible type as "Copperweld" or other equal and approved, each pair of electrodes shall be located not less than 3m. apart, the first pair being not less than 3m. from the building. The head of the earth rods shall be driven to 300mm below the surface of the ground and enclosed in a concrete box with a concrete inspection cover. The metal sheaths of all H.V. and L.V. cables shall be adequately bonded to the appropriate switchgear frame.

10.02 Earthing System for L.V. Supply

Where the supply is taken at L.V. from either a Substation on the site or a remote substation, the following earthing equipment shall be installed.

1. In the main switchroom (supply intake):

   A copper earth bus-bar, as described in Clause 10.01.

   A bare 25mm x 3 mm copper conductor from each item of isolated switchgear,connected to the earth busbar.

   A complete earth electrodes system, installed as specified in Clause 10.01, connected by an insulated earth continuity conductor to the earth busbar.

2. In the switchrooms of isolated buildings on the site.
   A similar earthing installation to that described in (1) above.

3. In the event of the K.P.& L. Co. providing an earth terminal at the intake position, the earth electrodes and earth continuity conductors, described in (1) and (2) above, shall be omitted.

10.03 Protective Multiple Earthing

Where protective multiple earthing (PME) is provided by the supply undertaking, the earthing lead shall be connected to the consumer's earthing terminal and, together with the neutral conductor of the installation, shall be so arranged that connection to the neutral conductor of the incoming supply can be carried out by the supply undertaking.

The earthing of the installation shall comply with the requirements laid down in the current edition of the I.E.E. Regulations. The earthing system for H.V. supply, described in Clause 10.01 shall be amended for the provision of separate earth electrodes for the H.V. and L.V. sides of the installation.

In addition, provision for earthing the neutral conductor shall be made for each distribution main at the end farthest from the transformer where it is connected to the main switchboard of an independent building or area of the site.

10.04 Consumer's Earth

The consumer's earth is deemed to be the earthing terminal at:-

1. The main L.V. switchboard

2. The L.V. switchboard at the intake position of an isolated building.

The consumer's earth will be bonded to the earth bus-bar in the sub-station in an approved manner.

10.05 Bonding

All conduit, trunking metal enclosers, the metallic sheathing of cables, the cases and enclosers of switchgear, fuse gear and apparatus of electrical nature in each building shall be so bonded as to be directly connected to the respective consumer's earth. Earthing arrangements and resistance of the earth continuity conductor shall comply with the current edition of the I.E.E. Regulations.

In situations such as bathrooms, kitchens, laundries or any situation where there is exposed metal and socket outlets or fixed appliances are installed, all metal work including hot and cold water pipes, waste pipes, metal draining boards, the casing of electrical appliances, etc., shall be effectively bonded to the earth continuity conductor of the electrical installation so as to ensure that no difference in electrical potential can arise between these items.

Earthing system shall be tested in accordance with the current edition of the I.E.E. Regulations, and if the minimum impedance required by the I.E.E. Regulations is not obtainable, the Engineer shall be informed.

The Sub-Contractor will be responsible for rectifying any fault in the earth continuity conductor at his own expense.

SECTION 11

INSTALLATION OF LIGHTING FITTINGS

11.01 Fixings

Information on the proposed method of fixing each type of lighting fitting is included in Part C of the Specification.

11.02 Alignment

Care shall be taken that individual lighting fittings are aligned with the ceiling in all planes and that there is proper alignment in groups or rows of lighting fittings.

Where necessary, cast iron extension rings shall be used to provide alignment between recessed point boxes and finished ceiling levels.

11.03 Enclosures

In situations where a lighting fitting is fitted to a ceiling of combustible material, the back plate or other accessory shall be so designed that the connecting cables are completely enclosed.

11.04 Earthing of Lighting Fittings

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

11.05 Programme for Erection of Lighting Fittings

The Sub-Contractor shall liaise with the Main Contractor in order that lighting fittings can be erected at such a time that:

i) The work of other trades is not inhibited by the presence of the fittings in-situ.

ii) No damage is caused to finished ceilings or walls

iii) Where fittings are located in selected spaces left open in a suspended ceiling, there is adequate clearance for the fittings, access to suspension points, and clearance for any other services in the ceiling void at that point.

No. claims will be considered for costs of extra works or damages which arise out of the Sub-Contractor's failure to comply with this clause.

SECTION 12

LIGHTING AND SINGLE PHASE POWER ACCESSORIES

12.01 General

The lighting switches, socket outlets, fused spur outlets and similar accessories shall be as specified. The type of accessory to be used in each location is related to the type of wiring system in that area,

In all cases where switches are grouped together, and are connected to the same phase they shall be ganged together and mounted in a multi-gang box and plate.

Where switches control points not readily visible from the switching position the plates shall be engraved to indicate the points controlled.

All switches controlling maintained circuits shall have the word 'MAINTAINED' engraved on the switchplate.

Multi-gang switch boxes, containing switches supplied from different phase shall have integral fixed separators segregating the switches on different phases. Each such segregated compartment shall have a separately fixed metal cover clearly marked 'Danger' 415 volts' and the overall switchplate shall cover the whole.

12.02 Special Accessories

Accessories for special purpose such as speed controls for small motors, dimmers, flameproof or sparkless switches, etc., shall be as specified. Where special accessories are supplied as part of the Sub-Contract Works they shall have a finish to match the other accessories installed in the same area.

SECTION 13

PLANT POWER WIRING

13.01 General

Wiring to motor outlets and control outlets in Plant Rooms, Boiler Houses, etc., and to remote motor and control outlets forming part of the Mechanical Engineering Services installation, shall be carried out in one of the wiring systems described in the specification.

The approximate location of motor and control outlets, distribution boards and control panels is shown on the Contract Drawings. Details of the size and type of cables, and rating of fuseways or circuit breaker are shown on the diagram of connections.

Precise instructions on the Sub-Contractor's responsibilities for the supply, fixing and connecting of equipment such as isolators, starters, control switches, sensing elements, annunciator panels, etc., are given in the Particular Specification. Where such items of equipment are provided by others it will be their responsibility to issue to the Main Contractor schematic diagrams; diagrams of connections and details of any special requirements, such as the provision and specification of screened cables and to ensure that the equipment is suitable for the electrical characteristics of the supply available.

13.02 Power Outlets for Lifts

The outlet for each lift shall terminate on an isolator located at the position shown on the Contract Drawings. The rating of the isolator and the size and type of cables are shown on the diagram of connections. Each outlet shall be wired on a separate circuit using butyl rubber cables in conduit or MICS cables, as indicated on the diagram of connections.

The switch fuse controlling a Firemen's Lift shall be located on the main switchboard, and shall be provided with means for padlocking in the `ON' position.

Where the installation includes a mains failure generator, the supply to the Firemen's Lift shall be connected to the `essential services' section of the main switchboard.

The isolating switch controlling each lift shall disconnect all supplies to the lift hoist and control equipment

SECTION 14

NON-METALLIC CONDUIT

14.01 General

Non-metallic conduit shall be best quality new super high impact grade heavy gauge Class `A' rigid PVC unplasticised conduit as manufactured by Ega Africa Ltd., suitable for plain connections.

14.02 Manipulation

The conduit shall be bent and formed strictly in accordance with the manufacturer's instructions.

i) Small sizes, i.e. 15mm, 19mm and 25mm, shall be bent cold by inserting the correct size bending spring. It is essential for right angle bends that the conduit is bent past 90° to allow for `spring back'.

ii) Larger sizes of conduit shall be preheated before inserting rubber cord to prevent kinking. Conduit badly formed or bent, or damaged in any way, shall not be used.

14.03 Joint of Plain Conduit

Joints shall be made water-tight by the use of `Egaweld' cement applied with a brush or rag. `Egaweld' shall be applied to the complete circumference of the conduit. Conduit shall be thoroughly cleaned at the ends to ensure a good adhesion to the end fittings. `Egaweld' shall not be permitted to enter into the conduit.

14.04 Conduit Fittings

All conduit fittings and accessories including couplers, reducers, stopping plugs, lock nuts and male and female bushes shall be manufactured to B.S. 4607 Part 1, 1970.

Solid tees shall not be used. Solid or inspection elbows or bends or inspection tees shall be used only in exceptional circumstances and then only with the Engineer's approval.

Where it eases the installation of cast-in-situ back entry boxes on the looping system, purpose made bends manufactured by Egatube and comprising a tight bend with a push socket at one end and a threaded socket at the other may be used.

14.05 Fixing of Conduit

Conduit shall be installed on the loop-in system and shall be either cast-in-situ in the main concrete structure concealed in chases case in concrete wall, or chases cut in solid partition walls, run in ceiling spaces or in hollow partitions or floors; concealed below the floor screed, whichever shall prove to be the most suitable method of installation for use in the building under construction. Unless it is clearly specified or shown on the drawing, the method of installing conduit shall be subject to the approval of the Engineer.

Sunken conduit run in chases in walls or ceilings shall be fixed by spacer bar saddles fixed not more than 900mm apart.

Surface conduit shall also be fixed 125mm. on both sides of all boxes, the box itself being securely fixed. Where such an arrangement of boxes and saddles would prove to be both unsightly and unnecessary, short lengths of conduit not exceeding 900mm. in length between boxes need not be secured further than by connection to the adjacent boxes. In such cases the Engineer reserves the right to insist upon additional fixings being provided, should he for any reason whatsoever consider additional fixings necessary.

Where two or more lines of conduit run parallel to each other, on the surface of walls, etc., the distance between them shall be not less than 20mm. and conduit shall not cross.

Conduit shall be installed in such a manner as to prevent interference with other services and shall be kept at least 150mm. clear of gas or water pipes, and heat in excess of 68°C.

A means of expansion shall be provided in conduit runs in excess of 6m. without any bend or set, by the use of "Egatube" expansion couplings, which shall also be used at building expansion joints.

Conduit cast-in-situ shall be frequently secured to the steel reinforcement work, with heavy binding wire to prevent movement of the conduit and conduit boxes during the pouring and vibrating of the concrete. Outlet boxes shall be filled with paper to prevent ingress of concrete, and all boxes shall be securely fixed to the shuttering with nails, or by means which shall be visible as a marked on removal or the shuttering only where these marks can be concealed. Conduit shall be installed after the first grid of steel reinforcement work is securely fixed and all open ends of conduit shall be protected by couplings plugged with a suitable non-metallic stopping plug.The number of right angle bends in conduit cast in-situ shall not exceed two between boxes. Immediately prior to installing the wiring all conduit and fittings shall be dried and cleaned out by drawing through a cloth swab. Rawl plugs shall be used for fixings to brickwork, self-tapping screws for fixing to aluminium section, rawlnuts, spring toggles, gravity toggles or rawlbolts shall be used for fixing to other materials as approved by the Engineer.

Corners shall be turned by easy bends or sets made in accordance with the manufacturer's instructions without altering the section or splitting the conduit.

14.06 Circular Inspection Boxes

Boxes will not be permitted in floors unless approved. Boxes cast-in-situ must face downwards from the ceiling/floor section.

Small standard circular non-metallic conduit boxes, conforming dimensional with B.S. 31/1940 with standard circular non-metallic (3mm) lids and nylon fixing screws, shall be provided and fixed at all junctions.

The above circular boxes or equivalent looping boxes shall be provided and securely fixed for all ceiling points. When the conduit is run on the surface, all circular boxes for ceiling points shall be fixed with screws.

Where ceiling roses occur and the ceiling box is recessed below the finished level of the ceiling, suitable extension rings to accommodate the ceiling rose must be provided.

Where ceiling boxes, including extension rings, are flush with the ceiling surface, break joint rings shall be provided to hide the joints.

Where a non-metallic outlet box of thermoplastic material is used for the fixing or suspension of a lighting fitting, care shall be taken to ensure that the temperature of the box does not exceed 60°C and the box shall be fitted with Egafrica steel insert clips.

14.07 Stopping Plugs

All spare ways in junction boxes, etc., left for possible future extension shall be fitted with stopping plugs.

14.08 Continuity

Where fittings and accessories require earthing, an earth continuity conductor shall be run through the conduit. The earth continuity conductor shall be of copper minimum size 1.0mm^2 and shall be continuous between terminals. Where the earth terminal is formed by a brass screw and washer, `Ross Courtney' terminations shall be used.

All metal boxes shall be equipped with an earth terminal.

Each final sub-circuit that is required to be earthed shall be provided with its own individual earth continuity conductor which shall be run from a terminal on the earth bar in the distribution board or consumer's control unit protecting the particular final sub-circuit.

PART B

ELECTRICAL ENGINEERING SERVICES

PARTICULAR SPECIFICATION

SECTION 1

PARTICULAR CONDITIONS

1.01 Location of Site

The site of the proposed Sub-Contract works shall be in Nairobi, Kenya.

1.02 Description of Project

The project shall comprise the development of an office block.

1.03 Commencement of Works

The Sub-Contractor in submitting his tender shall be deemed to have included for commencing any necessary work on site at such time as will comply with the Main Contractor's Program.

1.04 Climatic Conditions

The following climatic conditions apply at the site of the works and all plant, equipment, apparatus, materials and installations shall be suitable for these conditions.

Maximum temperature- 31°C

Minimum temperature- 17°C

Average temperature range- 24°C

Relative humidity range- 50% - 85%

Altitude- 1350 M above sea level

Latitude- 0° 10′03S

Longitude- 34° 27′55E

Rainfall- Extremely heavy at certain periods of the year

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

Unless otherwise stated, all ratings of plant, equipment and apparatus shall be interpreted as site ratings and not sea level or other ratings.

1.05 Scope of Sub-Contract Works

The Sub-Contract Works shall comprise the supply, delivery, erection, testing, commissioning and setting to work of the Electrical Engineering Services as detailed in this Specification and accompanying Contract Drawings.

The Sub-Contractor shall include for all apparatus and appliances not particularly called for in this Specification or on the Contract Drawings but which are necessary for the completion and satisfactory functioning of the Sub-Contract Works.
No claims for extra payment shall be accepted from the Sub-Contractor due to his failure to adhere to the above requirements.

It is deemed that if, in the opinion of the Sub-Contractor at the time of tendering, there existed a discrepancy between the Specification and the Contract Drawings, that the Sub-Contractor clarified this difference with the Engineer before tendering.

The works to be installed under this Sub-Contract shall comprise but not restricted to the following: -

1. K.P.L.C Main incoming electricity supplies.
2. Main Low Voltage Switchboard, sub-main switchboards, distribution boards and consumer units.
3. Electrical distribution systems and works associated with mechanical services.
4. Sub Mains cable and associated sub boards.
5. Lighting and Power Installations.
6. Lightning Protection System.
7. Security Lighting System.
8. Fire Alarm and Detection system.
9. Surveillance system

1.06 Ordering

The Sub-Contractor shall order materials from the quantities taken from his own approved working drawings and not from the quantities shown on the Contract Drawings or in the Specification

1.07 Builder's Work Requirements

The structural and other provisions allowed for are indicated on the Contract Drawings. If the Tenderer requires any other provisions, he shall mark them in a contrasting color and submit them as part of his tender.

1.08 Statement of Compliance

The Tenderer shall provide as an integral part of his bid, a statement of compliance in which he shall clearly declare any items of the Specification to which his offer does not comply and the alternative which is included in the offer.

1.09 Storage of Materials

The Sub-Contractor shall be liable for the cost of any storage accommodation provided specially for their use. No materials shall be stored or stocked on suspended slabs without the prior approval of the Architect.

If the Sub-Contractor does not wish to use the storage space provided by the Main Contractor, he may, at the Engineer's discretion, be allowed to store these in his premises. In this case, the Sub-Contractor shall be required to provide a security bond specifically covering these materials intended for use on the Sub-Contract Works.

1.10 Labour Camps

Labour camps will not be permitted on the site and the Sub-Contractor shall allow for all transport and other charges in moving labour to and from the site.

1.11 Site Visit

The tenderer is recommended to visit the site and shall be deemed to have satisfied himself with regard to the conditions under which the Sub-Contract Works shall have to be carried out.

SECTION 2

INCOMING ELECTRICITY SUPPLIES

2.01 General

The electricity supply shall be derived from the Kenya Power and Lighting Company network. The incoming low voltage cables from Transformer will be supplied, installed and connected to the main Low Voltage Switchboard by K.P.L.C. The Main Low Voltage Switchboard shall be supplied and installed under this contract.

A Provisional Sum is included in the appropriate price schedule for the service line charges that will become payable to the Kenya Power and Lighting Company.

The Sub-Contractor shall ascertain the size and type of incoming Low Voltage supply cables that will be installed by the Supply Authority and thereby ensure that the correct glands and terminations for the service cables entries into the Main Low Voltage switchboard are provided.

2.02 Earthing

Earthing and bonding shall be carried out to comply with the regulations currently in force and copper tape mesh system shall be installed adjacent to the Kenya Power and Lighting Company supply intake.

The copper tape mesh system has been decided on due to the nature of soil resistivity at the proposed site for construction.

A provisional sum has been included in the appropriate price Schedule for any additional cost that may be necessary to achieve an effective and permanent earthing system.

Provision shall be made for protective multiple earthing at the main meter boards with the final connection between the neutral and the consumers earthing terminal being effected by the Kenya Power and Lighting Company Limited's electrode system.

2.03 Metering Power Supplies.

The electricity power supply to the building shall be metered via K.P.L.C.'s maximum demand (kVA) and energy (kWh) meters supplied at 415V and

connected at the Main Low Voltage Switchboard by K.P.L.C. The entire building is connected to both supplies from K.P.L.C. and standby generator.

2.04 Attendance

The Sub-Contractor shall pay all attendance and liaise fully with Kenya Power and Lighting Company in ensuring satisfactory completion of all their work.

SECTION 3

MAIN L.V. SWITCHBOARD

3.01 Scope of Work

This section of the Specification covers the supply, installation, testing and commissioning of the Main Low Voltage Switchboard in accordance with the Contract Drawings and Specification.

3.02 Contract Drawings

The Schematic Layout of Main Electrical Distribution for the Building is shown on the contract Drawings.

The Sub-Contractor shall be deemed to have studied all the Contract Drawings and to have allowed for any necessary provisions in this section of the works required thereby.

3.03 Low Voltage Switchboard General Requirements

The Low Voltage Switchboard and meter boards shall be self-supporting floor mounted cubicles with front access incorporating the equipment as detailed on the Schematic Layout of Main Electrical Distribution System.

They shall also be supplied complete with all internal connections, voltmeter, instrument selection switches, cable glands or boxes and current transformers for the supply Authority's meters. The switchboard shall have a separate compartment to house the Kenya Power and Lighting Company metering equipment.
The switchboard shall be in accordance with the Specification.

The main Low Voltage Switchboard shall be capable of extension and the busbar section shall allow for this provision. The Engineer reserves the right to make such variations to the layout and dimensions of the switchboards as are deemed necessary to suit site conditions.

The arrangement of these switchboards shall be capable of accommodating power supply connection to all part of the buildings.

3.04 Fuse Switches

The fuse switches shall be as shown on Schematic Layout of Main Electrical Distribution and shall be as manufactured by Merlin Gerin to BS 5419. The fuse switched shall be provided complete with Class Q1 H.R.C. cartridge fuse links and three spare fuse links of each size fuse.

3.05 M.C.C.B.'s

Moulded case circuit breakers (M.C.C.B's) of fault breaking capacity of over 50KA shall be installed and shall be of Merlin Gerin manufacture unless otherwise stated.

These M.C.C.B's shall be as shown on Schematic Layout of Main Electrical Distribution system. Where switches or isolators are specified, these shall be moulded case switches and shall be capable of interrupting currents upto 10 times the rated current. They shall be as manufactured by Merlin Gerin.

SECTION 4

ELECTRICAL DISTRIBUTION SYSTEM

4.01 Scope of Work

This section of the Specification covers supply, installation, connection, testing and commissioning of the Sub-main cables, consumer units and distribution boards in accordance with the Contract Drawings and Specification.

4.02 Sub-main Cables

The sub-main cables and methods of installation shall be as shown on the Schematic and Layout Drawings and/or as specified in this Specification. The cables shall be as manufactured by BICC, East African Cables Ltd. or other equal and approved.

4.03 Distribution Boards and Consumer Units

The distribution boards and consumer units shall conform with the requirements of this Specification and shall be as manufactured by M/S Square D. Ltd., ABB, Schneider or other equal and approved.

Schematic of individual distribution boards and consumer units have been prepared and the Sub-Contractor should note that power boards consist of single phase and three phase sub-circuits ways.

All neutral conductors in a single phase distribution board shall be connected in the same circuit sequence as its phase conductor, i.e. phase wire No. 1 connected to No. 1 terminal on the neutral bar, etc.

In addition to this requirement for every distribution board each phase and neutral conductor shall have clipped to its sheath in the distribution board a clip-on numbered tag corresponding to its circuit number. The tag shall be of a type manufactures by M/S. Critchley Brothers Ltd or equal and approved type. All circuit numbers shall commence from left to right.

4.04 Electrical Services Associated with Mechanical Services Installation

4.04.1 Scope of Work

Work to be carried out under this section includes the supply, installation, wiring to and connection to the mechanical equipment power supply isolator or its control panel. The supply, installation, testing and commissioning of the equipment control panel, wiring between control pane; and equipment shall be by the Mechanical Equipment sub-contractor.

The electrical services shall be associated with the following mechanical equipment: -

a) Domestic water pumps (duty and standby) and the associated control panel.
b) Rainwater pumps (duty and Standby) and the associated control panel.
c) Fuel Interceptor pump (petrol interceptor pumps) (duty and standby) and associated control panel.
d) Sprinkler pumps (duty and standby) and associated control panel.
e) Wet Riser Pumps (duty and standby) and associated control panel.
f) Waste water treatment plant pumps (duty and Standby) and associated control panel.
g) Hose reel pumps (duty and Standby) and associated control panel.
h) Domestic/Rain water transfer pumps (duty and standby) and the associated control panel.
i) Air conditioning and Mechanical ventilation services and their associated control panels.

4.04.2 The Electrical Services shall also be associated with the provision of power supply up to the isolator or control panel of the following specialised equipment:-

a) Electric passenger lifts and associated control panel.
b) Electric Bullion Hoist and associated control panel.
c) ELV equipment.
d) Surveillance equipments
e) Fire protection system

4.05 Fuse Switches (Loose Equipment)

Fuse switches shall conform with the requirements as detailed.

4.06 Isolator (Loose Equipment)

Isolators shall conform with the requirements detailed in this specification but with exception that solid links shall be suitably sized to carry the full rated current

of the respective isolators. Unless otherwise stated, isolators shall be designed for load making/load breaking duties.

4.07 Cable Tray

Sizes, proposed fixing arrangements and routes of the galvanised cable tray have been detailed on the layout drawings. The cable tray shall conform with the requirements as detailed

4.08 Cable Schedule

The sub-contractor shall prepare a suitable cable route and schedule for all major Low Voltage cables within the Facility. The schedule shall be submitted with working drawings after contracts have been exchanged. During the course of installation, each major cable shall be suitably identified along its route by traffolite cable markers, in accordance with the Sub-Contractor's cable schedule.

4.09 Rising Main Bus bars

There shall be for sub- boards for each block and additional board for mechanical loads.

Phase colours of the incoming cables to each board shall clearly be marked and the current ratings shall comply with B.S. 159 for a temperature rise of 50^0C.
All connections to the boards shall be made by means of bolted type clamps designed to ensure maximum conductivity at all times, and drilling of bus-bars in the boards shall never be permitted.

4.10 Fire Barriers

Where the rising bus bar systems, vertical cable tray installations, vertical trunking installations pass through floors, a barrier of fire resisting materials shall be incorporated around the installations at each floor level to prevent the possible spread of fire between floors.
The fire barrier shall be foil clad, wire mesh reinforced 5mm thick fire barrier curtain, complete with metal fixing strips as RBC Envirograf 1983 - 1993 tested to BS 476 part 20/22 or equal and approved.

4.11.0 Power Factor Correction Equipment

4.11.1 Scope of Works

This section of the specification covers the supply, installations, connections, testing and commissioning of the power factor correction equipment and to ensure that at the peak of the demand the power factor shall be maintained at 0.95.

4.11.2 The anticipated maximum demand for the building is 600 KVA. The KVA rating of the capacitors is provisionally taken as 200 KVAr switched in six steps of 50 KVAr 50 KVAr, 25 KVAr, 25 KVAr, 25 KVAr, 25 KVAr each.

The power factor correction equipment shall be in separate free standing steel cabinet and shall be interconnected with the main L.V. Switchboard. The equipment shall be installed in the switchroom.

The power factor correction equipment shall be dry resin encapsulated, shall have low losses and shall be self-healing. The capacitors shall be delta connected.

The power factor relay shall be cyclic type with built in power factor meter.

The capacitors shall incorporate automatically switching facilities to vary the capacitors in circuit depending on load variations.

SECTION 5
LIGHTING AND POWER INSTALLATION

5.01 Scope of Work

This section of the Specification covers supply, installation, connection, testing and commissioning of the lighting and single phase power installation in accordance with the Contract Drawings and Specification.

5.02 Wiring System

Final sub-circuit wiring shall be carried out using single core PVC insulated copper cables enclosed in a system of high impact heavy gauge PVC conduit. The conduits shall be embedded in the fabric of the building or run surface on the roof members.

All single phase 13A socket outlets shall be wired using 30A ring main circuit system or 20A radial circuits as shown on the Contract Drawings.

An insulated earth continuity conductor shall be enclosed in all non-metallic conduits.

5.03 Lighting Luminaries

Lighting Luminaries shall be of the type and manufacture as detailed in this Specification.

All luminaries shall be supplied and installed complete with lamps and tubes of the wattage specified.

All fluorescent tubes shall be warm white as manufactured by Thorn Lighting or other equal and approved and shall conform to B.S. 1853.

5.04 Lighting Switches and Socket Outlets

In general areas Lighting switches shall be flush mounted, single pole, 15A rating, rocker operated grid switches with ivory moulded plastic cover plates.

Socket outlets and spur units shall be flush mounted 13 Amp. rating with rocker operated switches and ivory plastic moulded cover plates.

All lighting switches and socket outlets shall be as manufactured by M/S Crabtree Ltd., MK. Electric Ltd., Nettle Accessories Ltd. or other equal and approved.

5.05 Cooker Control Units

Cooker control units shall be flush mounting, with 45 Amp. D.P. switch, 13 Amp switched socket and neon indicators. An appropriate connector block shall be installed at low level. The cooker control units shall comply fully with B.S 4177 and shall have ivory plastic cover plates.

5.06 Connector Boxes

Connector boxes for cookers and water heaters shall be flush mounted with moulded cover plates. The connector boxes shall be supplied complete with terminal blocks and cords grips, terminals shall be capable of accommodating up 2 No. 10mm² stranded copper conductors.

5.07 Ramp Lighting

The work under this section includes the supply and installation of the ramp lighting as shown on the Contract Drawings. The ramp lights shall comprise of 18W PL lamp in 300mm dia. polycarbonate post top lanterns as specified on the contract drawings or equal and approved.

The ramp light shall be on top of the ramp parapet wall.

5.08 External lighting

The works under this section includes the supply and installation of the external security lighting and floodlighting of the building.

The external security lighting comprises of 18W PL lamps fitted in 300mm diameter white polycarbonate spheres suitable for external wall mounting. The security luminaries shall be controlled via photoelectric cell mounted on roof. The photo electric cell shall detect darkness in the evening and then energises the contactor coil to switch on power supply to the external luminaries via the respective distribution boards located in the riser ducts.

The car park lighting shall be controlled by photoelectric cells. Power supply to the car park lighting shall be derived from the consumer unit at the Gate House.

5.09 Adaptor Boxes

All adaptor boxes draw-in boxes, conduit boxes, lighting points boxes, boxes for sockets, telephone outlets, television outlets, camera boxes etc. shall form part of conduit layout installations.

5.10 Sub-Main Cables

All main and sub-main cables shall be supplied complete with glands, lugs etc.

SECTION 6

LIGHTNING PROTECTION SYSTEM

6.01 Scope of Work

Under this section of the specification, the Sub-Contractor shall supply, deliver, install and test a lightning protection system as shown on the Contract Drawings.

The Sub-Contractor shall include for the supply and installation of the roof tapes network, all bonding to down conductors and other metal works and earthing as indicated on the appropriate drawings.

6.02 Description of Installation

The installation is based on the recommendation of Kenya Bureau of Standards and I.E.C 62561 and shall comprise a network of 25mm x 3mm flat copper roof tapes running on the ridges and parapet wall and bonded to a selected 20mm diameter reinforced steel (lengths welded to form a sound and effective electrical continuity down to the concrete foundation bases). At the basement level, the down conductors shall be bonded to a system of effective earthing comprising of earth mats as specified herein.

6.03 Bonding of Roof Copper Tapes

The roof copper tapes shall be fixed onto the roof ridges; parapet wall etc by means of special holdfasts.

All roof tanks and other metal works projecting from the roof shall be bonded to the roof copper tapes.

6.04 Earthing of Lightning Protection System

Earthing of the lightning protection system shall be effected by bonding 20mm diameter reinforced steel down conductor to 25mm x 3mm earth matt constructed from the 25mm x 3mm copper tape as detailed in the contract drawings.

The earth matt shall be placed in an earth pit 1200mm x 1200mm x 800mm deep. The earth matt shall then be filled with red soil mixed with charcoal in the ratio of 3:1. The earth pit shall then be covered by concrete slab.

The periodical testing of the earthing for lightning protection system shall be conducted at the earth testing point in the basement column and as clearly shown on the contract drawings.

The expected earthing test result for this specification shall never be above 5 ohms.

6.05 Earth Continuity Test for Down Conductors

It will be the responsibility of the Electrical Sub-Contractor to ensure that the 20mm reinforced steel down conductor is properly welded to guarantee earth continuity from roof to foundation level.
The electrical sub-contractor shall witness and be satisfied that concrete pouring to the columns with lightning protection down conductors does not affect the welded points.

SECTION 7

TELEPHONE/COMMUNICATION DISTRIBUTION SYSTEM

7.01 Scope of Works

This section of the specification covers the supply and installation of trunkings, conduits and cable trays for the distribution of telephone system, communication system like Television network via satelite dish on roof all in accordance with the Contract Drawings and specification.

The supply and installation of the telephone equipment, communication equipment - T.V. and C.C.T.V. does not form part of this sub-contract.

7.02 Distribution System

At the ground floor level, the sub-contractor shall supply and install a cable tray for the installation of the main incoming line from the main point of entry into the building to the proposed server room.

The sub-contractor shall also provide and install cable tray from telecomm closets to riser duct and all the length of riser duct upto highest floor ceiling.

The electrical sub-contractor shall provide conduit interconnections between each cabinet box and office floor trunkings. Details of the office floor trunkings are shown on the Drawings and the trunking shall be 3-compartment with a separate compartment for telephone cables. The electrical sub-contractor shall provide and install an accessory box and data outlet plates (plug-in type as specified) for connection by other. Outlet plates shall be as manufactured by M/s. Crabtree Ltd, MK Electric Ltd or other equal and approved. Draw wires shall be installed in all conduits to facilitate wiring by others.

A metallic trunking 200mm x 50mm 3 - compartment shall be provided and installed by electrical sub-contractor in the same ICT riser duct from ground floor to highest floor for the accommodation of communication cables, T.V. cables and Fire Alarm and Detection system cables.

7.03 Wiring System

The Sub-Contractor shall supply and install lead-in pipe of diameter 100mm for the main incoming last mile cables.

The Sub-Contractor shall allow for all conduit installation from the cabinet to the data outlet position. The final wiring from the distribution case to each telephone outlet shall be carried out by others.

The minimum size of conduit shall be 25mm diameter and not more than 3 data outlets shall be fed by each 25mm diameter conduit.

At each telephone outlet position the sub-contractor shall supply and install an accessory box and outlet plate for connection by others. Each outlet plate shall comprise of jack plug mounted on an ivory plastic moulded cover plate to match the other accessories used.

Outlet plates shall be as manufactured by M/S Crabtree Ltd., M.K. Electric Ltd., Nettle Accessories Ltd., or equal and approved.

SECTION 8

FIRE ALARM AND DETECTION SYSTEM

8.01 Scope of Work

This section of the Specification covers supply, installation, connection, testing and commissioning of the fire alarm and detection system in accordance with the Contract Drawings and Specification.

8.02 Operation

The fire alarm system shall function as follows: -

In the event of a fire breaking out in any part of a building the alarm can be raised by an observer breaking the glass of the nearest contact. As a result of this action the following signals will be initiated: -

a) All the alarm bells within the affected zone shall sound.
b) The lamp of the appropriate zone indicator on the annunciator panel will be illuminated.
c) A supervisory alarm buzzer on the annunciator panel will sound.

Such signals may be initiated similarly by smoke or heat detectors.

The audible alarms may be silenced by a `Mute' switch on the annunciator panel. The zone indicator will however remain illuminated until the broken glass of the fire alarm contact is replaced and the system re-set.

The operation of the `Mute' switch shall not preclude the receipt of further alarm signals from other zones.

8.03 Wiring System

The equipment shall be wired using a 24 volt series fault monitoring circuitry with each floor of the building constituting a separate zone on the annunciator panel.

Wiring shall be carried out using single core PVC insulated copper cables enclosed in high impact PVC embedded in the fabric of the building.

The fire alarm conduit system shall be completely separate from all other systems. Red conduits shall be used in the ceiling voids or all exposed areas.
The system shall be in accordance with BS 5839 PTI (1980).

The 24 volt DC supply for the system shall be derived from a battery/charger unit within the annunciator panel located on the Ground Floor reception area.

8.04 Battery/Charger Unit

The battery/charger unit will be incorporated in the annunciator panel and shall contain a trickle charger unit, nickel cadmium battery cells, voltmeter and "main on" lamp.

The battery/Charger unit is an integral part of the annunciator panel. It shall be as manufactured by M/s Honeywell or Menvier or other equal and approved and shall be to BS 5839 PTI 1980.

The power supply to the batter/charger unit shall be 240 volts a.c. and shall be derived from an unswitched fused spur unit with neon indicator.

8.05 Annunciator Panels

A 16 way flush mounted addressable fire alarm annunciator panel shall be installed at the ground floor reception area with a mimic panel installed in an agreed position.

The panels shall comprise of a sheet steel cabinet with a stainless steel front plate containing 16 No. indicator lights, mains failure light, zone fault light, bell circuit fault light, red fire light, supervisory buzzer and alarm mute switch. The function of all indicator lights shall be clearly labelled.

The panels shall be as manufactured by M/S Honeywell, Manvier or other equal and approved.

8.06 Break Glass Contacts

Break glass contacts shall be mounted at a height of 1400 f.f.f.l. and shall be suitable for flush mounting.

The unit shall be complete with a black instruction plate engrave "FIRE-SMASH GLASS" and a test button mechanism.

The break glass units shall be as manufactured by Honey Well or other equal and approved.

8.07 Alarm Bells

The alarm bells shall be tangent type "8" diameter suitable for operation in the voltage range 12-24 volts DC as manufactured by M/S Honey Well or other equal and approved.

The bells shall be mounted at a height of 2000mm f.f.f.l. and shall be suitable for mounting on a standard BESA conduit box with terminals capable of accommodating 2 No. 4mm² PVC cables.

8.08 Smoke Detectors

Smoke detectors shall be installed as shown on the Contract Drawings and shall be of ionization chamber type and manufactured by M/S Honey Well, Menvier or other equal and approved.

8.09 Heat Detectors

Where called for, Heat detectors shall be suitable for operation on a closed loop circuitry system and shall comprise of a bi-metal strip and tilting mercury switch tube mounted in a stainless steel body as manufactured by M/s Honey Well, Menvier or other equal and approved.

CBK MAIN BUILDING
ELECTRICAL BILL OF QUANTITIES

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
1.0	**PRELIMINARIES & CONDITIONS OF CONTRACT**				
1.01	Allow for mobilization and setting up stores, tools and all necessary equipment on site	1	Item		-
1.02	Allow for co-ordination of works with the Main Contractor and other Sub-contractors	1	Item		-
1.03	Allow for preparation of all "shop" drawings and submitting to the Engineers for approval prior to commencement of work on site	1	Item		-
1.04	Arrangement for all site inspections and tests of the installation that may be required by the Engineer/Client and shall provide all instruments and equipment required for these tests	1	Item		-
1.05	Allow for preparation of all "As Built" Drawings immediately after Practical Completion of the works.	1	Item		-
1.06	Allow for the preparation of all "Operations & Maintenance Manuals" immediately after Practical Completion of the works.	1	Item		-
1.07	Allow for on-site Training of the Operators for specialised equipment	1	Item		-
1.08	Allow for all the preliminaries relating to this contract as specified	1	Item		-
1.09	Allow for all the conditions relating to this contract as specified	1	Item		-
	Total carried forward to Main Building Summary Page				-

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
2.0	**INCOMING POWER**				
	KPLC RELATED WORKS				
2.01	100mm diameter Heavy gauge duct for incoming underground H.V. cables with 1:3:6 concrete surround	600	M		-
2.02	900 x 900 x 900 concrete manhole complete with Manhole covers and Hatari(Danger) Sign indelibly engraved at the top	30	No.		-
2.03	Trenching , sifting and backfilling the 750mm deep trench after laying the above ducts including compaction	600	M		-
2.04	Hatari(Danger) sign concerete slabs	100	No.		-
2.05	Attendance on Kenya Power and Lighting Co. Ltd.	1	Sum		-
2.06	Complete Earthing system to KPLC requirements	1	Sum		-
2.07	Any other item to complete the installation in this section.	1	Sum		-
	Total for Incoming power installations carried forward to Main Building Summary Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
3.0	**MAIN POWER DISTRIBUTION**				
3.01	**Main Supply Intake Panel** **Low Voltage Distribution Panel in switchroom** Supply, install and commission:- **Switch Board** Switch board standardized sheet steel (2mm) execution including inscription plate and mounted on a metal support of 100mm Paint: Anti-rust primer:interior of panel RAL 7030 exterior of panel RAL 7030 Mounting The equipment is to be mounted on a light metal frame, with terminals in the section Protection 415V 3 phase with earthing bar Standards The switch board to be in accordance with SEV - standards Voltage Rated voltage 500V 50HZ service voltage 415V 50HZ control voltage 220V 50HZ Busbars Laminated HDHC copper rectangular busbar rated 2000A TYP NS 3D Protection IP 54 rear must be accessible Front doors Back doors Top closed Bases open Power rating 2000 Amps	1	No.		-
	Total carried forward to next page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total brought forward from previous page				-
	Incoming				
	Air Circuit breaker make ABB or approved equivalent, nominal rating 1600A 660V 50HZ breaking capacity 50KA at 440V with over current and short circuit protection inclusive with solid state trip.				-
	Current transformer 1600/ 1 A				-
	Voltage transformer 415/240V BTV 10 with selector switch for all phases				
	Electronic/ KWH meter similar to ABB or equal and approved				-
	OUTGOINGS				
	Accomodation Outgoing MCCB Moulded case circuit breaker Four pole, breaking capacity 50KA rated 1000A, 660V make ABB or LERGRAND or equal and approved with BMS compatible communicating module				-
	Main Building Outgoing MCCB Moulded case circuit breaker Four pole, breaking capacity 50KA rated 1000A, 660V make ABB or LERGRAND or equal and approved with BMS compatible communicating module				-
	Power Factor Outgoing MCCB Moulded case circuit breaker Triple pole make ABB type C401H or LEGRAND DPX range or nominal rating , 800A, 660V, breaking capacity 50KA with adjustable thermal trip or equally approvedwith BMS compatible communicating module				-
					-
	Switchroom Outgoing MCB Moulded case circuit breaker ,Two pole, breaking capacity 50KA rated 32A, 660V make ABB or LERGRAND DPX or equally approved to fire pump panel board with BMS compatible communicating module				-
	Total carried forward to next page				-

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total brought forward from previous page				-
	Spare Outlet Outgoing Spare cubicle for future connection for TP MCCB 415V, 50Hz, 2000A 50KA 4 pole copper busbar coupler which is normally kept open complete with all other accessories **Common Outgoing MCCB** Moulded case circuit breaker Four pole, breaking capacity 50KA rated 630A, 660V make ABB or LERGRAND or equal and approved to conference rising busbar with BMS compatible communicating module **Power Factor Outgoing MCCB** Moulded case circuit breaker Triple pole make ABB type C401H or LEGRAND DPX range or nominal rating , 800A, 660V, breaking capacity 50KA with adjustable thermal trip or equally approvedwith BMS compatible communicating module **Essential Loads Outgoing MCCB** Moulded case circuit breaker Triple pole make ABB type C401H or LEGRAND DPX range or nominal rating , 800A, 660V, breaking capacity 50KA with adjustable thermal trip or equally approvedwith BMS compatible communicating module **Spare Outlet Outgoing** Spare cubicle for future connection for TP MCCB Change Over switch comprising of 2No. 1600 A 4P motorised ACB, Electromechanical interlocked, complete with microprocessor, electronic trip, manual /bypass with BMS compatible communicating module Change Over switch comprising of 2No. 800 A 4P motorised ACB, Electromechanical interlocked, complete with microprocessor, electronic trip, manual /bypass with BMS compatible communicating module				- - - - -
	Total carried forward to next page				-

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total brought forward from previous page				-
	Power Factor Correction Panel In Switchroom Supply and install the following:- Constructed from rolled steel angle channel section welded to form robust structure with deta-chable 16 gauge plates to SEV - standards mounted on B198 Sheet1 Sheet1metal support of Sheet1 Front doors Back doors Top closed Bases open Paint: Anti-rust primer interior of panel RAL 7030 , exterior of panel RAL 7030 Mounting To be mounted on light frame, with terminals in the lower section Protection 415V 3 phase with earthing bar Voltage Rated voltage 500V 50HZ service voltage 415V 50HZ Busbars Laminated HDHC copper busbar rating 1600A rectangular conductor **Metering** Current transformer self-cooled rating 800/5A Power factor meter direct reading range - 0.5 capacitive of built in series resistors TYPE SIEMENS M01055 - D3590 Power factor regulator 2 steps of 100, 3 steps of 50, 2 steps of 25, 3 steps of 10 and 4 steps of 5 controller similar to siemens electronic KVAR controller type 4RY81 01 3DA01 supply voltage 415V 50HZ Power factor correction unit comprising of 2 step 100KVAr capacitor, 3 steps of 50KVAr Capacitor, 2 step 25KVAr capacitor, 3 step 10KVAr capacitor and 4 step 5KVAr capacitor banks, current transformers and control cables				-
	Total for Main LV Board Carried Forward to Main Building Summary Page				-

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
4	**SUB MAIN BOARDS AND CABLES** Supply and install the following:-				
4.1	400mm2 PVC/SWA/PVC single core armoured copper cable runs laid in trench from KPLC transformer to Generator and the main switchboard complete with cable glands and lugs as shown in the contract drawing.	50	LM		-
4.2	400mm2 PVC/SWA/PVC single core armoured copper cable runs laid in trench from LV board to main building rising busbars complete with cable glands and lugs	300	LM		-
4.3	1000A TPN+E, 600V, 36kA, Rising main busbars in 2 hour fire rated enclosures complete with the 1000A TPN+E system end-feed unit, phase insulation and withdrawable tap-off units 33No. 125A TP+N as Merlin Gerin or equal and approved complete with all switchgear accessories - accomodation duct	34	LM		-
4.4	Surface mount powder coated, Form 3B Sub Main Board, Comprising of:- 400A TP MCCB incomer, 3No.indicating lambs with 36No. 125A TP MCCB and 2No. blanked/Spare Ways (Accomodation board).	1	No.		-
4.5	240mm2 PVC/SWA/PVC single core armoured copper cable runs laid in trench from LV board to Accomodation board complete with cable glands and lugs	280	LM		-
4.6	Surface mount powder coated, Form 3B Sub Main Board, Comprising of:- 630A TP MCCB incomer, 3No.indicating lambs with 10No. 125A TP MCCB and 2No. blanked/Spare Ways (Common area board).	1	No.		-
4.7	240mm2 PVC/SWA/PVC single core armoured copper cable runs laid in trench from LV board to common area board complete with cable glands and lugs	150	LM		-
4.80	Surface mount powder coated, Form 3B Sub Main Board, Comprising of:- 800A TP MCCB incomer, 3No.indicating lambs with 10No. 125A TP MCCB and 2No. blanked/Spare Ways (Essential Loads board).	1	No.		-
4.9	240mm2 PVC/SWA/PVC single core armoured copper cable runs laid in trench from LV board to Essential loads board complete with cable glands and lugs	100	LM		-
	Total for Sub Main Boards and cables Installations				-

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Supply, install, test, commission and set to work the following. All lighting fittings to be complete with lamp, control gear etc as applicable.				
5	**GROUND FLOOR ELECTRICAL INSTALLATION**				
	LIGHTING POINTS				
5.01	Lighting point 1-way switched wired in 3 x 1.5mm^2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	536		-
5.02	Lighting point 2-way switched wired in 3 x 1.5mm2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	250		-
	LUMINIARES				
5.03	10 A white moulded switch plates as MK logic plus or an approved equivalent: -				
	(a) 1-gang 1-way	No.	50		-
	(b) 1-gang 2-way	No.	60		-
	(c) 2-gang 1-way	No.	70		-
	(d) 2-gang 2-way	No.	30		-
	(e) 3-gang 2-way	No.	40		-
	(f) 1-gang intermediate	No.	50		-
5.04	Install permanent **"DANGER" 415V** labels where groups of switches have been fed by more than one phase.	No.	10		-
5.05	**Luminiares, complete with lamps of specified wattage and appropriate colour rendering: -**				-
	i) HB	No.	88		-
	ii) Exit	No.	30		-
	iii) Type C (600X600)	No.	106		-
	iv)DL	No.	217		-
	v) DL1	No.	73		-
	vi) Type 4C	No.	76		-
	vii) Type N	No.	20		-
	viii) Type ST	No.	8		-
	ix) Type S	No.	30		-
	x) Type X	No.	40		-
	xi) Type E_m	No.	34		-
	xii) Type WB	No.	10		-
	xiii) Type CH	No.	4		-
5.06	Motion Sensors for lighting	No.	67		-
	Total C/F to Next Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				-
5.07	Outlet for sign illumination comprising box, concealed H.G. PVC conduit, box, wiring in 3 x 2.5mm^2 SC-PVC-CU cablesi 20mm H.G PVC Conduits and all accessories	No.	6		-
5.08	5A photocell unit for signage and security lights.	No.	4		-
5.09	30A SP/N contactor unit, wired to the Photocell Unit above.	No.	4		-
	Power Supply				
5.10	Twin standard 13A- point outlet for raw power, wired in 2.5mm² SC-PVC-CU cables ring mains inside concealed conduits in walls, floor box or trunking excluding face plate	No.	149		-
5.11	Twin Red 13A-socket point for clean power, wired in 2.5mm² SC-PVC-CU cables radial circuit inside concealed conduits in walls, floor box or trunking excluding face plate	No.	73		-
5.12	20A Outlet for the following, comprising box, concealed 20mm diameter H/G PVC conduit, wiring in 3 x 4.0 mm² SC-PVC-CU cables and all accessories but excluding 20A DP switch.				
	(i) Water Heater	No.	2		-
	(ii) HVAC	No.	50		-
	(iii) Hand Driers	No.	14		-
	(iv) Kitchen Equipment	No.	4		-
	(v) Dehumidifier	No.	4		-
	(vi) Fire Alarm Control Panel	No.	2		-
5.13	200 x 50mm 3-compartment angle trunking to details shown, in 14-gauge galvanized steel sheet with powder coating finish to approved colour, complete with cover, screws, bends, end caps and all accessories.	m	220		-
5.14	300 x 50mm galvanised steel factory fabricated Cable tray c/w bends, support all accessories	No.	34		-
5.15	Twin-outlet plates on the trunking, same colour finish	No.	42		-
5.16	Single-outlet plates on the trunking, same colour finish	No.	42		-
5.17	Dia. 50mm HG PVC conduits in slab for the above trunking	No.	220		-
	Total C/F to Next Page				-

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				-
5.18	Twin standard 13A-socket outlet for normal power as MK Logic plus or equal and approved.	No.	76		-
5.19	Twin Red 13A-socket outlet for clean power as MK Logic plus or equal and approved.	No.	73		-
5.20	20A DP switch with neon light as MK Logic plus or equal and approved.	No.	18		-
5.21	4 compartment Floor box as MK Cablelink Plus Modular or approved equivalent	No.	73		-
5.22	Twin Standard Floor box 13A-socket module outlet for raw power as MK or equal and approved	No.	73		-
5.23	Twin Red Floor box 13A-socket module outlet for clean power as MK or equal and approved	No.	73		-
5.24	12-way TP/N power distribution board complete with 125A TP/N integral isolator and all accessories including lockable cover for flush mounting. The Distribution Board to be as Schneider acti 9, or approved equivalent.	No.	7		-
5.25	12-way SP/N power Consumer Unit complete with 100A SP/N integral isolator and all accessories including lockable cover for flush mounting. The Consumer Unit to be as Schneider acti 9, or approved equivalent.	No.	7		-
5.26	35.0 mm^2 4 core XLPE /SWA/PVC CU cables c/w lugs and glands from Main Switch Board to distribution Board	m	120		-
5.27	16.0 mm^2 SC PVC CU cables c/w lugs and glands from Main Switch Board to distribution Board	m	80		-
5.28	25.0 mm^2 3 core XLPE /SWA/PVC CU cables c/w lugs and glands from Main Switch Board to distribution Board	m	60		-
5.29	SP MCB in the boards above.	No.	160		-
5.30	TP MCB in the boards above.	No.	120		-
5.31	SP RCBO in the boards above.	No.	30		-
5.32	Blanking plates for un-used spare ways.	No.	26		-
5.33	Labeling of all the final sub-circuits in boards above	Item	1		-
	Total C/F to Next Page				-

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				**-**
	ELV				
5.34	Outlet for the following installation, comprising box, concealed 25 mm conduit, draw wire and all accessories.				
	(i) CCTV	No.	117		-
					-
	(ii) Fire Alarm & Detection System	No.	126		-
					-
	(iii) Data	No.	90		-
					-
	(iv) TV	No.	10		-
					-
	(v) Public Address	No.	80		-
					-
	(vi) Access Control	No.	16		-
					-
	(vii) Security	No.	20		-
	Total For Ground Floor C/F to Main Building Summary Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Supply, install, test, commission and set to work the following. All lighting fittings to be complete with lamp, control gear etc as applicable.				
6	**FIRST FLOOR ELECTRICAL INSTALLATION**				
	LIGHTING POINTS				
6.01	Lighting point 1-way switched wired in 3 x 1.5mm^2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	240		-
6.02	Lighting point 2-way switched wired in 3 x 1.5mm2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	100		-
	LUMINIARES				
6.03	10 A white moulded switch plates as MK logic plus or an approved equivalent: -				
	(a) 1-gang 1-way	No.	30		-
	(b) 1-gang 2-way	No.	20		-
	(c) 2-gang 1-way	No.	20		-
	(d) 2-gang 2-way	No.	15		-
	(e) 3-gang 2-way	No.	15		-
	(f) 1-gang intermediate	No.	10		-
6.04	Install permanent **"DANGER" 415V** labels where groups of switches have been fed by more than one phase.	No.	10		-
6.05	**Luminiares, complete with lamps of specified wattage and appropriate colour rendering: -**				-
	i) HB	No.			-
	ii) Exit	No.	12		-
	iii) Type C (600X600)	No.	87		-
	iv)DL	No.	119		-
	v) DL1	No.	54		-
	vi) Type 4C	No.	12		-
	vii) Type N	No.	0		-
	viii) Type ST	No.	6		-
	ix) Type S	No.	24		-
	x) Type X	No.	6		-
	xi) Type E_m	No.	14		-
	xii) Type WB	No.	4		-
	xiii) Type CH	No.	2		-
6.06	Motion Sensors for lighting	No.	16		-
	Total C/F to Next Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				-
6.07	Outlet for sign illumination comprising box, concealed H.G. PVC conduit, box, wiring in 3 x 2.5mm^2 SC-PVC-CU cablesi 20mm H.G PVC Conduits and all accessories	No.	2		-
6.08	5A photocell unit for signage and security lights.	No.	1		-
6.09	30A SP/N contactor unit, wired to the Photocell Unit above.	No.	1		-
	Power Supply				
6.10	Twin standard 13A- point outlet for raw power, wired in 2.5mm² SC-PVC-CU cables ring mains inside concealed conduits in walls, floor box or trunking excluding face plate	No.	141		-
6.11	Twin Red 13A-socket point for clean power, wired in 2.5mm² SC-PVC-CU cables radial circuit inside concealed conduits in walls, floor box or trunking excluding face plate	No.	54		-
6.12	20A Outlet for the following, comprising box, concealed 20mm diameter H/G PVC conduit, wiring in 3 x 4.0 mm² SC-PVC-CU cables and all accessories but excluding 20A DP switch.				
	(i) Water Heater	No.	2		-
	(ii) HVAC	No.	20		-
	(iii) Hand Driers	No.	11		-
	(iv) Kitchen Equipment	No.	2		-
	(v) Dehumidifier	No.	2		-
	(vi) Fire Alarm Control Panel	No.	1		-
6.13	200 x 50mm 3-compartment angle trunking to details shown, in 14-gauge galvanized steel sheet with powder coating finish to approved colour, complete with cover, screws, bends, end caps and all accessories.	m	130		-
6.14	300 x 50mm galvanised steel factory fabricated Cable tray c/w bends, support all accessories	No.	20		-
6.15	Twin-outlet plates on the trunking, same colour finish	No.	30		-
6.16	Single-outlet plates on the trunking, same colour finish	No.	30		-
6.17	Dia. 50mm HG PVC conduits in slab for the above trunking	No.	130		-
	Total C/F to Next Page				-

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				-
6.18	Twin standard 13A-socket outlet for normal power as MK Logic plus or equal and approved.	No.	87		-
6.19	Twin Red 13A-socket outlet for clean power as MK Logic plus or equal and approved.	No.	54		-
6.20	20A DP switch with neon light as MK Logic plus or equal and approved.	No.	13		-
6.21	4 compartment Floor box as MK Cablelink Plus Modular or approved equivalent	No.	54		-
6.22	Twin Standard Floor box 13A-socket module outlet for raw power as MK or equal and approved	No.	54		-
6.23	Twin Red Floor box 13A-socket module outlet for clean power as MK or equal and approved	No.	54		-
6.24	12-way TP/N power distribution board complete with 125A TP/N integral isolator and all accessories including lockable cover for flush mounting. The Distribution Board to be as Schneider acti 9, or approved equivalent.	No.	3		-
6.25	12-way SP/N power Consumer Unit complete with 100A SP/N integral isolator and all accessories including lockable cover for flush mounting. The Consumer Unit to be as Schneider acti 9, or approved equivalent.	No.	3		-
6.26	35.0 mm2 4 core XLPE /SWA/PVC CU cables c/w lugs and glands from Main Switch Board to distribution Board	m	120		-
6.27	16.0 mm^2 SC PVC CU cables c/w lugs and glands from Main Switch Board to distribution Board	m	100		-
6.28	25.0 mm2 3 core XLPE /SWA/PVC CU cables c/w lugs and glands from Main Switch Board to distribution Board	m	80		-
6.29	SP MCB in the boards above.	No.	60		-
6.30	TP MCB in the boards above.	No.	40		-
6.31	SP RCBO in the boards above.	No.	20		-
6.32	Blanking plates for un-used spare ways.	No.	24		-
6.33	Labeling of all the final sub-circuits in boards above	Item	1		-
	Total C/F to Next Page				-

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				**-**
	ELV				
6.34	Outlet for the following installation, comprising box, concealed 25 mm conduit, draw wire and all accessories.				
	(i) CCTV	No.	34		-
					-
	(ii) Fire Alarm & Detection System	No.	55		-
					-
	(iii) Data	No.	74		-
					-
	(iv) TV	No.	20		-
					-
	(v) Public Address	No.	66		-
					-
	(vi) Access Control	No.	6		-
					-
	(vii) Security	No.	20		-
	Total For First Floor C/F to Main Building Summary Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Supply, install, test, commission and set to work the following. All lighting fittings to be complete with lamp, control gear etc as applicable.				
7.00	**ROOF FLOOR ELECTRICAL INSTALLATION**				
	LIGHTING POINTS				
7.01	Lighting point 1-way switched wired in 3 x 1.5mm^2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	2		-
	LUMINIARES				
7.02	10 A white moulded switch plates as MK logic plus or an approved equivalent: -				
	(a) 1-gang 1-way	No.	2		-
7.03	**Luminiares, complete with lamps of specified wattage and appropriate colour rendering: -**				-
	i) Exit	No.	1		-
	ii) Type N	No.	1		-
	iii) Type ST	No.	1		-
	iv) Type X	No.	1		-
	v) Type E_m	No.	1		-
7.04	Motion Sensors for lighting	No.	1		-
7.05	Outlet for sign illumination comprising box, concealed H.G. PVC conduit, box, wiring in 3 x 2.5mm^2 SC-PVC-CU cablesi 20mm H.G PVC Conduits and all accessories	No.	1		-
7.06	5A photocell unit for signage and security lights.	No.	1		-
7.07	30A SP/N contactor unit, wired to the Photocell Unit above.	No.	1		-
	Power Supply				
7.08	20A Outlet for the following, comprising box, concealed 20mm diameter H/G PVC conduit, wiring in 3 x 4.0 mm² SC-PVC-CU cables and all accessories but excluding 20A DP switch.				
	(i) Float switch	No.	1		-
	(ii) Hosereel fire pump	No.	1		-
	(iii) Aviation Lights	No.	6		-
					-
	Total For Roof Floor C/F to Main Building Summary Page				**-**

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
8.00	**EARTHING**				
	Supply and install the following:-				
8.01	Earth Potential Copper Bar measuring 1200m long X 50mm Wide X 6mm Thick, mounted on insulators in room	5	No.		-
8.02	Earth Potential Copper Bar measuring 600m long X 50mm Wide X 6mm Thick, mounted on insulators in room	10	No.		-
8.03	16mm sq SC CU cable c/w appropriate cable glands, cable lugs	100	M		-
8.04	95mm sq SC CU cable c/w appropriate cable glands, cable lugs	100	M		-
8.05	Earth pits c/w earth matt and earth rods	10	No.		-
	Total C/F to Next Page				**-**

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
	Total brought forward from Previous Page				-
	LIGHTNING PROTECTION				
	Supply and install the following:-				
8.06	Air Termination including the spike terminal, copper rod and clamp	5	No.		-
	Down Conductor				
8.07	25 x 3mm copper tape	100	LM		-
8.08	Tape clip	100	No.		-
8.09	Junction clamp	50	No.		-
8.10	38mm diameter HG PVC pipe	100	LM		-
8.11	Testing Joints	20	No.		-
8.12	Earth Termination	5	No.		-
8.13	15mm diameter, 4 meter length Copper Earth rod to be buried a depth of 5m below ground and spaced horizontally 3.5 meters apart in basement level	5	No.		-
8.14	Earth Treatment and Bonding	5	Item		-
8.15	Testing and commissioning of all the installations	1	Lot.		-
8.16	Any other item to complete installation in this section (specify)	1	Sum		-
	Total for Earthing and lightning protection				-

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
9.0	**AUTOMATIC VOLTAGE STABILIZER** Supply, Install test and commision the following				
9.1	1500kVA 50Hz 3 Phase voltage stabilizer with input voltage variation range of 415V (+/-15%) and selectable output voltage 220-230-240V (L-N) and 380-400-415V (L-L) with control and stabilization managed by digital microprocessor. (Please indicate the model name and country of origin)	1	No.		-
9.2	400mm2 PVC/SWA/PVC single core armoured copper cable runs laid in trench between the voltage stabilizer and the bypass switch panel within the main LV Switch board complete with cable glands and lugs	50	M		-
9.3	95mm2 Earth continuity copper conductor enclosed in 38mm diameter HG PVC concealed conduit complete with fixings at the stabilizer, bypass and at the earthing mats including terminations	20	M		-
	Total for AVS installations				-

ITEM	DESCRIPTION	Qty	UNIT	RATE (KSH)	AMOUNT (KSH)
10.0	**UPS**				
	Supply, Install test and commision the following				
10.1	**100KVA**				-
	UPS UNIT: UPS Unit c/w Battery back-up for 15 minute and the bypass switch	2	No.		-
10.2	**10KVA**				
	UPS UNIT: UPS Unit c/w Battery back-up for 15 minute and the bypass switch	2	No.		-
10.3	Preliminaries, Installation, Testing and Commissioning	1	Lot		-
	Total for UPS installations				-

ITEM	DESCRIPTION	Qty	UNIT	RATE (KSH)	AMOUNT (KSH)
11.0	**STREET LIGHTING** Supply, Install test and commision the following				
11.1	6 meters above finished foot path level, circular street lighting column made from 3mm thick steel galvanized pipe complete with single arm entry bracket of 1.0 meters outreach at an angle of 45 degrees, 100w LED solar street lights, IP65 waterproof level, 6000k color temperature, 200AH Gel battery capacity in waterproof pvc box and outer galvanized steel cage, 250W monopanel and 12V charge controller complete with dc cable and other accessories.	20	No.		-
	Total for Street lighting				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
12.0	**TRANSFORMERS** Supply, Install test and commision the following				
12.1	Free standing 11KV, 50Hz, 400A VCB Breaker incomer HT compact Ring main unit (RMU) complete with 11KV, 2No. 200A VCB outgoing cubicle disconnect switches & Relay with RS485 modbus output for BMS monitoring as per attached drawing. (Please indicate the model name and country of origin)	NO.	1		-
12.2	1500KVA 11kv/415V 50Hz 3ph, ground mounted Dyn-11 transformer, Dry Type with Enclosure and wheels for ground movement. Allow for Transformer Relay & Auxilliary terminals for Control Cables. (Please indicate the model name and country of origin)	NO.	1		-
12.3	3C, 95mm2 copper cable of voltage rating 11kv, XLPE, PVC/SWA/PVC insulated copper cable from KPLC Metering Breaker to Ring main unit and to Transformer	Lm	80		-
	Transformer grounding				
12.4	25x3mm copper tape complete with clips	Lm	20		-
12.5	Bonding of copper tape from transformer star point to Earth Mat	Item	1		-
12.6	Earthing comprising of copper earth mat in lattice configuration 1000mmx1000mm. Conductor size of lattice 25x3mm with tail to tie copper tape.	Item	1		-
12.7	Excavation for copper earth mat not less than 1.5m, laying of mat, enhancement of ground with dust coal & red soil and backfilling	Item	1		-
12.8	Transformer & RMU tests and inspections Provide all Factory & On site Test results for standard IEC 60076 tests to KPLC Requirements	Item	1		-
	Total for Transformers				-

ITEM	DESCRIPTION		AMOUNT (KSH)
	MAIN SUMMARY PAGE		
1	Total of Preliminaries		-
2	Total for Incoming power installations		-
3	Total for Main LV Board Installations		-
4	Total for Sub Main Boards Installations		
5	Total for Ground Floor Electrical installations		-
6	Total for First Floor Electrical installations		-
7	Total for Roof Floor Electrical installations		-
8	Total for Earthing and Lighting installations		-
9	Total for AVS installations		-
10	Total for UPS Installations		-
11	Total for street lighting		-
12	Total for Transformers		-
	TOTAL AMOUNT (KSHs). FOR MAIN BUILDING ELECTRICAL INSTALLATIONS		**-**

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	PRELIMINARIES				
1.01	Allow for mobilisation and setting up stores, tools and all necessary equipment on site		Item		
1.02	Allow for supply and installation of all labels and danger warning notices, in all personal protective equipment (PPEs).		Item		
1.03	Allow for all preparation of all working drawings.(3No. Sets of A2 drawings)	1	Item		-
1.05	Allow for the supply and installation of all necessary consumeables e.g cable markers,ties,etc.	1	Item		-
1.07	Allow for insurance of the works in accordance with the Conditions of Contract		Item		
1.08	Allow for the cost of the Performance Bond in accordance with the Conditions of Contract.		Item		
	Total Carried to ICT Collection page				-

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
2.00	**ACTIVE DEVICES**				
2.01	**Supply, install, test and commission a complete solution as described below: -**				
2.02	Core Switch - 40G port density or more Down-link in HA, Multi-Slot Chassis as Cisco or approved equivalent as described in the specifications	1	Item		-
2.03	Licensing for DNA infrastrucure and Core Switch support	1	Item		-
2.04	Multi-port density support on Distribution Switches with 10G Down-link to Access, 40G por density or more Up-link to Core in HA as Cisco or approved equivalent as described in the specifications	1	No.		-
2.05	Licensing for DNA infrastrucure and Distribution Switch support	1	Item		-
2.06	Data Access Swicthes - 10G Uplink as Cisco or approved equivalent as described in the specifications	10	No.		-
2.07	Licensing for DNA infrastrucure and Access Switch	10	No.		-
2.08	Access to Distribution Uplink Modules 10G 10GBASE-SR SFP Module, Enterprise-Class as Cisco or approved equivalent as described in the specifications	10	Item		-
	Total Carried Forward to next Page				-

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	Total bf from Previous Page				-
	WIRELESS				
2.09	Wireless Controller w/rack mounting kit as Cisco or approved equivalent as described in the specifications	1	Item		-
2.10	APs Indoor 802.11ac W2 AP w/CA; 4x4:3; Int Ant; 2xGbE E as Cisco or approved equivalent as described in the specifications	30	No.		-
2.11	Licensing for DNA infrastrucure and wireless support	1	Item		-
	Total Carried Forward to next Page				-

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	Total bf from Previous Page				-
	TELEPHONY				
2.12	IP PBX. for Small to Mid-range deployment. Can scale to 1000 Users	1	No		-
2.13	PBX Licenses for 300 Phones + Operator sets as Cisco or approved equivalent as described in the specifications	1	Item		-
2.14	Standard UC Phone complete with all accessories as Cisco or approved equivalent as described in the specifications	70	No.		-
2.15	Executive UC Phone complete with all accessories as Cisco or approved equivalent as described in the specifications	10	No.		-
2.16	Operator Phones complete with all accessories. Each takes up to 16 concurrent lines as Cisco or approved equivalent as described in the specifications	3	No.		-
2.17	Voice Gateways with 2 x E1 Cards each and 1 x 4 Port FXO Cards. These can host total of 136 ISDN + CO Lines as Cisco or approved equivalent as described in the specifications	1	No.		-
2.18	License support Voice Gateway UC	1	No.		-
	Total Carried to ICT Collection page				-

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	STRUCTURED CABLING				
3.00	**Supply, install, test and commission a complete Cat. 6A Performance Structured Cabling solution as Siemons or equivalent as described below: -**				
	A. HORIZONTAL CABLING				
3.01	Cat.6A 4-pair FTP cable for data/voice outlets as Siemons as approved	60	ROLL		-
3.02	Dual RJ45 Cat.6A outlets for voice / data complete with faceplate and labeling as as approved	250	No.		-
3.03	24-Port Cat.6A Voice and Data modular patch panel for 4-Pair FTP cable termination as as approved	15	No.		-
3.04	1M Factory terminated Cat.6A 4 pair-FTP RJ45- RJ45 patch cords to be used inside cabinet as as approved	60	No.		-
3.05	3M Factory terminated Cat.6 4 pair-RJ45- RJ45 patch cords for voice/data outlets as as approved	30	No.		-
3.06	1U Cable managers/organisers as as approved	15	No.		-
	Total Carried Forward to next Page				-

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	Total bf from previous page				-
	B: CABINETS				
3.07	Purpose-made Floor standing 19-inch, 22U, (600x800)mm rack mount communication cabinet in the Technical Room, complete with extract fan and 12 No. 3-pin power points as APC, HP or approved equivalent.	4	No.		-
	C: BACKBONE CABLING				
3.09	2 runs of 4-core multimode armoured fibre optic cable linking floor cabinet edge switch to core switch in the server cabinet.(Total length of 4-core fibre cable)	200	m		-
3.10	24-port fibre connector optic tray rack /patch panel complete with connectors and adaptors	10	No.		-
3.11	1M Factory terminated fibre optic patch cords complete with connectors to be used inside cabinet	200	No.		-
3.12	Allow for Earthing of the cabinet as specified	1	Item		-
	Total Carried Forward to ICT collection page				-

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	TESTING				
	Test and commission as described below: -				
4.00	Supply and installation of all necessary consumeables e.g factory made cable markers,cable ties,etc for proper labeling and cable management.	1	Item		-
4.01	Carry out comprehensive Structured LAN Cabling tests and analysis, after installations.	1	Item		-
	Total Carried Forward to ICT collection page				-

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	Modular Tier 2 DC for complex Distribution				
5.01	**Test and commission as described below: -**				
5.02	Rack and Aisle Containment comprising of 3 X IT racks , 2 X service rack(including 20 KVA N+1, UPS, PDU, monitoring unit)	1	No.		-
5.03	Cooling systems comprising of 2 X 11KW cooling system,2+1 redundancy rack mounted	1	No.		-
5.04	Management system comprising of humidity, 2 item access control and water leakage sensors	1	Item		-
5.05	Energen Fire supression systems	1	No.		-
	Total Carried Forward to ICT collection page				-

ITEM	DESCRIPTION	AMOUNT (KSH)
	MAIN SUMMARY PAGE	
1	Total for Preliminaries	-
2	Total for Active Devices	-
3	Total for Structured Cabling System	-
4	Total for Testing	-
5	Total Modular Tier 2 DC for complex Distribution	-
	Total for ICT & Structured Cabling Carried to Grand Summary Page	-

ACCESS CONTROL SYSTEM

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSh. Cts.)	AMOUNT
	Supply, install, test, commission and set to work (To the full satisfaction of all parties to the contract) the following: -				
	Supply, install, test, commission and set to work the following: -				
1.01	Access Controller Integrated with Proposed VMS for seamless operation for use with Barriers, Turnstiles and CTL Room and Server room and Face Recognition Readers	1	No		-
1.02	Access Control 16 Output relay board	1	No		-
1.03	Access control 16 input relay board	1	No		-
1.04	Emergency Evacuation /Break Glass' Switch complete with cabling	25	No		-
1.05	ACL Readers as MIFARE, 125kHz contactless cards supported, 13.56MHz contactless smart cards supported, Multi color led to indicate access authorisation	16	No.		-
1.06	Heavy Duty Override Keyswitch with LED, Cover & Backbox	16	No.		-
1.07	Touchless/Contactless IR Request-to-exit Button 15cm detection distance	16	No.		-
1.08	Electric Magnetic Lock 600lbs with LED signal light, Mounting brackets and door closer as Hik Vision Mag lock DS-K4H258S or an approved equivalent	16	No.		-
1.09	Monitored Power Supply nit with Battery Backup	7	No.		-
1.10	Proximity access control cards as Mifare, each bearing photograph of individual staff member. Conduct tailor-made programming of each card as per Client's requirements. The cards to be complete with printing.	50	No.		-
1.11	Desktop Encoder	1	No.		-
1.12	Double sided Card Printer	1	No.		-
1.13	Access Control, Time and Attendance Software	1	No.		-
	Total for Access Control System C/F to Grand Summary Page				-

CCTV INSTALLATIONS

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSh. Cts.)	AMOUNT
	Supply, install, test, commission and set to work (To the full satisfaction of all parties to the contract) the following: -				
1.01a)	Dome cover IP digital camera with the following specifications :- . 4 Mega Pixel Full HD Dome IP67 Outdoor IR Camera . 2.8-12mm Vari Focal Auto Iris Megapixel Lens . PoE . H.264 Video compression. Supports up to 25 frames per second at HD 720P resolution . True de-interlaced filter . Bidirectional G.711 and G.726 audio communication optional . Synchronized full-duplex one channel audio and video optional . State-of-the art CPU, separate codec and embedded software . Intelligent bit rate control (flexible for difficult network environments- mandatory) . Embedded streaming server and embedded Web Server with SD Card Slot . Motion-detected and event-triggered alarm processing . Sensor-triggered recording and FTP optional; One (1) alarm input One (1) relay output . ONVIF Compliant . True Day-Night capability . System time management RTC with Time Server synchronization . Security Support User authentication 128-bit encrypted data stream (selectable, for added security) **(State make and type, and enclose catalogues)**	127	No.		-
1.01b)	As above but Bullet type	22	No		-
	Total C/F to the next page				-

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSh. Cts.)	AMOUNT
	Total B/F from previous page				-
1.01c)	PTZ Dome Camera with the following specifications:- . Extremely silent, outdoor speed dome IP camera . 4MP FULL HD Sensor . Filter changeable type day and night . IP66 water-resistant . 20/22X optical with 12X digital zoom . Built-in IR Leds (80m range) . State-of-the-art CP, codec and embedded software . Superior video compression – H.264 . Maximum 25 frames per second at HD resolution with de-interlaced filter . Bidirectional audio communication – up (ADPCM), down (PCM) optional . Synchronized one channel audio and video data transmission . Intelligent bit rate control for flexible network deployment mandatory . Enhanced image quality . Embedded streaming server and embedded Web Server . Motion-detected and event triggered alarm processing . Easy recording and playback on client PC . Sensor-triggered Four (4) alarm inputs Two (2) relay outputs . Auto-flip video – on/off configuration . Wide range of network protocols supported . System time management . RTC with Time Server synchronization . Security support User authentication 128-bit encrypted streaming data for additional security (selectable) **(State make and type, and enclose catalogues)**	5	No		-
1.01d)	PTZ Controller	1	Item		-
	Total C/F to the next page				-

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSh. Cts.)	AMOUNT
	Total B/F from previous page				-
1.02	PoE Plug and Play Network Video Recording System base as approved with the following features:- . Up to 64 channel IP cameras can be connected .Up to 576 Mbps high incoming bandwidth ensures IP cameras can be connected . Standalone Video Management System or Seamlessly Integrated with Enterprise Solution . Turnkey Solution or Software Only (described elsewhere) . Centralized Administration . Freedom of Choice in Cameras, Storage and Computers . Adjustable Recording Rates for Time-Lapse recording Mode . Each Channel Records at Up to 25fps at FULL HD . Video Clip Export . Auto Launch of Video on specified Alarms/Events . Intelligent Motion Detection . Smart Video Search Feature for streamlined Investigations . Standalone Client Viewing Application . Ability to Lock/Save Critical Video Events . Fault Tolerant RAID 0,1,5,10 configuration . Real-time Linkage of Video to Alarms Generated by Third Party Field Devices . Control IP PTZ Cameras Using On Guard Alarm Monitoring Application . Camera Groups/Video Tours . Hard drive size - 12 TB capacity by 8 x internal HDD . 1.2 G.B RAM DDR memory . DVD/CD writer optional . 1.4MB Floppy Disc Drive (Drive A) . Capable of Pentaplex functionality, incorporating simultaneous live, record, playback, remote access and back up features. . Capable of Motion sensor recording. . Linux Based . ONVIF Compliant . Network Card, 100/1000 mbps . 1 No 42” SVGA full colour monitor . Standard keyboard . Mouse/Mouse-pad . 7.5KVA, 240V, 50HZ single-phase supply UPS as described in the specifications **(State Make and Type, and enclose brochures)**	3	No.		-
	Total C/F to the next page				-

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSh. Cts.)	AMOUNT
	Total B/F from previous page				-
	Control PC				
1.03	Core i7, 120/220V 275 watts, 16GB RAM, 1TB HDD, 500GB SSD boot drive complete with mouse, keyboard and 27"screen as HP or an approved equivalent. The PC to come with licenced Windows 11 software	1	No		-
1.04	Videowall comprising of 4 No.65" 4K Smart TV Screens complete with all hardware, software and controllers for viewing the cameras as LG or an approved equivalent.	1	No		-
1.05	CCTV software, with the following specifications:- . Event Recording Scheme . Operate Motion-Dector-Recording . NTSC-PAL video recording. . Be capable of recording real time images at full resolution and frames rate. . Features for connection for alarm system Automatic Recycling . Users' passwords. . Input, Output, Audio Alert Facilities . Remote Viewing Facilities, TCP/IP, INTERNET, ISDN, modem . Capability of streaming into the client's existing LAN / WAN infrastructure . Ability to quickly search through thousands of hours of recorded video information . Event-triggered video recording to reduce storage requirements . Masks out disturbing areas, or areas of no interest, within the specified region . Identifies & immediately alerts user to potential security breaches . Features should be able to be used at very low frame rates . Easy calibration for specific applications . Color-matching matches user-specified colour to the video image . Functions in outside environments with changing light conditions . Auto-learning of background feature	1	Item		-
	Total C/F to Page BQ/5				-

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSh. Cts.)	AMOUNT
	Total B/F from previous page				-
	. Object saliency and object Consistency mechanisms to filter out phantom objects . "Out of Focus" condition is user-calibrated by level of focus . Automatic self-test of camera validity . Motion Trajectory Analyzer provides advanced analysis of the motion of objects . Seamless integration into Enterprise security knowledge management solution. . Analysis of stationery objects . Loittering and people counting features				
1.06	STP Cat 6A structured cables as Siemons or approved equivalent	30	Boxes		-
1.07	STP Cat. 6A patch cord, 3M as Nexans or approved equivalent for the Cameras.	100	No		-
1.08	UPT Cat. 6A patch cord, 1M as siemon or approved equivalent	80	No		-
1.09	Associated Fiber and UTP (CAT 6A) cabling between field devices and switches	1	Item		-
1.10	24 Port layer 2 100Mbps POE SFP Switch with Min 30W Power availability per port	10	No		-
1.11	GBIC transceiver modules (LC to LC) multimode CISCO make for the switches above	10	No		-
1.12	Patch Panels for Data cable termination	10	No.		-
1.13	Data cable termination, both ends.	80	No		-
1.14	12 U steel Equipment Rack	1	No		-
1.15	Any other items (please specify) 1. _____				
	Total for CCTV Installations C/F to Collection Page				-

GENERAL ITEMS

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSh. Cts.)	AMOUNT
2.01	**Supply, install, test, commission and set to work (To the full satisfaction of all parties to the contract) the following: -** Carry out comprehensive Security Systems Installations testing and analysing, after installations. The testing and commissioning will be done as detailed below. i) Prior to commencement of the work the Service Provider shall submit a procedure for the inspection, testing and commissioning of the intruder detection system. This procedure shall include for the visual and functional check/test of all components of the system - the visual check will cover the standard of workmanship, the functional quality of the equipment and general compliance with the system specification and the functional tests shall check the operation of the system as a whole. ii) Commissioning will be undertaken by a qualified person using the approved inspection, testing and commissioning procedure. iii) On successful commissioning of the system, in terms of the specified requirements, a Taking Over Certificate shall be completed. This is the written notification to the Service Provider/installer that the appointed client representative has taken over the intruder detection system installation in terms of the Agreement. Payment cannot be effected without this certificate iv) The Final Completion date for the intruder detection system installation is determined from the Hand over Certificate. The taking over date is also that date on which the warranty period is deemed to have commenced. v) Each equipment in the installations shall be supplied with a complete installation manual and comprehensive operating instructions. In addition, cabling and wiring information, a list of all equipment with associated serial numbers, etc (as specified) and any other information that may be required by the client from time to time and a copy of the taking Over Certificate shall be provided in a A4 hard cover arch lever type file vi) The Service Provider shall provide basic operating training on the system, using the operating instructions, for client staff prior to the Taking over Certificate being issued. This training shall be sufficient to ensure correct operation of the system. The contractor shall issue certificates to certify that the operators are proficient in the operation of the system on successful completion of the system training. vii) The above documentation shall be handed to a selected Client representative at the time of commissioning. The documentation to be as detailed below:-	1	Item		-
	Total C/F to Page BQ/7				-

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSh. Cts.)	
	Total B/F from Page BQ/6				-
	viii) System Documentation - all documentation relating to the installation shall be concise, complete and unambiguous. Information shall be provided sufficient to install, test and commission, operate and maintain the system. Operating instructions shall be designed to minimize the possibility of incorrect operation of the system. ix) Component documentation - documentation relating to the components of the installation system shall also be concise, complete and unambiguous. Sufficient information shall be provided to ensure the integration of the component with any other of the system's components. Component documentation shall include the following: a) Name of manufacturer and / or supplier. b) Description of equipment. c) Standard to which component claims compliance. d) Name or mark of the certification body.				
2.02	Allow for presentation of all the required samples as per specifications, Bills of Quantities and Drawings.	1	Item		-
2.03	Prepare and submit Working Drawings as follows:- i) Draft soft copy in Autocad® in SSD drive ii) Amended soft copy in Autocad® in SSD drive iii) 5 Final soft copies in Autocad® in SSD drive to Architect, Client, Quantity Surveyor, and Engineer iv) 3 Draft hard copies of Working Drawings in A0 (Scales 1:50, 1:25) to Engineer, Architect and Main Contractor. v) 2 Amended hard copies of Working Drawings in A0 (Scales 1:50 and 1:25) to Engineer, Architect and Main Contractor. vi) 11 No. Final hard copies of working drawings in A0 (Scales 1:50, 1:25) to Engineer (3 copies), Architect (1 copy), Quantity Surveyor (1 copy), Client (3 copies), Contractor (3 copies) **(Note: Full set of drawings to be presented as per drawing list).**	1	Item		-
	Total C/F to Page BQ/8				-

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSh. Cts.)	AMOUNT
	Total B/F from Page BQ/7				-
2.04	As item no. 4.03, but for Record (As-Installed) Drawings comprising: . Fully dimensioned drawings of all plants and apparatus. . General arrangement drawings of equipment, plant etc. . Routes – types and sizes and arrangement of all pipework. . System schematics and trunking diagrams showing all salient information relating to control and instrumentation. . Grading charts . Wiring and piping diagrams of plant and apparatus. . Schematic diagram of individual plants and switch and control boards. . All the required operating instructions for all panels, boards, control panels etc.	1	Item		-
2.05	Warranty period for Workmanship and Equipment shall be _____ Months (A minimum of 12 months to be given)		Item		
2.06	<u>All other items</u> of general preliminary to cover, but not limited to:- . Attendance on all other contractors, such as for Electrical Installations, Sound Equipment/ Wiring Installations, Generator Installations, UPS Installations, V-Sat services etc. . Hiring and keeping a Supervisor/Foreman on site . Constant supervision of the works. . Provision of all the required spares. . Testing and Inspection of materials/works. . Provision of labour camps. . Storage of materials. . Initial maintenance (During Defects Liability) . Providing water/electricity for the works. . Protection of the works/materials . Clearing away on completion. . Preparing Final Account. . Providing all Test Certificates, etc.		Item		
	Total for General Items Carried Forward to Collection Page				-

CCTV INSTALLATIONS COLLECTION PAGE

ITEM NO.	DESCRIPTION	AMOUNT
1.00	CCTV INSTALLATIONS	-
2.00	GENERAL ITEMS	-
	Total Amount For CCTV Carried to Grand Summary	**-**

ITEM	DESCRIPTION		AMOUNT (KSH)
	MAIN BUILDING ELECTRICAL SUMMARY PAGE		
1	Main Building Electrical Works		-
2	Main Building Structured Cabling		-
3	Main Building Access Control		-
4	Main Building CCTV Installations		-
	TOTAL AMOUNT (KSHs). FOR MAIN BUILDING ELECTRICAL INSTALLATIONS		**-**

ACCOMODATION UNITS
ELECTRICAL BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	All LV boards & breakers are As Schneider Acti 9 or approved Equivalent				
	BILL NO. 1				
I	**GROUND FLOOR**				
A.	**ACCOMODATION UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	90		-
	ii) Ditto as in item No. 1.01 but for two way switching	No.	32		-
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	28		-
	ii) 10A two gang two way switch	No.	28		-
	iii) 10A three gang two way switch	No.	6		-
1.03	**LIGHTING FITTINGS**				
	a) Wall mounted UP and Down LED light Fitting as Illumat, or approved equivalent.	No.	28		-
	b) Weather proof Bathroom Fitting complete with LED energy saving bulb for washroom as Phillips, or approved equivalent	No.	10		-
	c) Shaver strip light complete with 110/240V shaver socket and pull cord as Phillips, or approved equivalent.	No.	8		-
	d) 2D Round LED ceiling fitting as Phillip or equal and approved	No.	24		-
	e) Pendant light fitting with a 30cm ,1.5mm2 three core flex cable (clear) complete with LED bulb, Daylight, as Phillips or approved equivalent.	No.	6		-
	f) 75/100mm Round Recessed 3W LED adjustable downlighter, Warm White colour, die cast aluminium material as Phillip or equal and approved	No.	0		-
	g) Chandelier complete with 9W LED bulbs as PHILLIPS SL Chanderlier or approved equivalent.	No.	6		-
	h) FSL LED Ceiling Light 18W – IP44, 220V (370×55mm) – warm white colour, Daylight | Slim Round Ceiling Lampas Phillip or equal and approved	No.	8		-
	Total Carried Forward to the Next Pg.				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				**-**
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	64		-
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or approved equivalent.	No.	64		-
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories,but excluding the 40A DP connection unit	No.	8		-
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	8		-
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A Cooker connection unit	No.	6		-
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	6		-
1.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	6		-
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	6		-
1.12	240V/12V Ding dong domestic door bell	No.	6		-
	Total Carried Forward to the Next Pg.				**-**

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				-
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the Data socket outlet.	No.	6		-
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	6		-
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		-
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	LM	60		-
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	8 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	6		-
1.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	32		-
	ii)32 A SP MCB	No.	10		-
	iii) 45 A SP MCB	No.	4		-
	iv) Blanking plates	No.	2		-
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	LM	54		-
	Total Carried Forward to Ground Floor Collection Pg.				**-**

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
B	**CORRIDOR/ ENTRANCE LOBBY AREA**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for two way switching, but excluding the switch and luminaire.	No.	38		-
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang two way switch	No.	2		-
	ii) 10A two gang two way switch	No.	2		-
1.03	**LIGHTING FITTINGS**				
	a) Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type N"**	No.	14		-
	b) Bulkhead fitting with moulded glass diffuser & Die Cast Aluminium base c/w 16W PL Lamp as Massive Sunderland Cat. No. 71410/01/31 for security lights. **"Type B"**	No.	24		-
1.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	14		-
1.05	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	2		-
	Total Carried Forward to the Next Pg.				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				**-**
	LIGHTING CONTROL				
1.06	Presence sensor complete with assocaited wiring (light and motion sensor) as Osram Duo with the following characteristics: Operation voltage 220 - 240V 50Hz, detection area-12m dia minimum, settable light value, switch-off delay (if no motion detected), installation height - 5m minimum	No.	2		-
1.07	24A, 240V, 2P DB/CU mounted silent operation contactor for Switching External lights complete with all accessories and as CRABTREE CIK24 or an approved equivalent	No.	2		-
					-
1.08	Photocell control unit and wired to energize the contactors complete with a D.P override switch as THORN QPK or approved equivalent	No.	1		-
					-
1.09	8 ways 100A TPN distribution boards 'T' complete with 100A TPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		-
					-
1.10	**MCBs for item above as Schneider Electric Acti 9**				-
	i)10 A SP MCB	No.	6		-
	ii) 32 A SP MCB	No.	4		-
	iii) 40 A SP MCB	No.	6		-
	iv) 32 A TP MCB	No.	4		-
	v) Blanking plates	No.	3		-
					-
1.11	Sub-mains circuits for DB 'T' above comprising of 4 core 25mm^2 PVC/SWA/PVC cable drawn in cable tray/ 50mm diameter heavy gauge conduits and running from the Lv switchboard	LM	290		-
	Total Carried Forward to Ground Floor Collection Pg.				**-**

ITEM	DESCRIPTION	QTY	RATE (KSH)	AMOUNT (KSH)
	GROUND FLOOR COLLECTION PAGE			
A	Total Amount for Ground floor	1		-
B	Total Amount for Ground floor Common Area	1		-
	Total For Ground Floor Carried Forward to ACCOMODATION UNITS Summary Pg.			-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
II	**TYPICAL 1ST - 5TH FLOOR**				
A.	**ACCOMODATION UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	90	-	-
	ii) Ditto as in item No. 1.01 but for two way switching	No.	32	-	-
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	28	-	-
	ii) 10A two gang two way switch	No.	28	-	-
	iii) 10A three gang two way switch	No.	6	-	-
1.03	**LIGHTING FITTINGS**				
	a) Wall mounted UP and Down LED light Fitting as Illumat, or approved equivalent.	No.	28	-	-
	b) Weather proof Bathroom Fitting complete with LED energy saving bulb for washroom as Phillips, or approved equivalent	No.	10	-	-
	c) Shaver strip light complete with 110/240V shaver socket and pull cord as Phillips, or approved equivalent.	No.	8	-	-
	d) 2D Round LED ceiling fitting as Phillip or equal and approved	No.	24	-	-
	e) Pendant light fitting with a 30cm ,1.5mm2 three core flex cable (clear) complete with LED bulb, Daylight, as Phillips or approved equivalent.	No.	6	-	-
	f) 75/100mm Round Recessed 3W LED adjustable downlighter, Warm White colour, die cast aluminium material as Phillip or equal and approved	No.	0	-	-
	g) Chandelier complete with 9W LED bulbs as PHILLIPS SL Chanderlier or approved equivalent.	No.	6	-	-
	h) FSL LED Ceiling Light 18W – IP44, 220V (370×55mm) – warm white colour, Daylight | Slim Round Ceiling Lampas Phillip or equal and approved	No.	8	-	-
	Total Carried Forward to the Next Pg.				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				-
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	64	-	-
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or approved equivalent.	No.	64	-	-
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories,but excluding the 40A DP connection unit	No.	8	-	-
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	8	-	-
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A Cooker connection unit	No.	6	-	-
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	6	-	-
1.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	6	-	-
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	6	-	-
1.12	240V/12V Ding dong domestic door bell	No.	6	-	-
	Total Carried Forward to the Next Pg.				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				-
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the Data socket outlet.	No.	6	-	-
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	6	-	-
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2	-	-
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	LM	60	-	-
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	8 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	6	-	-
1.18	**MCBs for item above as Schneider Electric Acti 9**			-	
	i)10 A SP MCB	No.	32	-	-
	ii)32 A SP MCB	No.	10	-	-
	iii) 45 A SP MCB	No.	4	-	-
	iv) Blanking plates	No.	2	-	-
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	LM	54	-	-
	Total Carried Forward to Typical Floor Collection Pg.				**-**

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
B	**CORRIDOR/ ENTRANCE LOBBY AREA**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for two way switching, but excluding the switch and luminaire.	No.	10	-	-
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang two way switch	No.	2	-	-
	ii) 10A two gang two way switch	No.	2	-	-
1.03	**LIGHTING FITTINGS**				
	a) Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type N"**	No.	10	-	-
	b) Bulkhead fitting with moulded glass diffuser & Die Cast Aluminium base c/w 16W PL Lamp as Massive Sunderland Cat. No. 71410/01/31 for security lights. **"Type B"**	No.	0	-	-
1.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	3	-	-
1.05	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	2	-	-
	Total Carried Forward to the Next Pg.				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				**-**
	LIGHTING CONTROL				
1.06	Presence sensor complete with assocaited wiring (light and motion sensor) as Osram Duo with the following characteristics: Operation voltage 220 - 240V 50Hz, detection area-12m dia minimum, settable light value, switch-off delay (if no motion detected), installation height - 5m minimum	No.	1	-	-
					-
1.07	8 ways 100A TPN distribution boards 'T' complete with 100A TPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1	-	-
				-	-
1.08	**MCBs for item above as Schneider Electric Acti 9**			-	-
	i)10 A SP MCB	No.	6	-	-
	ii) 32 A SP MCB	No.	4	-	-
	iii) 40 A SP MCB	No.	6	-	-
	iv) 32 A TP MCB	No.	4	-	-
	v) Blanking plates	No.	3	-	-
				-	-
1.09	Sub-mains circuits for DB 'T' above comprising of 4 core 25mm^2 PVC/SWA/PVC cable drawn in cable tray/ 50mm diameter heavy gauge conduits and running from the Lv switchboard	LM	10	-	-
	Total Carried Forward to Typical Floor Collection Pg.				**-**

ITEM	DESCRIPTION		QTY	RATE (KSH)	AMOUNT (KSH)
	TYPICAL 1ST - 5TH FLOOR COLLECTION PAGE				
A	Total Amount for 1st to 5th Floor	x5	5		-
B	Total Amount for 1st to 5th Floor Common Area		5		-
	Total for Typical Floors Carried Forward to ACCOMODATION UNITS Summary Page				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
III	**ROOF TERRACE & ROOF FLOOR**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for two way switching, but excluding the switch and luminaire.	No.	20	-	-
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-			-	
	i) 10A one gang two way switch	No.		-	-
	ii) 10A two gang two way switch	No.	1	-	-
1.03	**LIGHTING FITTINGS**			-	
	a) Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type N"**	No.	10	-	-
	b) Bulkhead fitting with moulded glass diffuser & Die Cast Aluminium base c/w 16W PL Lamp as Massive Sunderland Cat. No. 71410/01/31 for security lights. **"Type B"**	No.	10	-	-
1.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	2	-	-
1.05	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	1	-	-
	Total Carried Forward to the Next Pg.				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				**-**
	LIGHTING CONTROL				
1.06	Presence sensor complete with assocaited wiring (light and motion sensor) as Osram Duo with the following characteristics: Operation voltage 220 - 240V 50Hz, detection area-12m dia minimum, settable light value, switch-off delay (if no motion detected), installation height - 5m minimum	No.	1		-
1.07	24A, 240V, 2P DB/CU mounted silent operation contactor for Switching External lights complete with all accessories and as CRABTREE CIK24 or an approved equivalent	No.	1		-
					-
1.08	Hosereel power points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 38mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 40A TPN isolator	No.	1		-
					-
1.09	40A TPN isolator as MK or approved equivalent	No.	1		-
1.10	Solar water heater points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 38mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 40A TPN isolator	No.	2		-
					-
1.11	40A TPN isolator as MK or approved equivalent	No.	2		-
					-
	Total for ROOF TERRACE FLOOR Carried Forward to ACCOMODATION UNITS Summary Page				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
IV	**EARTHING AND LIGHTNING PROTECTION** SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:- **Air Termination**				
1.01	2000mm x15mmØ multiple point pure copper AirRods/ Termination with spikes as Furse Part No. RA240 or approved equivalent	No.	2		-
1.02	Copper Air Rod Base as Furse Part No. SD105-H or approved equivalent	No.	2		-
1.03	Copper Junction Clamps for copper tape as Furse Part No. CN105-H or approved equivalent	No.	2		-
1.04	25mm x 3mm Tinned Copper Tape as Furse TC230 or approved equivalent	Lm.	10		-
	Down Conductor				
1.05	25mm x 3mm Tinned Copper Tape as Furse TC230 or approved equivalent	Lm.	60		-
1.06	Screwdown copper test clamp as Furse CT305 or approved equivalent	No.	2		-
1.07	38mm Ø HG PVC conduits for drawing the down conductor above.	Lm.	40		-
	Earth Termination				
1.08	15mm Ø, 1500mm long solid copper earth rod c/w driving stud, coupling, and spike as Furse RC011 or approved equivalent	No	2		-
1.09	Earth rod to tape clamp type A as Furse CR108 or approved equivalent	No.	2		-
1.10	Concrete inspection earth pit Cat. No. PT 005 with 5 hole earth bar as Furse Cat. No. PT 006.	No.	2		-
1.11	600mm x 600mm copper earth mat made from 25mm x 3mm copper tape at 300mm spacing, buried to permanent moisture level and complete with all clamps and 6m long 25mm x 3mm copper tape clamped to the down conductor, soil conditioning agents (marconite or bentonite) as necessary to achieve earthing resistance value below 10-Ohms	Lot	2		-
1.12	Allow for earthing tests for the above and submission of the report to the engineer to BS7671 & BS62305 standards	No.	1		-
	Bonding				
1.13	Bonding and clamping to all metal work including water pipes, gas pipes, hand-rails, smatv system, window frames, cladding, metal roof etc. and the main earth for the building.	Item	1		-
	Total for Carried Forward to ACCOMODATION UNITSSummary Page				-

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
VI	**LV SWITCHBOARD-GROUND FLOOR**				
	SUPPLY DELIVERY, STORE, INSTALL AND COMMISSION THE FOLLOWING:-				
1.01	Install purpose made Free-standing, fully wired front access metal clad main switchboard cubicle suitable for floor / wall mounting and manufactured in 14SWG galvanised mild steel sheet, to be finished in cream (or appropriate colour) powder coating. Wiring as shown on the schematic (the other details as per Particular Specification) and in compliance with IEC 60439 and Local KS standards, complete with the following:-	No.	1		-
(i)	200Amps TP/N copper busbars - KPLC supply (Sealable)				
(ii)	200Amps MCCB as mains incomer adjustable				
(iii)	Space for 1No. 3-phase KPLC Common Services meter (kW, kWH, kVA, V, I etc), 100A TP MCB				
(iv)	24No. 63A DP MCBs for the units				
(v)	2No. 100A TP MCCBs for common area				
(vi)	100A TP sub changeover for common area				
(vii)	Space for KPLC cut-outs and 12No. 1-phase meters including studs for mounting KPLC seals				
(viii)	Sealable studs for all cover plate screws and all necessary accessories				
(ix)	6mm perspex viewing window for each section				
(x)	Heavy duty rubber lining for all the perspex viewing windows				
(xi)	10 No. Spare ways				
(xii)	Complete earthing system to KPLC requirements				
1.02	Earthing for the switch-board under this section comprising 25x3mm copper tape lead, 1800mm long x 15mm diameter copper earth electrode as Furse or approved equivalent complete with driving stud and tape to rod clamp, 300mm x 300mm x 300mm deep concrete inspection earth pit with removable waterproof cover, 600mm x 600mm copper earth mat, soil conditioning agents (marconite and bentonite etc) necessary to achieve earthing value below 5-Ohms and all other necessary accessories	No.	1		-
	Total for Carried Forward to ACCOMODATION UNITS Summary Page				-

ITEM	DESCRIPTION	AMOUNT (KSH)
	ACCOMODATION UNITS SUMMARY PAGE	
I	Total Amount for Ground Floor	-
II	Total Amount for Typical 1st - 5th Floors	-
III	Total Amount for Roof Terrace & Roof Floors	-
VI	Total Amount for Lightning Protection	-
V	Total Amount for LV Switchboard Installation and Earthing	-
VI	PROVISIONAL SUMS	
	i). Allow Provisional sum for Structured Cabling Installations	750,000.00
	i). Allow Provisional sum for CCTV Installations	750,000.00
	TOTAL AMOUNT CARRIED FORWARD TO ELECTRICAL GRAND SUMMARY PAGE	

POLICE POST
ELECTRICAL BILL OF QUANTITIES

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Supply, install, test, commission and set to work the following. All lighting fittings to be complete with lamp, control gear etc as applicable.				
	LIGHTING POINTS				
1.01	Lighting point 1-way switched wired in 3 x 1.5mm^2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	30		-
1.02	Lighting point 2-way switched wired in 3 x 1.5mm2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	10		-
	LUMINIARES				
1.03	10 A white moulded switch plates as MK logic plus or an approved equivalent: -				
	(a) 1-gang 1-way	No.	28		-
	(b) 1-gang 2-way	No.	4		-
	(c) 2-gang 1-way	No.	2		-
	(d) 2-gang 2-way	No.	2		-
	(e) 3-gang 2-way	No.	2		-
	(f) 1-gang intermediate	No.	2		-
1.04	Install permanent **"DANGER" 415V** labels where groups of switches have been fed by more than one phase.	No.	2		-
1.05	**Luminiares, complete with lamps of specified wattage and appropriate colour rendering: -**				-
	i) Exit	No.	3		-
	ii) Type C (600X600)	No.	14		-
	iii)DL	No.	10		-
	iv) DL1	No.	14		-
	v) Type 4C	No.	3		-
	vi) Type X	No.	10		-
	vii) Type E_m	No.	4		-
1.06	Motion Sensors for lighting	No.	14		-
1.07	Outlet for sign illumination comprising box, concealed H.G. PVC conduit, box, wiring in 3 x 2.5mm^2 SC-PVC-CU cablesi 20mm H.G PVC Conduits and all accessories	No.	1		-
1.08	5A photocell unit for signage and security lights.	No.	1		-
1.09	30A SP/N contactor unit, wired to the Photocell Unit above.	No.	1		-
	Total C/F to Next Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				**-**
	POWER SUPPLY				
1.10	Twin standard 13A- point outlet for raw power, wired in 2.5mm² SC-PVC-CU cables ring mains inside concealed conduits in walls, floor box or trunking excluding face plate	No.	10		-
1.11	Twin Red 13A-socket point for clean power, wired in 2.5mm² SC-PVC-CU cables radial circuit inside concealed conduits in walls, floor box or trunking excluding face plate	No.	10		-
1.12	20A Outlet for the following, comprising box, concealed 20mm diameter H/G PVC conduit, wiring in 3 x 4.0 mm² SC-PVC-CU cables and all accessories but excluding 20A DP switch.				
	(i) Water Heater	No.	1		-
	(ii) HVAC	No.	3		-
	(iii) Hand Driers	No.	4		-
	(iv) Kitchen Equipment	No.	2		-
	(v) Dehumidifier	No.	1		-
	(vi) Fire Alarm Control Panel	No.	1		-
1.13	200 x 50mm 3-compartment angle trunking to details shown, in 14-gauge galvanized steel sheet with powder coating finish to approved colour, complete with cover, screws, bends, end caps and all accessories.	m	20		-
1.14	300 x 50mm galvanised steel factory fabricated Cable tray c/w bends, support all accessories	No.	4		-
1.15	Twin-outlet plates on the trunking, same colour finish	No.	8		-
1.16	Single-outlet plates on the trunking, same colour finish	No.	8		-
1.17	Dia. 50mm HG PVC conduits in slab for the above trunking	No.	20		-
1.18	4 compartment Floor box as MK Cablelink Plus Modular or approved equivalent	No.	3		-
1.19	Twin Standard Floor box 13A-socket module outlet for raw power as MK or equal and approved	No.	3		-
1.20	Twin Red Floor box 13A-socket module outlet for clean power as MK or equal and approved	No.	3		-
	Total C/F to Next Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				-
1.21	8 ways 100A TPN distribution boards 'T' complete with 100A TPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		-
1.22	25.0 mm^2 3 core XLPE /SWA/PVC CU cables c/w lugs and glands from Main Switch Board to distribution Board	m	100		-
1.23	SP MCB in the boards above.	No.	16		-
1.24	TP MCB in the boards above.	No.	4		-
1.25	SP RCBO in the boards above.	No.	2		-
1.26	Blanking plates for un-used spare ways.	No.	2		-
1.27	Labeling of all the final sub-circuits in boards above	Item	1		-
	ELV				
1.32	Outlet for the following installation, comprising box, concealed 25 mm conduit, draw wire and all accessories.				
	(i) CCTV	No.	8		-
	(ii) Fire Alarm & Detection System	No.	12		-
	(iii) Data	No.	9		-
	(iv) TV	No.	2		-
	(v) Public Address	No.	10		-
	(vi) Access Control	No.	8		-
	(vii) Security	No.	4		-
	Total C/F to Police post Summary Page				-

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
II	**INCOMING POWER**				
1.01	100mm diameter Heavy gauge duct for incoming underground H.V. cables with 1:3:6 concrete surround	M	100		-
1.02	900 x 900 x 900 concrete manhole complete with Manhole covers and Hatari(Danger) Sign indelibly engraved at the top	No.	6		-
1.03	Trenching , sifting and backfilling the 750mm deep trench after laying the above ducts including compaction	M	100		-
1.04	Hatari(Danger) sign concerete slabs	No.	6		-
	EARTHING				
	Supply and install the following:-				
1.015	Earth Potential Copper Bar measuring 1200m long X 50mm Wide X 6mm Thick, mounted on insulators in room	No.	1		-
1.06	Earth Potential Copper Bar measuring 600m long X 50mm Wide X 6mm Thick, mounted on insulators in room	No.	1		-
1.07	16mm sq SC CU cable c/w appropriate cable glands, cable lugs	M	6		-
1.08	Earth pits c/w earth matt and earth rods	No.	1		-
	Total C/F to Police post Summary Page				**-**

ITEM	DESCRIPTION	Qty	UNIT	RATE (KSH)	AMOUNT (KSH)
III	**STREET LIGHTING** Supply, Install test and commision the following				
1.01	6 meters above finished foot path level, circular street lighting column made from 3mm thick steel galvanized pipe complete with single arm entry bracket of 1.0 meters outreach at an angle of 45 degrees, 100w LED solar street lights, IP65 waterproof level, 6000k color temperature, 200AH Gel battery capacity in waterproof pvc box and outer galvanized steel cage, 250W monopanel and 12V charge controller complete with dc cable and other accessories.	4	No.		-
	Total for Street lighting C/F to Police post Summary Page				-

ITEM	DESCRIPTION		AMOUNT (KSH)
	POLICE POST MAIN SUMMARY PAGE		
I	LIGHTING AND POWER SUPPLY		-
II	INCOMING POWER AND EARTHING		-
III	STREET LIGHTING		-
	PROVISIONAL SUMS		
	i). Allow Provisional sum for Structured Cabling Installations		450,000.00
	i). Allow Provisional sum for CCTV Installations		500,000.00
	TOTAL AMOUNT (KSHs). FOR POLICE POST ELECTRICAL INSTALLATIONS		

CIT LOUNGE
ELECTRICAL BILL OF QUANTITIES

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Supply, install, test, commission and set to work the following. All lighting fittings to be complete with lamp, control gear etc as applicable.				
	LIGHTING POINTS				
1.01	Lighting point 1-way switched wired in 3 x 1.5mm^2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	5		-
1.02	Lighting point 2-way switched wired in 3 x 1.5mm2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	1		-
	LUMINIARES				
1.03	10 A white moulded switch plates as MK logic plus or an approved equivalent: -				
	(a) 1-gang 1-way	No.	5		-
	(b) 1-gang 2-way	No.	1		-
1.04	Install permanent **"DANGER" 415V** labels where groups of switches have been fed by more than one phase.	No.	1		-
1.05	**Luminiares, complete with lamps of specified wattage and appropriate colour rendering: -**				-
	i) Exit	No.	1		-
	ii)DL	No.	4		-
	iii) DL1	No.	4		-
	iv) Type 4C	No.	1		-
	v) Type X	No.	4		-
	vi) Type E_m	No.	1		-
1.06	Motion Sensors for lighting	No.	2		-
1.07	Outlet for sign illumination comprising box, concealed H.G. PVC conduit, box, wiring in 3 x 2.5mm^2 SC-PVC-CU cablesi 20mm H.G PVC Conduits and all accessories	No.	1		-
1.08	5A photocell unit for signage and security lights.	No.	1		-
1.09	30A SP/N contactor unit, wired to the Photocell Unit above.	No.	1		-
	Total C/F to Next Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				**-**
	POWER SUPPLY				
1.10	Twin standard 13A- point outlet for raw power, wired in 2.5mm² SC-PVC-CU cables ring mains inside concealed conduits in walls, floor box or trunking excluding face plate	No.	4		-
1.11	20A Outlet for the following, comprising box, concealed 20mm diameter H/G PVC conduit, wiring in 3 x 4.0 mm² SC-PVC-CU cables and all accessories but excluding 20A DP switch.				
	(i) HVAC	No.	1		-
	(ii) Hand Driers	No.	2		-
	(ii) Fire Alarm Control Panel	No.	1		-
1.12	4 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		-
					-
1.13	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	m	100		-
					-
1.14	SP MCB in the boards above.	No.	2		-
					-
1.15	TP MCB in the boards above.	No.	1		-
					-
1.16	SP RCBO in the boards above.	No.	1	-	-
					-
1.17	Labeling of all the final sub-circuits in boards above	Item	1		-
	ELV				
1.18	Outlet for the following installation, comprising box, concealed 25 mm conduit, draw wire and all accessories.				
	(i) CCTV	No.	4		-
					-
	(ii) Fire Alarm & Detection System	No.	2		-
					-
	(iii) Data	No.	2		-
					-
	(iv) TV	No.	1		-
					-
	(v) Public Address	No.	3		-
					-
	(vi) Access Control	No.	1		-
					-
	(vii) Security	No.	2		-
	Total C/F to CIT Lounge Summary Page				**-**

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
II	**INCOMING POWER**				
1.01	100mm diameter Heavy gauge duct for incoming underground H.V. cables with 1:3:6 concrete surround	M	100		-
1.02	900 x 900 x 900 concrete manhole complete with Manhole covers and Hatari(Danger) Sign indelibly engraved at the top	No.	4		-
1.03	Trenching , sifting and backfilling the 750mm deep trench after laying the above ducts including compaction	M	100		-
1.04	Hatari(Danger) sign concerete slabs	No.	4		-
	EARTHING				
	Supply and install the following:-				
1.05	Earth Potential Copper Bar measuring 1200m long X 50mm Wide X 6mm Thick, mounted on insulators in room	No.	1		-
1.06	Earth Potential Copper Bar measuring 600m long X 50mm Wide X 6mm Thick, mounted on insulators in room	No.	1		-
1.07	16mm sq SC CU cable c/w appropriate cable glands, cable lugs	M	6	-	-
1.08	Earth pits c/w earth matt and earth rods	No.	1	-	-
	Total C/F to CIT Lounge Summary Page				**-**

ITEM	DESCRIPTION	Qty	UNIT	RATE (KSH)	AMOUNT (KSH)
III	**STREET LIGHTING** Supply, Install test and commision the following				
1.01	6 meters above finished foot path level, circular street lighting column made from 3mm thick steel galvanized pipe complete with single arm entry bracket of 1.0 meters outreach at an angle of 45 degrees, 100w LED solar street lights, IP65 waterproof level, 6000k color temperature, 200AH Gel battery capacity in waterproof pvc box and outer galvanized steel cage, 250W monopanel and 12V charge controller complete with dc cable and other accessories.	2	No.	-	-
	Total for Street lighting C/F to CIT Lounge Summary Page				-

ITEM	DESCRIPTION		AMOUNT (KSH)
	CIT LOUNGE MAIN SUMMARY PAGE		
I	LIGHTING AND POWER SUPPLY		-
II	INCOMING POWER AND EARTHING		-
III	STREET LIGHTING		-
	PROVISIONAL SUMS		
	i). Allow Provisional sum for Structured Cabling Installations		20,000.00
	i). Allow Provisional sum for CCTV Installations		60,000.00
	TOTAL AMOUNT (KSHs). FOR CIT LOUNGE ELECTRICAL INSTALLATIONS		

GATE HOUSES
ELECTRICAL BILL OF QUANTITIES

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Supply, install, test, commission and set to work the following. All lighting fittings to be complete with lamp, control gear etc as applicable.				
	LIGHTING POINTS				
1.01	Lighting point 1-way switched wired in 3 x 1.5mm^2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	24		-
1.02	Lighting point 2-way switched wired in 3 x 1.5mm2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	6		-
	LUMINIARES				
1.03	10 A white moulded switch plates as MK logic plus or an approved equivalent: -				
	(a) 1-gang 1-way	No.	6		-
	(b) 2-gang 2-way	No.	4		-
	(c) 3-gang 2-way	No.	2		-
1.04	Install permanent **"DANGER" 415V** labels where groups of switches have been fed by more than one phase.	No.	4		-
1.05	**Luminiares, complete with lamps of specified wattage and appropriate colour rendering: -**				-
	i) Exit	No.	4		-
	ii)DL	No.	4		-
	iii) DL1	No.	8		-
	iv) Type 4C	No.	4		-
	v) Type X	No.	16		-
	vi) Type E_m	No.	4		-
1.06	Motion Sensors for lighting	No.	8		-
1.07	Outlet for sign illumination comprising box, concealed H.G. PVC conduit, box, wiring in 3 x 2.5mm^2 SC-PVC-CU cablesi 20mm H.G PVC Conduits and all accessories	No.	4		-
1.08	5A photocell unit for signage and security lights.	No.	4		-
1.09	30A SP/N contactor unit, wired to the Photocell Unit above.	No.	4		-
	Total C/F to Next Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				-
	POWER SUPPLY				
1.10	Twin standard 13A- point outlet for raw power, wired in 2.5mm² SC-PVC-CU cables ring mains inside concealed conduits in walls, floor box or trunking excluding face plate	No.	10		-
1.11	20A Outlet for the following, comprising box, concealed 20mm diameter H/G PVC conduit, wiring in 3 x 4.0 mm² SC-PVC-CU cables and all accessories but excluding 20A DP switch.				
	(i) Automated Doors	No.	4		-
	(ii) Hand Driers	No.	4		-
	(iii) Fire Alarm Control Panel	No.	4		-
1.12	Twin Standard Floor box 13A-socket module outlet for raw power as MK or equal and approved	No.	10		-
1.13	4 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		-
1.14	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	m	180		-
1.15	SP MCB in the boards above.	No.	2		-
1.16	TP MCB in the boards above.	No.	1		-
1.17	SP RCBO in the boards above.	No.	1		-
1.18	Labeling of all the final sub-circuits in boards above	Item	1		-
	ELV				
1.19	Outlet for the following installation, comprising box, concealed 25 mm conduit, draw wire and all accessories.				
	(i) CCTV	No.	16		-
	(ii) Fire Alarm & Detection System	No.	8		-
	(iii) Data	No.	4		-
	(iv) TV	No.	4		-
	(v) Public Address	No.	4		-
	(vi) Access Control	No.	4		-
	(vii) Security	No.	4		-
	Total C/F to Gate Houses Summary Page				-

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
II	**INCOMING POWER**				
1.01	100mm diameter Heavy gauge duct for incoming underground H.V. cables with 1:3:6 concrete surround	M	180		-
1.02	900 x 900 x 900 concrete manhole complete with Manhole covers and Hatari(Danger) Sign indelibly engraved at the top	No.	6		-
1.03	Trenching , sifting and backfilling the 750mm deep trench after laying the above ducts including compaction	M	180		-
1.04	Hatari(Danger) sign concerete slabs	No.	6		-
	EARTHING				
	Supply and install the following:-				
1.015	Earth Potential Copper Bar measuring 1200m long X 50mm Wide X 6mm Thick, mounted on insulators in room	No.	1		-
1.06	Earth Potential Copper Bar measuring 600m long X 50mm Wide X 6mm Thick, mounted on insulators in room	No.	1		-
1.07	16mm sq SC CU cable c/w appropriate cable glands, cable lugs	M	6		-
1.08	Earth pits c/w earth matt and earth rods	No.	1		-
	Total C/F to Gate Houses Summary Page				**-**

ITEM	DESCRIPTION	Qty	UNIT	RATE (KSH)	AMOUNT (KSH)
III	**STREET LIGHTING** Supply, Install test and commision the following				
1.01	6 meters above finished foot path level, circular street lighting column made from 3mm thick steel galvanized pipe complete with single arm entry bracket of 1.0 meters outreach at an angle of 45 degrees, 100w LED solar street lights, IP65 waterproof level, 6000k color temperature, 200AH Gel battery capacity in waterproof pvc box and outer galvanized steel cage, 250W monopanel and 12V charge controller complete with dc cable and other accessories.	8	No.		-
	Total for Street lighting C/F to Gate Houses Summary Page				-

ITEM	DESCRIPTION		AMOUNT (KSH)
	GATE HOUSES MAIN SUMMARY PAGE		
I	LIGHTING AND POWER SUPPLY		-
II	INCOMING POWER AND EARTHING		-
III	STREET LIGHTING		-
	PROVISIONAL SUMS		
	i). Allow Provisional sum for Structured Cabling Installations		250,000.00
	i). Allow Provisional sum for CCTV Installations		650,000.00
	TOTAL AMOUNT (KSHs). FOR GATE HOUSES ELECTRICAL INSTALLATIONS		

POWER HOUSE
ELECTRICAL BILL OF QUANTITIES

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Supply, install, test, commission and set to work the following. All lighting fittings to be complete with lamp, control gear etc as applicable.				
	LIGHTING POINTS				
1.01	Lighting point 1-way switched wired in 3 x 1.5mm^2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	8		-
1.02	Lighting point 2-way switched wired in 3 x 1.5mm2 SC-PVC-CU cables in 20mm dia. H.G PVC conduits and all accessories	No.	4		-
	LUMINIARES				
1.03	10 A white moulded switch plates as MK logic plus or an approved equivalent: -				
	(a) 1-gang 1-way	No.	1		-
	(b) 2-gang 2-way	No.	1		-
1.05	**Luminiares, complete with lamps of specified wattage and appropriate colour rendering: -**				-
	i) Type 4C	No.	5		-
	ii) Type X	No.	6		-
	iii) Type E_m	No.	2		-
1.06	Motion Sensors for lighting	No.	2		-
1.07	Outlet for sign illumination comprising box, concealed H.G. PVC conduit, box, wiring in 3 x 2.5mm^2 SC-PVC-CU cablesi 20mm H.G PVC Conduits and all accessories	No.	1		-
1.08	5A photocell unit for signage and security lights.	No.	1		-
1.09	30A SP/N contactor unit, wired to the Photocell Unit above.	No.	1		-
	Total C/F to Next Page				**-**

Item	Description	Unit	Qty	Rate (Ksh.)	Amount (Ksh.)
	Total B/F from Previous Page				-
	POWER SUPPLY				
1.10	Twin standard 13A- point outlet for raw power, wired in 2.5mm² SC-PVC-CU cables ring mains inside concealed conduits in walls, floor box or trunking excluding face plate	No.	4		-
1.11	20A Outlet for the following, comprising box, concealed 20mm diameter H/G PVC conduit, wiring in 3 x 4.0 mm² SC-PVC-CU cables and all accessories but excluding 20A DP switch.				
	(i) Fire Alarm Control Panel	No.	1		-
1.12	Twin Standard Floor box 13A-socket module outlet for raw power as MK or equal and approved	No.	4		-
					-
1.13	4 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		-
					-
1.14	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	m	20		-
					-
1.15	SP MCB in the boards above.	No.	2		-
					-
1.16	TP MCB in the boards above.	No.	1		-
					-
1.17	SP RCBO in the boards above.	No.	1		-
					-
1.18	Labeling of all the final sub-circuits in boards above	Item	1		-
	ELV				
1.19	Outlet for the following installation, comprising box, concealed 25 mm conduit, draw wire and all accessories.				
	(i) CCTV	No.	2		-
					-
	(ii) Fire Alarm & Detection System	No.	2		-
					-
	Total C/F to Power House Summary Page				-

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
II	**INCOMING POWER**				
1.01	200mm diameter Heavy gauge duct for incoming underground H.V. cables with 1:3:6 concrete surround	M	110		-
1.02	900 x 900 x 900 concrete manhole complete with Manhole covers and Hatari(Danger) Sign indelibly engraved at the top	No.	6		-
1.03	Trenching , sifting and backfilling the 750mm deep trench after laying the above ducts including compaction	M	110		-
1.04	Hatari(Danger) sign concerete slabs	No.	6		-
	EARTHING				
	Supply and install the following:-				
1.015	Earth Potential Copper Bar measuring 1200m long X 50mm Wide X 6mm Thick, mounted on insulators in room	No.	1		-
1.06	Earth Potential Copper Bar measuring 600m long X 50mm Wide X 6mm Thick, mounted on insulators in room	No.	1		-
1.07	16mm sq SC CU cable c/w appropriate cable glands, cable lugs	M	6		-
1.08	Earth pits c/w earth matt and earth rods	No.	1		-
	Total C/F to Power House Summary Page				**-**

ITEM	DESCRIPTION		AMOUNT (KSH)
	POWER HOUSE MAIN SUMMARY PAGE		
I	LIGHTING AND POWER SUPPLY		-
II	INCOMING POWER AND EARTHING		-
	TOTAL AMOUNT (KSHs). FOR POWER HOUSE ELECTRICAL INSTALLATIONS		**-**

LIFT INSTALLATIONS
ELECTRICAL BILL OF QUANTITIES

LIFTS INSTALLATIONS

ITEM	DESCRIPTION	QTY.	UNIT	RATE (Ksh)	AMOUNT (Ksh)
1.0	**Prelimary & Conditions of Contracts**				
1.1	Allow for co-ordination of works with the Main Contractor and other Sub-contractors	1	Item		-
1.2	Allow for preparation of all "shop" drawings and submitting to the Engineers for approval prior to commencement of work on site	1	Item		-
1.3	To ensure the equipment are provided to specifications allow, allow for factory visit for 7 No. of persons (Consultants and client representatives) to visit the manufacturing factory to verify the lift specifications and witness all the relevant factory tests before approval of shipping is given: The cost of the visit to include: i) Visa processing fees ii) Return air-tickets to and from the factory iii) Any transfer fees iv)Local transport both in Nairobi and the city of destination v) Accommodation for the seven at a hotel/resort not less than 4 stars in rating vi) An allowance of not less than $1,000 to each member of the team vii)Any other incidental cost for smooth facilitation of the trip.	1	Lot		-
1.4	Allow for preparation of all "As Built" Drawings immediately after Practical Completion of the works.	1	Item		-
1.5	Allow for the preparation of all "Operations & Maintenance Manuals" immediately after Practical Completion of the works.	1	Item		-
1.6	Allow for on-site Training of the Operators	1	Item		-
1.7	Allow for all the preliminaries relating to this contract as specified	1	Item		-
1.8	Allow for Testing and commisioning	1	Item		-
	Total Carried to Next Page				-

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT SHS.
	Total bf from previous page				-
1.9	**Passager Lift with the following data:** Supply, Install and commission a passenger lift manufactured to comply with EN81-20/50, EN81-70 with the following description: Capacity: **1600 Kg** Speed: **2.0 m/s** Control System: **Full Collective** Travel: **16m** **Counter Weight Safty Gear** Shaft Size: **2600(w)x3000(d)** Pit: 1**500mm** No. of floors: **3** No. of Served floors: 3 No of Landing Door: **3** Car Entrance Type: **Single** Car Size: **1600(w)x2100(d)** Door Type: **2 Panel Centre Opening** Door Size: **1400(w)x2300(h)** Car Finish: **Brushed Stainless Steel** Car Door Finish: **Brushed Stainless Steel** Landing Door Finish: **Brushed Stainless Steel** Sill Material: **Extruded Aluminium** Signalization Display Type: **LCD Display** COP QTY: 2 No. of Riser/Floor: **3** Card Reader Provision CCTV Provision **Notes:** **The Lift should be Energy Efficient with Regenerative Drive, VVVF Variable voltage Variable frequency Motors, Efficient Lighting - LED indication and button Lighting, Sensor Controls- cabin lights and indicators are turned off when not in sleep mode.** **Control options - Emergency light, fan in car, 2-way intercom, Telephone, Fire detection(Whole building doors open), fireman's drive, Elevator Announcer in English, lock with emergency drive, recessed overload signal & buzzer.** **Module for integration with BMS System** **Floor front facial Cabin location Indicator/ Sensor units**	1	No		-
	Total Carried to Next Page				-

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT SHS.
	Total bf from previous page				-
2.0	**Passager Lift with the following data:** Supply, Install and commission a passenger lift manufactured to comply with EN81-20/50, EN81-70 with the following description: Capacity: **1600 Kg** Speed: **2.0 m/s** Control System: **Full Collective** Travel: **28m** **Counter Weight Safty Gear** Shaft Size: **2600(w)x3000(d)** Pit: 1**500mm** No. of floors: **6** No. of Served floors: 6 No of Landing Door: **6** Car Entrance Type: **Single** Car Size: **1600(w)x2100(d)** Door Type: **2 Panel Centre Opening** Door Size: **1400(w)x2300(h)** Car Finish: **Brushed Stainless Steel** Car Door Finish: **Brushed Stainless Steel** Landing Door Finish: **Brushed Stainless Steel** Sill Material: **Extruded Aluminium** Signalization Display Type: **LCD Display** COP QTY: 2 No. of Riser/Floor: **6** Card Reader Provision CCTV Provision **Notes:** **The Lift should be Energy Efficient with Regenerative Drive, VVVF Variable voltage Variable frequency Motors, Efficient Lighting - LED indication and button Lighting, Sensor Controls- cabin lights and indicators are turned off when not in sleep mode.** **Control options - Emergency light, fan in car, 2-way intercom, Telephone, Fire detection(Whole building doors open), fireman's drive, Elevator Announcer in English, lock with emergency drive, recessed overload signal & buzzer.** **Module for integration with BMS System** **Floor front facial Cabin location Indicator/ Sensor units**	1	No		-
	Total Carried to Electrical Grand Summary Page				-

GENERATOR INSTALLATIONS
ELECTRICAL BILL OF QUANTITIES

	LIST OF TOOLS TO BE SUPPLIED WITH THE SET	Amount
Item	**Details**	**(Ksh.)**
1	Metal tool box with lock and 2 keys	
2	Set of 8 No. Chrome Vanadium ring spanners in size to suit the set	
3	Ditto open-ended spanners	
4	Set of 3 screwdrivers, 75mm 200 mm and 300 mm plus 200 mm Philips's type.	
5	One set of feeler gauges	
6	One greases gun to suit greasing points	
7	One oil can, trigger type	
8	One Hydrometer and plastic filler bottle with pouring spout	
	Total carried forward to Summary on Page 3	**-**

	LIST OF SPARE PARTS AND LUBRICANTS TO BE SUPPLIED WITH THE SET	Amount
Item	**Details**	**(Ksh.)**
1	Oil filters 6No.	
2	Air filters 3No.	
3	One injector to suit the set	
4	One set of fan belts comprising ..... belts	
5	One set of indicator lenses comprising.....bulbs	
6	One set of indicator lenses comprising lenses	
7	One overall kit	
8	One set of fuses	
9	200-litre sump oil of grade.....	
10	Two 2-kilogram tin of grease of grade.....	
11	One 50-liter plastic container of distilled water	
12	**ANY OTHER RECOMMENDED SPARES** Fuel Filters 6 No.	
	Total carried forward to Summary on Page 3	**-**

	FUEL STORAGE TANKS	**Amount**
ITEM	**DETAILS**	**(Ksh.)**
1	Generator set fueling enough for 7 hours running	
2	Daily service tank 1000 mm x 1000 mm x 1000 mm **full of fuel 900 liters.**	
3	Fuel transfer pump located in generator room	
4	50mm diameter pipe 40m long complete with plugs for fuel transfer from both fuel storage room and generator room.	
	Total carried forward to Summary on Page 3	

	EARTHING	**Amount**
Item	**Details**	**(Ksh.)**
1	Supply and install 400mm x 400mm copper tape mesh 25mm x 3mm in 600mm x 600mm x 400mm earth pit and allow for the filling of pit with red soil and charcoal.	
	Total carried forward to Summary on Page 3	**-**

	SUMMARY PAGE	Amount
Item	**Details**	**(Ksh.)**
1	Sub-Contract Preliminaries.	
2	Supply and installation of set of 2No. 500kVA generator sound attenuated type set.	
3	Supply and installation of control panel and local cabling, Exhaust and Hot air duct.	
4	VAT and Customs Duty on imported items	
5	Commissioning of set	
6	Supply of "AS FITTED" drawings and maintenance.	
7	Supply of tool kit	
8	Supply of spares and lubricants.	
9	Fuel Storage tanks	
10	Earthing	
11	Supply and installation of an Automatic Transfer Switch for 500KVA Genset	
12	One- year Maintence Contract	
13	Provisional Sums and Contingencies	
	TOTAL FOR GENERATOR INSTALLATIONS	**-**

ITEM	DESCRIPTION		AMOUNT (KSH)
	MAIN BUILDING ELECTRICAL SUMMARY PAGE		
1	Main Building Electrical Works		-
2	Accomodation Units		-
3	Police post Installations		-
4	CIT Lounge Installations		-
5	Gate Houses Installations		-
6	Power House Installations		-
7	Lift Installations		-
8	Generator set Installations		-
	TOTAL AMOUNT (KSHs). FOR MAIN BUILDING ELECTRICAL INSTALLATIONS		**-**

MECHANICAL WORKS

Note:

1. The rates and prices shall be inclusive of VAT at 16%

PROPOSED CONSTRUCTION OF ELDORET BRANCH FOR THE CENTAL BANK OF KENYA IN ELDORET, UASIN GISHU COUNTY

SPECIFICATIONS FOR MECHANICAL SERVICES

SECTION 1.1

TECHNICAL SPECIFICATIONS
(PLUMBING & DRAINAGE)

Table of Contents

1.1 TECHNICAL SPECIFICATIONS (PLUMBING & DRAINAGE) 1
1.1.1 GENERAL SPECIFICATION - GENERAL REQUIREMENTS 1
1.1.2 INSTALLATION METHODOLOGY 12
1.1.3 INSPECTION, TESTING AND COMMISSIONING 19

1.2 TECHNICAL SPECIFICATIONS (FIREFIGHTING) 28
1.2.1 INTRODUCTION 28
1.2.2 STATUTORY OBLIGATIONS AND OTHER REGULATIONS 28
1.2.3 EXECUTION OF WORKS 31
1.2.4 PIPEWORK VALVES AND FITTINGS 32
1.2.5 HYDRANT AND HOSE REEL SYSTEM 40
1.2.6 AUTOMATIC SPRINKLER SYSTEM 43
1.2.7 TANKS AND PUMPS 49
1.2.8 GASEOUS EXTINGUISHING SYSTEM 54
1.2.9 MISCELLANEOUS 61
1.2.10 COMMISSIONING AND ACCEPTANCE TEST 67
1.2.11 GENERAL MAINTENANCE REQUIREMENTS 75
1.2.12 EMERGENCY INSPECTIONS, TESTS AND REPAIRS 77
1.2.13 CERTIFICATE OF MAINTENANCE 77
1.2.14 HANDOVER OF FIRE SERVICE INSTALLATION 78

1.1 TECHNICAL SPECIFICATIONS (PLUMBING & DRAINAGE)

1.1.1 GENERAL SPECIFICATION - GENERAL REQUIREMENTS

1.1.1.1 Installations to Comply with This General Specification

The Plumbing and Drainage Installations shall comply with this General Specification which details the intrinsic properties (including materials and workmanship) of the Installations in so far as it is not overridden by the Conditions, Particular Specification, Drawings and/or written instructions of the Engineer.

1.1.1.2 Scope of the Installations

This General Specification, Particular Specification, Tender Equipment Schedule and Drawings detail the performance requirements of the Installations. The Installations to be carried out in accordance with this General Specification shall include the design where specified, installation and supply of all materials necessary to form a complete installation including any necessary tests, adjustments, commissioning and maintenance as prescribed and all other incidental sundry components together with the necessary labour for installing such components, for the proper operation of the Installations.

1.1.1.3 Statutory Obligations and Other Requirements

1.1.1.3.1 Technical Standards

KEBS, BS, BS EN, ISO Standards, IEC Standards and Codes of Practice, etc. shall be deemed to include all amendments, revisions and standards superseding the standards listed herein, which are published before the date of first tender invitation for the Contract or the Nominated Sub-contract (as appropriate) unless otherwise specified.

1.1.1.3.2 Case of Conflict

The documents forming the Contract are to be taken as mutually explanatory of one another but in case of ambiguities or discrepancies the same shall be dealt with in accordance with the Conditions.

1.1.1.4 Execution of Installations

1.1.1.4.1 The International System of Units (SI)

The International System of Units (System International d'Unites) of weights and measures shall be used for all materials, equipment and measurements.

1.1.1.4.2 **Programme of Installations**

The P&D Contractor shall submit to the Engineer a detailed programme of the Installations within 4 weeks from the acceptance of his tender showing the intended method, stages and order of work execution in coordination with the building construction programme, together with the duration he estimated for each and every stage of the Installations. The programme shall include at least the following: -

(a) Dates for the placement of orders for equipment and materials;
(b) Expected completion dates for builder's work requirements, i.e. when work site needs to be ready;
(c) Delivery dates of equipment and materials to the Site;
(d) Dates of commencement and completion of every stage of the Installations in line with the building construction programme, i.e. each floor level and/or zone area;
(e) Dates of documents /drawings submissions to relevant Government departments to obtain the necessary approvals;
(f) Dates of requirement of temporary facilities necessary for testing & commissioning;
(g) Dates of water supply and drainage/sewage pipe connection
(h) Dates of completion, testing and commissioning; and
(i) Short term programmes showing the detailed work schedules of coming weeks and months shall also be provided to the Engineer. Programmes shall be regularly updated to reflect the actual progress and to meet the PD Contractors' obligations under the Contract.

1.1.1.4.3 **Builder's Work**

All builder's work including openings or holes through building structure or partition walls; trenches, ducts and cutting; and all plinths, concrete bases, supports, ducts, etc. required for the Installations will be carried out as part of the building works by the Building Contractor at the expense of the Employer provided that the PD Contractor has submitted full details of such requirements within a reasonable time to the Engineer for approval, so that due consideration may be given before the Building Contractor commences the building works in accordance with the building programme in the areas concerned. After obtaining the said approval of the Engineer, the PD Contractor is required to mark out at the relevant locations of the Site the exact positions and sizes of all such works

and to provide detailed information of such works to the Building Contractor to facilitate him to carry out the builder's works as the works proceed.

All "cutting-away" and "making-good" as required to facilitate the PD Contractor's works will be carried out by the Building Contractor, except for minor provisions required for the fixing of screws, raw plugs, redhead bolts, etc. which shall be carried out by the PD Contractor. The PD Contractor shall mark out on Site and/or supply drawings of all "cutting-away" to the Building Contractor within a reasonable time.

All expenses properly incurred and losses suffered by the Employer as a result of the PD Contractor's failure to comply with the above requirements are recoverable by the Employer from the PD Contractor as a debt under the Contract or via the Building Contractor as if it is a debt liable to the Building Contractor under the Sub-contract as appropriate.

The PD Contractor shall ensure that such works are essential for the execution of the Installations. In the event that any of such works is proved to be nonessential, unnecessary and/or abortive, the PD Contractor shall bear the full cost of such works including but not limited to any unnecessary or incorrect cutting away and making-good and shall reimburse the Employer for all cost incurred in this connection are recoverable by the Employer from the PD Contractor as a debt under the Contract or via the Building Contractor as if it is a debt liable to the Building Contractor under the Sub-contract as appropriate.

1.1.1.4.4 **Coordination of Installations**

The PD Contractor shall coordinate the Installations with those works of the Building Contractor and any other contractors and sub-contractors of the Building Contractor. The PD Contractor shall note that the drawings supplied to him only indicate the approximate locations of the Installations. He shall make any modification reasonably required of his programme, work sequence and physical deployment of his work to suit the outcome of work coordination or as necessary and ensure that all cleaning, adjustment, test and control points are readily accessible while keeping the number of loops, cross-overs and the like to a minimum.

No work shall be carried out before approval of shop drawings or equipment has been given by the Engineer. It is the PD Contractor's responsibility to co-ordinate all Mechanical works to match with the structure of the building and the proposed arch and interior design of the building including but limited to ducts, grilles, equipment, pipes, light fittings, false ceiling layout and other services to allow a completely symmetrical and co-ordinated installation. PD Contractor shall prepare

section as required to demonstrate all constrains and coordinate the same for resolving any conflicts among the services. Contractor shall ensure that all required access, clearances and false ceiling heights are achieved as per the requirements are achieved.

1.1.1.4.5 **Cooperation with Other Contractors**

The PD Contractor shall cooperate at all times with the Building Contractor and all other contractors and sub-contractors of the Building Contractor in order to achieve efficient workflow on the Site.

Any significant problems beyond the PD Contractor's control shall promptly be reported to the Engineer.

Access doors shall be provided by the Contractor as required to provide proper access to all valves, clean out, junction boxes and all other concealed items which are located above ceilings or in walls and in partitions, whether such accesses are shown in the drawings or not. The omission shall be brought to the attention of the Engineer before installation of equipment. All access doors shall be properly designed, sized and located to suit the service required or as directed by the Engineer and to his satisfaction.

1.1.1.4.6 **Site Supervision**

The PD Contractor shall keep on the Site a competent and technically qualified site supervisor to control, supervise and manage all his works on Site. The site supervisor shall be vested with suitable powers to receive instructions from the Engineer.

All tradesmen must be experienced in the trade and the work carried out shall be consistent with good practice in Kenya and to the satisfaction of the Engineer. In this connection, the PD Contractor's attention is drawn to the Special

1.1.1.4.7 **Sample Board**

The materials offered for approval shall be strictly in accordance with the specifications and tender drawings. The contractor shall submit in triplicate, the technical literature for each item of the equipment, he intends to use for the project, to the consultant for the necessary review and approval. If in case the technical literature is not available, then a sample shall be submitted in the absence of either of these, typed technical data shall be submitted duly supported by telex / letter of the manufacturer for confirmation. In case of items involving aesthetic, sink taps, Showers, Draw offs etc., samples must be submitted for approval along with the materials

submittals. Each copy of the submittals shall be numbered and signed with the technical literature clearly highlighted, indicating the model, type and capacity of the equipment offered. The consultant shall retain two for copies and return one, either Approved or Not Approved, to the contractor. The contractor shall maintain and submit a status report every month, of all the Materials submittals of the Plumbing Materials & Equipments in the following proforma to the consultant:

i. Submittal Number
ii. Type of Material
iii. Manufacturer / Local Agent
iv. Date of Approval
v. Date of Order / Order Number
vi. Mode of Delivery (Air, Land or Sea)
vii. ETA on Site
viii. Status as on date of Report

Within 4 weeks of the acceptance of his Tender and prior to the commencement of the Installations, the PD Contractor shall submit to the Engineer for approval a sample board of essential components proposed to be used in the Contract. However, the PD Contractor may request the Engineer in writing for a longer period for submission if 6 weeks are practically insufficient.

Items displayed shall be deemed to be adequate for the Installations unless otherwise clearly indicated. Each sample, with clear numbering and labeling, shall be firmly fixed onto a rigid wooden or metal board. A list shall also be affixed on the sample board to show the item description, make and brand, country of origin and locations of installation (if not generally used). Samples rejected by the Engineer shall be replaced as soon as possible. Upon approval of all items, the Engineer will endorse the list on the sample board and the PD Contractor shall deliver the board to the site office for reference.

The following items shall be included in the sample board as a minimum:

i. Pipe work, fitting and their support complete with fixing accessories;
ii. Valves; and
iii. Vibration isolator

Additional items may be required by the Engineer and/or specified in the Particular Specification

1.1.1.4.8 **Material Inspection**

The contractor shall inform the consultant within one week upon receipt of all the materials at the site and arrange for the inspection of the same. Any material used at site which is not approved earlier specifically shall stand rejected without notice. Any item on supply differs from the one shown on the submittal catalogue copy or the sample submitted shall also be rejected at site. In such cases, the contractor shall make a fresh submittal for the item and obtain approval from the Consultant. Any time delay caused due to the above shall be on the Contractor‟s account. The contractor shall have to remove the rejected materials from the site and replace with approved materials at his own expenses. In the event the contractor fails to do so, the client shall have the liberty to carry out such works from other agencies and debit the ensuing amount to the Contractor.

1.1.1.4.9 **Equipment Deviations**

Subsequent to the award of the Contract, and only in exceptional circumstances where it is demonstrated in writing by the PD Contractor that the original equipment offered cannot be obtained, the Engineer may consider and accept, in writing, alternative equipment and materials proposed by the PD Contractor provided always that these are fully in compliance with the relevant Specifications and Drawings and do not impose any additional contractual or financial liabilities onto the Employer.

In the event that the approved alternative equipment or material is lower in price than the original offered equipment or material, the net difference in price between the original offered equipment or material and the approved alternative equipment or material with the executed quantities of the relevant work item shall be deducted from the Contract Sum in accordance with the Contract. The Contract Sum, however, shall not be adjusted where the approved alternative equipment or material is higher in price than the original offered equipment or material.

1.1.1.5 Drawings and Manuals

1.1.1.5.1 **Drawings in Electronic Format**

The PD Contractor shall provide drawings in electronic format as required in the following clauses. These drawings shall conform to the latest version of CAD Standard.

1.1.1.5.2 **Installation Drawings**

1.1.1.5.2.1 Drawing Submission Schedule

The Plumbing tender drawings related to this project have been listed in the Schedule of Drawings enclosed with the specifications. The tender drawings have been prepared to show the tenderer the principal equipment and general arrangement required for the project. These drawings do not indicate every detail of the work. It is the Contractor's responsibility to check the positions / locations at site. All dimensions are tentative and shall be checked with the Architectural and Structural drawings. Any discrepancy shall be brought to the attention of the consultant, in writing at the time of tender. Particular attention shall be paid to the positioning of draw offs, valves, and other accessories, in relation to the Interior finishes and locations of various appliances. The Contractor is deemed to have studied the services drawings based on all the local regulations and have included in his prices for all builders" work associated with these drawings.

The PD Contractor shall submit a detailed installation drawing submission schedule and programme to the Engineer. The PD Contractor shall allow reasonable time in the programme for vetting of the installation drawings by the Engineer and for drawing resubmissions as necessary.

The PD Contractor shall provide at least 6 hard copies and one electronic copy, unless otherwise specified in the Contract or the Sub-contract as appropriate, of the approved installation drawings to the Engineer for distribution.

Unless otherwise indicated or instructed, the PD Contractor shall, in the stated or in adequate time before each section of the work proceeds, prepare, and submit for acceptance by the Engineer, detailed installation drawings and/or shop drawings (which may also be referred to as working drawings) to demonstrate how they propose to install the works both in 'Detail' and 'Form' to facilitate the practical installation. These drawings shall be fully dimensioned and shall be based on the basic intentions of the Drawings but shall not be simply a copy of them.

1.1.1.5.2.2 Size of Installation Drawings

Drawings submitted by the PD Contractor shall only be of standard sizes from A0 to A4 or B1 size as stipulated in ISO 5457:1999.

PD Contractor's 'Installation Drawings' and/or 'Shop Drawings' shall be prepared to such scales that will clearly show all necessary details.

The drawings shall be prepared to the same sheet sizes and scales as used for the ultimate 'As-Installed' record drawings.

1.1.1.5.2.3 Contents of Installation Drawings

In accordance with the provisions of this General Specification and as stated elsewhere in the Contract, the installation drawings must incorporate details of the actual plant and equipment items as approved by the Engineer.

The PD Contractor shall ensure all installation drawings are accurate representation of the Installations, before submitting them to the Engineer. All installation drawings shall be fully dimensioned and suitably scaled showing construction, sizes, weights, arrangements, operating clearances and performance characteristics.

a) "Installation drawings" shall generally include, but not limited to, the following: -
   - Symbols and notations same as and compatible with the Drawings' standard;
   - Complete layout/assemblies including all necessary minor items and accessories;
   - Positions of all fixings, hangers and supports;
   - Maintenance spaces for all withdrawable items, such as coils, heater elements, thermometers, thermostats, fan shafts and fan blowers, cleaning and replacement of tubes, removal of guards, etc.;

b) Pipework Installation Drawings

   Prior to the commencement of any manufacture, fabrication, or installation, the PD Contractor shall submit to the Engineer for technical appraisal installation drawings for the pipework installation. Generally, the drawings shall be drawn to a scale of not less than 1:50. Subject to the Engineer's approval a scale of 1:100 may be adopted where the installation is a simple one.

   The locations of Sink taps, showers, draw offs and their piping routes, etc., as indicated on the tender drawings is tentative and may require some variation to suit the site requirements. The exact positions must be checked and shown on the detailed working drawings as indicated on the detailed architectural drawings and coordinated with furnishing and other services.

   The drawings shall indicate the location, with dimensions given, of all pipework in relation to the building structure and other pipework and

equipment. The position of all valves, strainers, check valves, etc. shall be shown together with clearances necessary for removal of strainer baskets, internal parts of all valves, motors for motorized valves, solenoids, etc.

Positions and details of all hangers and supports shall be shown and the positions dimensioned.
Positions of thermostats, thermometers, test pockets and similar devices shall be shown and dimensioned including clearances required for their removal.
Details and outline of insulation and insulation boxes shall be shown including clearances required for removal of the boxes.

c) Special Plant Rooms Co-ordination Work

Unless otherwise stated in the Contract, in the case of a plant room where the PD Contractor's equipment constitutes the major item involved (i.e. as in the case of pump room), the PD Contractor shall allow in the Tender for taking effective responsibility for the coordination of other services/building details within these specific areas.

1.1.1.5.2.4 Manufacturer's Shop Drawings

The manufacturer's shop drawings are drawings for equipment or plant to be manufactured by a specialist manufacturing supplier in their own workshops and places away from the Site.

The drawings shall show detailed construction, principal dimensions, weights and clearances for maintenance, etc. Immediately after placing of any order or at any event within 4 weeks unless otherwise approved in writing by the Engineer, the PD Contractor shall forward to the Engineer for comment, 4 copies of manufacturer's shop drawings indicating detailed construction, principal dimensions and weights, clearances for withdrawals and/or cleaning, etc. No work shall proceed on or off Site unless drawings requiring approval are so approved in writing by the Engineer

1.1.1.5.2.5 Checking Drawings of Other Trades

The PD Contractor shall follow the design intent of the Drawings in planning and carrying out the work and shall cross check with other trades in order to verify the line, level, space and sequence in which the Installations is to be installed.

If directed by the Engineer, the PD Contractor shall, without extra charge, make reasonable adjustments to the proposed installation drawing layouts as are necessary to prevent conflicts with the work of other trades or for the proper sequence of and execution of Works. Where such modifications are of a nature and of such unforeseen complexity that they involve unreasonably extra work not covered by the Contract, they may be covered by variation order to be issued by the Engineer wherever such a requirement is justified.

1.1.1.5.3 **As-Built Drawings**

1.1.1.5.3.1 Submission of As–built Drawings

The PD Contractor shall submit 3 sets of the first draft prints of as-built drawings within 28 days of the issuance of the certification of completion in accordance with the Contract to the Engineer for checking. The Engineer after checking the above draft prints shall return one set of the marked up copies of these as-built drawings to the PD Contractor within 42 days from the date of submission of the PD Contractor's draft prints with comments. The PD Contractor shall within a further 28 days from the date of receiving the Engineer's comments on the draft as-built drawings re-submit to the Engineer for his approval another 3 sets of the second draft prints of as-built drawings with the Engineer's comments incorporated. This process of submission and approval shall continue until the final approval of the Engineer on these as-built drawing is obtained.

The final approved as-built drawings shall be in 3 sets of hard copy and 3 sets of electronic copies. These shall be submitted within 21 days from the date of final approval. Each electronic copy shall be in the form of CD-ROM, labelled, with cross reference to a printed list of files explaining the contents and purpose of each file and supplied in sturdy plastic containers.

The detailed requirements and the media of as-built drawings set out in the Contract shall be followed as appropriate.

1.1.1.5.3.2 Size of As-built Drawings

As-built drawings shall only be of standard sizes of A0, A1 or B1 size as stipulated in ISO 5457:1999. Smaller size (A2 to A4) is accepted for installation drawings.

1.1.1.5.3.3 Content of As-built Drawings

The PD Contractor shall ensure all as-built drawings are accurate representation of the Installations, before submitting them to the Engineer. The as-built drawings required to be provided by the PD Contractor for

various types of the Installations shall include, but not limited to the following: -

(a) Plumbing and drainage layout plans such as pipe arrangement, valve arrangement, sanitary fitments arrangement, etc.;
(b) System schematic diagrams; and
(c) Installation details and assembly drawings such as pipework, sanitary fitments, etc. "As-built" drawings shall complete with all details to be used for commissioning purposes. Any amendments noted on these drawings during the commissioning and test stage shall subsequently be transferred to the original "As-built" drawings once the amendments have been accepted by the Engineer

1.1.1.5.4 **Operation and Maintenance (O&M) Manual**

The PD Contractor shall refer to the Specifications for any other requirements in O&M Manual.

The O&M Manual is for use by the maintenance agent of the completed Installations. It shall contain detailed technical information covering both operation and maintenance aspects of the Installations.

Operating and maintenance manuals shall contain the following:

a) A description of the buildings to which services are applied stating their duty and functions,

b) A listing and description of the services as installed,

c) Details of the manufacturer's installation, operating and maintenance requirements which must be edited of otherwise reproduced to be specific for the installation.

d) A detailed list of equipment supplied, manufacturer, address, telephone number and official order number/date,

e) A schedule detailing the regular maintenance requirements with space for remarks and service history,

f) A fault tree analysis of the system(s),

g) A copy of the "As fitted" record drawings,

h) Copies of all test and commissioning data including pre-commissioning check lists,

i) A schedule giving the finally adjusted set points for plant, equipment and controls,

j) A detailed listing of all spare parts giving part number and description, typical cost and availability,

k) Any item deemed necessary by the Engineer to clearly identify to the use/operator the function and intended performance of the plant and system.

1.1.1.5.5 **Damaged Material**

Any plant or material that is damaged by any means whatsoever shall not be used in the works. Should the contractor wish to rectify such damage in order to utilize the plant or materials in the permanent works, the matter shall be brought to the attention of the Consultant, who in turn shall conduct a proper survey after which the necessary instructions shall be issued. Only after obtaining a written permission from the Consultant, shall any remedial work be carried out. Any damaged Plant or Material allegedly brought to a "as-new" condition following such a procedure, shall only be accepted after the technical appraisal & discretion of the Consultant, whose decision in such matters shall be final and binding.

1.1.2 INSTALLATION METHODOLOGY

1.1.2.1 Installation of Above Ground Drainage Systems

1.1.2.1.1 **General**

Foul water drainage above ground shall be installed generally to BS EN 12056-2: 2000.

Bolted access doors or inspection units shall be provided to all branches and bends (other than ventilating and anti-syphon pipes) and at the foot of main soil stacks. Access doors to cast iron soil stacks shall be fitted with gunmetal bolts.

1.1.2.1.2 **Handling and Storage**

Store rubber jointing rings in protective bags and do not expose them to sunlight. Avoid any deformation.

Do not expose plastic pipes and fittings to sunlight and avoid any deformation.

Store pipes, gutters and fittings under cover and clear of a leveled, well-drained and maintained hard-standing ground

1.1.2.1.3 **Fixing Pipes and Fittings**

General Details

Inspect pipes and fittings inside and out before fixing. Reject any which are defective.

Fix pipes and fittings securely with fixings and fastenings appropriate to the location and the material.

Protection to Movement and Expansion

Make adequate provision to control and/or allow for thermal movement in the length of pipes and gutters depending on material specified and in accordance with details shown on the Drawings.

Provide expansion joints in plastic pipes by means of loops or other methods in accordance with the manufacturer's recommendations.

Protection to Movement and Expansion

Unless otherwise approved by the Engineer, pipes shall not run over electrical switchgear; inside transformer room, switch room, generator room, meter room, telephone equipment room, PABX room, riser duct for electrical services, or any other rooms containing electrical hazard.

1.1.2.1.4 **Jointing Pipes and Fittings**

Carry out all pipe joints in accordance with the manufacturer's instructions and do not allow jointing material to project into bore of pipes or fittings. Cut ends of pipes and gutters clean and square, chamfering internally or externally if required using equipment appropriate to the material.

1.1.2.1.5 **Pipework Support**

1.1.2.1.5.1 General

Support pipes on flat roofs and canopies at least 150 mm above roof and canopy finish on concrete blocks with pipe clamps. Do not use branch pipes that connect to vertical pipes as pipe supports.

Corrosion-resistant fixings such as stainless steel brackets and connections or similar corrosion-resistant fixing supports shall be used. The fixings shall be properly anchored into solid wall.

Pipe brackets shall be of stainless steel to BS EN 10088-3: 2005 number 1.4301 or SAE Grade 304 or other approved material. The pattern shall suit the type of pipe and the surface to which they are to be fixed, including where appropriate:

(a) Flanged ends for building in;
(b) Plain round ends for fixing in drilled holes with an approved grout;
(c) Approved expanding bolts or stud anchors for fixing to concrete, brickwork etc.;
(d) Threaded ends for fixing to steelwork, or wood, or panel wall with plug as required;

Plugs for fixing to hard materials shall be of proprietary plastic, fibre, soft metal or similar material. Plugs for fixing to friable materials, plasterboard and the like shall be of proprietary fixings specially designed for the purpose. Plugs containing asbestos shall not be used.

1.1.2.1.5.2 Pipe Bracket Intervals

Pipe bracket shall be installed at intervals not exceeding those shown in Table 1.5.2 for straight runs, and with not less than one bracket per length of pipe. All brackets shall be equally spaced

Table 1.5.2 - Spacing of Pipe Fixing

Pipes	**Nominal Size (mm)**	**Maximum Spacing (mm)**	
		Vertical pipes	**Horizontal pipes**
Cast iron and ductile iron	All	3000	1750
Steel	Up to 15 20 and 25 32 40 and 50 65 and 80 125 and 150	2400 3000 3000 3600 4500 5400	1800 2400 2700 3000 3600 4500

UPVC	Up to 25 32 40 and 50 65 to 150	1500 1800 2000 2500	750 900 1000 1200

1.1.2.1.6 **Pipework Penetrating Building Structure**

1.1.2.1.6.1 Pipes through Walls and Floors

Where pipes pass through walls or floors:

a) Cast or build in UPVC sleeves to BS 3505: 1986 or BS EN ISO 1452-1: 2009 with 2 to 12 mm clearance to allow for expansion and movement of pipe
b) Finish sleeves flush with finished face of walls and ceilings and projecting 100 mm above finished floor level.
c) Provide loose plastic or chromium plated cover plates, when specified, to ends of sleeves visible in completed work. Plates shall be 50 mm larger than the external diameter of pipe and either clipped to the pipe or screwed or plugged and screwed to the adjacent surfaces.
d) If required to be water tight, point with approved mastic sealant.
e) No split PVC sleeves shall be permitted

1.1.2.1.6.2 Pipes through Fire Rated Walls and Floors

Where pipes pass through fire rated walls or floors which are not fire compartment walls or floor:

a) For metal pipes pass through fire rated walls or floors which are not fire compartment walls or floors, either of the following shall be used:

The installation shall be as Clause B3.6.1 but

- Cast or built in galvanized mild steel pipe sleeves to BS EN 10255: 2004 with 20 mm clearance.
- Well caulk the voids between the pipes and the sleeves for the full length with mineral wool or approved equivalent material designed for fire separation purposes in compliance with the Code of Practice for Fire Safety in Buildings.

a) For non-metal or plastic pipes pass through fire rated walls or floors which are not fire compartment walls or floors, firmly fix sealing system around the pipes to properly seal up the voids between the pipes and the fire rated walls or floors in compliance with the Code of Practice for

Fire Safety in Buildings. The sealing system shall be tested to BS EN 1366-3: 2009 or BS 476-20: 1987

Where pipes pass through fire compartment walls or floors:

a) For metal pipes pass through fire compartment walls or floors, suitable intumescent coating or sealant shall be used to maintain the required fire compartment. The sealing system shall be tested to BS EN 1366-3: 2009 or BS476-20: 1987 and the installation of which shall be in accordance with the manufacturer's recommendations.

b) For non-metal or plastic pipes pass through fire compartment walls or floors, suitable fire collars shall be used. The fire collars shall be tested to BS EN 1366-3: 2009 or BS 476-20: 1987 with integrity not less than of the fire compartment walls or floors as prescribed under the relevant Building Regulation and the Code of Practice for Fire Safety in Buildings. The fire collars shall be fixed at underneath of fire compartment floors or walls or other locations around the pipes in accordance with the manufacturer's recommendations.

1.1.2.1.6.3 Pipes through Basement Wall

Where pipes pass through external basement walls:

a) Cast or build in cast iron or 2.5 mm galvanized mild steel sleeve to BS EN 10255: 2004 after fabrication with 2 to 12 mm clearance.
b) Caulk space and point both ends with approved mastic sealant

1.1.2.1.7 **Sumps**

The construction of Sump Pit shall be in accordance with BS : 8007, 1987. All cement shall be sulphate resisting and comply with BS :4027, 1980. All reinforced concrete base slab walls and cover slab shall be cast in situ using grade 25 concrete and comply with BS:8110, Part 1, 1985. The Sump Pit shall be constructed to take into account the ground conditions, strictly in accordance with the structural engineering details. Sump pit shall be painted internally with epoxy mortar or pitch epoxy (2 coats) and externally with one coat of bituminous emulsion paint. A 600x600-mm access manholes shall be provided at the top, with heavy duty manhole covers as detailed in the schedule of manholes. If the pit is more than one(1.2) meter depth, it is shall be provided with galvanized step irons to BS: 1247, 1975 shall be provided at 30 mm centers both vertically and horizontally, the first being 450 mm below cover level. The Sump Pit height shall be governed by the following: a. height between the top of the slab and the bottom of lowest drainage pipe drained to the sump pit b. height between the bottom of lowest drainage pipe and the sump pump switch on level. c. minimum storage height of waste water. d. height between the sump

pump switch off level and the height of water required to submerge the pump discharge. As shown on the drainage standard detail drawings, the pit height varies due to the above factors, therefore It shall be the contractors responsibility to fully check and verify as per site requirement for the height needed to suit the site condition.

1.1.2.2 Manholes

Manhole covers and frames shall comply with BS 497:1976 and shall be of the sizes and types as shown on the contract drawings. In general, manhole covers and frames shall be one of three types, as follows unless otherwise specified. Heavy Duty to BS 497 Grade A Medium Duty to BS 497 Grade B Light Duty to BS 497 Grade C

1.1.2.3 Pipe Entries into Buildings

Pipe entries into buildings shall be sealed with mastic compound and plugged after installation of pipework to prevent the ingress or egress of water or vermin.

1.1.2.4 Venting and Draining

Air vents and drain valves shall be provided at high points and low points respectively in all piping systems.
Automatic air vents, or air cocks where specified, shall be supplied and installed at the highest points of pipework and where necessary for the venting of air in the installation.
They shall have gunmetal or brass bodies, stainless steel floats and guides, and non-corrodible valves and seats. Each automatic air vent shall be controlled by a lock shield valve. Air release pipes shall be run to discharge at the nearest suitable visible point. Air cocks shall be nickel-plated, of the spoutless pattern and with screwed taper thread. At least two loose keys shall be provided for each type of cock installed.
Drain valves, or drain cocks where specified, shall be fitted on the lowest points of pipework or where necessary for the water drainage of the system. Plugs for drain cocks shall be ground-in. Two loose keys of forged mild steel shall be provided with each drain cock. Drain valves/cocks shall be connected to the nearest building floor drain or drain point of adequate size.

1.1.2.5 Valves, Taps and Cocks

Valves, taps and cocks shall be of the types and working pressures suitable for the systems to which they are connected and shall be accompanied with valid letters of approval issued by the Water Supplies Department.

Wherever applicable, the following British Standards for cocks and valves shall be relevant: -

- BS 1010 Part 2 Draw-off taps and above ground stop valves.
- BS 5150 Cast iron gate valves for general purposes DN Series PN 16.
- BS 5151 Cast iron gate (parallel slide) valves for general purposes DN Series PN16.
- BS 5152 Cast iron globe and globe stop and check valves for general purposes DN Series PN16.
- BS 5156 Screw down diaphragm valves DN Series PN16.
- BS 5159 Cast iron and carbon steel ball valves for general purposes DN Series PN16.
- BS 5163 Key-operated cast iron gate valves for water works purposes DN Series PN16.

Valves and fittings of PN25 or heavier duty shall be used for high pressure system.
All components in the fire service installations and equipment shall be designed to withstand at least two times the system pressure.

All valves shall be arranged so that clockwise rotation of the spindle closes the valve.
Valves shall not be installed at locations with a change in direction of the pipework.
Isolating valves shall be of the full way gate type. Regulating valves shall be of globe type, unless otherwise specified. Globe valves shall be positioned so as not to prevent draining of the system.
Bodies of valves and cocks up to 50 mm shall be of cast gunmetal or bronze. Valves having heavy pattern hot-pressed bodies may be used subject to the approval of the Engineer. Valves over 50 mm shall have cast iron bodies.

All working parts shall be of gunmetal or bronze or stainless steel. Spindles shall be of high tensile bronze, forged brass or stainless steel with Teflon or approved packing to the manufacturer's standard. Gate valves shall have split or solid wedge gates of bronze with bronze seats. Disc valves shall have renewable discs free to rotate on the spindle.
Valves and cocks for installation in screwed jointed pipework shall have taper screwed ends. Flanges of flanged valves shall be to BS 4504 for PN16 rating.

Operating handwheels shall be of malleable iron, or of approved composition having metal insert for securing positively to the stem.

Outlets valves on fire service water tanks, sprinkler installation, and elsewhere as specified, shall have padlocks and leather straps capable of locking the valves in the "OPEN" position.

Non-return valves shall have flaps of light construction pivoting on gunmetal, bronze or stainless steel spindle. The valves shall be fitted with stops to prevent undue movement and sticking of the flap and shall be quiet in operation. The valve shall be so constructed that minimum resistance is offered in the normal direction of flow.

Pressure reducing valves for direct connection in hosereel branch pipes, and elsewhere as specified, shall be of approved spring-loaded relay-operated type or otherwise constructed to prevent high pressure build-up on the low pressure side, and shall be supplied and installed with strainer and by-pass valves. Pressure reducing valves for hydrant outlets (parity valves) shall be of the type having relief connection to drain unless otherwise specified

1.1.3 INSPECTION, TESTING AND COMMISSIONING

1.1.3.1 General

Throughout the execution of the installation, the PD Contractor shall be responsible for ensuring compliance with the Regulations included in Part A and shall notify the Engineer of any infringement which directly or indirectly detracts from the safe and satisfactory operation of the installation(s) whether or not such infringement relates to the works covered in the Contract or to those associated with others

The PD Contractor is required to appoint a competent and experienced testing and commissioning engineer responsible for the overall planning, organizing, coordinating, supervising and monitoring of the testing and commissioning works and also certifying all results and reports from the testing and commissioning works. The PD Contractor shall submit, at the commencement of the Contract, information detailing qualification and experience of the testing and commissioning engineer for the Engineer's approval.

It is necessary to require the PD Contractor to provide, at no cost to the Employer, all necessary equipment, apparatus, tools and materials for carrying out of testing and commissioning works.

1.1.3.1.1 Master Programmed of Testing and Commissioning Works

The PD Contractor is required to submit a programme for testing and commissioning works shall be submitted at the commencement of the Contract, usually within the first three months. The programme shall indicate the tentative dates of all tests and commissioning works that will be carried out throughout the whole contract and all necessary submissions and approval relating to testing and commissioning and ensure that the testing and commissioning programme matches the master programme for construction and that all testing and commissioning works are complete before the completion date of the Contract.

1.1.3.1.2 Inspection, Testing and Commissioning Methods and Procedures

The PD Contractor is required to submit detailed inspection, testing and commissioning methods and procedures together with report formats for reporting inspection, testing and commissioning results for the Engineer's approval at least four months before commencement of testing and commissioning works, or four months after the commencement of the Contract, whichever is earlier

1.1.3.1.3 Labor and Materials

The PD Contractor is required to be responsible for provision of all labour and both consumable and non-consumable materials for carrying out testing and commissioning works at their expenses. Electricity supply, water and LP gas and town gas for carrying out of testing and commissioning works shall also be arranged and provided by the PD Contractor at no cost to the Employer

1.1.3.1.4 Supply of Inspection, Measuring and Testing Equipment

The PD Contractor is required to supply the calibrated equipment and instrument for testing and commissioning works in accordance with the requirements as specified in the Particular Specification.

1.1.3.1.5 Readiness for Commissioning and Testing

The PD Contractor is required to check the completion of the works to be tested or commissioned, the associated builder's works and the associated building services installations to ensure that testing and commissioning can be proceeded in a safe and satisfactory manner without obstruction.

"Type-test" for equipment shall be carried out at the manufacturers' works or elsewhere appropriate in order to demonstrate their compliance with

the Regulation or requirements. "Type-test" certificates together with the corresponding drawings, sketches, reports and any other necessary documents shall be submitted to the Engineer for approval before delivery of the equipment.

Prior to the testing and commissioning works, the PD Contractor shall check the completion of the installation works, associated builder's work and related building services installations, to ensure that commissioning can be proceeded without obstruction. Before any installation is subjected to commissioning and site testing, it shall be thoroughly cleaned both internally and externally. All pipes shall be thoroughly cleaned and flushed before filling with water.

The PD Contractor shall be responsible for initially setting the plants to work including:

a) Preliminary checks to ensure that all systems and system components are in a satisfactory and safe condition before start up;
b) Preliminary adjustment and setting of all plant and equipment consistent with eventual design performance;
c) Carrying out pressure test, hydraulic test and other tests required before energising the equipment and plant;
d) Checking the proper functioning of the protective devices and safety valves in the installation and carrying out all necessary safety testing;
e) Energising and setting to work on all plants; and
f) Initial regulation and demonstration that the installation delivers the correct rate of flow at the conditions specified in the Contract

For specialist plant or equipment, the PD Contractor shall arrange for it to be commissioned, certified and tested by the manufacturer's skilled commissioning engineer and/or technician.

Where the tests involved other plumbing and drainage installations already in operation in other parts of the building outside the Site or works area, the PD Contractor shall co-ordinate with relevant parties, where necessary, on the temporary suspension of other plumbing and drainage installations for the tests

The PD Contractor is required to provide advanced notice for inspection, testing and commissioning works as follows: -

a) Off-site Inspection and Testing

An advanced notice of at least one week before commencement of the inspection or test shall be provided.

b) On-site Inspection, Testing and Commissioning

An advanced notice of at least 4 calendar days before commencement of inspection, testing or commissioning shall be provided.

1.1.3.1.6 Documentation and Deliverables

The PD Contractor shall record all commissioning information and testing results at the witness of the Engineer or his representatives. Commissioning and testing record shall be properly checked and certified by contractor's Testing and Commissioning Engineer and signed by the Engineer or his representative who has witnessed the testing or commissioning before submission to the Engineer. The PD Contractor shall submit full commissioning and testing report to the Engineer within 14 calendar days after completion of commissioning and testing of the installation.

1.1.3.2 Testing and Commissioning - Definitions

For the purpose of this General Specification the following definitions shall apply: -

***Commissioning*:** the advancement of an installation from the stage of static completion to full working conditions and to meet the specified requirements. This will include setting into operation and regulation of the installation.

Setting to work: the process of setting a static system into motion.

Off-site Tests: tests carried out on items of equipment at manufacturer's works or elsewhere to ensure compliance with the requirements of Specifications and/or relevant Standards or Codes of Practice (or other standards specified).

Site Tests: tests on static plant and systems (e.g. inspection and testing of welds, hydraulic testing of pipe work, etc.) to ensure correct and safe installation and operation.

Regulation: the process of adjusting the rates of fluid flow and heat transfer in a distribution system within specified tolerances as stated in the relevant CIBSE Commissioning Code.

Performance Testing: the measuring and recording of the performance of the commissioned installation.

1.1.3.3 Testing and Commissioning - General

Any defects of workmanship, materials and performance, maladjustments or other irregularities which become apparent during commissioning or testing shall be rectified by the PD Contractor at no cost to the Employer and the relevant part of the commissioning or testing procedure shall be repeated at the PD Contractor's expenses.

The entire testing and commissioning procedure shall be undertaken by the PD Contractor's own competent specialist staff or by a competent Independent Commissioning Specialist nominated by and acting for the PD Contractor and approved by the Engineer.

Where specified in the Particular Specification, the PD Contractor shall nominate a competent independent Specialist to conduct commissioning work.

Where specified in the Particular Specification, the PD Contractor shall employ an approved specialist testing and commissioning firm who shall be named in the returned Tender Documents.

At the appropriate time in the Contract, usually within the first three months, the PD Contractor shall furnish the Provisional Testing and Commissioning Programme, methods, procedures and formats of test records to the Engineer. This shall be updated as the work progresses towards completion.

Unless otherwise indicated, all electricity, main water and other fuels, such as town gas, necessary for the operation of the plant during preliminary runs and for full adjustments and commissioning tests will be provided at no cost by the PD Contractor unless otherwise specified in the Contract.

1.1.3.4 Off-Site Tests

Where the specified Standards or Codes of Practice stipulate, "type-tests" on items of equipment to demonstrate compliance shall be carried out at the manufacturer's works or elsewhere as appropriate. In all cases, "type-tests" Certificates shall be submitted in duplicate to the Engineer.

1.1.3.5 Site Tests

The PD Contractor shall carry out "on-site" tests in respect of all static systems to ensure safe and proper operation as conforming to the design intent. Such tests shall include test of welds and pressure tests on the hydraulic systems.

1.1.3.6 Inspection and Testing During Construction Period

1.1.3.6.1 Periodic Site Tests

Site inspections of "work in progress" will be made by the Engineer or the representative from time to time. The PD Contractor shall keep such inspection record for checking from time to time. Installations to be permanently covered up shall be subjected to inspection and test before cover up. During the inspection, if the Engineer discovers any work that has been covered up before inspection and testing, this work shall be uncovered for inspection and testing to the Engineer's satisfaction. The cost involved in uncovering the work, inspecting, testing and re-concealing the work together with any consequential losses shall be paid by the PD Contractor at no additional cost to the Employer.

1.1.3.6.2 Test at Factory

The PD Contractor shall note that the Engineer may require witness of tests and inspections of locally and/or overseas manufactured equipment during construction at the manufacturer's works. Where this requirement is indicated in the Contract Documents, the PD Contractor shall allow for making the necessary arrangements; including and indicating the Engineer's travel and subsistence expenses in the Contract

1.1.3.6.3 Factory Test Certificates

Certificates of all hydraulic and other manufacturers" tests carried out at the manufacturers" works shall be forwarded in duplicate to the Engineer for approval. This approval shall normally be required before the materials or apparatus are dispatched from the manufacturer's works.

Where specified, the PD Contractor shall subject certain materials and equipment to be tested by the recognized institutions or laboratories and submit the type test certificates to the Engineer for approval.

1.1.3.6.4 Sampling and Analysis of Potable Fresh Water

The PD Contractor shall conduct sampling and analysis for the quality of potable fresh water upon substantial completion of the plumbing installation. The sampling and analysis methodology shall be submitted to the Engineer for approval. Notwithstanding, the samples shall be taken at all farthest points of use in the plumbing system from the storage tank, and shall include sampling for each water supply tank in the building as minimum.

The sampling and analysis of potable fresh water for physical, chemical and bacteriological examinations shall be collected, preserved a n d handled using the standard techniques as listed below: -

a) BS EN ISO 5667-1: 2006, BS EN ISO 5667-3: 2003 and BS ISO 5667-5: 2006, or equivalent standards;
b) Annex 4 of the World Health Organization (WHO) Guidelines for Drinking

   Water Quality 2nd Edition Volume 3; and
c) Section 1060 of the American Public Health Association (APHA) Standard Methods for the Examination of Water and Wastewater 20th Edition.

1.1.3.7 Documents and Data Required for Hand-Over

1.1.3.7.1 General

The PD Contractor shall note that the system cannot be handed over until all the foregoing requirements (where applicable) have been carried out to the satisfaction of the Engineer.

1.1.3.7.2 Test Certificates

Before the handover inspection, the PD Contractor shall provide the follow test/record certificates where applicable: -

a) Copies of manufacturer's works tests/record certificates on plant items comprising heat generating plant, heat exchangers, chillers units, packaged air conditioning units, tanks, vessels, motors, fans, pumps, etc.;
b) Copies of hydraulic and pressure test/record certificates for works carried out on Site;
c) Copies of boiler plant efficiency test/record certificates;
d) Copies of Registered Surveyor's test/record certificates for pressure vessels (if any);

1.1.3.7.3 "As-built" Drawings

All necessary copies of "As-built" drawings as detailed in the Contract Documents and this General Specification shall be provided upon handover.

1.1.3.7.4 Operation and Maintenance Manuals

All necessary copies of Operating and Maintenance Manuals as detailed in the Contract and this General Specification shall be provided upon handover.

1.1.3.7.5 Manufacturer's Name Plate

Every item of plant supplied by a manufacturer shall be fitted with a clearly engraved, stamped or cast manufacturer's name plate properly secured to the plant item and showing: -

- Manufacturer's Name;
- Serial and/or Model No.;
- Date of Supply;
- Rating/Capacity; and
- Test and Working Pressure (where applicable).

1.1.3.7.6 Labels and Related Instructions

Labels and notices shall be supplied and installed for all valves and piping to facilitate operation and proper maintenance of the Installation. All labels shall make cross reference to the operation and maintenance manuals and as-built drawings

All wording shall be in both Kiswahili and English. All labels shall be of adequate size as to give clearance between lettering and fixings to ensure an aesthetic arrangement on completion, and meeting with.

SECTION 1.2

TECHNICAL SPECIFICATIONS (FIREFIGHTING)

1.2 TECHNICAL SPECIFICATIONS (FIREFIGHTING)

1.2.1 INTRODUCTION

1.2.1.1 General

This section, This General Specification details the intrinsic properties (including materials and workmanship) required of a fire service installation including hydrant/hosereel system, sprinkler system, manual and automatic fire alarm system, audio/visual advisory system, gas extinguishing system, portable appliances, pressurisation of staircases system, smoke extraction system and all associated electrical equipment and wiring.

1.2.1.2 Preference

The fire service installation shall comply in every respect with this Project Specification unless otherwise specified in the Particular Specification, the Drawings and/or Contract documents relating to a particular job or modified by written instruction of the Engineer.

The Project Specification takes preference over the standard specifications wherever the two Specifications might be in conflict.

1.2.1.3 Scope of Work

The scope of the Works in this Project Specification consists of the whole of the labour and all materials necessary to form a complete installation and such commissioning, adjustments, tests and maintenance as prescribed or as necessary. It shall include not only the major items of plant and equipment shown or specified but all the incidental sundry components necessary together with the cost of labour for installing such components for the completion of the Works and for the proper and functional operation and maintenance of the installation whether or not these sundry components are mentioned in detail in the Contract. It shall also include co-operation with other contractors involved on the Contract site in respect of co-ordination, programming, scheduling and sequencing of installation of the works in all circumstances where stipulated in the Contract or proven as necessary in practice.

1.2.2 STATUTORY OBLIGATIONS AND OTHER REGULATIONS

1.2.2.1 Installation to Comply with Obligations, Regulations and Specification

The installation shall comply with this General Specification, and with the following statutory obligations, regulations and specifications currently in force in
Kenya Government

a) KS Code (2009) Part S
b) BS 5588-4, *Fire precautions in the design, construction and use of buildings – Part 4: Code of practice for smoke control using pressure differentials.*
c) BS 7346-1, *Components for smoke and heat control systems – Part 1: Specification for natural smoke and heat exhaust ventilators*
d) BS 7974, *Application of fire safety engineering principles to the design of buildings – Code of practice.*
e) EN 12101-1, *Smoke and heat control systems – Part 1: Specification for smoke barriers.*
f) EN 12101-2, *Smoke and heat control systems – Part 2: Specification for natural smoke and heat exhaust ventilators.*
g) EN 12101-3, *Smoke and heat control systems – Part 3: Specification for powered smoke and heat exhaust ventilators.*
h) SANS 193, *Fire dampers.*
i) SANS 306-4, *Fire extinguishing installations and equipment on premises – Part 4: Specification for carbon dioxide systems.*
j) SANS 543 (SABS 543), *Fire hose reels (with hose).*
k) SANS 1128-1 (SABS 1128-1), *Firefighting equipment – Part 1: Components of underground and above-ground hydrant systems*
l) SANS 1128-2 (SABS 1128-2), *Firefighting equipment – Part 2: Hose couplings, connectors and branch pipe and nozzle connections.*
m) SANS 1151 (SABS 1151), *Portable rechargeable fire extinguishers – Halogenated hydrocarbon type extinguishers.*
n) SANS 1186-1, *Symbolic safety signs – Part 1: Standard signs and general requirements.*
o) Internationally recognised equivalent standards acceptable to the local authority and demonstrated to be equivalent in terms of the type of construction, functions, performance, general appearance and standard of quality of manufacture and approved by the Engineer.
p) Where indicated, the codes, standards and guidelines issued by the following international institutions, or internationally recognised equivalent standards acceptable to the local authority and demonstrated to be equivalent in terms of the type of construction, functions, performance, general appearance and standard of quality of manufacture and approved by the Engineer:
    - National Fire Protection Association, United States
    - Loss Prevention Council, United Kingdom
    - International Operation for Standardisation

- American National Standard Institute
- Committee for European Normalisation
- Factory Mutual, United States
- Underwriters' Laboratory, United States

1.2.2.2 Intellectual Property Rights

If the Contractor intends to use the intellectual property rights of another party in performing the Contractor's obligations under the Contract, appropriate licences shall be obtained from the relevant rights owners.

Where any software is provided in the Works, the Contractor shall submit documents showing that appropriate permission or licence has been obtained from relevant beneficial owners of intellectual property rights for the use of the software free of all fees for the whole operating life of the Works.

1.2.3 EXECUTION OF WORKS

1.2.3.1 Programme of Works

The Fire Protection Contractor (Sub-Contractor) shall obtain the programme from the Main Building Contractor (builder) and co-ordinate the Fire Protection installation programme with that of the builder.

1.2.3.2 Builder's Work

Approved pipe sleeves and pipe collars, and approved fire rated pipe sleeves and fire rated pipe collars where necessary, shall be supplied and installed by the Contractor for all fire service pipes and the like passing through compartments, walls, floors and any structural openings. Puddle flanges for inlet and outlet pipes of the tanks for fire service shall be supplied by the Contractor and will be installed by the Building Contractor unless otherwise specified.

1.2.3.3 Training of Employer's Staff

The Contractor shall provide training for the operation and where necessary maintenance of sophisticated equipment. The training shall include all training facilities, material and handouts etc. The Contractor shall submit a training schedule and proposal at least three (3) months prior to completion of the Works for the Engineer's Approval.

The Contractor shall provide adequate training to the Employer's staff to operate the fire alarm control system and to monitor and to reset/mute alarms in the fire service installation at completion of the Works and before the commencement of the Maintenance Period. The Contractor shall provide adequate training to the Employer's staff on the operation of the fire service installation during fire alarm, fault alarm, warning alarm and other emergency situations as appropriate. The
Contractor shall provide contact telephone list as necessary to the Employer's staff.

The Contractor shall provide facilities and training programme to ensure that the Employer's operation and maintenance staff, as available, acquire full knowledge and appreciation of all aspects of the design, day-to-day operation, diagnosis and where necessary, breakdown and routine maintenance, and hence operate and maintain reasonably effectively and efficiently the system/equipment.

1.2.3.4 Sample Board

Prior to the commencement of installation work, the Contractor shall submit to the Engineer for approval in good time sample boards of electrical and mechanical accessories proposed to be used for the Contract. Each sample shall be firmly fixed onto a rigid wooden or metal board and clearly numbered and labelled. A list shall be affixed to show the item description, make and brand, name of manufacturer, country of origin, accessories to be used and locations of installation (if not generally used).

Only samples deemed to comply with the Specification shall be displayed and items shall be adequate for the whole installation unless otherwise clearly indicated as outstanding ones to be submitted later. Samples rejected by the Engineer shall be replaced as soon as possible. Upon approval of all items in a sample board, the Engineer will endorse the list of the sample board and the sample board shall be delivered by the Contractor to the Employer's site office for reference.

1.2.4 PIPEWORK VALVES AND FITTINGS

1.2.4.1 Steel Tubes and Fittings for Exposed Pipework

All tubes and fittings up to and including 150 mm diameter shall, unless otherwise specified, be galvanised mild steel of at least medium grade to BS 1387 / ISO 65 Steel tubes and tubulars for screwing to BS 21 / ISO 7/1 pipe threads. All other fittings shall be to BS 1740.

All tubes and fittings above 150 mm diameter shall, unless otherwise specified, be ductile iron to BS EN 545 Class K12 cold bitumen coated externally and internally to BS 3416 Type II.

Where specified for operation in high pressure from 1600 kPa, all tubes shall be suitable for pressure from 1600 kPa shall be carbon steel of ERW 320 to BS 3601 - carbon steel pipes and tubes with specified room temperature properties for pressure purposes, and shall have dimensions to BS 3600 - Specification for dimensions and masses per unit length of welded and seamless steel pipes and tubes for pressure purposes. All fittings shall be butt-welding type carbon steel for pressure purposes to BS EN 10253-1. All tubes on or below 150 mm diameter for high pressure from 1600 kPa shall be galvanised mild steel pipe of heavy grade to BS 1387/ ISO 65.

1.2.4.2 Copper Pipework

Copper pipework, where specified, shall comprise seamless hard drawn copper tubes manufactured to BS EN 12449 Table Z and of appropriate gauge to suit the working pressure of the system.

1.2.4.3 Underground Pipework

Pipe laid underground shall conform to one of the following specifications: -

a) BS 1387 / ISO 65 - Steel tubes and tubular of heavy grade for screwing to BS 21 / ISO 7/1 pipe threads.
b) BS EN 545 - Ductile iron pipes and fittings, Class K12.

If not specified in the Particular Specification, ductile iron pipes and fittings shall be of Class K12 to BS EN 545.

Mechanical pipe couplings shall be used for joints in underground pipes. Suitable mechanical pipe coupling of approved type that can provide the required allowance for angular deflection and contraction and expansion shall be used.

1.2.4.4 Pipe Sizes

Where pipe sizes are stated in this General Specification, this is intended to be the nominal bore in the case of steel tubes and the nominal outside diameter in the case of copper tubes.

1.2.4.5 Joints in Steel Pipework

Joints in steel pipework shall be made in accordance with the following general requirements, using only the highest quality materials and skilled labour.

Mechanical pipe couplings shall be employed for steel pipes of diameter larger than 65mm up to 150 mm unless otherwise specified. The pipes and fittings shall have grooved or shouldered ended suitable for the mechanical pipe couplings. It shall be a positive watertight couple providing some allowance for angular pipe deflection, contraction and expansion. The coupling assembly shall be securely held together by bolts and nuts with a water sealing gasket so designed that the internal water pressure increases the water tightness of the seal. Pipe couplings shall be of malleable iron castings and galvanised, or ductile iron castings. Pipe grooves may be cut or rolled without the removal of any metal. The entire coupling installation shall be in accordance with the published selected manufacturer's recommendations and designed to withstand two times of normal operating pressure. Where the pipes are laid underground, suitable mechanical pipe coupling of approved type that can provide the required allowance for angular deflection and contraction and expansion shall be used.

Flanged joints and flanged fittings shall be used for steel pipe of diameter larger than150 mm. For aboveground steel pipes with normal operating pressure higher than 1600 kPa, flanged joints and flanged fittings shall be used for pipes of diameter larger than 65mm. For pipes exposed in public accessible areas, flanged joints and flanged fittings shall be used for pipes of diameter larger

than 65mm. If prior approval is obtained from the Engineer, mechanical pipe couplings may be used for steel pipes at such exposed locations up to 150 mm.

Steel pipes less than or equal to 65 mm shall be jointed with screwed fittings, screwed flanges, or screwed unions. Screwed joints shall have tapered threads to BS 21 / ISO7/1 and shall be made with approved jointing material. Where the process of cutting of threads removes galvanization, the Contractor shall apply an approved cold galvanising finish to restore the integrity of the pipe protective finish. Fittings shall be galvanized. Screwed fittings other than sockets shall be of galvanized malleable iron.

The pipes shall be fitted with screwed flanges for jointing valves and other equipment having flange connections.

Where flanged joints and flanged fittings are specified, the flanged joints and fittings shall be of factory applied flange joints for galvanized steel and ductile iron pipes.
Welded flanges are permitted for carbon steel pipes. Flanges shall be raised face to BS 4504. Flanges for steel pipe work shall be wrought iron or annealed steel, machined full face and galvanised, suitable for the working pressures to which they will be subjected. For flanged joint pipes, facilities and provisions shall be provided in the pipe system to absorb thermal movement, vibration and water hammering.

Jointing of steel pipes by welding is only permitted where specified or with the expressed permission of the Engineer. Only ungalvanised pipes of 50 mm bore or larger may be joined by welding.

1.2.4.6 Dismantling Facilities

All pipe runs shall be arranged for ease of dismantling and re-erection. Disconnecting flanges, mechanical pipe coupling or screwed unions, as applicable, shall be supplied and installed at suitable locations and at valves and equipment. Unions shall be of ground-in spherical seated type. Unions for steel pipes shall be of forged steel heavy duty pattern and unions for copper pipes shall be of gunmetal. Unions shall have hexagon bodies.

1.2.4.7 Pipework Installation

Pipework installation shall be carried out in accordance with the following general requirements.

Pitcher tees, bends, twin elbows, etc. shall be of the same size as the pipework connected to them. Bushings shall not be used. Square tees shall only be used where short sweep fittings would cause air to be trapped.

Bends shall be of long radius wherever possible. Short radius bends and elbows may be used for pipe sized up to 65 mm diameter or for pipes installed inside false ceiling or concealed ceiling void. Use of short radius bends and elbows of larger size in areas other than false ceiling and concealed ceiling void are subject to the Engineer's approval on consideration of space available for installation. Square elbow is not permitted.

Tubes shall be reamed after cutting and shall be free from burrs, rust, scale, and other defects and shall be thoroughly cleaned and treated for corrosion protection before and after erection.
Open ends left during the progress of the work shall be properly blanked off with approved metal or wood plugs or blank caps or counter flanges.

Joints shall not be made in the thickness of any wall, floor or ceiling.

Where pipes pass through ordinary walls or floors, the Contractor shall, unless otherwise specified,

a) Cast or build in galvanised mild steel pipe sleeves with 2 to 25 mm clearance to allow for expansion and movement of pipe.
b) Finish sleeves flush with the finished face of walls unless concealed inside false ceiling.
c) Project sleeves at least 100 mm above finished floor level.
d) Fill the annular space between pipe and sleeve for the full length with approved fireproof materials and non-flammable type sealant.
e) Provide loose chromium plated steel cover plates where specified, to ends of sleeves visible in completed work. Plates shall be 50 mm larger than the external diameter of pipe and either clipped to the pipe or screwed or plugged and screwed to the adjacent surfaces.

When pipes pass through fire rated walls or floors, the Contractor shall, unless otherwise specified,

a) Cast or build in fire rated pipe sleeve with 2 to 25 mm clearance.
b) Finish sleeves flush with the finished face of walls unless concealed inside false ceiling.
c) Project sleeves at least 100 mm above finish floor level.
d) Fill the annular space between pipe and sleeve for the full length with approved fireproof materials of fire rated period not less than that of the wall and the floor through which the pipe penetrates.
e) Provide loose chromium plated steel cover plates, where specified, to ends of sleeves visible in completed work. Plates shall be 50 mm larger than the external diameter of pipe and either clipped to the pipe or screwed or plugged and screwed to the adjacent surfaces.

Where pipes pass through building roofs, the Contractor shall, unless otherwise specified,

a) Cast or build in fire rated pipe sleeves with 2 to 12 mm clearance projecting 150 mm above roof finish.
b) Caulk space and void at both ends for the full length with approved fire rated sealant, e.g. mastic sealant.
c) Cover top of sleeves with watertight stainless steel collars or similar cover as per roofing specification.
d) Pipework shall not be embedded in the concrete structure or "grouted in" or otherwise installed in such a way as to make subsequent alterations difficult at a later date.

1.2.4.8 Pipework Supports

All pipework shall be properly supported with substantial hangers, anchors, brackets, saddles, guide, etc. to BS 3974 with adequate provision for expansion and contraction and for corrosion protection.

Pipework supports shall be arranged as close as possible to joints and changes of direction and each support shall take its share of the load. The spacing of the supports shall not exceed the centres given in the following table: -

1.2.4.9 Spacing of pipework support for mild steel pipes

Nominal Pipe Size (mm)	**Spacing of Vertical Run (m)**	**Spacing of Horizontal Run (m)**
15 20 and25 32 40&50 63 & 80 100 125	2.5 3 3 3.5 4.5 4.5 5	2 2.5 3 3 3.5 4 4.5
150 200	5 7.5	5 7.5

Vertical rising pipework shall be supported at the base or as indicated to carry the total weight of the riser. Branches from risers shall not be used as a means of support for the riser.
Where pipework up to 50 mm is fixed to solid structure, brackets may be of the screw-on or long shank built-in type. Fixings to timber or to light-weight

structure shall be of screw-on pattern. Brackets and supports for mild steel tube shall be galvanised steel or malleable iron and galvanised. Brackets for copper tubes shall be brass or gunmetal.

The pipe clip shall be detachable without disturbing the fixing.

Brackets screwed to walls shall be securely fixed by expanding plugs of adequate size or other purpose-designed fixing devices of non-combustible material. Wood plug is not permitted.

Pipework of 65 mm size and larger subjected to expansion and contraction shall be suspended on swivel hangers or hangers having equivalent functions and performance to cater for expansion and contraction. The pipe hangers and supports shall be galvanised steel or approved materials for supporting the load of the pipes.

Unless otherwise specified, hangers for horizontal pipework at high level shall be supported from angle or channel galvanised irons supplied and installed by the Contractor and suitable for building-in or otherwise secured to the structure. Tee hangers supported on two legs instead of angle hangers shall be used. Adjustable galvanised steel hangers shall be used. Pipe rings shall be of malleable iron or fabricated steel and galvanised, made in halves and secured by bolts or machine screws.

Alternatively, galvanised malleable iron hinged pipe rings may be used. Calliper type hook is not permitted.

Where integral pipe hangers are required for housing the fire service pipes and pipes for other services, the integral pipe hangers shall be of a type approved by the Engineer and supplied by one manufacturer with all the accessories. Structural calculation shall be submitted for approval. The laying of pipes on the integral pipe hangers shall be fully coordinated with other parties before installation.

1.2.4.10 Expansion Joints

Expansion joints shall be supplied and installed for all pipework passing through any building expansion joint and where necessary as specified. They shall be of axial pattern bellow type and shall have screwed or flanged ends as appropriate to facilitate replacement. They shall incorporate internal liners if required and shall be manufactured from 18/8 stainless steel or better material to the approval of the Engineer and shall be designed to withstand at least two times of the system pressure.

External protective sleeves shall be fitted. Each joint shall be securely held by guides on both sides. All expansion joints shall have a working life of not less

than twenty years. Unless otherwise approved by the Engineer, flexible connector of single sphere or double sphere type made from rubber, EPDM or similar materials shall not be used as expansion joint.

1.2.4.11 Protection of Underground Pipework

Underground pipes shall be protected against corrosion and against mechanical damage. Pipework shall be cleaned after jointing and treated with two coats of good quality bituminous paint and wrapped with corrosion and water resistance self-amalgamating tapes and mastics having 55% overlapping before laying, and bedded in washed sand free of all salts or sieved soil before the trench is back filled. All joints and supports shall be appropriately wrapped. Pipework shall be hydraulically tested before the trench is back filled. Underground pipework shall be provided with suitable and approved couplings which provide allowance for angular deflection, contraction and expansion. Anchor blocks shall be made at appropriate locations to the approval of the Engineer for thrust bearing. Anchor block, trench, backfilling of trench and sand bed are included under the builder's works.

1.2.4.12 Pressure Gauges

Pressure gauges shall conform to BS EN 837-1 and shall have brass cases with dials not less than 100 mm diameter. They shall be calibrated in kPa to a maximum of not less than 1-1/3 times and not more than 2 times the operating pressure. Divisions of scale shall not exceed 20 kPa for a maximum scale value of 1000 kPa, 50 kPa for a maximum scale value of 1600 kPa and 100 kPa for maximum values in excess of 1600 kPa. An isolating valve/cock shall be supplied and installed for each pressure gauge.

1.2.4.13 Electric Alarm Pressure Switches

Electric alarm pressure switches shall have contact sets of silver or approved alloy rated to suit the working voltage and current of the circuits controlled and shall have independent adjustments for the cut-in and cut-out points and for the operating differential. Electric alarm pressure switches shall be of LPCB approved type or approved by similar widely recognised independent regulatory body. The maximum working pressures of all pressure switches shall be at least 300 kPa above the maximum pressure of the water inside the pipework at the points of installation of the switches. Pressure switch shall be supplied and installed with necessary ancillary facilities and isolating valves for maintenance and hydrostatic pressure test purpose complying with NFPA 13. All isolating valves where provided shall be complete with padlocks.

1.2.4.14 Water Flow Alarm Switches

Water flow alarm switches shall be of magnetic type having the water side completely separated from the electrical side. Contacts shall be suitable for the working voltage and current of the circuits controlled, and shall be of silver or approved alloy. Water flow alarm switches shall be of a type approved by LPCB or approved by similar widely recognised independent regulatory body. They shall be capable of standing a test pressure of minimum 1500 kPa for six (6) hours without showing any sign of leakage.

1.2.4.15 Pipeline Strainers

Water strainers shall be installed in all pipelines upstream of all water pumps. For pipelines of nominal bores between 15 mm and 50 mm diameter inclusive, strainers shall be screwed gunmetal or bronze body "Y" type with brass or stainless steel screen.
For pipelines of nominal bores of 65 mm diameter or above, strainers shall be flanged with "Y" type cast iron body, brass or stainless steel screen. Strainer screen shall have straining holes of 2 mm diameter.

1.2.4.16 Ball Float Valves

Ball float valves up to 50 mm shall be of cast gunmetal or bronze body. Ball float valves over 50 mm shall be of cast iron body. They shall be with nickel alloy and stainless steel working parts. They shall be of a slow closing type and of PN10 pressure rating.

1.2.4.17 Vortex Inhibitors

Vortex inhibitors shall be LPCB approved type or approved by similar widely recognized independent regulatory body for PN16 and flanged. They shall be used for operation under positive head conditions.

1.2.4.18 Orifice Plates

Orifice plates for system balancing, pump churning water circuits, where applicable, shall be supplied and installed as required for proper commissioning of the systems. Wherever necessary to suit the pump or system performance or in respect of system balance, an orifice plates shall be supplied and installed even if they are not indicated on Drawings.

Orifice plates shall be generally constructed and installed according to LPC Rules for Sprinkler Installations. They shall be manufactured by factories producing LPCB approved equipment and UL listed sprinkler equipment or equipment approved by similar widely recognised independent regulatory body, and acceptable to the local government regulations.

Orifice plate that has been factory calibrated and produced by a factory with a quality control system in place can also be used if they are acceptable by the local government. The flow characteristic data of the orifice plate shall be included in the operation and maintenance manual.

1.2.4.19 Cleaning and Draining

All piping shall be cleaned and shall be free of scale, dirt, etc., before installation. During the course of the installation, all open ends of pipes shall be plugged or capped to prevent ingress of dirt. After installation and sealing of joints, all piping shall be thoroughly flushed with clean water under pressure, to the satisfaction of the Engineer.

Water used for this purpose shall be discharged as directed. Any temporary pipework and equipment necessary for the above cleaning work shall be provided by the Contractor.

1.2.5 HYDRANT AND HOSE REEL SYSTEM

1.2.5.1 General Requirements

The general requirements of the hydrant and hose reel system and the individual equipment installations shall comply with KS Code (2009) and local administrative authorities and Circular Letters.

The fire service inlets, hydrant outlet valves and hose reels shall comply with KS Code (2009).

1.2.5.2 Fire Service Inlets and Hydrant Outlets

Fire service inlets shall be of twin type comprising screw-down globe type stop valve with male screwed outlet of suitable bore and two 65 mm horizontal male instantaneous inlet connections complete with integral spring loaded resilientseated non-return valves.

Hydrant outlets shall be single or double type comprising screw-down globe type stop valve for each outlet branch and with male screwed inlet of suitable bore and 65 mm female instantaneous outlets. Outlet branches shall incline at 70° from the centre line of the hand wheel, and at 90° to each other where applicable. The coupling control shall be located at the side of each outlet branch. A bronze blanking cap held captive by a suitable chain shall be fitted to each female outlet.

The fire service inlets and hydrant outlets shall be of all gunmetal construction except for the handwheel which shall be of cast iron or hard aluminium alloy.

The inlet and outlets fittings shall be supplied and manufactured to the quality of material, construction, and dimensions as detailed in the following British Standard Specification: -

a) Hydrant assembly to BS 5041 Part 1.
b) Major valve components of gunmetal to BS EN 1982.
c) Globe & check valve of service rating 1000 kPa to BS 5154.
d) Male and female instantaneous terminals of 65 mm diameter to BS 336.
e) All fittings shall be tested to at least 2000 kPa.

1.2.5.3 Venting and Draining

All hydrant risers shall be supplied and installed with automatic air vents of 25 mm size at the highest points and drain valves at the lowest points of the systems as specified in Clause 6.4

1.2.5.4 Pressure Reducing Hydrant Outlets

Pressure reducing hydrant outlet shall be supplied and installed at outlet locations where the static and pump pressure exceeds 700 kPa.

The pressure reducing hydrant outlet shall be in the form of a parity valve incorporated in the hydrant outlet and valve assembly and connected to a drain pipe not less than 40 mm diameter. Alternatively, where specified, the pressure reducing hydrant outlet can be in the form of self-contained type without the use of the parity valve and drain pipe. It shall be capable to reduce the running pressure and satisfy the flow test requirements. The pressure reducing mechanism of the valve shall be located at downstream of the valve seat. Pressure reduction shall be achieved by means of hydraulic pressure balancing with metal diaphragm. An 100% effectiveness pressure reducing performance shall be maintained at all times of operation.

1.2.5.5 Hose Reels

Hose reels shall be of fixed or swing-out type to suit the site installation conditions of the site. The construction, testing, performance, working pressure, etc. shall be to KS Code (2009). The length of hose shall be 30 m and bore 19 mm.

Drums shall be constructed of diecast light alloy, hydraulically balanced, free from denting and twisting, and finished in red enamel. The hub and shaft shall

be of brass, fitted with a device to prevent overrun of the hose, having a glandless centre seal.

The entire assembly shall be drip free. Hoses shall be of reinforced rubber or P.V.C. tubing complying with KS Code (2009) and shall be fitted with a copper alloy nozzle having slow closure type lever-operated cock.

A hose guide complete with nylon or similar runners shall be supplied and installed adjacent to fixed type hose reels to enable the hose to be run out in any direction as required.
For the wall fixed pattern, wall-mounting brackets of substantial construction capable of supporting the entire weight of the hose reel and tubing under all operating conditions are required.

For the swing-out pattern, the support brackets and the swing-out arm shall be so designed as to enable the whole hose reel assembly be swung through 180° in a horizontal plan.
Each hose reel nozzle shall be housed inside a glass fronted metal box. The box shall be fabricated from sheet metal not less than 0.8 mm thick with a hinged door with front break glass and padlocking facility. The metal box shall be painted and finished to the satisfaction of the Engineer. The break glass shall be of fragile type not more than 1.5 mm thick. The break glass shall be easily replaced. Common key shall be used for the padlocks. Five common keys shall be provided. A metal or plastic striker

1.2.5.6 Cabinets

Cabinets for the housing of fire service inlets, hydrant outlets and hose reels will be provided by the Building Contractor unless otherwise specified. The Contractor shall furnish all necessary information to enable these cabinets to be designed and constructed including proposed dimensions for the cabinets and the dimensions, weights, etc. of the equipment supplied by him. All information supplied shall be based on BS 5041 Part 4.

Where hose reels are located in cabinets or recesses to which doors are fitted, the doors shall bear the words "FIRE HOSE REEL ( )" in both English and Swahili characters prominently and easily identifiable from all lines of sight in the surrounding. In the case of doors which can only be opened by pushing in first, they shall also be annotated "PUSH TO OPEN ( )" in both English and Swahili. Hose reel cabinets fitted with doors shall not be locked and shall be easily identified and opened at time of emergency. All doors and markings will be provided by the Building Contractor unless otherwise specified.

1.2.5.7 External Hydrant System

External hydrants shall be of pedestal type manufactured of cast iron. The construction of the street hydrants shall comply with the requirements of KS Code (2009)

The hydrant, when tested in accordance with the provision of BS 1042 with one 65 mm outlet working, shall be capable of delivering not less than 2000 litres per minute (33.3 l/sec.) with a minimum running pressure of 170kPa at the outlet. The minimum output and pressure as stated above shall be made available from two 65 mm outlets of the system delivering at the same time, i.e. a total output of not less than 4000 litres per minutes (66.7 l/sec.) at 170 kPa. Where the minimum standards are not possible from direct town mains, the water supply shall be augmented by water tank and booster pumps. The Contractor shall submit to the Engineer for approval soonest after the test proposal for providing booster pumps and tanks for the street hydrant system if the water supply pressure and flow from town mains are not adequate to meet with the requirements of KS Code (2009)

1.2.5.8 Controls

The control system, where applicable, shall comply with Section 7.8, SANS 10400T and Circular Letters. All associated electrical wiring and installation shall comply with Section 7.9

1.2.6 AUTOMATIC SPRINKLER SYSTEM

1.2.6.1 Types of Systems

Types of sprinkler systems are as defined in the LPC Rules for Sprinkler Installations.

1.2.6.2 Classification of Fire Hazard

The LPC Rules for Sprinkler Installations has defined various classes of fire hazard according to the occupancy of the building to be protected.

1.2.6.3 Grading of Sprinkler Systems

Sprinkler systems are graded according to the number and type of water supplies available. Reference shall be made to the LPC Rules for Sprinkler Installations.

1.2.6.4 Sprinklers

Sprinkler for general application shall be of LPCB approved conventional type or approved by similar widely recognized independent regulatory body. Spray sprinkler shall be used where specified and approved. The sprinkler shall not be altered in any respect nor have any type of ornamentation or coating applied after leaving the production factory. Unless otherwise specified, sprinkler shall be quick response type approved by LPCB or approved by similar widely recognized independent regulatory body. For sprinkler system designed to high hazard group, the sprinkler shall in addition be designed to provide appropriate water droplet sizes for the type of hazard and goods they protected.

Sprinkler shall be constructed with the appropriate characteristics, to suit each particular application. The sprinkler shall be of pendant, upright or side wall type to suit the installation requirements in accordance with the LPC Rules for Sprinkler Installations and FSD Requirements and Circular Letters. Each sprinkler may be defined by any of the following characteristics: -

a) Nominal Size of the orifice
b) Type of heat operated element
c) Operation Temperature
d) Type of Detector

Unless otherwise specified, glass bulb sprinkler shall be constructed with heat sensitive quartzoid bulb with temperature rating of 68^0C. Sprinklers installed in heated rooms e.g. kitchen cooking area, autoclave room, etc. shall have a temperature rating of 93^0C or as required by the FSD unless otherwise specified.

Sprinkler installed at the false ceiling shall be of flush pattern, pendant type and be supplied and installed with an adjustable screw type escutcheon and adaptor to be installed flush with the false ceiling with the yoke and heat sensitive element exposed below the false ceiling line. Sprinkler heads shall be installed at the centre line of the ceiling tiles. The sprinkler head assembly including the yoke arm, escutcheon, adaptor and cover plate installed in exposed locations shall be chromium plated or finished to a polyester white colour or a colour to be approved by the Engineer. The sprinkler head concealed inside false ceiling shall be of natural brass finish or of the same finish as the sprinklers in exposed locations.

Dry pendent sprinklers where specified for pre-action system shall be of adjustable standard or recessed type providing vertical adjustment needed for accurate fit to false ceiling level. The escutcheon shall match the other sprinklers.

Dry pendent sprinklers shall consist of a valve mechanism which utilizes the centre strut in compression principle to seal water and air from the sprinkler pipe until the sprinkler is operated. Water shall then flow freely through the operated sprinkler and distributed by its deflector.

The sprinklers shall cover all areas in the sprinkler-protected building including staircases, common corridors and toilets except plant rooms/D.G. stores/cold storage and other special areas that are provided with other fire service systems acceptable to KS Code (2009)

1.2.6.5 Sprinkler Guards

Sprinklers shall be protected by approved metal guards at locations where they are installed at a height less than 2 metres from ground level or liable to accidental or mechanical damage or required by the KS Code (2009). Sprinkler guards shall be made from brass, wax coated or products having equivalent functions and performance for corrosion resistance. It shall be of size not more than 65 mm high.

1.2.6.6 Spacing and Location of Sprinklers

Spacing and location of sprinklers shall be in accordance with the LPC Rules for Sprinkler Installations.

The Contractor shall check the actual site conditions before and during installation works to ensure that the sprinkler installation complies with the LPC Rules for Sprinkler Installations. The Contractor shall inform the Engineer well in advance of any necessary change of pipe sizes or sprinkler layout in order to suit the finished engineering layout. The Contractor shall be held responsible for the taking down and refixing works without charges if he/she fails to check and inform the Engineer in good time about such alterations

The Contractor shall supply and install metal baffles of the correct size between sprinklers wherever required by the LPC Rules for Sprinkler Installations.

1.2.6.7 Spare Sprinklers

The Contractor shall supply and install a cabinet containing a minimum number of spare sprinklers for each type of sprinklers as recommended by the LPC Rules for Sprinkler Installations or as specified. Sprinkler spanners as supplied by the manufacturers of the sprinklers shall also be provided and kept in the cabinet. Where quick response sprinklers or fast response sprinklers are provided in the Works and adequate quantities of spare quick/fast response sprinklers shall be supplied and maintained as recommended by the LPC Rules for Sprinkler Installations or as specified. Where conventional sprinkler heads and quick response / fast response sprinkler heads are provided in an installation, the number of spare sprinklers for each type of sprinkler head shall

be considered separately and each shall comply with the recommendation in the LPC Rules for Sprinkler Installations for any hazard class.

1.2.6.8 Pipework Installation

Pipework installation for sprinkler systems shall be installed in accordance with the LPC Rules for Sprinkler Installations and as detailed in Clause 6.2.

1.2.6.9 Pressure Gauges, Valves and Alarm Devices

Pressure gauges, various types of valve and alarm devices shall be installed in accordance with the LPC Rules for Sprinkler Installations.

1.2.6.10 Cabinets for Control Valve Sets and Sprinkler Inlets

Cabinets for housing the sprinkler control valve sets and sprinkler inlets will be provided by the Building Contractor unless otherwise specified. The Contractor shall furnish all necessary dimensional information to enable these cabinets to be designed and constructed.

1.2.6.11 Subsidiary Stop Valves

Electric monitoring type subsidiary stop valves shall give visual signals back to the fire alarm control and indicating panel to indicate the open/close state.

Audible signal shall also be given when the valve is not in fully open position.

1.2.6.12 Sprinkler Control Valve Sets

The control valve set comprising the associated pressure gauges, valves, alarm devices, water motor gongs, testing facilities, retarding chambers, etc. shall be in accordance with the LPC Rules for Sprinkler Installations. Electric monitoring device shall be fitted at each valve to give signals back to the fire alarm control and indicating panel to indicate the open/close state of the valve. Audible signal shall also be given when the valve is not in fully open position. Drain connection to the system shall be led to conspicuous positions as approved by the Engineer and comply with the requirements of the Water Supplies Department. Sprinkler control valve set shall be of duplicate alarm valve arrangement or of alarm valve with bypass arrangement, and with alarm monitoring facilities.

1.2.6.13 Pre-Action System

Pre-action system shall be supplied and installed where specified. There are two

types of pre-action installation as follows:

a) Type 1, which shall be installed only to prevent a premature discharge of water from pipework or sprinklers that have suffered mechanical damage; and

b) Type 2, which shall be installed only to facilitate an early discharge of water from a dry pipe installation by opening the installation main control valve, thus filling the installation control pipework with water, upon operation of a fire detection system.

For Type 1 system, the water shall normally flow into the pre-action pipework when the sprinkler is opened and the fire detection system is operated. For Type 2 system, the water shall fill the pre-action system pipework upon operation of a fire detection system before the sprinkler is operated.

Unless otherwise specified, Type 2 shall be used for pre-action system.

The sprinkler installation pipework shall be normally charged with air under pressure, and monitored to give a warning indication on reduction of the air pressure. Complete loss of air pressure shall initiate the visual and audible indications for a fire alarm.

The fire detection system shall automatically give an alarm at the fire alarm control and indicating panel, pre-action system control panel and any repeater panels and shall operate two independent LPCB certified solenoid valves or actuator mechanisms either of which shall release (Type 1 or Type 2) pre-action alarm valves. The solenoid valves or actuator mechanisms may be energised or de-energised to operate a pre-action valve control system.

The pre-action system control panel shall incorporate the necessary relays, timers, key types switches, alarm and trouble lights essential to the operation of the system. The control panel shall employ printed circuit boards for the components and shall be completely factory-wired and ready for connection on site. The control panel shall comply with Section B8 where relevant and the following:

a) The duration of the battery stand-by power supply shall be at least seventy-two (72) hours. At the end of the 72- hour stand-by period, the stand-by power supply shall be capable of operating the pre-action control panel and solenoid valve or actuator to release the pre-action alarm valve.

b) The pre-action control panel shall initiate operation of the pre-action alarm valve immediately in the event of a fire alarm system fault (including a failure of the primary and stand-by power supplies) which may result in failure to execute the appropriate actions in the event of fire

The pre-action control panel relays and circuitry operating the pre-action alarm valve solenoid valves or actuator mechanisms shall be duplicated and wired such that no single fault or failure shall render the installation inoperable. Monitoring devices shall be supplied and installed to give: -

a) indication that any stop valves down-stream of the installation control valve set are fully open;

b) audible and visual warnings at the pre-action control panel that any monitored stop valve is not fully open;

c) audible and visual warnings at the pre-action control panel that the cover to a condition indicator switch has been removed;

d) audible and visual warnings at the pre-action control panel of short circuit or disconnection of the leads of any solenoid valve or actuator which is energised to open;

e) audible and visual warnings at the pre-action control panel of short circuit or disconnection of the primary power supply, the secondary power supply or any battery charger associated with the operation of the pre-action system.

The fire detection system used to activate a pre-action sprinkler system shall comply with FOC Rules for AFA Installations where appropriate and the following: -

a) Each room or compartment protected by sprinklers shall have sufficient fire detectors to initiate release of the pre-action installation without the operation of any detectors external to the room or compartment or located within equipment.

b) Fire detection systems employing coincidence connection (requiring a response from two detectors to initiate operation of the pre-action alarm valve) may be used with Type 1 and Type 2 pre-action installations. Consideration shall be given to actuation of the pre-action alarm valve on operation of a single fire detector where fast-developing fires may occur.

c) Any two detectors of a group of detectors that may initiate the operation of the pre-action alarm valve shall be separately connected to independent wiring circuits (coincidence connection).

Consideration shall be given to the nature of the occupancy, building height, sprinkler thermal sensitivity, air movement and the recommendations of the FOC Rules for AFA Installations and the Technical Bulletin TB 21 of the LPC Rules for Sprinkler Installations

1.2.7 TANKS AND PUMPS

1.2.7.1 Water Tanks

Water tanks forming part of the building construction will be provided by the Building Contractor unless otherwise specified.

Water tanks shall be constructed in compliance with the FSDCOP, LPC Rules for Sprinkler Installations, SANS 10400-T Requirements and Circular Letters.

Puddle flanges for inlet and outlet pipes shall be supplied by the Contractor and installed by the Building Contractor unless otherwise specified. All other piping connections and valves shall be supplied and installed by the Contractor except overflow, drains and inlet piping which will be supplied and installed by Building Contractor unless otherwise specified.

The Contractor shall check the construction drawings for water tanks for fire service installation and verify their correctness for installation purposes, or submit proposals for modification to the design, as necessary, and shall assist in the supervision of their construction, in order to ensure their suitability and proper functioning.

1.2.7.2 Water Pumps

Water pumps for sprinkler systems shall comply with the LPC Rules for Sprinkler Installations. Water pumps for hydrant/hosereel systems shall comply with the FSDCOP, SANS 10400-T and Circular Letters, and BS 5306 Part 1 wherever applicable. Pumps shall be manufactured by a manufacturer possessing certified ISO 9001/9002.

Sprinkler pumps shall be LPCB certified pumps or approved by any similar widely recognised independent regulatory body acceptable by the Ministry of Defence. Test certificate shall be submitted at the time of delivery.

There shall be at least one standby pump in addition to the duty pumps for each pump set. In addition, there shall be at least one jockey pump in each sprinkler pump set.

1.2.7.3 Pump Operation

Pumps with stable characteristics for fire service installation shall be selected to suit the design requirements for capacity (flow rate) as specified and shall discharge at a pressure which shall produce running pressures within the

statutory requirements at the location concerned. In addition, the required net positive suction head of the selected pumps shall be compatible with the available net positive suction head in the installations. The design figures given on the Particular Specification and/or drawings are for guidance only. No adjustment in cost will be entertained if the actual required duty points (pressure and flow rate) are different from the specified figures. Close valve total pressure head shall not exceed 140% of the rated head.

The Contractor shall be responsible for carrying out a final accurate calculation of operating heads based upon the characteristics of the pipework systems including fittings, equipment and accessories as actually installed by him. Certified performance curves for the pumps shall be provided with the operating range clearly indicated.

Pump drive motor output power shall be rated to give 20% for hydrant system and 10% for sprinkler system more power in addition to the hydraulic power required for the rated flow of the system. Pump speed shall not exceed 50 rps.

Pumps shall be capable of running under conditions of zero or low "draw-off" continuously without overheating. This may be achieved either by pump design or by an automatic by-pass circuit arrangement. Details of this shall be shown on the Contractor's Installation Drawings. Overheat alarm devices may be supplied and installed if necessary but these shall not be arranged to shut down the pump automatically.

Pumps shall have acceptable low noise level and good energy efficiency to the approval of the Engineer especially for the jockey pumps.

1.2.7.4 Pump Construction

Pumps shall be of centrifugal, horizontal end suction type unless otherwise specified having casings of close-grained grey cast iron to BS 1452 Grade 180.

Horizontal split casing pump or multi-stage centrifugal pump shall be supplied and installed in lieu of the end suction type if necessary or as specified.

Flanges shall be to BS 4504 PN16. Impellers shall be of stainless steel to BS 970 Part 1 Grade 316S31. Shaft shall be of stainless steel to BS 970 Part 1 Grade 316S31 statically and dynamically balanced after assembly. Impeller rings shall be of cast iron and renewable secured from relative movement by stainless steel end rotation ring.

Salt water pumps if specified shall be generally of the similar type and construction to the fresh water pump, and the impellers and shafts shall be of stainless steel to BS 970 Part 1 Grade 316S31.

Pump seals shall be of the stuffing box gland type of appropriate depth to prevent leakage. Low pressure stuffing boxes shall be water sealed to prevent air leakage. Glands shall be of cast iron or bronze.

Bearings shall be of ball or roller type having an adequate safety factor to ensure long life. Housings shall be easily removable for servicing.

Grease nipples shall be provided on the pump casing adjacent to each bearing for lubrication of the bearings.

1.2.7.5 Pump Set Installation

The pump and motor shall be directly coupled and mounted on a substantial machined base plate of cast iron or of fabricated mild steel. Couplings shall be flexible of steel pin and synthetic rubber bushing type, accurately aligned, and fitted with guards.

Pumps shall be complete with all necessary water seal connections, vents, drains and priming plugs, and all installation materials including foundation bolts and anti-vibration mountings. Drain pipework shall be of copper and shall run to a nearby drain gully or as specified. Automatic priming equipment shall be included where necessary to ensure that the pumps are primed at all times.

The exposed shafts, couplings and moving parts of pumps shall be provided with suitable galvanised iron mesh guards coated with primers and finishing paint and shall be stoutly constructed and easily removable complete with lifting handles.

Each pump shall be provided with pressure gauges installed to indicate the suction and discharge pressure. The gauges shall be neatly mounted on a rigid wooden or metal board adjacent to the pump or rigidly fixed in-line with suction and discharge pipework. Suitable permanent labels in English and Swahili shall be affixed for each gauge to indicate its function.

Duty/standby selector, manual start/stop buttons, voltmeters, ammeters, high/low level alarm, and associated indications shall be supplied and installed at the starter panel inside the pump room. Except the manual stop buttons, similar provisions shall also be supplied and installed at the main and/or repeating fire alarm control and indicating panels as specified in the Particular Specification. A lock-off type emergency stop shall be supplied and installed adjacent to each pump set. Visual and audible indication shall be provided on the pump control panel indicating the pump is stopped and locked by the emergency stop and shall remain on until the emergency stop is reset.

Except for the proprietary package pump set and proprietary starter panel complying with SANS 10400-T and with ISO 9001/9002 quality system, the

starter panel shall be made from minimum 1.6 mm thick stainless steel to BS 970 Part 1 Grade 316S31.

The pumps shall be actuated at the pump room and the fire alarm control and indicating panel.

1.2.7.6 Maintenance Facilities

Pump installation shall be complete with adequate facilities for maintenance and future replacement of base plate. Lifting eyes shall normally be provided upon pumps, motors, and engines. Details of any requirements for overhead run-ways, hoists, etc., required for installation and maintenance shall be submitted to the Engineer for approval. Where there is a Building Contractor carrying out the building work for a particular project, the overhead run-ways, hoists and hoisting beam will be carried out in the building work by the Building Contractor provided that the Contractor shall submit in good time to the Engnieer for approval, full details of such requirements, so that due consideration may be given before the Building Contractor commences work in the areas concerned. Where there is no Building Contractor, all facilities for maintenance shall be supplied and installed by the Contractor.

1.2.7.7 Motors for Pump Drives

Electric motor for pump drives shall be of the drip proof or totally enclosed fan-cooled (TEFC) squirrel cage induction motor to BS 4999 and BS 5000 Part 10 with Class F insulation. Drip proof motors shall be fitted internally with an anti - condensation heater of single phase pattern arranged so that the heater will be switched off automatically when the motor is started and switched on automatically after stopping.

Totally enclosed fan-cooled motors shall be dust and moisture protected to IP 54. In damp situations or in underground pump houses, motor terminal boxes shall be of weather-proof type. The power factor of the motor shall not be less than 0.85 lagging under all normal operating conditions. Noise level of all motors shall be in accordance with or better than the recommendation of BS EN 60034-9 and shall comply with Environmental Protection Department's requirements. Motor and pump shall be properly balanced and aligned to avoid excessive vibration.

1.2.7.8 Motor Starting

The method of motor starting shall be selected according to the characteristics of the pump and shall comply with the Electricity Supply Co.'s limitations on starting current.
The type of starter shall be as follows, unless otherwise specified: -

Condition 1 : For supply arrangement from company's overhead line

Up to 3.8 kW	Direct-on-line
3.8 kW to 22 kW	Star/delta
Above 22 kW	Automatic-transformer 60% tapping or star/delta

1.2.7.9 Condition 2 : For supply arrangement from company's non-overhead line system

Up to 11 kW	Direct-on-line
11 kW to 25 kW	Star/delta
Above 25 kW	Automatic-transformer 65% tapping or star/delta

1.2.7.10 Starters

Starters shall be air break triple pole electromagnetic contactor type and shall comply with and be tested to BS EN 60947-4-1. Any no-volt release mechanism must be of the automatic resetting type such that on the restoration of the supply the motor can restart automatically. Magnetic and thermal overload trips are not allowed. A phase failure protective device shall be incorporated. Utilization category shall be AC-3 of intermittent duty Class 0.1, 60% on-load factor. Each starter shall comprise on/off controls and indications.

Starters shall be supplied and installed complete with enclosures except where required to be mounted upon composite control panels and shall be in accordance with BS EN 60947-4-1. Enclosure shall provide protection of person against contact with live or moving parts inside the enclosure, protection against ingress of dust and liquid and protection against mechanical damage in accordance with BS EN 60947-1, BS EN

Star/delta and auto-transformer starters shall have approved timers for automatic transition, calibrated and adjustable.

All components shall be of non-hygroscopic, non-corroding material and tropicalized.
Operating coils shall be wound on nylon or similar and vacuum impregnated with nonorganic varnish or plastic encapsulated.

1.2.7.11 Pump Set Isolation Mountings

Unless otherwise approved by the Engineer, motor driven pump set shall be mounted upon a common base plate supported by approved spring-type isolation mountings on concrete plinth. Where package fire pump set is specified, the fire pump, motor, couplings, controls, etc. shall be pre-assembled on the common base plate with spring type isolation mountings by manufacturer in a factory possessing ISO 9001/9002 quality system.

1.2.7.12 Jockey Pumps

Jockey pumps complete with TEFC driven motor for maintaining hydraulic pressure shall be of the multi-stage horizontal or vertical centrifugal type having construction generally in compliance with Sections B4.5 and B4.8 with stainless steel shaft and impellers. Alternatively, reciprocating pumps capable of performing the same duty may be acceptable. Reciprocating pumps shall be with stainless steel piston rod and piston, synthetic rubber seals and oil bath lubrication, mounted on a common base plate with the electric motor drive.

1.2.7.13 Factory Test and Certification

All sprinkler pumps before delivery shall be factory tested and certified on the performance. A factory test certificate and record shall be submitted. Where the manufacturer does not have an approved test facilities required by LPCB for the test in the factory, the Contractor shall, before delivery, arrange the test to be carried out by an independent testing organization approved by LPCB or approved by any similar widely recognised independent regulatory body acceptable to the Engineer.

Site test shall not be accepted as a substitute for the factory test.
Package fire pump set shall be factory tested and certified similar to the sprinkler pump. Where specified, factory test and certification shall be required for other pumps similar to the sprinkler pump.

1.2.8 GASEOUS EXTINGUISHING SYSTEM

1.2.8.1 General

The Contractor shall be responsible for the design of the gaseous extinguishing system. Unless otherwise specified, gaseous extinguishing systems shall be of the total flooding type with pressurized open-ended piping installation on the distribution side. The automatic gas release mechanism shall be operated by means of fire detection units at the protected compartment or manually by a pull handle or push button as described below. Design the gaseous extinguishing system to comply with the standards published by National Fire Protection Association or internationally recognised equivalent standards, and demonstrated to be equivalent in terms of the type of construction, functions, performance, general appearance and standard of quality of manufacture and approved by the Engineer. All proprietary design details from the manufacturer shall be submitted to the Engineer and complying with SANS 10400-T.

Carbon dioxide system shall be designed and installed in accordance with either BS 5306 Part 4 or NFPA 12 and shall only be used in normally unoccupied areas where egress of personnel can be accomplished in thirty (30) seconds.

Other gaseous systems shall be of clean agent type and designed and installed in accordance with NFPA 2001 or any recognised system design manual prepared by the manufacturer.
Unless otherwise specified or approved by the Engineer, the clean agent used shall be FM200. For application in areas with high ceiling height or with low temperature or with limitation in storage spaces for the clean agent that makes the use of FM200 unsuitable, other clean agents such as FE13, FIC, etc. to the approval of the Engineer will be considered. Other clean agents may require additional submission, tests and other information required by the FSD. The Contractor shall deem to allow the cost for all such submissions, requirements and tests to the satisfaction and compliance with SANS 10400-T and the Engineer when other clean agents are used.

The entire gaseous extinguishing system shall be a proprietary product certified by LPCB, UL or FM and has been approved by SABS. All components of the installation shall be compatible with the design of the system. Any add-on device shall be approved by the system manufacturer and shall not affect the proper functioning of the system.

1.2.8.2 Quality of Extinguishing Agents

Carbon dioxide used shall be of good commercial grade, free of water and other contaminants that might cause container corrosion or interfere with free discharge through nozzle orifices. In general, carbon dioxide obtained by converting dry ice to liquid will not be acceptable. The vapour phase shall not be less than 99.5% purity with no detectable off-taste or odour. The water content of the liquid phase shall not be more than 0.01% by weight. Oil content shall not be more than 10 ppm by weight.

Other clean agent gases shall comply with NFPA 2001, in particular, the acute toxicity, the ozone depletion potential and global warming potential.

1.2.8.3 Performance of Standard Total Flooding Installation

Carbon dioxide total flooding systems shall be designed to achieve the necessary concentration, rate of application and duration to maintain the extinguishing concentration all as specified in BS 5306 Part 4 or NFPA 12 in accordance with the volume, hazard and environmental conditions of the protected enclosures. Unless otherwise specified, the rate of application in general shall comply with following requirements: -

a) For surface fires, the design concentration shall be achieved within one (1) minute.
b) For deep-seated fires, the design concentration shall be achieved within 7 minutes but the rate shall not be less than that required to develop a concentration of 30% in two (2) minutes.

Other clean agent gas flooding systems shall be designed to achieve an acceptable concentration stipulated in NPFA 2001 or any recognised system design manual from the manufacturer at room temperature complying with SANS 10400-T. Discharge of gas shall be substantially completed within ten (10) seconds and following discharge the concentration of clean agent shall develop throughout the protected compartment to achieve final extinguishments of fire within sixty (60) seconds.

1.2.8.4 Contractor's Responsibility for System Performance

The compartment to be protected and the location of the gas cylinders shall be as indicated on the Contract Drawings. The layout of pipework and nozzles shown on the Contract Drawing is indicative. The Contractor is responsible for the design of the complete system in co-ordination with other services.

Notwithstanding that the Contractor has demonstrated by calculation to the satisfaction of the Engineer that the system will perform to the standard required, the Contractor shall remain responsible for ensuring that under test the system does in fact perform in accordance with the Specification.

1.2.8.5 Contractor to Provide a Complete Working System

The Contractor shall supply and install all components necessary for full operation of the system in the automatic or manual mode regardless of whether such components are specified or not.

1.2.8.6 Gas Storage Pressure

All the gas extinguishing agents shall be stored in rechargeable cylinders to hold the pressurized agents in liquid form at ambient temperature. The Contractor shall select cylinders of commonly available sizes and types that can be recharged. The Contractor shall allow for at least 10% spare capacity in sizing of each cylinder.

For high pressure system, carbon dioxide shall be pressurized to a corresponding nominal pressure of 5860 kPa at 21°C. The normal filling density shall not be in excess of 68%. For low pressure system, carbon dioxide shall be kept at the design pressure of 2068 kPa by refrigeration system. The refrigerants in the refrigeration system shall have zero ozone depletion potential. Appropriate alarm and pressure relief shall be supplied and installed to cater

for possible failure of the refrigeration system. Unless otherwise specified, carbon dioxide system shall be of high pressure system.

Clean agent cylinders shall be charged in accordance with NFPA 2001 or any recognised system design manual from the manufacturer.

Gas cylinders, distribution pipework, valves, nozzles and fittings shall be manufactured to standards designed to withstand the maximum pressure of stored agent allowing for variations in ambient temperature.

The gas cylinders shall be certified for the intended gas storage pressure and use and complying with SANS 10400-T.

1.2.8.7 Gas Cylinders

Carbon dioxide cylinders shall be of seamless steel construction to BS 5045 Part 1. For low pressure refrigerated system, it shall be in accordance with the manufacturer's design and certified by recognised bodies such as LPCB, UL, FM or approved by any similar widely recognised independent regulatory body acceptable by the Engineer and complying with SANS 10400-T

Clean agent cylinders shall be constructed in accordance with NFPA 2001.

Cylinders shall be securely mounted in a frame bolted to the wall and to be so arranged that the external parts may be readily inspected and corrosion cannot occur. Each cylinder shall be fitted with an automatic pressure release device for over pressure protection of the cylinder.
Each cylinder shall be complete with gas valve, actuator, pressure gauge, flexible hose, check valve and all other necessary accessories. Where the cylinder of a proprietary system complying with SANS 10400-T is not fitted with a pressure gauge, the Contractor shall supply and install pressure gauge in the system pipework for each cylinder.

A device shall be supplied and installed for measuring the amount of liquid in the cylinder at any time. This shall be done by a method which does not require the cylinder to be detached from the manifold. If a weighing device of the type that requires suspension is proposed, means shall be supplied and installed above each cylinder for the attachment of the weighing device. The contents of the cylinders may alternatively be checked by the use of a liquid level indicator of a type approved by the Engineer.

The liquid shall be discharged from the cylinder through a siphon tube. The pressure of the liquid stored in the cylinder shall be such that freezing cannot take place at the lowest possible ambient temperature.

Means shall be supplied and installed to prevent gas discharging into empty containers and to prevent loss if the gas is released when any of the cylinders is disconnected.

Gas cylinders shall be painted signal red as specified in BS 381C in accordance with the requirements of BS 5252. The cylinder shall be free from all rust and corrosion before painting is applied. The type of extinguishing agent, the tare weight, gross weight, liquid level at 21°C and also the degree of super pressurisation (for clean agent) where applicable shall be clearly painted on each cylinder with white paint.

Gas cylinders shall be of rechargeable and re-usable types. If the discharge of gas will require the irreversible rupture of any component of the system such that they are not reusable, the Contractor shall provide one spare set of such components for each installed cylinder. They shall be stored in a labelled and locked cabinet inside the gas cylinder room. Three keys shall be provided.

Only gaseous extinguishing systems that can be recharged locally and the refilling of gas after discharge can be accomplished within a short time shall be approved and used.
The Contractor shall submit details of the refilling arrangement including agency, address of local workshop, refilling time, etc. together with the equipment submission to the Engineer for approval. Equipment submission without details on the refilling arrangement shall not be approved.

The Contractor shall supply and install facilities to isolate or to lock the gas cylinders during routine maintenance or inspection work on the gas cylinders and control system in order to prevent accidental discharge of gas. The facilities shall give appropriate warning indication when it is switched to the 'isolated' mode.

1.2.8.8 Fire Detection and System Control - Automatic Release

Fire detection in the protected area shall be by means of smoke or heat detectors as specified. Sufficient detectors shall be supplied and installed to give duplicate coverage of the whole of the protected area and connected in cross-zones.

Activation of a detector on one zone shall cause alarm bells to sound. Activation of detectors on two zones shall cause a siren or an approved horn to sound and red or amber flashlights in the protected area to light warning that the extinguishing agent is about to be discharged if the system is in the automatic mode. These warning signals will also be activated by the operation of the manual release before the discharge.

The gas extinguishing control panel shall control and monitor the gas release system.
It shall include an automatic/manual lock-off unit controlled by key switches at each entrance to the protected area. Any one key switch shall be capable of switching the system on or off. The manual release mechanism will remain operative whether the system is on or off. A time delay unit which is adjustable in the range of 15 to 30 seconds shall be supplied and installed. Relays shall be supplied and installed to shut down ventilation and air-conditioning, to close openings and to switch off equipment as necessary. These relays will operate immediately when two zones of the fire detection system are activated or when the manual release is operated. Release of the gas will follow after the pre-set time delay.

The gas extinguishing control panel shall comply with Clause 7.8 where relevant and with battery backup. The battery supply shall be able to actuate the system at the end of the standby period.

1.2.8.9 Manual Release

A manual release unit shall be supplied and installed in a suitable position outside each entrance to the protected compartment. The manual release unit shall consist of a pull handle or push button mounted in a box with "break glass" cover. The box shall be so designed that its glass front may be readily replaced and that its front cover can be opened with a key for the purpose of operating the switch without breaking the glass.

1.2.8.10 Emergency Release

An emergency release handle with direct mechanism shall be supplied and installed in an accessible position at or near the gas cylinders. The emergency release shall require no power supply to operate and it shall be supplied and installed with a removable pin to prevent accidental release of gas. Provision shall be made for operation of the emergency release to activate the relays to cause simultaneous shutdown of ventilation, air-conditioning, equipment etc. and to sound the alarm.

1.2.8.11 Gas Release Mechanism

The operation of the gas release mechanism shall require minimum power from an external electrical, pneumatic or mechanical source and shall preferably be operated by a falling weight device. No springs shall be used in any position where their failure or fracture would prevent the correct operation of the gas release mechanism or cause the inadvertent release of the gas.

All release devices and mechanisms shall be designed for the working conditions they will encounter and shall not readily be rendered inoperative or

susceptible to accidental operation. They shall have proper protection from mechanical, chemical or other damage that would render them inoperative.

1.2.8.12 Gas Distribution System

All pipework shall be non-combustible and able to withstand the expected pressures and temperatures without damage. Specification of materials and installation shall conform to the relevant international standards for the respective gas extinguishing agent used.

Other standards adopted for proprietary systems that are in compliance with SANS 10400-T can also be used when approved by the Engineer.

Pipes up to 100 mm shall be screwed and socketed, pipework over 100 mm shall use screwed flanges.

Threaded steel pipework and fittings shall be free of burrs and rust and shall be galvanised inside and outside. Screwed threads shall conform to the dimensions specified in BS 21. Screwed joints shall be made with P.T.F.E. tape or products having equivalent functions and performance but chemically inert to the extinguishing agent used. Compressed fibre gaskets free of asbestos shall be used for flange joints.

Pipe work shall be painted signal red as specified and illustrated in BS 381C in accordance with the requirements of BS 5252. Brass fittings shall be left unpainted.

1.2.8.13 Gas Discharge System to be Securely Fixed and Guarded

The gas discharge system including cylinders, pipework and nozzles shall be securely fixed to the structure with correctly spaced saddles or brackets in according with SANS 10400-T Requirements and Circular Letters. All components shall remain in place when subjected to the pressures and forces produced during discharge. Fixings shall allow for movement due to thermal expansion.

The system shall be guarded so that the operation of any moving parts shall not be obstructed.

1.2.8.14 Indicator Lights, Warning Notices and Labels

All gas storage compartments and compartments protected by a gas extinguishing system shall have a warning notice fixed on each entrance door to the compartment.
The notice shall be made of sheet metal plate not less than 1.6 mm thick or of material approved by the Engineer.

The manual/automatic lock off key switches, the manual release units and the emergency release handle shall all be labelled in English and Swahili so that it is clear what their purpose is and how to operate them.

1.2.8.15 System Odoriser

Odorisers where specified shall be capable of automatically treating the gas after releasing from the cylinder and shall be of citrus odour type, so that hazardous atmosphere can be recognised at once. Where odorisers are installed, a suitable notice to the effect that anyone detecting the citrus odour should leave the area immediately and report the occurrence to a responsible person. The notice shall be worded in English and Swahili.

1.2.9 MISCELLANEOUS

1.2.9.1 Labels and Notices

Labels and notices shall be supplied and installed for all pumps, valves, switches, gauges, indicators, cables, internal wiring terminals and all other equipment to facilitate operation and proper maintenance of the fire service installation. All labels shall make cross reference to the operation and maintenance manuals and as-built drawings

Labels and notices required by statutory requirements shall be inscribed accordingly whereas other labels shall indicate name and purpose of the equipment together with ratings and commissioned set values where applicable.

Labels for equipment identifications shall be made of red plastic material or multilayer formica with white lettering or as approved. Lettering shall be engraved on the plastic material or formica. All wording shall be in both Swahili and English. All labels shall be of adequate size as to give clearance between lettering and fixings to ensure an aesthetic arrangement on completion.

Notices for safety warning and instructions shall be constructed of heavy gauge aluminium sheets painted with symbols or wording as appropriate.

Notice for instruction for operation and use of the equipment shall be provided as appropriate and necessary. Instructions for use shall be provided to all equipment for use by the general public and for operation by the operating staff.

Labels and notices shall be fixed by screws. Where drilling and tapping is impracticable, approved adhesive may be used subject to prior approval by the Architect. For pipelines or valves, where applicable, labels shall be fixed by means of a key ring attached to the upper corner of the pipe mounting bracket or the hand wheel of valves. The labels shall be suspended from brass or stainless steel chain loops over the relevant pipe.

All major fire service equipment and components such as pumps and motors, flow switches, alarm valves, expansion joints, pipes and fittings, etc. shall have factory applied permanent nameplates indicating, where relevant: -

a) Name of Manufacturer.
b) Model.
c) Serial Number.
d) Design Flow Rate, Pressure, etc.
e) Rated Duty.
f) Operating Voltage, Phase, Ampere, and Frequency.
g) Full Load Current and Power.
h) Starting Method and Current.
i) Power Factor.
j) Date of Manufacture.
k) IEC, British Standards or other Authorities' markings to indicate their compliance and grades of application.
l) Any other necessary data to conform to specified requirements and to indicate the equipment performance.

Instructions for oiling and/or greasing of all fans, motors, etc. shall be attached to the relevant greasing or oiling points.

Where the equipment has an operating life less than or equal to ten (10) years, the expiry date or the 'end of service life' date has to be stated on the label attached to the equipment. Labels of approved types shall be supplied and installed for fire extinguishers, fixed sprayer units, batteries, detectors and gas extinguishing system showing the expiry date of design operating life. Unless otherwise barcode labels are provided, the label shall have a serial number of the equipment and the serial number shall be recorded on the as-built drawings.

Identification to the approval of the Engineer shall be supplied and installed for emergency luminaires of the same appearance as other non-emergency luminaires for quick identification in routine inspection.

All isolators and protective devices that can isolate the supply to the fire alarm system shall be properly labelled to the approval of the Engineer.

1.2.9.2 Danger Notices

Danger notices worded: DANGER-PLANT ON AUTOMATIC START (-) in English and Swahili shall be supplied and installed adjacent to all automatically controlled motor-driven and engine-driven pumps.

Notices, instructions of use complying with the requirements of Labour Department and Occupational Safety and Health Ordinance, Chapter 509, shall be supplied and installed.

1.2.9.3 Painting, Finishing, Protection and Identification

Painting shall follow General Specification for Building unless otherwise specified. Paint all surfaces including cable trunking/conduit, panel, box, enclosure, cladding, pipework, equipment, fitting, etc. except otherwise specified.

Self-finished surfaces like stainless steel, anodised aluminium, chrome plated, bronze, plastic, etc. are not required to be painted.

Galvanised pipework concealed in false ceiling or galvanised duct not normally accessible and/or seen need not be painted unless otherwise specified, but appropriate colour code indication shall be applied.

Equipment with factory applied paints or epoxy coatings need not be painted.

Painting and coatings for the purpose of protecting the materials from corrosion including those inside concealed spaces shall be required.

All surfaces, unless otherwise specified, shall be finished in first class paint work. All metallic surfaces shall be wire-brushed and cleaned to make it free from rust, scale, dirt and grease prior to painting. All work shall be carried out by qualified tradesmen. Water based paints with reduced volatile and preservative content or paints with reduced solvent content formulated for minimal volatile organic compound emissions complying with reputable international standards shall be used in occupied areas. In addition, all paints shall contain no mercury, lead, hexavalent chromium or cadmium compounds. All painting works shall be completed and left in ventilated environment for at least 1 week, or the curing period recommended by the paint manufacturer whichever is longer, before occupation or handover of the renovated area to minimize volatile organic compound exposure.

All surfaces shall be painted and finished as specified in the Particular Specification to meet and match the aesthetic Architectural design as required.

Painting shall be of approved type and shall be generally to CP (prepared by the
PM), and should include but not limited to the following: -

a) Do not carry out painting work in wet, humid or foggy weather or on surface that is not thoroughly dry or if there is excessive dust in the air.
b) Ensure that all holes, cracks and other defects in surface have been made good prior to painting.
c) Ensure the surface is thoroughly clean and dry prior to painting. Loose material shall be removed by dry brushing with stiff broom or brush.
d) Keep surface clean and free from dust during coating and drying.
e) Protection freshly applied surface coating from damage.

Primer shall be applied to metal surface before the application of under and finishing coats of paint. Primer for non- galvanised metal surface shall be metallic zinc-rich primer to BS 4652, Type 2, and for galvanised surface shall be calcium plumbate primer or approved etch primer. Bare copper tubing shall be polished bright and coated with approved heat resisting clear synthetic varnish. All surfaces shall receive one primer coat, one under coat and 2 finishing coats.

The primer, under coat and finishing coat of paint shall be from the same manufacturer. The painting procedure shall be strictly in accordance with the manufacturer's instruction.

For anti-corrosion paint and primer, the correct type of thinner/activator shall be used and the mixing method shall follow the manufacturer's instructions.

Colour of the finishing coats shall be to the approval of the Engineer. Pipes and pipelines shall be complete with the identification colour code indicators when the colour of the finishing coat is not in accordance with ISO 3864.

The street hydrant body shall be painted red if it is connected to fresh water supply and painted yellow if it is connected to salt water supply. If the street hydrant is removed from service, the blank cap shall be painted blue.

Copper pipes and fittings shall be polished bright by sanding, wiped with mineral spirits and coated with an approved heat resisting clear synthetic varnish.

Where normal painting is not practicable, all possible measures to prevent corrosion to the plant shall be applied such as special protective coverings, special anti-corrosive paints, etc. as recommended by the supplier or specified in the Particular Specification

For temporary protection, all stainless steel parts shall be covered with PVC wrapper of tape until handover. All ferrous parts shall be painted or greased (whichever is most suitable). All bright parts (chrome plates, polished stainless steel or aluminium, etc.) which are liable to deterioration shall be covered with tallow or a suitable protective coating during the progress of work. Upon completion of work, the protection coating shall be removed and the parts

polished as appropriate. Any damage to the primer or protective coatings shall be made good. When it is necessary to remove, or partly remove the protection for installation or making connections, the Contractor shall ensure that the standard of protection provided originally is re-applied at the earliest possible time. All plants, pipes valves, and fittings shall be, as far as possible, thoroughly cleaned and cleared of rust and other foreign matters both before erection and before subjection to pressure tests. For temperature and/or humidity sensitive electrical or electronic control panels and equipment, the Contractor shall where necessary protect them against high humidity and/or temperature by operating portable or temporary dehumidifiers and/or air conditioners in the enclosures containing this equipment. In order to protect the equipment against dust infiltration, the Contractor shall store them in a dust free room or enclose them in heavy duty PVC sheets or bags. Where necessary, filters shall be provided in the temporary air conditioning systems.

1.2.9.4 Spares and Tools

For plant and/or equipment included in the Contract, the Contractor shall provide the types of spare parts generally wherever these are appropriate to the plant and/or equipment involved plus any additional items for the particular plant and/or equipment. Unless specified in detail, the criteria by which the Contractor shall judge the need for spare parts to be included shall be any part or component of the plant or equipment that is subject to frictional wear, vibration or temperature fatigue, rupture to safety (or otherwise), corrosion, erosion, decay, limited operating life, unacceptable deposits and/or saturation, normal fair wear and tear and is likely to fail or reach an unacceptably low performance level.

The Contractor shall provide sets of spare parts and special tools including spare sprinkler heads, detectors, replacement break glass plates, indicator lamps, special keys, fuses, parts for the gas extinguishing system after discharge, etc. as required by the statutory rules, required by specifications in Section A2 and in Section B3.12, for one year operation and maintenance after expiry of the Maintenance Period, and as required by other parts of this General Specification at the time of completion of the Works and before commencement of the Maintenance Period. The Contractor shall supply and install locked cabinet or cabinets in the plant room(s) and/or control room(s) for housing the spares and tools. Such sets of spare parts and special tools shall be submitted to the Engineer for approval within four (4) months after commencement of the Contract, or in such period as has been agreed by the Engineer in writing.

The Contractor shall also supply all the spare parts and special tools required for the whole Maintenance Period for operation and maintenance of the plant and installation. The spare parts and special tools shall be in addition to the requirements in the second paragraph of this section. At the end of the Maintenance Period, the Contractor shall ensure that the spare parts and

special tools required in the second paragraph of this section are provided and stored in the cabinet.

The Contractor shall replenish and supply spare parts that may have been used during the Maintenance Period.

In addition, the Contractor shall include in the operation and maintenance manual a complete manufacturer's recommended list of all the replaceable parts, spares and special tools with model number, part number and price which are likely to prove necessary to service the plant and/or equipment. The list shall be complete with prices and the prices listed shall be fixed and open for acceptance up to the end of the Maintenance Period. The list shall include diagrams or catalogue details of the parts concerned and bona fide manufacturer's published price lists. The Contractor may add the net shipping costs for each item plus a 15% margin to cover overheads and profit. Where appropriate, the prevailing exchange rate must be stated.

The Contractor shall submit information on the design operating life for equipment such as batteries, detectors, fire extinguishers, gas extinguishing system, etc. that are required to be replaced some years later. The Contractor shall provide three keys for each key operating facilities, locks and switches unless otherwise specified.

1.2.9.5 Provision for Water Meter

Metering of water supplies to fire service installation is not required. Provision shall, however, be made for the possible future connection of the Water Supplies Department meter at each point of connection to the main, immediately downstream of the main stop valve. The position of this future meter shall be shown on the installation drawings. The Contractor shall co-ordinate with the Building Contractor to obtain the information where necessary.

1.2.9.6 Noise and Vibration

The Contractor shall take all necessary steps to prevent the transmission of any objectionable noise and vibration which affects the occupied areas of the building.

Pumps and motors shall be balanced and aligned such that the measured vibration velocity at all three axis shall not exceed 1.8 mm/s rms in the range of 10 to 1000 Hz as defined in BS 4675, ISO 2954 and ISO 10814.

Motor driven pump set shall be mounted upon a common base plate supported by approved spring-type isolation mountings on concrete plinth.

Flexible connectors shall be installed at pump connections to take up vibration. Unless otherwise specified, flexible connector of single sphere or double sphere type made from rubber and similar materials shall not be used. Flexible

connector shall be used to absorb the vibration and shall not be used to take care of the misalignment during installation. All pumps and pipes shall be properly aligned on completion

Pumps shall be of low noise rating especially for the jockey pump set and other equipment requiring frequent operation. Acoustic treatment shall be provided as necessary and approved by the Engineer.

Acoustic treatment shall be provided to the emergency generator installation and other fire service installations and equipment to comply with statutory requirements on noise and vibration.

1.2.9.7 Equipment Bases

All bases and supports for plant and equipment shall be supplied and installed by the Contractor, except concrete plinths and blocks, which will be provided by the Building Contractor unless otherwise specified but shall be designed by the Contractor to suit the actual equipment.

Plinths and blocks shall be designed to project approximately 100 mm above the finished floor level.

1.2.9.8 Safety Facilities

Facilities for operational and maintenance safety shall be supplied and installed to comply with the Occupational Safety and Health Ordinance and with the requirements of Labour Department. All moving parts shall be appropriately covered and emergency stops shall be supplied and installed where necessary.
Adequate spaces and facilities shall be allowed for maintenance and access.

1.2.9.9 Schematic Diagram and Key Layout Drawings

Schematic diagrams and where relevant key layout drawings shall be provided to all major plant rooms and fire service control rooms. The diagrams and drawings shall be mounted in glazed frame s and installed in appropriate locations in the rooms

---

1.2.10 COMMISSIONING AND ACCEPTANCE TEST

1.2.10.1 Adjustments, Commissioning, Functional and Performance Tests

The Contractor shall commission the installation and carry out complete functional and performance tests for all equipment and systems installed by

him/her or them, make all necessary adjustments, including setting all controls and checking the operation of all protective and safety devices in accordance with the manufacturers' instructions, the requirements of the statutory rules and regulations and to the satisfaction of the Engineer before the installations will be accepted. Prior to any tests, the Contractor shall submit detailed commissioning and testing procedures, methods, format of test records and a programme for the commissioning and testing to the Engineer for approval at least three (3) months before commencement of commissioning and testing or within four (4) months after commencement of the Contract whichever is earlier. They shall be updated as the work progresses towards completion. All commissioning and testing procedures for works that are required to be tested during construction shall be submitted in good times for approval.

The detailed procedures submitted shall follow Testing & Commissioning Procedures submitted by the Engineer with additional details and tests proposed by the Contractor to the approval of the Engineer and in accordance with the manufacturer's recommendation, relevant standards and statutory regulations. Detailed commissioning and testing procedures shall be submitted for all special systems and systems. The detailed procedures shall be prepared in two main parts covering the following: -

a) Testing that is required to be carried out during the construction period when part of the Works is installed.
b) Commissioning and testing required for certifying completion of the Works and before commencement of the Maintenance Period.

Immediately after each test, the Contractor's Commissioning Authority, herein referred to as "CCA" shall sign the data record sheet on site with endorsement by the Engineer's representative witnessing the test, irrespective whether the test is successful or not, and submit a copy of the data record sheet to the Engineer. For testing that is required to be carried out during the construction period, the Contractor shall submit a formal commissioning and testing report or certificate for each test and endorsed by the Contractor's CCA within fourteen (14) calendar days after the test.

Commissioning and testing shall include, but not limited to: -

a) Factory tests and off-site tests.
b) Visual inspection and checking.
c) Setting to work, safety and quality tests.
d) Commissioning, regulations, tuning and adjustment
e) Functional tests.
f) Performance tests.
g) Final mock-up tests.
h) Statutory tests and inspections.

Visual inspection and checking shall include verification of the installed equipment being the approved models. The Contractor shall submit relevant documents including delivery orders and payment vouchers to substantiate the equipment installed on site being the approved models if the identification of the manufacturer and model name cannot be seen easily on site.

The Contractor shall note that completion of commissioning and testing and the associated statutory inspection by the local authority is one of the considerations for certifying completion of the Works. The Contractor shall make a detailed plan on the programme of the commissioning and testing works at the commencement of the Contract, in order to ensure that all of such works can be completed within the Contract period. The commissioning and testing programme submitted shall detail the types of commissioning and testing works required, the breaking down of the programme into floor-by-floor and area-by-area basis, the tests that are required during construction and at the time before the completion of the Works, the period of tests with float time allowed, the milestone dates on connection of fire alarm direct link, final mock- up test and statutory/licensing inspections, and the programme for the completion of various builder's works such as pump rooms, control rooms, water supply, electrical supply, etc. The Contractor shall in particular plan the programme so as to minimize the overlapping of different tests arranged simultaneously in different locations.

The Contractor shall arrange to enable the Engineer or the Engineer's representatives to witness all the commissioning and testing. Unless otherwise approved by the Engineer, commissioning and testing carried out by the Contractor in the absence of the Engineer or the Engineer's representatives shall not be accepted. The Contractor shall give at least 72 hours' notice, in writing, when any part or parts of the installation will be tested.

Any defects of workmanship, materials and performance, maladjustments or other irregularities which become apparent during commissioning and testing shall be rectified by the Contractor at no additional cost to the Employer and the relevant part of the commissioning or testing procedure shall be repeated at the Contractor's expenses

If considered appropriate, the Contractor shall be required to carry out demonstration to dismantle those parts/components of the installation which are considered difficult/impossible for maintenance access. The Contractor shall be responsible for carrying out all necessary modification work at no extra charge to the Employer to alleviate the difficulties associated with dismantling or maintenance access.

The Contractor shall not wait for completion of every part of the work but shall arrange for a progressive commissioning programme to achieve practical overall completion and have the whole work ready to be handed over by a date to suit the Contract completion date or any other agreed programme date.

1.2.10.2 Factory Tests and Off-site Tests

Factory test shall deem to be included. Factory test and off-site tests shall be carried out at the manufacturer's works or by an approved independent testing body/laboratory where specified, or elsewhere as approved. Where indicated, 'type-tests' on items of equipment to demonstrate compliance shall be carried out. 'Type-tests' certificates shall be submitted in duplicate to the Engineer. Factory quality and general inspection test recommended by the manufacturer shall be required. Where indicated or necessary, factory performance test shall be carried out for each of the offered equipment before delivery. Factory test certificate certified by qualified factory engineer shall be submitted in duplicate to the Engineer for approval. This approval shall normally be required before the materials or equipment are dispatched from the manufacturer's works. Factory test shall be witnessed by an independent approved agency where indicated.

The Contractor shall note that the Engineer may require witnessing tests and inspections of manufactured equipment during construction at the manufacturer's works. Where this requirement is indicated in the Contract, the Contractor shall allow for making the necessary arrangements.

1.2.10.3 Visual Inspection and Checking

Site inspections of 'work in progress' will be made by the Engineer or the representative from time to time. The Contractor shall keep such inspection record for checking from time to time. Works to be permanently covered up shall be subjected to inspection, pressure test and other tests before cover up. During the inspection, if the Engineer discovers any work that has been covered up before inspection and testing, this work shall be uncovered for inspection and testing to the Engineer's satisfaction. The cost involved in uncovering the work, inspecting, testing and re-concealing the work together with any consequential losses shall be paid by the Contractor at no additional cost to the Employer. Any defective works and installation of poor workmanship found during visual inspection shall be rectified or replaced before proceeding with further tests.

1.2.10.4 Setting to Work, Safety and Quality tests

Prior to any commissioning and testing works, the Contractor shall check the completion of the works, the associated builder's work, the related fire services provisions and the associated building services installations, to ensure that commissioning can be proceeded without obstruction.

Before any installation is subjected to commissioning and site testing, it shall be thoroughly cleaned both internally and externally.

The Contractor shall be responsible for initially setting the plants to work including: -

a) Preliminary checks to ensure that all systems and system components are in a satisfactory and safe condition before start up.
b) Preliminary adjustment and setting of all plant and equipment consistent with eventual design performance.
c) Carrying out pressure test, hydraulic test and other tests required before energizing the equipment and plant.
d) Checking the proper functioning of the protective devices and safety valves in the installation and carrying out all necessary safety testing.
e) Energizing and setting to work on all plants.
f) Initial regulation and demonstration that the installation delivers the correct rate of flow at the conditions specified in the Contract.

The Contractor shall arrange for any specialist plant or equipment to be commissioned and tested by the specialist equipment manufacturer's skilled commissioning engineer and/or technician.

1.2.10.5 Commissioning, Regulations, Tuning and Adjustment

The Contractor shall regulate, balance, tune, commission and adjust the installation and equipment as appropriate and necessary to deliver the conditions and requirements specified in the Contract. The Contractor shall allow carrying out such adjustment and re-adjustment as necessary until all the requirements are met and the installation is accepted by the Engineer.

1.2.10.6 Functional Tests

The Contractor shall demonstrate to the satisfaction of the Engineer the functioning of the installation, system and equipment complying with the operational and functional intent and the requirements in the Contract. The Contractor shall demonstrate and test the proper operational mode, control and the sequence of the operation in various parts of the system and installation.

1.2.10.7 Performance Tests

The Contractor shall carry out tests to prove the performance of the installation, system and equipment in term of flow, pressure, current, sound level, and other technical/design aspects complying with the requirements in the Contract and the statutory requirements. The Contractor shall regulate, balance, tune, adjust and modify the installation, system and equipment as necessary till the performance requirements are met. The final setting and operational parameters of all equipment shall be recorded.

Where necessary, the Contractor shall carry out full load test by simulation or other approved method to prove the performance of the installation at full load condition.

1.2.10.8 Labour and Materials

The Contractor shall dispatch competent and experienced commissioning engineers and technicians to carry out the commissioning and testing of the installation. All labour and materials necessary for carrying out the work shall be provided by the Contractor, except that the Building Contractor will supply electricity and water as required unless otherwise specified. The Contractor shall supply any necessary diesel, gas or other fuel oil for engine-driven pumps and generators provided in the Works, sufficient gases required for the discharge tests of the gaseous extinguishing system installations, etc.

The Contractor shall employ a competent and experienced commissioning engineer in- charge (hereinafter referred as CEIC) approved by the Engineer to be responsible for the overall arrangement, co-ordination, supervision and certification of the commissioning and testing of all fire service installations and equipment. The CEIC shall have minimum 5 years on site experience for similar type and scale of commissioning and testing works. The CEIC shall be responsible for the submission of detailed commissioning and testing methodologies and procedures, co-ordination of the programme and sequence of commissioning and testing works, arranging the test and re-test of the installations, supervising the commissioning and testing works, and certifying results of the tests. The CEIC shall lead and co-ordinate the final mock-up test as well as the statutory inspection with the local administrative authority. The Contractor shall submit details of CEIC together with the commissioning and testing programme to the Engineer for approval.
The Contractor shall replenish all fire extinguishing media and other materials expended or used during the test and ensure that the entire installation is in "as new" condition at the conclusion of the tests.

The Contractor shall properly drain the water and exhaust the gas during and after the test as required. The Contractor shall provide and adopt measures to avoid damage to the building, installations, decorations and fixtures during the tests for any fixed fire service installations and equipment.

1.2.10.9 Water System Tests

Water systems and circuits shall be tested hydraulically to a minimum pressure of1000 kPa or 1.5 times the working pressure whichever is higher applied at the highest point of the system and held for a period of not less than 15 min without leaks appearing. All pipework shall be thoroughly cleaned and flushed before test. The Contractor shall ascertain that there is adequate drainage nearby to discharge by large hose in order to ensure flooding of low level areas will not occur. Where necessary, the Contractor shall provide chemical cleaning to the pipes. After flushing out the pipework, a flow test shall be performed on the hydrant/hose reel system in accordance with the

requirements of the Code of Practice for Minimum Fire Service Installations and Equipment.

A water supply test with the drain and test valves fully opened shall be made on the sprinkler system in accordance with the requirements of the LPC Rules for Sprinkler Installations. An alarm test for at least thirty (30) seconds on the water gong shall also be carried out by opening the test valve to ensure that it shall sound continuously after water flow in the system is detected. All controls and air supply system for the pre- action system, recycling pre-action system and dry pipe system shall be tested.

An actual water discharge test shall be performed on the drencher/deluge/water spray/water mist system and where required for other automatic fixed installations using water to test the water flow and discharge pattern of the nozzles.

For street hydrant system without pumps, the Contractor shall test the incoming water supply pressure at a nearby supply point and at such time as agreed with the Engineer before the completion of the installation to establish the adequacy of the water supply pressure. If the supply pressure is inadequate, the Contractor shall propose remedial measures for the approval of the Engineer. The Contractor shall find and select the most appropriate nearby supply point for the test.
The Contractor shall provide whatever hoses or drainage channels required to safely removing the test water discharged while carrying out these tests in order to ensure that no damage to the building and property will be caused by the test water.

The Contractor shall submit hydraulic test certificates/reports that shall be signed by the Contractor's CEIC and by the Engineer or the representative who has witnessed the test. The test certificates/reports shall contain the following particulars: -

- Date of test
- Apparatus or section under test
- Makers number (if any)
- Nature, duration and conditions of test
- Result of test
- Name of Contractor's representative (in block letter) in charge of
  test
- Name of Employer's representative at witness the test

1.2.10.10 Gaseous Extinguishing System Tests

Gaseous extinguishing system and manifolds shall be tested in accordance with Section 7.6 and SABS Requirements and Circular Letters. Pipework shall be

tested for ten (10) minutes to a minimum of 1.5 times the operating pressure of the system and 10 bars whichever is larger. A 'puff' test(s) to the installed pipework is required.

The Contractor shall refill the gas cylinders with the design agents and reset all equipment after the discharge test.

1.2.10.11 Final Mock-Up Test

Before arranging statutory inspections with Local Fire Department and an Independent Commissioning Authority (CA), the Contractor shall arrange a final mock- up test with the Engineer to demonstrate all the items required for the statutory inspections have been completed and tested to the satisfaction of the Engineer.

Before the final mock- up test, the Contractor shall ensure that all documents required for statutory inspections shall be available on site.

Further mock-up tests shall be required if the installation fails to meet with the satisfaction of the Engineer in the test. The Contractor shall not arrange inspection with local fire departments till the satisfactory acceptance of the mock- up test by the Engineer. The Contractor shall allow adequate time in the commissioning and testing programme for re-testing of the system in case of failure. The Contractor shall indicate the mock- up test and the inspection by local fire department as the milestone events in the critical path programme to be submitted to the Engineer at the commencement of the Works.

1.2.10.12 Commissioning and Testing Report and Certificate of Completion

All commissioning and testing results shall be properly recorded during commissioning and testing at the witness of the Engineer. Immediately after the commissioning and testing, the Contractor's CEIC shall endorse the data record sheet on site with endorsement by the Engineer's representative witnessing the commissioning and testing, irrespective whether the tests are successful or not, and submit a copy of the data record sheet to the Engineer. A full commissioning and testing report shall be forwarded to the Engineer within fourteen (14) calendar days after completion of commissioning and testing of the installation.

1.2.10.13 Completion of Outstanding Works

Within one month of receiving the Engineer's substantial completion certificate, the Contractor shall complete all outstanding works listed thereon and rectify any defects that have arisen up to that time.

1.2.11 GENERAL MAINTENANCE REQUIREMENTS

The Contractor shall furnish free maintenance services for the complete fire service installation for the whole Maintenance Period unless otherwise specified. This free maintenance services shall include the following: -

a) Routine quarterly inspections, tests and maintenance services, and routine inspections, tests and maintenance service as necessary.
b) Emergency inspections, tests and repairs.
c) Final inspections, tests and maintenance services, and annual inspections, tests and maintenance services.

All inspections, tests, maintenance services and repairs shall be carried out generally in accordance with the manufacturers' recommendations/instructions and to the satisfaction of the Engineer. The maintenance service is to maintain the fire service installation in a good and functional working condition. The maintenance service shall include preventive maintenance and all spare parts and spares required in the Maintenance Period.

The Contractor shall dispatch competent and experienced engineers and technicians equipped with the appropriate testing instruments, tools, equipment, etc. to inspect, service, test, adjust and maintain the fire service installation in a satisfactory operating condition. The Contractor shall allow for carrying out such inspection, service, testing, adjustment and maintenance at a time outside normal office hours including general holidays where and when required. The Contractor shall submit a list with at least two names, telephone and pager numbers and addresses of the Contractor's English- speaking and Cantonese- speaking representative to who services calls should be directed.

Particularly in the case of complex fire service installation, the Contractor shall provide at least two senior servicemen being thoroughly familiarized with all aspects of such installation to be responsible for inspection, maintenance and testing of the installation. In this type of installation, the Contractor must be prepared to provide a high level of service, allowing for more frequent service of environmentally sensitive equipment and when necessary, to ensure prompt rectification of the faults resulting in unacceptably high rate of unwanted alarms all at the expenses of the Contractor.

All labour and materials necessary, e.g. fire alarm contacts, detectors, bells, buzzers, lamp bulbs, etc., including cleaning materials, lubricants, battery electrolyte, tools, instruments, replacement of parts, etc., and transportation required for carrying out routine and emergency inspections, tests, repairs, replacements and maintenance services shall be included in the Contract. Any renewals or repairs necessitated by reason of negligence or misuse of the

equipment or by reason of any other cause beyond the Contractor's control (with the exception of ordinary wear and tear) shall be carried out at an additional cost with prior notice to the Engineer. The Contractor shall also replenish at the Contractor's own cost all fire extinguishing media and other materials expended or used during the tests including diesel or petrol fuel and ensure that the entire installations are in a satisfactory operational condition at the conclusion of each visit.

The Contractor shall be responsible for all repairs necessary to maintain the fire service installation in a safe, reliable and operative condition at all times. The Contractor must ensure that the Contractor's servicing staff shall carry out the necessary repairs by utilizing manufacturer's original replacement parts. Any component taken down for services shall be reinstated within two (2) hours or otherwise replaced by a spare unit at the Contractor's expenses.

The Contractor shall ensure minimum interruption to the functioning of the fire service installation during each inspection, testing, repair or maintenance service. Where any part of the fire service installation is out of service temporarily during the progress of work, the Contractor shall place a suitable notice in a prominent position on the control panel so that the client is aware of the situation and the local fire department will not be called out unnecessarily. This is, however, not to be construed as an authority to leave any part inoperative for an undue length of time.

The Contractor shall, as and when instructed by the Engineer, repair or replace at the Contractor's own cost any part of the system proved to be defective by reason of Contractor's negligence, faulty design, inadequate routine maintenance and supervision, workmanship or materials. No claim whatsoever shall be made by the Contractor for such repair or replacement if it is within the scope of the Contractor's responsibility.

After each routine quarterly inspection, testing and maintenance service, the Contractor shall furnish to the Engineer within fourteen (14) calendar days a report complete with the following details: -

a) Date and time of inspection, testing and maintenance service.
b) Persons carrying out the task.
c) Details of inspection and maintenance service.
d) Results of all tests performed.
e) Any external factors significantly affecting the service and test results.
f) Any follow-up actions as required.
g) The record of the fire alarm direct link being temporarily disconnected since last routine quarterly inspection with date and time.

The Contractor shall, at the Contractor's own expenses, make all suitable arrangements to avoid damage to property or installations provided by others during the course of the Works. The Contractor shall be responsible for all

losses and claims for injury or damage to any person or property arises out of or in consequence of the execution of the maintenance work.

1.2.12 EMERGENCY INSPECTIONS, TESTS AND REPAIRS

Emergency service including overtime work for minor repairs and adjustments shall be included under the Contract.

The Contractor shall be responsible for immediate answering of breakdown calls during the day or night including public holidays, whether true or false, and attention to such calls both inside and outside the normal working hours in the shortest possible time and using the quickest means of transport. In general, a response time of less than one (1) hour will be expected unless special arrangement is made and approved for very remote locations.

Any necessary repairs shall be carried out with the most practicably expeditious means to ensure minimum interruption to the operation of the fire service installation.

The Contractor shall arrange to refill the gas cylinders for the gaseous extinguishing system upon discharge and put the system into normal operation within a time as short as possible but in no case shall be longer than seven (7) calendar days. Unless otherwise there are evidences that the discharge of gases in the gaseous extinguishing systems is due to a fire, smoke that generated a fire alarm, or the default operation/act of the occupiers of the building, the cost for refilling the gas cylinders of the gaseous extinguishing systems after discharge in the Maintenance Period shall be borne by the Contractor.

The Contractor shall keep a clear and legible record of all fault callouts and shall submit this record within three (3) calendar days upon request by the Engineer for inspection. The Contractor shall also include the record of all fault callouts in the report in Section C2.1 submitted after each routine quarterly inspection, testing and maintenance service. The record shall indicate the date, time of callout, time of attending, persons attending, brief description of the fault, location/identification of fault, cause of fault, and subsequent time of clearance for each occasion. The record will be returned to the Contractor after perusal by the Engineer but shall subsequently be submitted and kept by the Engineer at the end of the Maintenance Period during the handover inspection of the installation.

1.2.13 CERTIFICATE OF MAINTENANCE

After completion of the final inspection, testing and maintenance service to the fire service installation at the end of the Maintenance Period to the satisfaction of the Engineer, the Contractor shall within fourteen (14) calendar days issue to the Engineer a certificate of maintenance signed by the Contractor with a copy forwarded to the Director of Fire Services. Where the Maintenance Period is longer than one year, the Contractor shall also submit to the Engineer a certificate of maintenance after the completion of the annual inspection, testing and maintenance to the satisfaction of the Engineer with a copy forwarded to the Director of Fire Services in compliance with the requirements of local fire department.

1.2.14 HANDOVER OF FIRE SERVICE INSTALLATION

The fire service installation shall not deem as acceptable for handover to the Engineer until the installation is in good working order and all as-built drawings, instruction and maintenance manuals, spare parts lists, test reports, test certificates, etc. have been submitted to the Engineer.

BILL OF QUANTITIES
MECHANICAL INSTALLATION WORKS

PRELIMINARIES & CONDITIONS OF CONTRACT

BILL NO. 01: PRELIMINARIES & CONDITIONS OF CONTRACT

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
1.0	**PRELIMINARIES & CONDITIONS OF CONTRACT**				
A	Allow for mobilization and setting up stores, tools and all necessary equipment on site	1	Item		-
B	Allow for co-ordination of works with the Main Contractor and other Sub-contractors	1	Item		-
C	Allow for preparation of all "shop" drawings and submitting to the Engineers for approval prior to commencement of work on site	1	Item		-
D	Arrangement for all site inspections and tests that may be required by the Project Engineers/Client and shall provide all instruments and equipment required for these tests.	1	Item		-
E	Allow for preparation of all "As Built" Drawings immediately after Practical Completion of the works.	1	Item		-
F	Allow for the preparation of all "Operations & Maintenance Manuals" immediately after Practical Completion of the works.	1	Item		-
G	Allow for on-site Training of the Operators for specialised equipment	1	Item		-
H	Allow for application and connection of Foul water to existing sewer line for Eldoret Water and Sanitation Company (ELDOWAS)	1	Item		-
	TOTAL FOR PRELIMINARIES CARRIED TO BQ GRAND SUMMARY PAGE				-

BILL OF QUANTITIES
CBK MAIN BUILDING

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:				
1.0	**SANITARY FITTINGS** To be complete with all the necessary fittings and jointing. Where brand names are mentioned it is only inteded as a guide to the type and quality expected. Other equal and equivalent brands shall be accepted upon approval by the Engineer.				
A	**Water Closet - Pan**				
i)	**Back-To-Wall Floor standing** Water Closet Pan as DURASTYLE Model No: Model-No. 215009, white in colour. Complete with matching **soft close seat and cover**, **outlet connector** and all other necessary **fixing accessories**. or equal and approved	50	NO.		-
	WC concealed cistern				
ii)	**WC concealed cistern** compatible with the WC pan and with **control plate** chrome plated as Duravit: Square **Cistern Actuator Plate**, Glossy Chrome Plated or approved equivalent	50	NO.		-
	Toilet Roll Holder				
B	Wall mounted stainless steel toilet roll holder with cover and concealed fixings as TAPIS "D068070". Or equal and approved	50	NO.		-
	Robe / Coat Hook				
C	Dali: Robe Hook (Four), as DALI, Ref. No. EROBHK4001, chrome plated. or equal and approved.	50	NO.		-
D	**Wash Hand Basin**				
i)	Above the **counter wash hand basin** as DURASTYLE , Item No. BWHDRDUR37, of nominal size 600x380x120mm, white in colour, comprising of 1 center tap hole, 1 ¼ " waste fitting, 1 ¼ " **chrome plated bottle trap** or equal and approved.	62	NO.		-
ii)	**Wash Hand BasinTap** Single Lever Basin mixer tap as TAPIS Item Code: CBSMXTAZZ34 Chrome plated or equal and approved.	62	NO.		-
iii)	**Towel Ring** Towel ring as Dali Ref No. BMA20 Chrome plated or equal and approved.	62	NO.		-
E	**Mirror** Mikado HJGFNC001 LED Rectangle 5mm thick glass plate mirror of size 600 x 800mm. Complete with foam lining and dome headed chrome plated fixing Screws	62	NO.		-
F	**Soap Dispenser** Counter-top recessed 950ml dispenser as MEDICLINICS "DJT118" IN AISI 304 Stainless Steel material, having a press action soap release mechanism complete with fixing screws. Allow for initial soap supply. or equal and approved.	62	NO.		-
G	**Paper Dispeser** Paper Dispeser as "Mediclinics ZTWLDSP05" in AISI 304 Stainless Steel material, with a capacity of 400-600 C/Z towels. or equla and approved	62	NO.		-
	Total C/F to the Next Page				**-**

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total Brought Forward from Previous Page				-
H	Automatic hand drier as "Mediclinics Smartflow" in AISI 304 Stainless Steel material, operating on an infra-red automatic sensing system with heating element safety cut-out complete with a 30 seconds safety timer. or equal and	62	NO.		-
I	**Shower Fittings**				
	Shower head as JAQUAR CHS-CHR-1605 complete with concealed pipe work, a spout and 4 way wall mounted chrome plated shower mixer as JAQUAR FUS-CHR-29421. Or equal and approved	14	NO.		-
J	**Towel Rail Bar**				
	Towel Rail as Dali, 600mm towel bar Item Code: ETWLBAR156. or equal and approved	14	NO.		-
K	**Soap Dish**				
	Soap Tray Holder as DALI Item Code: ESOPDS1325 chrome plated complete with wall fixings. Or equal and approved	14	NO.		-
L	**Kitchen Sink**				
i)	Double bowl, single drainer stainless steel 316 grade kitchen sink of size 1360 x 500mm or equal and approved. The bowl size to be 410x 343x 150mm deep complete with chrome plated 40mm waste fittings, plugs, chain stays, overflow, plastic plated bottle trap with 75mm deep seal and plastic chain	6	NO.		-
ii)	**Mixer Pillar Sink** Tapis: Enoch Sink Mixer,Item Code: CBSMXTAZZ06,Brand Reference: WGH56477C or equal approved equivalent.	6	No.		-
M	**Undersink Water Heater**				
	"Heatrae Sadia" UTC under-sink automatic electric hot water heater capacity 10 Litres with a 3.0 Kw heating element and a thermostatic adjustable between 5°C - 70° C and complete with pressure-vented mixer tap.	6	NO.		-
N	**Waste Bins**				
	Stainless steel pedal operated cylindrical bins with self-closing lid and foot operated. To have epoxy external finish for collection of tissue paper waste in washrooms and kitchenwaste. Shall be as Tramontina 94538730 or equivalent and of the following capacities:				
i)	30 Litres capacity for the Kitchen Waste	6	NO.		-
ii)	5 Litres capacity for the Bathroom for hand tissue paper	62	NO.		-
O	**Dhobi Sink**				
	Stainless Steel Dhobi Sink, size 500mm X 500mm X 400mm as "Associated Steel Limited". Complete with traps and fixings, and a ½ inch single back inlet Wall Type Star Head Bibtap as "Tapis: Ref. No. 622-2AC" With Hose Union; 13cm, Chrome Plated" or equal and approved.	2	NO.		-
P	**Urinal Components**				
i)	Urinal Bowl with back inlet as Duravit D-Code: Urinal Bowl: Concealed Inlet, White Model No. BWHDRDCO19 or approved equivalent	25	No.		-
ii)	Flash Valve with automatic actuator (Mains operated) complete with all operation ready connections and mechanisims as Geberit	1	No.		-
	Total for Sanitary Fittings C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
2.0	**INTERNAL PLUMBING**				
	PPRC Pipes - PN20				
	Supply, deliver and install Polypropylene Random Copolymer (PPRC) PN20 pipework to DIN 8077 with joints, couplings, reducers, tees, adaptors, pipe fixing clips etc all to DIN16962 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.				
A	**PPRC PN 20 PIPEWORK**				
i)	25mm diameter pipework	400	Lm		-
ii)	32mm diameter pipework	250	Lm		-
iii)	40mm diameter pipework	200	Lm		-
iv)	50mm diameter pipework	150	Lm		-
v)	63mm diameter pipework	150	Lm		-
vi)	75mm diameter pipework	120	Lm		-
B	**Bends**				
i)	25mm diameter bend	180	No.		-
ii)	32mm diameter bend	160	No.		-
iii)	40mm diameter bend	100	No.		-
iv)	50mm diameter bend	80	No.		-
v)	63mm diameter bend	60	No.		-
vi)	75mm diameter bend	60	No.		-
C	**Tees**				
i)	25mm equal tee	180	No.		-
ii)	32mm equal tee	160	No.		-
iii)	40mm equal tee	100	No.		-
iv)	50mm equal tee	80	No.		-
v)	63mm equal tee	60	No.		-
vi)	75mm equal tee	60	No.		-
D	**Reducers**				
i)	32 x 25mm diameter reducer	140	No.		-
ii)	40 x 25mm diameter reducer	140	No.		-
iii)	40 x 32mm diameter reducer	138	No.		-
iv)	50 x 32mm diameter reducer	128	No.		-
v)	50 x 40mm diameter reducer	60	No.		-
vi)	63 x 50mm diameter reducer	60	No.		-
vii)	63 x 40mm diameter reducer	10	No.		-
viii)	75 x 63mm diameter reducer	10	No.		-
	Total C/F to Next Page				**-**

BILL NO. 02: CBK MAIN BUILDING

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total B/F from Previous Page				-
E	**Male/Female Adapters (Brass threaded)**				
i)	20mm brass threaded adapter	140	No.		-
ii)	25mm brass threaded adapter	138	No.		-
iii)	32mm brass threaded adapter	128	No.		-
iv)	40mm brass threaded adapter	72	No.		-
					-
F	**Male/Female Bend (Brass threaded)**				-
i)	20mm brass threaded bend	160	No.		-
ii)	25mm brass threaded bend	146	No.		-
					-
G	**Threaded Brass Coupling**				-
i)	25mm threaded brass coupling	140	No.		-
ii)	32mm threaded brass coupling	140	No.		-
iii)	40mm threaded brass coupling	138	No.		-
iv)	50mm threaded brass coupling	128	No.		-
v)	65mm threaded brass coupling	60	No.		-
vi)	75mm threaded brass coupling	58	No.		-
					-
H	**Valves**				-
i)	25mm gate valve	50	No.		-
ii)	32mm gate valve	40	No.		-
iii)	40mm gate valve	30	No.		-
iv)	50mm gate valve	20	No.		-
v)	65mm gate valve	10	No.		-
vi)	75mm gate valve	1	No.		-
I	**Unions**				
i)	25mm diameter pipe union	200	No.		-
ii)	32mm diameter pipe union	150	No.		-
iii)	40mm diameter pipe union	150	No.		-
iv)	50mm diameter pipe union	120	No.		-
v)	65mm diameter pipe union	60	No.		-
vi)	75mm diameter pipe union	60	No.		-
J	**Splash Tap**				
	½ inch single back inlet Wall Type Star Head Bibtap as "Tapis: Ref. No. 622-2AC" With Hose Union; 13cm, Chrome Plated" The Biptap to be complete with threaded adaptors and all necessary fixing accessories. or equal and approved.	20	No.		-
K	**Pipe Sleeves**				
	100mm diameter heavy duty PVC pipe sleeves for crossing over columns, slabs and beams	120	Lm		-
L	**Flexible Tubing**				-
	15mm dia. x 300mm long flexible connectors complete with Corrossion resistant Stainless steel grade 316 angle valve	236	No		-
					-
M	**Water Meters**				-
	50mm diameter check water meters as kent or approved Equivalent	1	No.		-
N	**Sterilization, Testing and Commissioning**				-
	Allow for flushing out and sterilizing the whole system with chlorine and testing and commissioning of the plumbing and drainage installations to the satisfaction of the Engineer.	1	Item		-
	Total for Internal Plumbing C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
3.0	**INTERNAL FOUL WATER DRAINAGE**				
	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.				
A	**MuPVC and uPVC Waste and Soil pipework - Heavy Gauge Class 41.**				
i)	100mm diameter heavy gauge grey mUPVC pipe	720	Lm		-
ii)	50mm diameter waste pipe	420	Lm		-
iii)	40mm diameter waste pipe	230	Lm		-
iv)	32mm diameter waste pipe	100	Lm		-
B	**Bends**				-
i)	100mm diameter sweep bend	120	No.		-
ii)	50mm diameter sweep bend	98	No.		-
iii)	40mm diameter sweep bend	88	No.		-
C	**Tees**				-
i)	100mm diameter sweep tee	94	No.		-
ii)	50mm diameter sweep tee	84	No.		-
iii)	40mm diameter sweep tee	80	No.		-
iv)	32mm diameter sweep tee	40	No.		-
D	**Access Caps**				-
i)	100mm diameter access cap	56	No.		-
ii)	50mm diameter access cap	40	No.		-
iii)	40mm diameter access cap	34	No.		-
E	**Boss Connectors**				-
i)	100 x 50mm diameter boss connector	60	No.		-
ii)	100 x 40mm diameter boss connector	52	No.		-
F	**Single Branches**				-
i)	100mm diameter double branch	38	No.		-
ii)	100mm diameter Single branch	30	No.		-
G	**WC Connectors**				-
	100mm diameter WC connector	50	No.		-
H	**Traps**				-
	100 x 50mm diameter floor trap and stainless steel grating	84	No.		-
I	**Inspection Chamber**				-
	Standard 600 x 450 x (600-1000)mm inspection chamber complete with Cast Iron cover as made by East african Foundry or Equivalent.	2	No.		-
J	**Masonary Trap gulley**				-
	450x450mm by 300mm deep masonary bult trap gully chamber complete with 100mm seat PVC gully trap.	2	No.		-
K	**Weathering Slates and Vent Cowls**				-
i)	100mm diameter weathering slate and apron.	10	No.		-
ii)	100mm diameter vent cowl	10	No.		-
L	**Supporting Brackets**				-
	Allow for suitable supporting stainless steel grade316 brackets for anchoring and supporting drainage pipes bends on the Ground floor. To be painted to match the walling colour.	100	No.		-
	Total for Internal Foul water Drainage C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
4.0	**ROOF & TERRACE DRAINAGE**				
	Supply and fix uPVC pipes to BS 4660 and BS 4515 and MuPVC pipes to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework & also where necessary, for pipe fixing clips, holder bats plugged & screwed for the proper & satisfactory functioning of the system.				
A	**Pipes**				
i)	150mm diameter heavy gauge grey mUPVC down pipes	320	Lm		-
ii)	100mm diameter heavy gauge grey mUPVC down pipes	220	Lm		-
iii)	50mm diameter heavy gauge grey mUPVC pipes	94	Lm		-
B	**Bends**				
i)	150mm diameter 45 degrees bend	60	No.		-
ii)	100mm diameter 45 degrees bend	40	No.		-
iii)	100mm diameter sweep bend	40	No.		-
iv)	50mm diameter bend	38	No.		-
					-
C	**Others**				
i)	100mm diameter single branch with 50mm boss adaptor	24	No.		-
ii)	100 x 50mm diameter floor drain with grating for Terrace	20	No.		-
D	**Fulbora**				
i)	100mm diameter UPVC fulbora	30	No.		-
	Total for Roof and Terrace Drainage C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
5.0	**WATER STORAGE TANKS**				
A	**Supply, install and commission Galvanized Pressed Steel Tanks to EN 10088-1:2005, panels according to BS1564:1975 and plates according to BS EN 10240. The tanks to be complete with the following:-** *1,000 x 6mm thick steel plate *Galvanized Steel Internal & External ladders to BS 4211 *Water level indicator *100mm dia overflow *100mm dia washout and gate valves *100mm diameter vent with mosquito net *Flanged 75mmØ inlet pipe connection with high pressure ball valve *100mmØ flanged outlet pipe connectors for domestic water with gate valve *100mmØ flanged outlet pipe connectors for sprinkler installations with a gate valve				
i)	**Roof Storage Water Tank**				
	48,000 Litres Treated Water Storage Tank of 6,000 x4,000 x 2,000 mm	2	No		-
	Total for Water Storage Tanks C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
6.0	**EXTERNAL FOUL WATER DRAINAGE INSTALLATIONS** 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.				
A	**Pipes**				
	a) 100mm dia UPVC Golden Brown pipe (heavy duty)	180	LM		-
	b) 150mm dia UPVC Golden Brown pipe (heavy duty)	440	LM		-
B	**Bends**				
	a) 100mm diameter UPVC bend with access	60	NO.		-
	b) 150mm diameter UPVC sweep bend	100	NO.		-
C	100mm diameter gulley trap complete with chamber and cover.	30	NO.		- -
D	Standard 600x450mm Inspection Chamber complete with HD cover.	40	NO.		-
E	**Weathering Slates and Vent Cowls**				-
i)	100mm diameter weathering slate and apron.	10	No.		-
ii)	100mm diameter vent cowl	10	No.		- -
E	**Grease Trap** Grease Trap Allow concreting to Class 1:3:6, walling 200 mm thick solid concrete block walls with 1:3 mortar and plastering to 1:2 for a two chamber grease trap of overall size of 1,650 x 750 x 1,050 mm deep complete with: -4 No. Medium Duty Rectangular cover and frame 2 LM of 100 mm diameter uPVC Pipe 3 No. 100 mm diameter uPVC paddle flanges 2 No. 500 x 350 x 100 mm deep grease trap tray made from 4 mm thick mild steel plate with 20 mm diameter holes, 50 mm between centres at the bottom and 80 x 5 mm thick flat MS lifting handle, 750 mm long welded with 80 x 80 x 5 mm MS angle plate on to the base of the tray complete with 80 x 80 x 5 mm thick MS angle supports, 60 mm high	4	NO.		-
	Total For External Foul Water Drainage C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
7.0	**DRY RISER INSTALLATION** The pipe work for the dry riser installation shall be in GMS to BS 1387 Class C with pipe threads to B.S 21. The pipe work and all associated fittings shall be in approved colour for fire fittings. Pipework complete with necessary fittings, couplings, union, nipples, sockets, connectors, joints, bends, elbows, hangers, supports, wall chasing, paintings, trenches, excavation, back-filling, sleeves etc.The quoted rate shall includes of Acrylic Fire stop Sealant (as per IS 12458:1888) in the opening for pipes passing through fire compartment walls of RCC floors, masonry walls to provide up to 2 hours fire rating.				
A	**Pipework - GI Class C to BS 1387**				
	i) 65mm Pipe	20	LM		-
	ii) 100mm ditto	136	LM		-
B	**Elbows/Bends**				
	i) 65mm Elbows/Bends	6	NO.		-
	ii) 100mm ditto	8	NO.		-
C	**Tees**				
	i) 65mm Tee	6	NO.		-
	ii) 100mm ditto	6	NO.		-
D	**Reducers**				
	i) 100x65mm Reducer	6	NO.		-
E	**Landing Valve** 65mm diameter dry riser landing valve complete with cap on chain to be installed 1.0 metre above floor level. Complete with 65mm diameter, 20 metres long canvas hose, branch pipe and coupling.	6	NO.		-
F	**Automatic Air Release Valve** 50mm diameter automatic air release valve as "Greenfield" to be connected to the top of dry riser pipe.	1	NO.		-
G	**Drain Valve** 65mm diameter Drain valve on the inlet breeching.	1	No		-
H	**Breaching Inlet** 100mm diameter fire brigade 2-way breaching valve to be installed near the building entrance. The inlet shall be in the standard fire brigade inlet box painted red and marked in black block letters "**DRY RISER SYSTEM FIRE BRIGADE INLET**".	1	NO.		-
I	**Breeching Inlet Sheet Metal Box** Inlet breeching sheet metal box with wired glass door secured with spring locks openable from inside by smashing the glass and releasing the cash on the lock.	1	No.		-
J	**Canvas Hose** 65 mm diameter, canvas hose, 30 metres long designed for a bursting pressure of 34bar complete with instantenous coupling.	6	No.		-
	Total for Dry Riser C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
8.0	**HOSEREEL SYSTEM** **Supply, deliver, install, test and commission the following:** The pipe work for the hose reel installation shall be galvanized wrought steel tubing heavy grade Class B to B.S 1387: 1967 with pipe threads to B.S 21. The pipe work and all associated fittings shall be in approved colour for fire Tenderers must allow in pipework prices for all couplings, union, nipples, sockets, connectors, joints etc. in running lengths of pipes and also where necessary for fixing clips, holderbats plugged and screwed.				
A	**Pipework - GMS Class B to BS 1387**				
	i) 25mm GMS Pipe	36	LM		-
	ii) 50mm ditto	220	LM		-
B	**Elbow and Bends**				
	i) 25mm Bend/Elbows	24	NO.		-
	ii) 50mm ditto	20	NO.		-
C	**Tees**				
	i) 25mm Tees/Equal Tee	12	NO.		-
	ii) 50mm ditto	12	NO.		-
D	**Reducers**				
	i) 25x20mm Reducer	12	NO.		-
	ii) 50x25mm ditto	12	NO.		-
E	**Unions**				
	i) 25mm Union	20	NO.		-
	ii) 50mm ditto	100	NO.		-
F	**Sockets**				
	i) 25mm Socket	24	NO.		-
	ii) 50mm ditto	24	NO.		-
G	**Isolation Valves**				
	i) 25mm Isolation Valves	12	NO.		-
	ii) 50mm ditto	4	NO.		-
H	**Air Relief Valves**				
	i) 50mm Air Relief Valves as CRANE	6	NO.		-
					-
	Total C/F to Next Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total B/F from the Previous Page				-
I	**Hosereels** Swinging type hosereel complete with 30m long hose of 20mm diameter, 25mm internal diameter rubber fire hose with nylon spray/jet and shut off nozzle, and mounting brackets conforming to BS 5274	12	No.		-
J	**Hosereel Pipework Painting** Wire brush, clean and paint complete installation with one coat of red oxide primer, under coat and gloss coat inclunding banding and colour coding to British standards	1	ITEM		-
K	**Hosereel Pumps** Fire Booster set (2 No. Pumps), duty and standby complete with the following:- 2 No. automatic electrical motor driven fire water pumps with a capacity of 4m3/hr at 4 bar and air pressure vessel. Automatic electrical control panel as per specification for above pumps. Base frame with anti-vibration mountings. All other necessary items for booster set as Dayliff or	1	SET		-
L	**Cabinets for Hose Reel, Fire Equipment & Landing Valve** Supply and install recessed vertical type cabinet to accommodate Fire hosereel, landing valve & fire extinguishers manufactured to comply with BSEN 671-1. The cabinet to be made of electro galvanised sheet and LPCB	6	No.		-
M	**Control Panel** Control panel for above pumps with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer, 80 meters long float switch control 4-core cable to the roof tanks, start/stop push buttons and indicator lights. All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet that is oven powder coated. There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to not more than 6 per hour. It should include a change-over switch to enable the pumps to work alternately.	1	No.		-
N	**Electrical Works** Allow for electrical works wiring and fitting to all pumps, control panel and float switches, from isolator provided by others with 3 metres distance.	1	Item		-
	Total for Hosereel System C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
9.0	**PORTABLE FIRE EXTINGUISHERS & ACCESSORIES**				
	Supply, deliver, install, test and commission the following:				
A	5 Kg carbon dioxide gas fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	16	NO.		-
B	6 Kg dry powder fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	16	NO.		-
C	9 Ltr water fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	16	NO.		-
D	Fire Safety Signage, Fire Point signs and Fire Action Plan signs, to Engineer's approval.	16	NO.		-
E	9" (225mm) manual operated alarm bell (Gong)	16	NO.		-
F	Fire Blanket, 1.8m x1.8m	6	NO.		-
G	**Dry Chemical Powder Fire Extinguisher**				-
	6kg dry chemical podwer portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	6	No		-
	Total for Portable Extinguishers C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
10.0	**FIRE SPRINKLER INSTALLATIONS**				
A	**Pump Room Installations** Fully automatic fire pumpset including duty & standby electrically driven pumpset, control panel, interconnecting manifold pipework to Automatic Sprinklers, hosereels and connection to detection/alarm system, these to be complete with pressure reducing valve, fittings all mounted on a fabricated steel baseplate tovalves, pressure vessel and fittings all mounted on a fabricated steel baseplate to BS5306 as follows;				
B	**Main Pumpset (Electric, Diesel and Jockey Combination)** Supply, Install, Test and Commission a BMS Compatible Electric (1 Duty + 1 Standby) & a Jockey fire pump to serve hydrants and wet stand pipes in accordance with EN 12845. Flow: **500.00 US gpm**. at a head of **10 Bar**. **Diesel 6kW/Electric 5,5kW** Power Rating or approved equivalent and is BMS Compatible equivalent.	1	Set		-
C	**Butterfly valves on pump suction** Supply and install 100mm Butterfly valves, with supervisory switch	2	No		-
D	**Y-strainers on pump suction** Supply and install 100mm Dia Y-strainers, with associated bolts, nuts, washer and gaskets, tested to 10 kg/cm² pressure complete as per specifications for jockey and main pump suction	2	No		-
E	**Pump Header** 100 mm Galvanised Mild Steel	36	LM		-
F	Supply and install 100mm Dia. Non return valves, CI construction, with associated bolts,nuts, washer and gaskets,	2	No		-
G	**Isolation Valves on pump discharge /test drain** Supply and Install 100mm Dia. Butterfly valves, Wafer type, PN 16 rating, CI Body, Nitrile rubber sheet, CI disc, carbon steel shaft, hand operated upto 150 NB, gear operated for 200 NB & above, with associated bolts, nuts, washer and gaskets, tested to 10kg/cm² pressure complete as per specifications for test drain, jockey and main pump discharge	2	No		-
H	**Pressure Regulating Valve** Suply and Install DN100 flanged type PRV rated for pressure of 12 Bars. The valve shall be UL listed/FM approved	1	No		-
I	**Outside Screw and Yoke Valve** Suply and Install DN100 OS&Y Valve. The valve shall be fully encapsulated EPDM ductile iron Wedge to ensure bubble-tight sealing and UL listed/FM approved	1	No		-
	Total C/F to Next Page				**-**

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	Total Brought Forward from Previous Page				-
J	**Pump House Electricals & Instrumentation** Electrical cabling work with XLPE insulated Aluminium conductor armoured cable routed through standard cable trays from the electrical panel to respective pump, cabling for pressure switches etc..	1	Lot		-
K	**Testing & Commissioning** Allow for Testing and Commissioning of the whole Pumping System as described in the Technical Specificatios	1	Lot		-
	Sprinkler Installations				
L	**Zone System Control Valve Set** Supply and install combined Sprinkler DN 80 Automatic Zone control valves complying with LPC Rules to include; Indicating Control Valve; Check Valves; Pressure Gauges; Flow Switches; Test Drain Valves for verication of Sprinkler Flow Demand; Alarm Valve, Pressure Relief Valves, Drain Valves	6	Sets		-
M	**Sprinkler Heads (Pendant K.80(metric))** Supply, Installation, Testing & Comissioning of Pendant type Sprinkler of 15NB, Quartzoid Bulb type 68º. Standard Response, with adjustable Escutcheon Plate in SS 304.	380	No.		-
	Total Carried Forward to Next Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	Total Brought Forward from Previous Page				-
N	**Sprinkler System Pipe Works** Black Iron Class 'C' schedule 40 to ASTM A106 grade B with screwed and socketed joints to BS 21 including all range piping, fittings,sleeves, puddle flanges,hangers, supports, brackets, and supports				
	i) 25Ø GMS tubing	600	Lm		-
	ii) Ditto 32Ø	420	Lm		-
	iii) Ditto 40Ø	300	Lm		-
	iv) Ditto 50Ø	280	Lm		-
	v)Ditto 65Ø	198	Lm		-
	vi) Ditto 75Ø	168	Lm		-
	vii) Ditto 80Ø	320	Lm		-
O	**Coupler**				
	i) GMS 25Ø	100	No.		-
	ii) Ditto 32Ø	70	No.		-
	iii)Ditto 40Ø	50	No.		-
	iv) Ditto 50Ø	50	No.		-
	v) Ditto 63Ø	33	No.		-
	vi) Ditto 75Ø	28	No.		-
	vii) Ditto 80Ø	54	No.		-
P	**Elbow 45°/ 80°**				
	i) GMS 25Ø	300	No.		-
	ii) Ditto 32Ø	180	No.		-
	iii)Ditto 40Ø	160	No.		-
	iv) Ditto 50Ø	140	No.		-
	v) Ditto 63Ø	120	No.		-
	vi) Ditto 75Ø	60	No.		-
	vii) Ditto 80Ø	40	No.		-
Q	**Equal Tee**				
	i) GMS 25Ø	250	No.		-
	ii) Ditto 32Ø	160	No.		-
	iii)Ditto 40Ø	120	No.		-
	iv) Ditto 50Ø	80	No.		-
	v) Ditto 63Ø	74	No.		-
	vi) Ditto 75Ø	60	No.		-
	vii) Ditto 80Ø	40	No.		-
R	**Cross Piece**				
	i) GMS 25Ø	120	No.		-
	ii) Ditto 32Ø	80	No.		-
	iii)Ditto 40Ø	74	No.		-
	iv) Ditto 50Ø	60	No.		-
	v) Ditto 63Ø	40	No.		-
	Total C/F to Next Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	Total Brought Forward from Previous Page				-
S	**Reducers**				
	i) GMS 32Ø x 25Ø	300	No.		-
	ii) Ditto 40Ø x 25Ø	180	No.		-
	iii) Ditto 40Ø x 32Ø	160	No.		-
	iv) Ditto 50Ø x 25Ø	140	No.		-
	v) Ditto 50Ø x 32Ø	120	No.		-
	vi) Ditto 50Ø x 40Ø	60	No.		-
	vii) Ditto 63Ø x 40Ø	40	No.		-
	viii) Ditto 63Ø x 50Ø	40	No.		-
	ix) Ditto 75Ø x 40Ø	30	No.		-
	x) Ditto 75Ø x 50Ø	28	No.		-
	xi) Ditto 80Ø x 75Ø	20	No.		-
T	**Reducing Tees**				
	i)GMS 32Ø x 25Ø x 32Ø	174	No.		-
	ii)Ditto 40Ø x 25Ø x 40Ø	142	No.		-
	iii)Ditto 40Ø x 32Ø x 40Ø	140	No.		-
	iv)Ditto 50Ø x 25Ø x 50Ø	120	No.		-
	v)Ditto 50Ø x 32Ø x 50Ø	54	No.		-
	vi)Ditto 50Ø x 40Ø x 50Ø	30	No.		-
	vii)Ditto 63Ø x 40Ø x 63Ø	30	No.		-
	viii)Ditto 63Ø x 50Ø x 63Ø	26	No.		-
	ix)Ditto 75Ø x 40Ø x 75Ø	25	No.		-
	x)Ditto 75Ø x 50Ø x 75Ø	18	No.		-
U	**Pipe Plug**				
i)	GMS ½"	158	No.		-
ii)	Ditto 3"	136	No.		-
iii)	Ditto 4"	60	No.		-
V	**Female Adapter**				
i)	25Ø x ½"	300	No.		-
ii)	32Ø x ½"	242	No.		-
W	**Female Tee Adapter**				
i)	25Ø x ½"	300	No.		-
ii)	32Ø x ½"	242	No.		-
iii)	40Ø x ½"	120	No.		-
iv)	50Ø x ½"	114	No.		-
v)	63Ø x ½"	64	No.		-
X	**Female Elbow Adapter**				
i)	25Ø x ½"	120	No.		-
Y	**Female Threaded Union**				-
i)	25Ø x ½"	100	No.		-
	Total C/F to Next Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	Total Brought Forward from Previous Page				-
Z	Allow for all pipes hangers (UL-listed) Connectors, Clamps etc. and any other item required for satisfactory operation of hydrant and fire sprinkler systems	1	Lot		-
A1	**Alarm Check Valves** 100mm Alarm check valves	1	No.		-
B1	**Painting** Priming and finish painting of the installation pipework with a primer coat and 2 No. coats of postal enamel red complete as required.	1	Lot		-
C1	**Testing and Commissioning** Allow for setting to work, testing and commissioning of the whole of sprinkler system to the satisfaction of the Engineer.	1	Lot		-
	Total for Sprinkler Installations To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
11.0	**FIRE SUPPRESSION SYSTEM INSTALLATION WORKS FOR LV SWITCH ROOM AND SERVER ROOM**				
A	80litre (32.1Kg) normal charged capacity Argonite specified containers charged with Argonite gas at 300bar with dimensions 267mm diameter and 1910mm high when fitted with valve cylinders to be complete with discharge valves gauges and hoses for connection to the manifold. All to be as "Fike" or approved equivalent.	2	No.		-
B	80litre (32.1Kg) normal charged capacity Argonite specified containers charged with Argonite gas at 300bar for testing.	1	No		-
C	Cylinder support bracket system	1	Item		-
D	50mm schedule 40 discharge manifold kit with 2 No. ports complete with end caps and a threaded port for pressure switch. All to be as "Fike" or approved equivalent.	1	Item		-
E	25mm selector switch	1	No		-
F	Actuation package	1	Item		-
G	Solenoid valve/ manual release valve assembly inclusive of hoses, connectors etc.	1	Item		-
H	50mm pressure reducing valve	1	No.		-
I	15mm Argonite discharge Nozzles V type 6 orifice, Nozzle coverage 360 degrees pattern and a radius of 3M. The Nozzle will be located less than 300mm below the ceiling as "Fike" or approved equivalent.	5	No.		-
J	Relief valve	2	No		-
K	Check valve	2	No		-
L	Pressure gauge	2	No		-
M	Pressure relief/vent	2	No		-
N	Discharge pressure switch	1	No.		-
O	Flexible discharge horse	2	No.		-
P	Controls, addresable Control panel and wiring complete with standby	1	Item		-
Q	Maintenance switch	1	No.		-
R	Double Action manual /electric releasing switch	1	No.		-
S	Abort switch	1	No.		-
T	Ionization sensors	3	No.		-
U	Photo electric sensors	3	No.		-
V	Audible alarms	1	No.		-
W	Visual alarm	1	No.		-
	Total C/F to Next Page				**-**

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
	Total Brought Forward from Previous Page				-
X	**Pipework**				
i)	25mm diameter seamless black pipe Schedule 40	6	LM		-
ii)	20mm diameter seamless black pipe Schedule 40	20	LM		-
iii)	15mm diameter seamless black pipe Schedule 40	50	LM		-
iv)	20mm diameter pipe bend/elbow	4	No		-
v)	15mm diameter pipe bend/elbow	6	No		-
vi)	25mm x 20mm pipe reducer	2	No		-
vii)	25mm x 15mm pipe reducer	2	No		-
viii)	20mm x 15mm pipe reducer	2	No		-
ix)	25mm equal tee	2	No		-
x)	20mm equal tee	1	No		-
Y	Allow for associated Builders work	1	Item		-
Z	Allow for pipework anchorage/hangers	1	Item		-
A1	Allow for painting system pipework	1	Item		-
B1	Electrical works and earthing	1	Item		-
C1	Labelling and warning signs inside and outside the rooms	2	No		-
D1	Calculations,working drawings and as installed drawings	1	Item		-
E1	**Dry Chemical Powder Fire Extinguisher**				
	6kg dry chemical podwer portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		-
	Total for Fire Suppression Systems To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KSH)	AMOUNT (KSH)
12.0	**AIR CONDITIONING SYSTEMS** Supply, deliver and install the following Air Conditioning System comprising of the Indoor and Outdoor Units as here below described and to positions indicated on the contract drawings and as instructed by the Engineer: -				
A	**SERVER ROOM CLOSE CONTROL SYSTEMS**				
i)	**20kw (68,300Btu/h) floor mounted close control split air conditioner** inclusive of wall mounted outdoor unit complete with support brackets. It shall be air cooled direct expansion type with top inlet and bottom outlet. The indoor unit shall be installed on a raised floor with a void beneath to act as a supply plenum. It shall have microprocessor controls that monitor status of unit components and environmental parameters like temparature and humidity. It shall be equipped with a signalling alarm to indicate deterioration of conditions, electronic expansion valve, a status display panel and all other necessay control devices. It shall operate on R410A refrigerant or any other non ozone depleting refrigerant and shall be Energy Star Rated. The unit shall be as UNIFLAIR Amico series downflow type or approved equivalent.	2	No		-
ii)	**Floor Grille** Light duty tile replacement panel floor grille designed to withstand a light loading and or foot traffic. Constructed entirely from aluminium extrusions and having a reinforced frame fitted with an opposed blade damper. The grille shall comply with the specification and structural integrity requirements of British and European test standard BS EN 13264:2001, Light Duty classification. Grille size shall be 400mm x 400mm overall and shall be as manufatured by Air-Diffusion Co. of U.K or approved equivalent.	12	No.		-
iii)	**Trunking** 75x50mm approved PVC trunking for concealing the refrigerant pipework.	40	LM		-
	VARIABLE REFRIGERANT FLOW (VRF) AIR CONDITIONING SYSTEM VRF air conditioning system consisting of a series of interconnected outdoor units serving a number of concealed high static ducted and Ceiling Casettes indoor units. The capacities of the units are as outlined below:				
B	**INDOOR UNITS** The units to run on R410A refrigerant and be capable of air filtration, directional air flow and error autodiagnosis. The units to be as **BOSCH** or equal and approved. To have the following features: - Ceiling cassette white indoor unit c/w mounting brackets - Voltage protection of the units - Wireless Remote controller c/w batteries				
i)	4 - Way Ceiling Cassette Indoor Unit - 3.6 kW (12,300Btu/h)	4	No		-
i)	4 - Way Ceiling Cassette Indoor Unit - 4.5 kW (15,400Btu/h)	5	No		-
ii)	4 - Way Ceiling Cassette Indoor Unit - 5.6 kW (19,100Btu/h)	2	No		-
ii)	4 - Way Ceiling Cassette Indoor Unit - 7.1 kW (24,200Btu/h)	8	No		-
	Total Carried Forward to the Next Page				**-**

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
	Total Carried Forward from the Previous Page				-
C	**Concealed Indoor Units**				
	Concealed in ceiling VRF duct indoor units of capacity with thermostat to control room temperature, Inbuilt condensate drain pump,Auto restart function. Sound pressure level of at most 38 db (A),5m long insulated drain hose of 25mm diameter, initial charge of refrigerant (R410A) and of capacities as listed below. The unit should be complete with ducting.				
i)	Cooling capacity: 9kW (30,700Btu/h) as Bosch	1	NO		-
ii)	Cooling capacity: 11.2kW (38,200Btu/h) as Bosch	4	NO		-
iii)	Cooling capacity: 14kW (47,800Btu/h) as Bosch	2	NO		-
iv)	Cooling capacity: 16kW (54,600Btu/h) as Bosch	1	NO		-
v)	Cooling capacity: 20kW (68,300Btu/h) as Bosch	3	NO		-
D	**Grills**				
i)	600mm X600mm air diffuser as Air master or approved equivalent complete with Opposed Blade Damper (OBD)	88	NO		-
E	**ASSOCIATED DUCT WORK**				
	Stainless steel 316 grade ductwork 1.0 mm thick, complete with bends, transformation pieces, offsets, joints, branches, gaskets, supports, sleeves, stiffeners, splitters, turning vanes, test holes, access doors and any other accessories necessary for the complete laying of the ductwork.	110	SQM		-
F	**OUTDOOR UNIT**				
	VRF Outdoor Units				
	Variable Refrigerant Flow air-conditioning oudoor unit to operate on R410 refrigerant. The outdoor unit shall have a capacities as indicated below.The unit to have high air volume efficient refrigerant control, low noise and built to withstand weather elements. The unit to be as **BOSCH Models** or equal and approved.				
i)	BOSCH VRF Heat Pump, Outdoor Unit, Non-Cascadable AF5300A 90-3	1	NO.		-
ii)	BOSCH VRF Heat Pump, Outdoor Unit, Non-Cascadable AF5300A 79-3	1	NO.		-
iii)	BOSCH VRF Heat Pump, Outdoor Unit, Non-Cascadable AF5300A 67-3	1	NO.		-
iii)	BOSCH VRF Heat Pump, Outdoor Unit, Non-Cascadable AF5300A 40-3	1	NO.		-
F	**Central Monitoring Unit**				
	Central Monitoring Unit shall monitor and control all indoor/outdoor units of the VRF AC system, complete with all accessories and should be able to control the air conditioners individually and collectively etc.	1	NO.		-
	Total Carried Forward to the Next Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
	Total Carried Forward from the Previous Page				-
G	**Wall Mounted Wired Remote Controller** Fully wired wall mounted remote controller panel, wiring and conduit works including but not limited to interconnecting cable between the outdoor and indoor units.	30	No		-
H	**Air Handling Units** Supply, installation, testing and commissioning of heat recovery AHU. The unit shall have two fans, supply and extractor fan. Compatible with BMS Each unit should come with the followings : - Primary and secondary filter for supply air (G4, F7); - Primary filter for extract (G3); - Plate heat exchanger; - 100% Fresh air with heat recovery; - 500 Pa available external available static pressure for suppl & return fans; -Complete control system -Steel frame for each AHU resting on metal spring or anti vibrators -Sound isolation pad below each AHU **Assemby Package unit** Complete packaged unit with Fresh Air AHU of cooling capacity 25kW. The unit shall be weatherproof double skin horizontal floor mounted AHU and to operate on VFD and wired control. The unit shall have a matching condensing unit close to it and to be as Trane or approved equivalent	1	No.		-
I	**DUCTWORK** Stainless steel 316 grade ductwork 1.0 mm thick, complete with bends, transformation pieces, offsets, joints, branches, gaskets, supports, sleeves, stiffeners, splitters, turning vanes, test holes, access doors and any other accessories necessary for the complete laying of the ductwork.	60	SQM		-
J	**Refrigeration Pipework**				
i)	Hard drawn heavy gauge copper piping of various sizes from 1/2" to 1 5/8" Dia complete with 25mm thick Closed Cell Rubber Insulation and aluminium foil cladding of appropriate gauge, necessary bends, reducers, 'Y' joints, distributors, support brackets, etc, for SUCTION LINE. or equal and approved insulation material	220	LM		-
ii)	Hard drawn heavy gauge copper piping of various sizes from 1/4" to 7/8" Dia complete with 25mm thick Closed Cell Rubber Insulation, and aluminium foil cladding of appropriate gauge, necessary bends, reducers, 'Y' joints, distributors, support brackets, etc, for LIQUID LINE. or equal and approved insulation material	220	LM		-
	Total Carried Forward to the Next Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
	Total Carried Forward from the Previous Page				-
J	**Condensate Drain Pipe** 32mm diameter high pressure pipe as condensate drainage pipe work complete with necessary bends, reducers, tees, supports, hangers & fixtures and with 20mm thick Closed Cell Rubber Insulation, and aluminium foil cladding of appropriate gauge. or equal and approved insulation material	160	LM		-
K	**Electrical Works**				
i)	Allow for electrical and control wiring including cabling to and from the indoor units to outdoor units (for item above items) 1.0 ~1.5 mm2 cables wired in diameter 25mm HG conduit	250	LM		-
ii)	Electrical wiring between 3 phase outdoor unit and local isolator	1	ITEM		-
iii)	Voltage (3 Phase 415V) surge protection device wired to each outdoor unit (Appropriate rating).	4	No		-
L	**Cleaning and Flushing the Installation** Allow for cleaning and flushing the whole installation with appropriate medium before charging the system with refrigerant.	1	ITEM		-
M	**Refrigerant Charging** Allow R410A extra refrigerant for charging all the VRF air conditioning systems described above.	1	ITEM		-
N	**Testing & Commissioning** Allow for testing of the above Air Conditioning Units both during progress of installation and at completion to the Engineers satisfaction, including initial charging of the system with Refrigerant Gas R.410A or other equal and approved and to leave the system in good and sound working condition	1	ITEM		-
O	**Mounting Bracket** Mounting bracket for the outdoor unit complete with a cage and provided with purpose-made protective steel iron angle frame and all other anchoring accessories including rawl bolts and anti- vibration rubber mountings to engineer's approval.	1	ITEM		-
P	**Sweep Fans** Ceiling mounted sweep fan of sweep diameter 900mm and a drop of 375mm running at approximately 350 R.P.M and delivering about 6800m3/hr. It shall be complete with anti-vibration devices. It shall be suitable for operation on 240V, 50Hz and shall be class 1 earthed. It shall have a manual speed controller with five speed settings complete with associated electrical wiring. The fan and controller shall be as Xpelair NWA 36 or approved equivalent.	10	No		-
	Total for Air Conditioning Systems To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	UNIT	QTY.	RATE (KSH)	AMOUNT (KSH)
	VENTILATION SYSTEMS				
13.0	**TOILET EXTRACT**				
A	**Duct Exhaust Fans**				
	Supply and Installation Double skin exhaust fan with EC motors. Also allow for shut off damper when not operational to be installed after the fan. Allow for connection into the duct. The fan should be BMS Ready, to include isolators including electrical connections and wiring from fan to starter and from starter to fan, hangers, supports, controls, control panel and fixing required for the satisfactory execution operation and completion of the work. The sizes to be as;				
	i) 200m3/hr @ 100 Pa	4	No.		-
	ii) 280m3/hr @ 100 Pa	1	No.		-
	iii) 640m3/hr @ 100 Pa	2	No.		-
	iv) 760m3/hr @ 150 Pa	6	No.		-
	v) 880m3/hr @ 150 Pa	4	No.		-
	vi) 1080m3/hr @ 200 Pa	2	No.		-
	vii) 1360m3/hr @ 200 Pa	3	No.		-
B	**Roof Exhaust Fans**				
	Supply, deliver, install, test and commission exhaust fan EF with Cast aluminium alloy hub and adjustible blades. Galvanised steel casing manufactuerd in accordance with DIN EN ISO 1461 and should be sound insulated. IP55 415, 50Hz 3 phase motor, insulation class F (CO ventilation) according to EN 60034-5. the units should be tested in fan test rig in accordance with DIN ISO 5801 and AMCA 210-99. The fan should be BMS Ready, to include isolators including electrical connections and wiring from fan to starter and from starter to fan, hangers, supports, controls, control panel and fixing required for the satisfactory execution operation and completion of the work. The sizes to be as;				
	i) 1600m3/hr @ 150 Pa	1	No.		-
	ii) 3200m3/hr @ 150 Pa	1	No.		-
C	**Duct work**				
	Supply and install, Test and Commisioning of Aluminium Ducting Factory Fabricated with Duct Mate Flanges as per specifications. The duct work should comply to BS 4844 & NFPA 90A for supply air, Inclussive of supports, C channel or Tie Angle and Rods, hanger threaded rods, clamp plates, trapeze angle or channel hanger iron, etc as specified in NFPA 90A. The GSM should be 180 GSM coating. Support spacing should be as in the specification or BS EN 15727:2010, NFPA 90A.(Allow for fittings as shown in the drawings and details)				
	i) 0.8 mm minimum thickness	180	m²		-
	ii) 1.0 mm minimum thickness	140	m²		-
	Total C/F to Next Page				-

BILL NO. 02: CBK MAIN BUILDING

ITEM	DESCRIPTION	UNIT	QTY.	RATE (KES)	AMOUNT (KES)
	Total Brought Forward From Previous Page				-
D	**Flexible Duct** Supply, install, test and commission flexible air ducts as Technical description to conform to the particular requirements of the site. Allow for all duct fittings hangers, supports as required to complete the air distribution system and all necessary fittings and accessories and fixing required for the satisfactory execution operation and completion of the work				
	i) Φ200 diameter	120	Lm		-
E	Disc valve Φ200	60	No		-
F	**Door Grille** Supply, installation of 300 x 200 mm door grilles as AEROVAC or equal and approved	40	No		-
G	**Volume Control Dampers** Supply,Install, Test and Commision Systemair Duct type volume control dampers of aluminium Construction with BMS compatible and should operate in 5 different modes with the folowing sizes				
	i) 500 x350 mm	6	No.		-
	ii) 350 x 250 mm	12	No.		-
	iii) 150 x 150 mm	20	No.		-
H	**External Weather Louvres** 500mm x 350 mm high external weather louvers with a weather resistant external cover for fresh air inlet openings complete with galvanized coated wire mesh screen on the front face and frame and blades fabricated from extruded aluminium sections. As "TROX" or equal and approved.	18	No.		-
I	**Control Panel** Electrical panel complete with phase failure, relay in a IP65 enclosers. - Washroom Fans	18	No.		-
J	Wire Termination from Fans to the panel	208	LM		-
	Total For Toilet Extract C/F To CBK MAIN BUILDING BQ Main Collection Page				-

BILL NO. 02: CBK MAIN BUILDING

Item	Description	Qty	Unit	Rate (Ksh)	Amount (Ksh)
14.0	**KITCHEN EXTRACT**				
A	**Kitchen Hood**				
i)	Supply, Install and commision kitchen Hood in Stainless steel plate of 2mm thickness including but not limited to Duct Mate Flanges as per specifications. The noise level should be according to EN 60704 -3 EN 60704 -2-13 at maximum normal setting. The duct work should comply to BS 15780 & NFPA 90 for Exhaust air, Inclussive of supports, C channel or Tie Angle and Rods, hanger threaded rods, clamp plates, trapeze angle or channel hanger iron, etc.(Allow for fittings as shown in the drawings and details) Kitchen Hood of Dimensions, 3,000 X 2,000mm (LXW) and adjustable	1	No.		-
B	**Cooking Island Extract Fan** Axial case fan capable of extracting 1800m3/h of air against 150Pa static pressure. The fan will be driven by an electric motor. The fan shall be installed complete with guard kit, plate fan inlet guard, protection guard, silencer and flexible connector, in accordance with the manufacturer's printed instructions. To be as 'S & P Model HCFT/4-800/L-X ' or equal and approved.	1	No		-
C	**Grease Filter Bank** The grease filter unit consisting of a Single Angle unit housing with top exit for use in island canopy applications for housing 8No. 508 x 254 mm top exit washable type stainless steel filter panels. The unit shall have removable grease trays and framework made out of stainless steel. As "Vokes" TE 20/3 Single Angle unit housing with top exit or equal and approved.	2	No		-
D	**Grease Filter** The grease filters of size 508 x 254mm washable type stainless steel filter panels. The unit shall have removable grease trays and framework made out of stainless steel. The filter shall be composed of folded woven metal material interspersed with layers of expanded metal mesh of stainless steel and shall be capable of filtering a total of 6600m3/hr. The filter panels shall be easily removable for washing as and when necessary. As "Vokes" or equal and approved.	2	No		-
E	**Ductwork** 350mm x 300mm extract duct from hood to fan, constructed from 18 S.W.G. rolled galvanized steel sheet and connected to the fan by flexible connections and flanged joints. All joints and seams shall be sealed with mastic to make them airtight.	20	SM		-
F	**Vapor Proof Light Fitting** Vapor proof light fittings, capacity 65 watts in a heat resistant and watertight enclosure all complete with in approved heat resistant conduits and wiring in the kitchen hood.	2	No		-
G	**Fire Damper** Shutter fire damper complete with fusible link and micro switch for de-activating the fan when damper closes suitable for a duct size 350mm x300	1	No		-
H	**Testing and Commissioning** Testing and commissioning, setting to work to the requirements of the specification and to the satisfaction of the Project Engineer.	1	Item		-
	Total Cost for Kitchen Extract C/F To CBK MAIN BUILDING BQ Main Collection Page				**-**

BILL NO. 02: CBK MAIN BUILDING

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
15.0	**SOLAR WATER HEATING SYSTEM** Supply, delivery, installation, testing and commissioning of the following solar hot water system appliances complete with all the accessories including all connections to the services, jointing to water supply, overflows, supports and all plugging and screwing to walls and frames. The hot water cylinder shall be installed as directed by the Project Engineer.				
	Indirect Solar Water Heating System				
A	**Hot Water Storage Tank**				
i)	Hot water storage cylinder, of **300 Ltrs** capacity, complete with electric booster element with thermostat, pressure release valve, automatic air eliminator, other safety valves, controller and all other necessary interconnectors. The system shall be a closed loop type and indirect water heating using glycol as transfer medium. As Dayliff or an approved equivalent. The storage cylinder shall be high pressure fabricated from 5.0 mm thick stainless steel plate manufacture, suitable for horizontal mounting.	4	NO		-
	Solar Collector Panels				
B	Solar collector panel, Size 2m x 1m made from extruded or thermally bonded copper or aluminium tubes and coated with solar absorbing paint, insulation, 5mm thick glass and painted sheet metal casing and frame. The panel shall be as Dayliff or approved equivalent.	8	NO.		-
	Supporting Frames				
C	Allow for Galvanised mounting frames for the Hot Water Cylinder and the Solar Collector Panels for flat/ inclined roof installations that ensures high durability in all weather conditions fixed on slab/roof to support the Solar panels to approval	1	ITEM		-
	Electrical Booster Time Switch				
D	The auxilliary electric water heater elements shall be controlled by a time switch, such that they come "ON" during peak hours only. The time switch must be capable of switching the heater "ON" and "OFF" at least two times per day. The time switch though electrically operated shall be capable of keeping time for a minimum 48 hours of electric power failure.	4	NO.		-
	Recirculation Pump				
E	Hot water Circulation pump As`GrundFos`Model No. UPS 200 Series with a capacity of 2m3/hr at 24m head water gauge. Complete with a **Temperature Differential Controller.** Or equal and approved	4	NO.		-
	Plumbing Works				
F	Allow for plumbing pipework and fittings to/from the Solar System to connect to the internal hot water supply plumbing pipework in the facility.	1	ITEM		-
	Pipework Insulation				
G	Allow for insulation for pipework, bends, tees and other fittings, to approval. The thermal conductivity of the insulate shall not exceed 0.033 W/m.K at 10°C mean.	1	ITEM		-
	Electrical Works				
H	Allow for all wiring to the pumps and sensors and any other electrical equipment. **Note:** Electrical supply shall be brought to within five metres of equipment	1	ITEM		-
	Total Cost for Solar Water Heating System C/F To CBK MAIN BUILDING BQ Main Collection Page				-

CBK MAIN BUILDING BQ MAIN COLLECTION PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	SANITARY FITTINGS	-
2.0	INTERNAL PLUMBING	-
3.0	INTERNAL FOUL WATER DRAINAGE	-
4.0	ROOF & TERRACE DRAINAGE	-
5.0	WATER STORAGE TANKS	-
6.0	EXTERNAL FOUL WATER DRAINAGE INSTALLATIONS	-
7.0	DRY RISER INSTALLATION	-
8.0	HOSEREEL SYSTEM	-
9.0	PORTABLE FIRE EXTINGUISHERS & ACCESSORIES	-
10.0	FIRE SPRINKLER INSTALLATIONS	-
11.0	FIRE SUPPRESSION SYSTEM INSTALLATION WORKS FOR LV SWITCH ROOM AND SERVER ROOM	-
12.0	AIR CONDITIONING SYSTEMS	-
13.0	TOILET EXTRACT	-
14.0	KITCHEN EXTRACT	-
15.0	SOLAR WATER HEATING SYSTEM	-
	TOTAL FOR CBK MAIN BUILDING CARRIED TO BQ GRAND SUMMARY PAGE	**-**

BILL OF QUANTITIES
ACCOMODATION UNITS

BILL NO. 03: ACCOMODATION

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:				
1.0	**SANITARY FITTINGS (1 No. Floor)** To be complete with all the necessary fittings and jointing. Where brand names are mentioned it is only inteded as a guide to the type and quality expected. Other equal and equivalent brands shall be accepted upon approval by the Engineer.				
A	**Water Closet - Suite**				
i)	**Floor Standing** Close Coupled Rimless Water Closet Suite as Durastyle Eco Model No: Item-No. BWHDRDUR60, white in colour. Complete with matching 4.5 litres cistern, slow close seat and cover, outlet connector and all other necessary fixing accessories. or equal and approved	10	NO.		-
B	**Toilet Roll Holder** Wall mounted stainless steel toilet roll holder with cover and concealed fixings as TAPIS "D068070". Or equal and approved	10	NO.		-
C	**Robe / Coat Hook** Dali: Robe Hook (Four), as DALI, Ref. No. EROBHK4001, chrome plated. or equal and approved.	10	NO.		-
D	**Wash Hand Basin**				
i)	Above the **counter wash hand basin** as DURASTYLE , Item No. BWHDRDUR37, of nominal size 600x380x120mm, white in colour, comprising of 1 center tap hole, 1 ¼ " waste fitting, 1 ¼ " **chrome plated bottle trap** or equal and approved.	10	NO.		-
ii)	**Wash Hand Basin Tap** Single Lever Basin mixer tap as TAPIS Item Code: CBSMXTAZZ34 Chrome plated or equal and approved.	10	NO.		-
iii)	**Towel Ring** Towel ring as Dali Ref No. BMA20 Chrome plated or equal and approved.	10	NO.		-
E	**Mirror** Plain size bevelled 6mm thick glass plate mirror size 450 x 800mm. Complete with foam lining and dome headed chrome plated fixing Screws	10	NO.		-
F	**Soap Dispenser** Counter-top recessed 950ml dispenser as TAPIS IN AISI 304 Stainless Steel material, having a press action soap release mechanism complete with fixing screws. Allow for initial soap supply. or equal and approved.	10	NO.		-
	Total C/F to the Next Page				**-**

BILL NO. 03: ACCOMODATION

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total Brought Forward from Previous Page				-
G	**Paper Dispeser** Paper Dispenser as TAPIS in AISI 304 Stainless Steel material, with a capacity of 400-600 C/Z towels. or equla and approved	10	NO.		-
H	**Shower Fittings** Rain Shower head as TAPIS complete with concealed pipe work, a spout and 4 way wall mounted chrome plated shower mixer . Or equal and approved	8	NO.		-
I	**Towel Rail Bar** Towel Rail as Dali, 600mm towel bar Item Code: ETWLBAR156. or equal and approved	8	NO.		-
J	**Soap Dish** Soap Tray Holder as DALI Item Code: ESOPDS1325 chrome plated complete with wall fixings. Or equal and approved	8	NO.		-
K	**Kitchen Sink**				
i)	Double bowl, single drainer stainless steel 316 grade kitchen sink of size 1360 x 500mm or equal and approved. The bowl size to be 410x 343x 150mm deep complete with chrome plated 40mm waste fittings, plugs, chain stays, overflow, plastic plated bottle trap with 75mm deep seal and plastic chain	6	NO.		-
ii)	**Mixer Pillar Sink** Tapis: Enoch Sink Mixer,Item Code: CBSMXTAZZ06,Brand Reference: WGH56477C or equal approved equivalent.	6	No.		-
L	**Undersink Water Heater** "Heatrae Sadia" UTC under-sink automatic electric hot water heater capacity 10 Litres with a 3.0 Kw heating element and a thermostatic adjustable between 5°C - 70° C and complete with pressure-vented mixer tap.		NO.		-
M	**Waste Bins** Stainless steel pedal operated cylindrical bins with self-closing lid and foot operated. To have epoxy external finish for collection of tissue paper waste in washrooms and kitchenwaste. Shall be as Tramontina 94538730 or equivalent and of the following capacities:				
i)	30 Litres capacity for the Kitchen Waste	1	NO.		-
ii)	5 Litres capacity for the Bathroom for hand tissue paper	1	NO.		-
N	**Dhobi Sink** Stainless Steel Dhobi Sink, size 500mm X 500mm X 400mm as "Associated Steel Limited". Complete with traps and fixings, and a ½ inch single back inlet Wall Type Star Head Bibtap as "Tapis: Ref. No. 622-2AC" With Hose Union; 13cm, Chrome Plated" or equal and approved.	6	NO.		-
	Total for Sanitary Fittings C/F To Collection Page				**-**

SANITARY FITTINGS INSTALLATIONS COLLECTION PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	SANITARY FITTINGS (1 No. Floor)	-
		x 6
	*** Sanitary Fittings For 6 Floors (x6) C/F To ACCOMODATION Main Collection Page**	-
	Total for the Sanitary Fitting Installations C/F To ACCOMODATION BQ Main Collection Page	-

BILL NO. 03: ACCOMODATION

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
2.0	**INTERNAL PLUMBING (1 No. Floor)**				
	PPRC Pipes - PN20				
	Supply, deliver and install Polypropylene Random Copolymer (PPRC) PN20 pipework to DIN 8077 with joints, couplings, reducers, tees, adaptors, pipe fixing clips etc all to DIN16962 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.				
A	**PPRC PN 20 PIPEWORK**				
i)	25mm diameter pipework	56	Lm		-
ii)	32mm diameter pipework	48	Lm		-
iii)	40mm diameter pipework	16	Lm		-
iv)	50mm diameter pipework	16	Lm		-
v)	63mm diameter pipework	16	Lm		-
vi)	75mm diameter pipework	16	Lm		-
B	**Bends**				
i)	25mm diameter bend	36	No.		-
ii)	32mm diameter bend	32	No.		-
iii)	40mm diameter bend	32	No.		-
iv)	50mm diameter bend	28	No.		-
v)	63mm diameter bend	22	No.		-
vi)	75mm diameter bend	20	No.		-
C	**Tees**				
i)	25mm equal tee	30	No.		-
ii)	32mm equal tee	30	No.		-
iii)	40mm equal tee	28	No.		-
iv)	50mm equal tee	26	No.		-
v)	63mm equal tee	18	No.		-
vi)	75mm equal tee	10	No.		-
D	**Reducers**				
i)	32 x 25mm diameter reducer	28	No.		-
ii)	40 x 25mm diameter reducer	26	No.		-
iii)	40 x 32mm diameter reducer	18	No.		-
iv)	50 x 32mm diameter reducer	16	No.		-
v)	50 x 40mm diameter reducer	14	No.		-
vi)	63 x 50mm diameter reducer	12	No.		-
vii)	63 x 40mm diameter reducer	12	No.		-
viii)	75 x 63mm diameter reducer	10	No.		-
	Total C/F to Next Page				**-**

BILL NO. 03: ACCOMODATION

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total B/F from Previous Page				-
E	**Male/Female Adapters (Brass threaded)**				
i)	20mm brass threaded adapter	18	No.		-
ii)	25mm brass threaded adapter	16	No.		-
iii)	32mm brass threaded adapter	14	No.		-
iv)	40mm brass threaded adapter	12	No.		-
					-
F	**Male/Female Bend (Brass threaded)**				-
i)	20mm brass threaded bend	18	No.		-
ii)	25mm brass threaded bend	16	No.		-
					-
G	**Threaded Brass Coupling**				-
i)	25mm threaded brass coupling	38	No.		-
ii)	32mm threaded brass coupling	36	No.		-
iii)	40mm threaded brass coupling	34	No.		-
iv)	50mm threaded brass coupling	32	No.		-
v)	65mm threaded brass coupling	30	No.		-
vi)	75mm threaded brass coupling	24	No.		-
					-
H	**Valves**				-
i)	25mm gate valve	20	No.		-
ii)	32mm gate valve		No.		-
iii)	40mm gate valve		No.		-
iv)	50mm gate valve	2	No.		-
v)	65mm gate valve		No.		-
vi)	75mm gate valve		No.		-
I	**Unions**				
i)	25mm diameter pipe union	36	No.		-
ii)	32mm diameter pipe union	34	No.		-
iii)	40mm diameter pipe union	32	No.		-
iv)	50mm diameter pipe union	30	No.		-
v)	65mm diameter pipe union	28	No.		-
vi)	75mm diameter pipe union	22	No.		-
J	**Splash Tap**				
	½ inch single back inlet Wall Type Star Head Bibtap as "Tapis: Ref. No. 622-2AC" With Hose Union; 13cm, Chrome Plated" The Biptap to be complete with threaded adaptors and all necessary fixing accessories. or equal and approved.	6	No.		-
K	**Pipe Sleeves**				
	100mm diameter heavy duty PVC pipe sleeves for crossing over columns, slabs and beams	1	Lm		-
L	**Flexible Tubing**				-
	15mm dia. x 300mm long flexible connectors complete with Corrossion resistant Stainless steel grade 316 angle valve	52	No		-
					-
M	**Water Meters**				-
	50mm diameter check water meters as kent or approved Equivalent	1	No.		-
N	**Sterilization, Testing and Commissioning**				-
	Allow for flushing out and sterilizing the whole system with chlorine and testing and commissioning of the plumbing and drainage installations to the satisfaction of the Engineer.	1	Item		-
	Total for Internal Plumbing C/F To Collection Page				-

INTERNAL PLUMBING INSTALLATIONS COLLECTION PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	INTERNAL PLUMBING (1 No. Floor)	-
		x 6
	*** Internal Plumbing For 6 Floors (x6) C/F To ACCOMODATION BQ Main Collection Page**	-
	Total for the Internal Plumbing Installations C/F To ACCOMODATION BQ Main Collection Page	**-**

BILL NO. 03: ACCOMODATION

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
3.0	**FOUL WATER INTERNAL DRAINAGE (1 No. Floor)** 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.				
A	**MuPVC and uPVC Waste and Soil pipework - Heavy Gauge Class 41.**				
i)	100mm diameter heavy gauge grey mUPVC pipe	54	Lm		-
ii)	50mm diameter waste pipe	56	Lm		-
iii)	40mm diameter waste pipe	54	Lm		-
iv)	32mm diameter waste pipe	4	Lm		-
B	**Bends**				-
i)	100mm diameter sweep bend	20	No.		-
ii)	50mm diameter sweep bend	32	No.		-
iii)	40mm diameter sweep bend	28	No.		-
C	**Tees**				-
i)	100mm diameter sweep tee	24	No.		-
ii)	50mm diameter sweep tee	22	No.		-
iii)	40mm diameter sweep tee	18	No.		-
iv)	32mm diameter sweep tee		No.		-
D	**Access Caps**				-
i)	100mm diameter access cap	10	No.		-
ii)	50mm diameter access cap	26	No.		-
iii)	40mm diameter access cap	22	No.		-
E	**Boss Connectors**				-
i)	100 x 50mm diameter boss connector	26	No.		-
ii)	100 x 40mm diameter boss connector	6	No.		-
F	**Single Branches**				-
i)	100mm diameter double branch	10	No.		-
ii)	100mm diameter Single branch	10	No.		-
G	**WC Connectors**				-
	100mm diameter WC connector	10	No.		-
H	**Traps**				-
	100 x 50mm diameter floor trap and stainless steel grating	26	No.		-
I	**Inspection Chamber**				-
	Standard 600 x 450 x (600-1000)mm inspection chamber complete with Cast Iron cover as made by East african Foundry or Equivalent.		No.		-
J	**Masonary Trap gulley**				-
	450x450mm by 300mm deep masonary bult trap gully chamber complete with 100mm seat PVC gully trap.		No.		-
K	**Weathering Slates and Vent Cowls**				-
i)	100mm diameter weathering slate and apron.		No.		-
ii)	100mm diameter vent cowl		No.		-
L	**Supporting Brackets**				-
	Allow for suitable supporting stainless steel grade316 brackets for anchoring and supporting drainage pipes bends on the Ground floor. To be painted to match the walling colour.	4	No.		-
	Total for Internal Foul water Drainage C/F To Collection Page				**-**

INTERNAL INSTALLATIONS COLLECTION PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	FOUL WATER INTERNAL DRAINAGE (1 No. Floor)	-
		x 6
	*** Internal Foul Water Drainage For 6 Floors (x6) C/F To ACCOMODATION BQ Main Collection Page**	-
	Total for the Internal Installations C/F To ACCOMODATION BQ Main Collection Page	**-**

BILL NO. 03: ACCOMODATION

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
4.0	**ROOF & TERRACE DRAINAGE** Supply and fix uPVC pipes to BS 4660 and BS 4515 and MuPVC pipes to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework & also where necessary, for pipe fixing clips, holder bats plugged & screwed for the proper & satisfactory functioning of the system.				
A	**Pipes**				
i)	100mm diameter heavy gauge grey mUPVC down pipes	468	Lm		-
ii)	50mm diameter heavy gauge grey mUPVC pipes	96	Lm		-
B	**Bends**				
i)	100mm diameter 45 degrees bend	56	No.		-
ii)	100mm diameter sweep bend	28	No.		-
iii)	50mm diameter bend	48	No.		-
					-
C	**Others**				
i)	100mm diameter single branch with 50mm boss adaptor	48	No.		-
ii)	100 x 50mm diameter floor drain with grating for Terrace	48	No.		-
D	**Fulbora**				
i)	100mm diameter UPVC fulbora	26	No.		-
	Total for Roof and Terrace Drainage C/F To ACCOMODATION BQ Main Collection Page				-

BILL NO. 03: ACCOMODATION

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
5.0	**WATER STORAGE TANKS**				
A	**Supply, install and commission Galvanized Pressed Steel Tanks to EN 10088-1:2005, panels according to BS1564:1975 and plates according to BS EN 10240. The tanks to be complete with the following:-** *1,000 x 6mm thick steel plate *Galvanized Steel Internal & External ladders to BS 4211 *Water level indicator *100mm dia overflow *100mm dia washout and gate valves *100mm diameter vent with mosquito net *Flanged 75mmØ inlet pipe connection with high pressure ball valve *100mmØ flanged outlet pipe connectors for domestic water with gate valve *100mmØ flanged outlet pipe connectors for sprinkler installations with a gate valve				
i)	**Roof Storage Water Tank**				
	24,000 Litres Treated Water Storage Tank of 4,000 x3,000 x 2,000 mm	2	No		-
	Total for Water Storage Tanks C/F To ACCOMODATION BQ Main Collection Page				-

BILL NO. 03: ACCOMODATION

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
6.0	**EXTERNAL FOUL WATER DRAINAGE INSTALLATIONS** 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.				
A	**Pipes**				
	a) 100mm dia UPVC Golden Brown pipe (heavy duty)	60	LM		-
	b) 150mm dia UPVC Golden Brown pipe (heavy duty)	100	LM		-
B	**Bends**				
	a) 100mm diameter UPVC bend with access	22	NO.		-
	b) 150mm diameter UPVC sweep bend	10	NO.		-
C	100mm diameter gulley trap complete with chamber and cover.	22	NO.		-
					-
D	Standard 600x450mm Inspection Chamber complete with HD cover.	18	NO.		-
E	**Weathering Slates and Vent Cowls**				-
i)	100mm diameter weathering slate and apron.	16	No.		-
ii)	100mm diameter vent cowl	16	No.		-
					-
E	**Grease Trap** Grease Trap Allow concreting to Class 1:3:6, walling 200 mm thick solid concrete block walls with 1:3 mortar and plastering to 1:2 for a two chamber grease trap of overall size of 1,650 x 750 x 1,050 mm deep complete with: -4 No. Medium Duty Rectangular cover and frame 2 LM of 100 mm diameter uPVC Pipe 3 No. 100 mm diameter uPVC paddle flanges 2 No. 500 x 350 x 100 mm deep grease trap tray made from 4 mm thick mild steel plate with 20 mm diameter holes, 50 mm between centres at the bottom and 80 x 5 mm thick flat MS lifting handle, 750 mm long welded with 80 x 80 x 5 mm MS angle plate on to the base of the tray complete with 80 x 80 x 5 mm thick MS angle supports, 60 mm high	4	NO.		-
	Total For External Foul Water Drainage C/F To ACCOMODATION BQ Main Collection Page				-

BILL NO. 03: ACCOMODATION

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
7.0	**HOSEREEL SYSTEM** **Supply, deliver, install, test and commission the following:** The pipe work for the hose reel installation shall be galvanized wrought steel tubing heavy grade Class B to B.S 1387: 1967 with pipe threads to B.S 21. The pipe work and all associated fittings shall be in approved colour for fire fittings. Tenderers must allow in pipework prices for all couplings, union, nipples, sockets, connectors, joints etc. in running lengths of pipes and also where necessary for fixing clips, holderbats plugged and screwed.				
A	**Pipework - GMS Class B to BS 1387**				
	i) 25mm GMS Pipe	12	LM		-
	ii) 50mm ditto	28	LM		-
B	**Elbow and Bends**				
	i) 25mm Bend/Elbows	6	NO.		-
	ii) 50mm ditto	4	NO.		-
C	**Tees**				
	i) 25mm Tees/Equal Tee	6	NO.		-
	ii) 50mm ditto	6	NO.		-
D	**Reducers**				
	i) 25x20mm Reducer	6	NO.		-
	ii) 50x25mm ditto	6	NO.		-
E	**Unions**				
	i) 25mm Union	10	NO.		-
	ii) 50mm ditto	10	NO.		-
F	**Sockets**				
	i) 25mm Socket	6	NO.		-
	ii) 50mm ditto	4	NO.		-
G	**Isolation Valves**				
	i) 25mm Isolation Valves	6	NO.		-
	ii) 50mm ditto	2	NO.		-
H	**Air Relief Valves**				
	i) 50mm Air Relief Valves as CRANE	1	NO.		-
					-
	Total C/F to Next Page				-

BILL NO. 03: ACCOMODATION

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total B/F from the Previous Page				-
I	**Hosereels** Swinging type hosereel complete with 30m long hose of 20mm diameter, 25mm internal diameter rubber fire hose with nylon spray/jet and shut off nozzle, and mounting brackets conforming to BS 5274	6	No.		-
J	**Hosereel Pipework Painting** Wire brush, clean and paint complete installation with one coat of red oxide primer, under coat and gloss coat inclunding banding and colour coding to British standards	1	ITEM		-
K	**Hosereel Pumps** Fire Booster set (2 No. Pumps), duty and standby complete with the following:- 2 No. automatic electrical motor driven fire water pumps with a capacity of 4m3/hr at 4 bar and air pressure vessel. Automatic electrical control panel as per specification for above pumps. Base frame with anti-vibration mountings. All other necessary items for booster set as Dayliff or approved equivalent.	1	SET		-
L	**Cabinets for Hose Reel, Fire Equipment & Landing Valve** Supply and install recessed vertical type cabinet to accommodate Fire hosereel, landing valve & fire extinguishers manufactured to comply with BSEN 671-1. The cabinet to be made of electro galvanised sheet and LPCB	6	No.		-
M	**Control Panel** Control panel for above pumps with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer, 80 meters long float switch control 4-core cable to the roof tanks, start/stop push buttons and indicator lights. All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet that is oven powder coated. There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to not more than 6 per hour. It should include a change-over switch to enable the pumps to work alternately.	1	No.		-
N	**Electrical Works** Allow for electrical works wiring and fitting to all pumps, control panel and float switches, from isolator provided by others with 3 metres distance.	1	Item		-
	Total for Hosereel System C/F To ACCOMODATION BQ Main Collection Page				-

BILL NO. 03: ACCOMODATION

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
8.0	**PORTABLE FIRE EXTINGUISHERS & ACCESSORIES** **Supply, deliver, install, test and commission the following:**				
A	5 Kg carbon dioxide gas fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	6	NO.		-
B	6 Kg dry powder fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	6	NO.		-
C	9 Ltr water fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	6	NO.		-
D	Fire Safety Signage, Fire Point signs and Fire Action Plan signs, to Engineer's approval.	6	NO.		-
E	9" (225mm) manual operated alarm bell (Gong)	6	NO.		-
F	Fire Blanket, 1.8m x1.8m	6	NO.		-
G	**Dry Chemical Powder Fire Extinguisher**				-
	6kg dry chemical podwer portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	0	No		-
	Total for Portable Extinguishers C/F To ACCOMODATION BQ Main Collection Page				-

BILL NO. 03: ACCOMODATION

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
9.0	**SOLAR WATER HEATING SYSTEM** Supply, delivery, installation, testing and commissioning of the following solar hot water system appliances complete with all the accessories including all connections to the services, jointing to water supply, overflows, supports and all plugging and screwing to walls and frames. The hot water cylinder shall be installed as directed by the Project Engineer.				
	Indirect Solar Water Heating System				
A	**Hot Water Storage Tank**				
i)	Hot water storage cylinder, of **1,000 Ltrs** capacity, complete with electric booster element with thermostat, pressure release valve, automatic air eliminator, other safety valves, controller and all other necessary interconnectors. The system shall be a closed loop type and indirect water heating using glycol as transfer medium. As Davliff or an approved The storage cylinder shall be high pressure fabricated from 5.0 mm thick stainless steel plate manufacture, suitable for horizontal mounting.	3	NO		-
	Solar Collector Panels				
B	Solar collector panel, Size 2m x 1m made from extruded or thermally bonded copper or aluminium tubes and coated with solar absorbing paint, insulation, 5mm thick glass and painted sheet metal casing and frame. The panel shall be as Davliff or approved equivalent.	21	NO.		-
	Supporting Frames				
C	Allow for Galvanised mounting frames for the Hot Water Cylinder and the Solar Collector Panels for flat/ inclined roof installations that ensures high durability in all weather conditions fixed on slab/roof to support the Solar	1	ITEM		-
	Electrical Booster Time Switch				
D	The auxilliary electric water heater elements shall be controlled by a time switch, such that they come "ON" during peak hours only. The time switch must be capable of switching the heater "ON" and "OFF" at least two times per day. The time switch though electrically operated shall be capable of keeping time for a minimum 48 hours of electric power failure.	3	NO.		-
	Recirculation Pump				
E	Hot water Circulation pump As`GrundFos`Model No. UPS 200 Series with a capacity of 2m3/hr at 24m head water gauge. Complete with a **Temperature Differential Controller.** Or equal and approved	1	NO.		-
	Plumbing Works				
F	Allow for plumbing pipework and fittings to/from the Solar System to connect to the internal hot water supply plumbing pipework in the facility.	1	ITEM		-
	Pipework Insulation				
G	Allow for insulation for pipework, bends, tees and other fittings, to approval. The thermal conductivity of the insulate shall not exceed 0.033 W/m.K at 10°C mean.	1	ITEM		-
	Electrical Works				
H	Allow for all wiring to the pumps and sensors and any other electrical equipment. **Note:** Electrical supply shall be brought to within five metres of equipment	1	ITEM		-
	Total Cost for Solar Water Heating System C/F To ACCOMODATION BQ Main Collection Page				-

ACCOMODATION BQ MAIN COLLECTION PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	SANITARY FITTINGS INSTALLATIONS (6 Floors)	-
2.0	INTERNAL PLUMBING (6 Floors)	-
3.0	FOUL WATER INTERNAL DRAINAGE (6 Floors)	-
4.0	ROOF & TERRACE DRAINAGE	-
5.0	WATER STORAGE TANKS	-
6.0	EXTERNAL FOUL WATER DRAINAGE INSTALLATIONS	-
7.0	HOSEREEL SYSTEM	-
8.0	PORTABLE FIRE EXTINGUISHERS & ACCESSORIES	-
9.0	SOLAR WATER HEATING SYSTEM	-
	TOTAL FOR ACCOMODATION CARRIED TO BQ GRAND SUMMARY PAGE	**-**

BILL OF QUANTITIES
POLICE POST

BILL NO. 04: POLICE POST

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:				
1.0	**SANITARY FITTINGS** To be complete with all the necessary fittings and jointing. Where brand names are mentioned it is only inteded as a guide to the type and quality expected. Other equal and equivalent brands shall be accepted upon approval by the Engineer.				
A	**Water Closet - Pan**				
i)	Squatting Pan as TWYFORD "Nile Squatting Pan" Ref. WC3390WH, white in colour and in Vitreous China. WC pan to be complete with fixing accessories. or equal and approved.	6	NO.		-
	Water Closet - Flush Valve				
ii)	Water Closet - Flush Valve as DOCOL: Dual Flush Escutcheon Plate: C.P #00449506, chrome finish face plate. Complete with back entry flush pipe inlet connectors, and all other necessary fixing accessories. or equal and approved	6	NO.		-
	Toilet Roll Holder				
B	Wall mounted stainless steel toilet roll holder with cover and concealed fixings as TAPIS "D068070". Or equal and approved	6	NO.		-
	Robe / Coat Hook				
C	Dali: Robe Hook (Four), as DALI, Ref. No. EROBHK4001, chrome plated. or equal and approved.	6	NO.		-
D	**Wash Hand Basins**				
i)	Above the **counter wash hand basin** as DURASTYLE , Item No. BWHDRDUR37, of nominal size 600x380x120mm, white in colour, comprising of 1 center tap hole, 1 ¼ " waste fitting, 1 ¼ " chrome plated bottle trap or equal and approved.	4	NO.	-	-
ii)	**Wash Hand Taps** Push type tap as "TAPIS Delay Action Tap, Chrome plated, with back inlet. With flow restrictor (+ or - 3 seconds) of flow after button is pressed. or equal and approved.	4	NO.	-	-
iii)	**Towel Ring** Towel ring as Dali Ref No. BMA20 Chrome plated or equal and approved.	4	NO.	-	-
E	**Mirror** Plain size bevelled 6mm thick glass plate mirror size 600 x 800mm. Complete with foam lining and dome headed chrome plated fixing Screws	4	NO.	-	-
F	**Soap Dispenser** Wall mounted soap dispenser as "Tapis" with a capacity of 1,100ml and in AISI 304 Stainless Steel material, having a press action soap release mechanism complete with fixing screws. Allow for initial soap supply. or equal and approved.	4	NO.	-	-
	Total C/F to the Next Page				**-**

BILL NO. 04: POLICE POST

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total Brought Forward from Previous Page				-
G	**Paper Dispeser** Paper Dispenser as TAPIS in AISI 304 Stainless Steel material, with a capacity of 400-600 C/Z towels. or equla and approved	4	NO.	-	-
H	**Shower Fittings** Rain Shower head as TAPIS complete with concealed pipe work, a spout and 4 way wall mounted chrome plated shower mixer . Or equal and approved	4	NO.	-	-
I	**Towel Rail Bar** Towel Rail as Dali, 600mm towel bar Item Code: ETWLBAR156. or equal and approved	4	NO.	-	-
J	**Soap Dish** Soap Tray Holder as DALI Item Code: ESOPDS1325 chrome plated complete with wall fixings. Or equal and approved	4	NO.	-	-
K	**Waste Bins** Stainless steel pedal operated cylindrical bins with self-closing lid and foot operated. To have epoxy external finish for collection of tissue paper waste in washrooms and kitchenwaste. Shall be as Tramontina 94538730 or equivalent and of the following capacities:				
i)	5 Litres capacity for the Bathroom for hand tissue paper	4	NO.	-	-
L	**Urinal Components**				
i)	Urinal Bowl with back inlet as Duravit D-Code: Urinal Bowl: Concealed Inlet, White Model No. BWHDRDCO19 or approved equivalent	4	No.	-	-
ii)	25mm urinal bowl press type flush valve for the above urinal bowls complete with, back entry with integral vacuum breaker, self closing mechanism, non-hold-open features and nonreturn valve, inlet control stop and wall plate as Tapis or equal and approved.	4	No.	-	-
ii)	Urinal wall mounted division as DURAVIT, white in colour in Vitreous China, complete with fixings accessories. or equal and approved.	4	NO.		-
	Total for Sanitary Fittings C/F To POLICE POST BQ Main Collection Page				-

BILL NO. 04: POLICE POST

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
2.0	**INTERNAL PLUMBING**				
	PPRC Pipes - PN20				
	Supply, deliver and install Polypropylene Random Copolymer (PPRC) PN20 pipework to DIN 8077 with joints, couplings, reducers, tees, adaptors, pipe fixing clips etc all to DIN16962 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.				
A	**PPRC PN 20 PIPEWORK**				
i)	25mm diameter pipework	48	Lm		-
ii)	32mm diameter pipework	20	Lm		-
iii)	40mm diameter pipework	12	Lm		-
iv)	50mm diameter pipework	8	Lm		-
B	**Bends**				
i)	25mm diameter bend	16	No.		-
ii)	32mm diameter bend	8	No.		-
iii)	40mm diameter bend	6	No.		-
iv)	50mm diameter bend	2	No.		-
C	**Tees**				
i)	25mm equal tee	10	No.		-
ii)	32mm equal tee	8	No.		-
iii)	40mm equal tee	6	No.		-
iv)	50mm equal tee	4	No.		-
D	**Reducers**				
i)	32 x 25mm diameter reducer	8	No.		-
ii)	40 x 25mm diameter reducer	8	No.		-
iii)	40 x 32mm diameter reducer	6	No.		-
iv)	50 x 32mm diameter reducer	4	No.		-
v)	50 x 40mm diameter reducer	4	No.		-
E	**Male/Female Adapters (Brass threaded)**				
i)	20mm brass threaded adapter	12	No.		-
ii)	25mm brass threaded adapter	12	No.		-
iii)	32mm brass threaded adapter	8	No.		-
iv)	40mm brass threaded adapter	4	No.		-
					-
F	**Male/Female Bend (Brass threaded)**				-
i)	20mm brass threaded bend	8	No.		-
ii)	25mm brass threaded bend	6	No.		-
	Total C/F to Next Page				**-**

BILL NO. 04: POLICE POST

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total B/F from Previous Page				-
					-
G	**Threaded Brass Coupling**				-
i)	25mm threaded brass coupling	16	No.		-
ii)	32mm threaded brass coupling	14	No.		-
iii)	40mm threaded brass coupling	10	No.		-
iv)	50mm threaded brass coupling	8	No.		-
					-
H	**Valves**				-
i)	25mm gate valve	12	No.		-
ii)	32mm gate valve	4	No.		-
iii)	40mm gate valve	2	No.		-
iv)	50mm gate valve	2	No.		-
I	**Unions**				
i)	25mm diameter pipe union	18	No.		-
ii)	32mm diameter pipe union	14	No.		-
iii)	40mm diameter pipe union	10	No.		-
iv)	50mm diameter pipe union	6	No.		-
v)	65mm diameter pipe union	4	No.		-
vi)	75mm diameter pipe union	4	No.		-
J	**Splash Tap**				
	½ inch single back inlet Wall Type Star Head Bibtap as "Tapis: Ref. No. 622-2AC" With Hose Union; 13cm, Chrome Plated" The Biptap to be complete with threaded adaptors and all necessary fixing accessories. or equal and approved.	2	No.		-
K	**Pipe Sleeves**				
	100mm diameter heavy duty PVC pipe sleeves for crossing over columns, slabs and beams	6	Lm		-
L	**Flexible Tubing**				-
	15mm dia. x 300mm long flexible connectors complete with Corrossion resistant Stainless steel grade 316 angle valve	8	No		-
					-
M	**Water Meters**				-
	50mm diameter check water meters as kent or approved Equivalent	1	No.		-
N	**Sterilization, Testing and Commissioning**				-
	Allow for flushing out and sterilizing the whole system with chlorine and testing and commissioning of the plumbing and drainage installations to the satisfaction of the Engineer.	1	Item		-
	Total for Internal Plumbing C/F To POLICE POST BQ Main Collection Page				-

BILL NO. 04: POLICE POST

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
3.0	**INTERNAL FOUL WATER DRAINAGE** 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.				
A	**MuPVC and uPVC Waste and Soil pipework - Heavy Gauge Class 41.**				
i)	100mm diameter heavy gauge grey mUPVC pipe	40	Lm		-
ii)	50mm diameter waste pipe	24	Lm		-
iii)	40mm diameter waste pipe	16	Lm		-
iv)	32mm diameter waste pipe	4	Lm		-
B	**Bends**				-
i)	100mm diameter sweep bend	6	No.		-
ii)	50mm diameter sweep bend	6	No.		-
iii)	40mm diameter sweep bend	8	No.		-
C	**Tees**				-
i)	100mm diameter sweep tee	2	No.		-
ii)	50mm diameter sweep tee	2	No.		-
iii)	40mm diameter sweep tee	2	No.		-
iv)	32mm diameter sweep tee	0	No.		-
D	**Access Caps**				-
i)	100mm diameter access cap	6	No.		-
ii)	50mm diameter access cap	6	No.		-
iii)	40mm diameter access cap	4	No.		-
E	**Boss Connectors**				-
i)	100 x 50mm diameter boss connector	6	No.		-
ii)	100 x 40mm diameter boss connector	2	No.		-
F	**Single Branches**				-
i)	100mm diameter double branch	2	No.		-
ii)	100mm diameter Single branch	2	No.		-
G	**WC Connectors**				-
	100mm diameter WC connector	6	No.		-
H	**Traps**				-
	100 x 50mm diameter floor trap and stainless steel grating	8	No.		-
I	**Supporting Brackets**				-
	Allow for suitable supporting stainless steel grade316 brackets for anchoring and supporting drainage pipes bends on the Ground floor. To be painted to match the walling colour.	4	No.		-
	Total for Internal Drainage Foul water C/F To POLICE POST BQ Main Collection Page				-

BILL NO. 04: POLICE POST

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
4.0	**ROOF DRAINAGE** Supply and fix uPVC pipes to BS 4660 and BS 4515 and MuPVC pipes to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework & also where necessary, for pipe fixing clips, holder bats plugged & screwed for the proper & satisfactory functioning of the system.				
A	**Pipes**				
i)	150mm diameter heavy gauge grey mUPVC down pipes	48	Lm		-
B	**Bends**				
i)	150mm diameter 45 degrees bend	16	No.		-
iii)	150mm diameter sweep bend	8	No.		-
D	**Fulbora**				
i)	150mm diameter UPVC fulbora	8	No.		-
	Total for Roof Drainage C/F To POLICE POST BQ Main Collection Page				-

BILL NO. 04: POLICE POST

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
5.0	**WATER STORAGE TANKS**				
A	Supply, install and commission 1,000 liters plastic loftank as Kentank of dimensions 1,240 x 1,240 x 740 (LxWxH) mm	4	No.		-
	Total for Water Storage Tanks C/F To POLICE POST BQ Main Collection Page				-

BILL NO. 04: POLICE POST

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
6.0	**EXTERNAL FOUL WATER DRAINAGE INSTALLATIONS** 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.				
A	**Pipes**				
	a) 100mm dia UPVC Golden Brown pipe (heavy duty)	12	LM		-
	b) 150mm dia UPVC Golden Brown pipe (heavy duty)	40	LM		-
B	**Bends**				
	a) 100mm diameter UPVC bend with access	4	NO.		-
	b) 150mm diameter UPVC sweep bend	2	NO.		-
C	**Masonary Trap gulley**				
	450x450mm by 300mm deep masonary bult trap gully chamber complete with 100mm seat PVC gully trap.	4	NO.		-
D	**Inspection Chamber**				
	Standard 600 x 450 x (600-1000)mm inspection chamber complete with Cast Iron cover as made by East african Foundry or Equivalent.	4	NO.		-
E	**Weathering Slates and Vent Cowls**				-
i)	100mm diameter weathering slate and apron.	2	No.		-
ii)	100mm diameter vent cowl	2	No.		-
					-
	Total For External Foul Water Drainage C/F To POLICE POST BQ Main Collection Page				-

BILL NO. 04: POLICE POST

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
7.0	**HOSEREEL SYSTEM** **Supply, deliver, install, test and commission the following:** The pipe work for the hose reel installation shall be galvanized wrought steel tubing heavy grade Class B to B.S 1387: 1967 with pipe threads to B.S 21. The pipe work and all associated fittings shall be in approved colour for fire fittings. Tenderers must allow in pipework prices for all couplings, union, nipples, sockets, connectors, joints etc. in running lengths of pipes and also where necessary for fixing clips, holderbats plugged and screwed.				
A	**Pipework - GMS Class B to BS 1387**				
	i) 25mm GMS Pipe	4	LM		-
	ii) 50mm ditto	24	LM		-
B	**Elbow and Bends**				
	i) 25mm Bend/Elbows	2	NO.		-
	ii) 50mm ditto	4	NO.		-
C	**Tees**				
	i) 25mm Tees/Equal Tee	1	NO.		-
	ii) 50mm ditto	1	NO.		-
D	**Reducers**				
	i) 25x20mm Reducer	2	NO.		-
	ii) 50x25mm ditto	2	NO.		-
E	**Unions**				
	i) 25mm Union	2	NO.		-
	ii) 50mm ditto	6	NO.		-
F	**Sockets**				
	i) 25mm Socket	2	NO.		-
	ii) 50mm ditto	4	NO.		-
G	**Isolation Valves**				
	i) 25mm Isolation Valves	1	NO.		-
	ii) 50mm ditto	1	NO.		-
H	**Air Relief Valves**				
	i) 50mm Air Relief Valves as CRANE	1	NO.		-
					-
	Total C/F to Next Page				-

BILL NO. 04: POLICE POST

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total B/F from the Previous Page				-
I	**Hosereels** Swinging type hosereel complete with 30m long hose of 20mm diameter, 25mm internal diameter rubber fire hose with nylon spray/jet and shut off nozzle, and mounting brackets conforming to BS 5274	1	No.		-
J	**Hosereel Pipework Painting** Wire brush, clean and paint complete installation with one coat of red oxide primer, under coat and gloss coat inclunding banding and colour coding to British standards	1	ITEM		-
K	**Hosereel Pumps** Fire Booster set (2 No. Pumps), duty and standby complete with the following:- 2 No. automatic electrical motor driven fire water pumps with a capacity of 2m3/hr at 4 bar and air pressure vessel. Automatic electrical control panel as per specification for above pumps. Base frame with anti-vibration mountings. All other necessary items for booster set as Dayliff or approved equivalent.	1	SET		-
L	**Cabinets for Hose Reel, Fire Equipment** Supply and install recessed vertical type cabinet to accommodate Fire hosereel, landing valve & fire extinguishers manufactured to comply with BSEN 671-1. The cabinet to be made of electro galvanised sheet and LPCB	1	No.		-
M	**Control Panel** Control panel for above pumps with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer, 80 meters long float switch control 4-core cable to the roof tanks, start/stop push buttons and indicator lights. All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet that is oven powder coated. There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to not more than 6 per hour. It should include a change-over switch to enable the pumps to work alternately.	1	No.		-
N	**Electrical Works** Allow for electrical works wiring and fitting to all pumps, control panel and float switches, from isolator provided by others with 3 metres distance.	1	Item		-
	Total for Hosereel System C/F To POLICE POST BQ Main Collection Page				-

BILL NO. 04: POLICE POST

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
8.0	**PORTABLE FIRE EXTINGUISHERS & ACCESSORIES** **Supply, deliver, install, test and commission the following:**				
A	5 Kg carbon dioxide gas fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	4	NO.	-	-
B	6 Kg dry powder fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	4	NO.	-	-
C	9 Ltr water fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	4	NO.	-	-
D	Fire Safety Signage, Fire Point signs and Fire Action Plan signs, to Engineer's approval.	4	NO.	-	-
E	9" (225mm) manual operated alarm bell (Gong)	1	NO.	-	-
F	Fire Blanket, 1.8m x1.8m	0	NO.	-	-
G	**Dry Chemical Powder Fire Extinguisher**			-	-
	6kg dry chemical podwer portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	0	No	-	-
	Total for Portable Extinguishers C/F To POLICE POST BQ Main Collection Page				-

POLICE POST BQ MAIN COLLECTION PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	SANITARY FITTINGS	-
2.0	INTERNAL PLUMBING	-
3.0	INTERNAL FOUL WATER DRAINAGE	-
4.0	ROOF DRAINAGE	-
5.0	WATER STORAGE TANKS	-
6.0	EXTERNAL FOUL WATER DRAINAGE INSTALLATIONS	-
7.0	HOSEREEL SYSTEM	-
8.0	PORTABLE FIRE EXTINGUISHERS & ACCESSORIES	-
	TOTAL FOR POLICE POST CARRIED TO BQ GRAND SUMMARY PAGE	**-**

BILL OF QUANTITIES
CIT LOUNGE

BILL NO. 05: CIT LOUNGE

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:				
1.0	**SANITARY FITTINGS** To be complete with all the necessary fittings and jointing. Where brand names are mentioned it is only inteded as a guide to the type and quality expected. Other equal and equivalent brands shall be accepted upon approval by the Engineer.				
A	**Water Closet - Pan**				
i)	Squatting Pan as TWYFORD "Nile Squatting Pan" Ref. WC3390WH, white in colour and in Vitreous China. WC pan to be complete with fixing accessories. or equal and approved.	2	NO.		-
	Water Closet - Flush Valve				
ii)	Water Closet - Flush Valve as DOCOL: Dual Flush Escutcheon Plate: C.P #00449506, chrome finish face plate. Complete with back entry flush pipe inlet connectors, and all other necessary fixing accessories. or equal and approved	2	NO.		-
	Toilet Roll Holder				
B	Wall mounted stainless steel toilet roll holder with cover and concealed fixings as TAPIS "D068070". Or equal and approved	2	NO.		-
	Robe / Coat Hook				
C	Dali: Robe Hook (Four), as DALI, Ref. No. EROBHK4001, chrome plated. or equal and approved.	2	NO.		-
D	**Wash Hand Basins**				
i)	Above the **counter wash hand basin** as DURASTYLE , Item No. BWHDRDUR37, of nominal size 600x380x120mm, white in colour, comprising of 1 center tap hole, 1 ¼ " waste fitting, 1 ¼ " chrome plated bottle trap or equal and approved.	2	NO.		-
ii)	**Wash Hand Taps** Push type tap as "TAPIS Delay Action Tap, Chrome plated, with back inlet. With flow restrictor (+ or - 3 seconds) of flow after button is pressed. or equal and approved.	2	NO.		-
iii)	**Towel Ring** Towel ring as Dali Ref No. BMA20 Chrome plated or equal and approved.	2	NO.		-
E	**Mirror** Plain size bevelled 6mm thick glass plate mirror size 600 x 800mm. Complete with foam lining and dome headed chrome plated fixing Screws	2	NO.		-
F	**Soap Dispenser** Wall mounted soap dispenser as "Tapis" with a capacity of 1,100ml and in AISI 304 Stainless Steel material, having a press action soap release mechanism complete with fixing screws. Allow for initial soap supply. or equal and approved.	2	NO.		-
	Total C/F to the Next Page				**-**

BILL NO. 05: CIT LOUNGE

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total Brought Forward from Previous Page				-
G	**Paper Dispenser** Paper Dispenser as "Tapis" in AISI 304 Stainless Steel material, with a capacity of 400-600 C/Z towels. or equally and approved	2	NO.		-
H	**Waste Bins** Stainless steel pedal operated cylindrical bins with self-closing lid and foot operated. To have epoxy external finish for collection of tissue paper waste in washrooms and kitchenwaste. Shall be as Tramontina 94538730 or equivalent and of the following capacities:				
i)	5 Litres capacity for the Bathroom for hand tissue paper	2	NO.		-
I	**Urinal Components**				
i)	Urinal Bowl with back inlet as Duravit D-Code: Urinal Bowl: Concealed Inlet, White Model No. BWHDRDCO19 or approved equivalent	2	No.		-
ii)	25mm urinal bowl press type flush valve for the above urinal bowls complete with, back entry with integral vacuum breaker, self closing mechanism, non-hold-open features and nonreturn valve, inlet control stop and wall plate as Tapis or equal and approved.	2	No.		-
ii)	Urinal wall mounted division as DURAVIT, white in colour in Vitreous China, complete with fixings accessories. or equal and approved.	2	NO.		-
	Total for Sanitary Fittings C/F To CIT LOUNGE BQ Main Collection Page				-

BILL NO. 05: CIT LOUNGE

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
2.0	**INTERNAL PLUMBING** **PPRC Pipes - PN20** Supply, deliver and install Polypropylene Random Copolymer (PPRC) PN20 pipework to DIN 8077 with joints, couplings, reducers, tees, adaptors, pipe fixing clips etc all to DIN16962 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.				
A	**PPRC PN 20 PIPEWORK**				
i)	25mm diameter pipework	24	Lm		-
ii)	32mm diameter pipework	18	Lm		-
iii)	40mm diameter pipework	12	Lm		-
B	**Bends**				
i)	25mm diameter bend	8	No.		-
ii)	32mm diameter bend	8	No.		-
iii)	40mm diameter bend	8	No.		-
C	**Tees**				
i)	25mm equal tee	6	No.		-
ii)	32mm equal tee	4	No.		-
iii)	40mm equal tee	4	No.		-
D	**Reducers**				
i)	32 x 25mm diameter reducer	6	No.		-
ii)	40 x 25mm diameter reducer	4	No.		-
iii)	40 x 32mm diameter reducer	4	No.		-
E	**Male/Female Adapters (Brass threaded)**				
i)	20mm brass threaded adapter	8	No.		-
ii)	25mm brass threaded adapter	6	No.		-
iii)	32mm brass threaded adapter	4	No.		-
iv)	40mm brass threaded adapter	4	No.		-
	Total C/F to Next Page				**-**

BILL NO. 05: CIT LOUNGE

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total B/F from Previous Page				-
					-
F	**Male/Female Bend (Brass threaded)**				-
i)	20mm brass threaded bend	4	No.		-
ii)	25mm brass threaded bend	4	No.		-
					-
G	**Threaded Brass Coupling**				-
i)	25mm threaded brass coupling	4	No.		-
ii)	32mm threaded brass coupling	4	No.		-
iii)	40mm threaded brass coupling	4	No.		-
					-
H	**Valves**				-
i)	25mm gate valve	4	No.		-
ii)	32mm gate valve	2	No.		-
iii)	40mm gate valve	1	No.		-
I	**Unions**				
i)	25mm diameter pipe union	8	No.		-
ii)	32mm diameter pipe union	6	No.		-
iii)	40mm diameter pipe union	4	No.		-
J	**Splash Tap**				
	½ inch single back inlet Wall Type Star Head Bibtap as "Tapis: Ref. No. 622-2AC" With Hose Union; 13cm, Chrome Plated" The Biptap to be complete with threaded adaptors and all necessary fixing accessories. or equal and approved.	1	No.		-
K	**Pipe Sleeves**				
	100mm diameter heavy duty PVC pipe sleeves for crossing over columns, slabs and beams	6	Lm		-
L	**Flexible Tubing**				-
	15mm dia. x 300mm long flexible connectors complete with Corrossion resistant Stainless steel grade 316 angle valve	4	No		-
					-
M	**Water Meters**				-
	50mm diameter check water meters as kent or approved Equivalent	1	No.		-
N	**Sterilization, Testing and Commissioning**				-
	Allow for flushing out and sterilizing the whole system with chlorine and testing and commissioning of the plumbing and drainage installations to the satisfaction of the Engineer.	1	Item		-
	Total for Internal Plumbing C/F To CIT LOUNGE BQ Main Collection Page				-

BILL NO. 05: CIT LOUNGE

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
3.0	**INTERNAL FOUL WATER DRAINAGE** 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.				
A	**MuPVC and uPVC Waste and Soil pipework - Heavy Gauge Class 41.**				
i)	100mm diameter heavy gauge grey mUPVC pipe	24	Lm		-
ii)	50mm diameter waste pipe	12	Lm		-
iii)	40mm diameter waste pipe	8	Lm		-
iv)	32mm diameter waste pipe	4	Lm		-
B	**Bends**				-
i)	100mm diameter sweep bend	4	No.		-
ii)	50mm diameter sweep bend	4	No.		-
iii)	40mm diameter sweep bend	2	No.		-
C	**Tees**				-
i)	100mm diameter sweep tee	2	No.		-
ii)	50mm diameter sweep tee	2	No.		-
iii)	40mm diameter sweep tee	2	No.		-
D	**Access Caps**				-
i)	100mm diameter access cap	2	No.		-
ii)	50mm diameter access cap	2	No.		-
iii)	40mm diameter access cap	2	No.		-
E	**WC Connectors**				-
	100mm diameter WC connector	2	No.		-
F	**Traps**				-
	100 x 50mm diameter floor trap and stainless steel grating	2	No.		-
G	**Inspection Chamber**				-
	Standard 600 x 450 x (600-1000)mm inspection chamber complete with Cast Iron cover as made by East african Foundry or Equivalent.	4	No.		-
H	**Masonary Trap gulley**				-
	450x450mm by 300mm deep masonary bult trap gully chamber complete with 100mm seat PVC gully trap.	2	No.		-
I	**Weathering Slates and Vent Cowls**				-
i)	100mm diameter weathering slate and apron.	2	No.		-
ii)	100mm diameter vent cowl	2	No.		-
J	**Supporting Brackets**				-
	Allow for suitable supporting stainless steel grade316 brackets for anchoring and supporting drainage pipes bends on the Ground floor. To be painted to match the walling colour.	3	No.		-
	Total for Internal Drainage Foul water C/F To CIT LOUNGE BQ Main Collection Page				-

BILL NO. 05: CIT LOUNGE

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
4.0	**ROOF DRAINAGE** Supply and fix uPVC pipes to BS 4660 and BS 4515 and MuPVC pipes to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework & also where necessary, for pipe fixing clips, holder bats plugged & screwed for the proper & satisfactory functioning of the system.				
A	**Pipes**				
i)	150mm diameter heavy gauge grey mUPVC down pipes	24	Lm		-
B	**Bends**				
i)	150mm diameter 45 degrees bend	8	No.		-
ii)	150mm diameter sweep bend	4	No.		- -
C	**Fulbora**				
i)	150mm diameter UPVC fulbora	4	No.		-
	Total for Roof and Terrace Drainage C/F To CIT LOUNGE BQ Main Collection Page				-

BILL NO. 05: CIT LOUNGE

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
5.0	**WATER STORAGE TANKS**				
A	Supply, install and commission 1,000 liters plastic loftank as Kentank of dimensions 1,240 x 1,240 x 740 (LxWxH) mm	2	No.		-
	Total for Water Storage Tanks C/F To CIT LOUNGE BQ Main Collection Page				-

BILL NO. 05: CIT LOUNGE

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
6.0	**PORTABLE FIRE EXTINGUISHERS & ACCESSORIES** **Supply, deliver, install, test and commission the following:**				
A	5 Kg carbon dioxide gas fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	NO.	-	-
B	6 Kg dry powder fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	NO.	-	-
C	9 Ltr water fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	NO.	-	-
D	Fire Safety Signage, Fire Point signs and Fire Action Plan signs, to Engineer's approval.	2	NO.	-	-
E	9" (225mm) manual operated alarm bell (Gong)	1	NO.	-	-
	Total for Portable Extinguishers C/F To CIT LOUNGE Main Collection Page				-

CIT LOUNGE BQ MAIN COLLECTION PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	SANITARY FITTINGS	-
2.0	INTERNAL PLUMBING	-
3.0	INTERNAL FOUL WATER DRAINAGE	-
4.0	ROOF DRAINAGE	-
5.0	WATER STORAGE TANKS	-
6.0	PORTABLE FIRE EXTINGUISHERS & ACCESSORIES	-
	TOTAL FOR CIT LOUNGE CARRIED TO BQ GRAND SUMMARY PAGE	**-**

BILL OF QUANTITIES
GATE HOUSES

BILL NO. 06: GATE HOUSES

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:				
1.0	**SANITARY FITTINGS** To be complete with all the necessary fittings and jointing. Where brand names are mentioned it is only inteded as a guide to the type and quality expected. Other equal and equivalent brands shall be accepted upon approval by the Engineer.				
A	**Water Closet - Pan**				
i)	Squatting Pan as TWYFORD "Nile Squatting Pan" Ref. WC3390WH, white in colour and in Vitreous China. WC pan to be complete with fixing accessories. or equal and approved.	3	NO.		-
	Water Closet - Flush Valve				
ii)	Water Closet - Flush Valve as DOCOL: Dual Flush Escutcheon Plate: C.P #00449506, chrome finish face plate. Complete with back entry flush pipe inlet connectors, and all other necessary fixing accessories. or equal and approved	3	NO.		-
	Toilet Roll Holder				
B	Wall mounted stainless steel toilet roll holder with cover and concealed fixings as TAPIS "D068070". Or equal and approved	3	NO.		-
	Robe / Coat Hook				
C	Dali: Robe Hook (Four), as DALI, Ref. No. EROBHK4001, chrome plated. or equal and approved.	3	NO.		-
D	**Wash Hand Basins**				
i)	Above the **counter wash hand basin** as DURASTYLE , Item No. BWHDRDUR37, of nominal size 600x380x120mm, white in colour, comprising of 1 center tap hole, 1 ¼ " waste fitting, 1 ¼ " chrome plated bottle trap or equal and approved.	3	NO.		-
ii)	**Wash Hand Taps** Push type tap as "TAPIS Delay Action Tap, Chrome plated, with back inlet. With flow restrictor (+ or - 3 seconds) of flow after button is pressed. or equal and approved.	3	NO.		-
iii)	**Towel Ring** Towel ring as Dali Ref No. BMA20 Chrome plated or equal and approved.	3	NO.		-
E	**Mirror** Plain size bevelled 6mm thick glass plate mirror size 600 x 800mm. Complete with foam lining and dome headed chrome plated fixing Screws	3	NO.		-
F	**Soap Dispenser** Wall mounted soap dispenser as "Tapis" with a capacity of 1,100ml and in AISI 304 Stainless Steel material, having a press action soap release mechanism complete with fixing screws. Allow for initial soap supply. or equal and approved.	3	NO.		-
	Total C/F to the Next Page				**-**

BILL NO. 06: GATE HOUSES

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total Brought Forward from Previous Page				-
G	**Paper Dispenser** Paper Dispenser as "Tapis" in AISI 304 Stainless Steel material, with a capacity of 400-600 C/Z towels. or equally and approved	3	NO.		-
H	**Waste Bins** Stainless steel pedal operated cylindrical bins with self-closing lid and foot operated. To have epoxy external finish for collection of tissue paper waste in washrooms and kitchenwaste. Shall be as Tramontina 94538730 or equivalent and of the following capacities:				
i)	5 Litres capacity for the Bathroom for hand tissue paper	3	NO.		-
I	**Urinal Components**				
i)	Urinal Bowl with back inlet as Duravit D-Code: Urinal Bowl: Concealed Inlet, White Model No. BWHDRDCO19 or approved equivalent	3	No.		-
ii)	25mm urinal bowl press type flush valve for the above urinal bowls complete with, back entry with integral vacuum breaker, self closing mechanism, non-hold-open features and nonreturn valve, inlet control stop and wall plate as Tapis or equal and approved.	3	No.		-
ii)	Urinal wall mounted division as DURAVIT, white in colour in Vitreous China, complete with fixings accessories. or equal and approved.	3	NO.		-
	Total for Sanitary Fittings C/F To GATE HOUSES BQ Main Collection Page				-

BILL NO. 06: GATE HOUSES

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
2.0	**INTERNAL PLUMBING** **PPRC Pipes - PN20** Supply, deliver and install Polypropylene Random Copolymer (PPRC) PN20 pipework to DIN 8077 with joints, couplings, reducers, tees, adaptors, pipe fixing clips etc all to DIN16962 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.				
A	**PPRC PN 20 PIPEWORK**				
i)	25mm diameter pipework	28	Lm		-
ii)	32mm diameter pipework	20	Lm		-
iii)	40mm diameter pipework	16	Lm		-
B	**Bends**				
i)	25mm diameter bend	8	No.		-
ii)	32mm diameter bend	8	No.		-
iii)	40mm diameter bend	8	No.		-
C	**Tees**				
i)	25mm equal tee	6	No.		-
ii)	32mm equal tee	4	No.		-
iii)	40mm equal tee	4	No.		-
D	**Reducers**				
i)	32 x 25mm diameter reducer	6	No.		-
ii)	40 x 25mm diameter reducer	4	No.		-
iii)	40 x 32mm diameter reducer	4	No.		-
E	**Male/Female Adapters (Brass threaded)**				
i)	20mm brass threaded adapter	8	No.		-
ii)	25mm brass threaded adapter	6	No.		-
iii)	32mm brass threaded adapter	4	No.		-
iv)	40mm brass threaded adapter	4	No.		-
	Total C/F to Next Page				**-**

BILL NO. 06: GATE HOUSES

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Total B/F from Previous Page				-
					-
F	**Male/Female Bend (Brass threaded)**				-
i)	20mm brass threaded bend	6	No.		-
ii)	25mm brass threaded bend	6	No.		-
					-
G	**Threaded Brass Coupling**				-
i)	25mm threaded brass coupling	4	No.		-
ii)	32mm threaded brass coupling	4	No.		-
iii)	40mm threaded brass coupling	4	No.		-
					-
H	**Valves**				-
i)	25mm gate valve	4	No.		-
ii)	32mm gate valve	2	No.		-
iii)	40mm gate valve	1	No.		-
I	**Unions**				
i)	25mm diameter pipe union	8	No.		-
ii)	32mm diameter pipe union	6	No.		-
iii)	40mm diameter pipe union	4	No.		-
J	**Splash Tap**				
	½ inch single back inlet Wall Type Star Head Bibtap as "Tapis: Ref. No. 622-2AC" With Hose Union; 13cm, Chrome Plated" The Biptap to be complete with threaded adaptors and all necessary fixing accessories. or equal and approved.	3	No.		-
K	**Pipe Sleeves**				
	100mm diameter heavy duty PVC pipe sleeves for crossing over columns, slabs and beams	6	Lm		-
L	**Flexible Tubing**				-
	15mm dia. x 300mm long flexible connectors complete with Corrossion resistant Stainless steel grade 316 angle valve	6	No		-
					-
M	**Water Meters**				-
	50mm diameter check water meters as kent or approved Equivalent	1	No.		-
N	**Sterilization, Testing and Commissioning**				-
	Allow for flushing out and sterilizing the whole system with chlorine and testing and commissioning of the plumbing and drainage installations to the satisfaction of the Engineer.	1	Item		-
	Total for Internal Plumbing C/F To GATE HOUSES BQ Main Collection Page				-

BILL NO. 06: GATE HOUSES

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
3.0	**INTERNAL FOUL WATER DRAINAGE** 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.				
A	**MuPVC and uPVC Waste and Soil pipework - Heavy Gauge Class 41.**				
i)	100mm diameter heavy gauge grey mUPVC pipe	42	Lm		-
ii)	50mm diameter waste pipe	16	Lm		-
iii)	40mm diameter waste pipe	8	Lm		-
iv)	32mm diameter waste pipe	4	Lm		-
B	**Bends**				-
i)	100mm diameter sweep bend	4	No.		-
ii)	50mm diameter sweep bend	4	No.		-
iii)	40mm diameter sweep bend	2	No.		-
C	**Tees**				-
i)	100mm diameter sweep tee	2	No.		-
ii)	50mm diameter sweep tee	2	No.		-
iii)	40mm diameter sweep tee	2	No.		-
D	**Access Caps**				-
i)	100mm diameter access cap	3	No.		-
ii)	50mm diameter access cap	3	No.		-
iii)	40mm diameter access cap	3	No.		-
E	**WC Connectors**				-
	100mm diameter WC connector	3	No.		-
F	**Traps**				-
	100 x 50mm diameter floor trap and stainless steel grating	3	No.		-
G	**Inspection Chamber**				-
	Standard 600 x 450 x (600-1000)mm inspection chamber complete with Cast Iron cover as made by East african Foundry or Equivalent.	6	No.		-
H	**Masonary Trap gulley**				-
	450x450mm by 300mm deep masonary bult trap gully chamber complete with 100mm seat PVC gully trap.	2	No.		-
I	**Weathering Slates and Vent Cowls**				-
i)	100mm diameter weathering slate and apron.	3	No.		-
ii)	100mm diameter vent cowl	3	No.		-
J	**Supporting Brackets**				-
	Allow for suitable supporting stainless steel grade316 brackets for anchoring and supporting drainage pipes bends on the Ground floor. To be painted to match the walling colour.	3	No.		-
	Total for Internal Drainage Foul water C/F To GATE HOUSES BQ Main Collection Page				-

BILL NO. 06: GATE HOUSES

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
4.0	**ROOF DRAINAGE** Supply and fix uPVC pipes to BS 4660 and BS 4515 and MuPVC pipes to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework & also where necessary, for pipe fixing clips, holder bats plugged & screwed for the proper & satisfactory functioning of the system.				
A	**Pipes**				
i)	150mm diameter heavy gauge grey mUPVC down pipes	48	Lm		-
B	**Bends**				
i)	150mm diameter 45 degrees bend	24	No.		-
ii)	150mm diameter sweep bend	12	No.		- -
C	**Fulbora**				
i)	150mm diameter UPVC fulbora	12	No.		-
	Total for Roof and Terrace Drainage C/F To GATE HOUSES BQ Main Collection Page				-

BILL NO. 06: GATE HOUSES

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
5.0	**WATER STORAGE TANKS**				
A	Supply, install and commission 1,000 liters plastic loftank as Kentank of dimensions 1,240 x 1,240 x 740 (LxWxH) mm	3	No.		-
	Total for Water Storage Tanks C/F To GATE HOUSES BQ Main Collection Page				-

BILL NO. 06: GATE HOUSES

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
6.0	**PORTABLE FIRE EXTINGUISHERS & ACCESSORIES** **Supply, deliver, install, test and commission the following:**				
A	5 Kg carbon dioxide gas fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	3	NO.	-	-
B	6 Kg dry powder fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	3	NO.	-	-
C	9 Ltr water fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	3	NO.	-	-
D	Fire Safety Signage, Fire Point signs and Fire Action Plan signs, to Engineer's approval.	3	NO.	-	-
E	9" (225mm) manual operated alarm bell (Gong)	3	NO.	-	-
	Total for Portable Extinguishers C/F To GATE HOUSES BQ Main Collection Page				-

GATE HOUSE BQ MAIN COLLECTION PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	SANITARY FITTINGS	-
2.0	INTERNAL PLUMBING	-
3.0	INTERNAL FOUL WATER DRAINAGE	-
4.0	ROOF DRAINAGE	-
5.0	WATER STORAGE TANKS	-
6.0	PORTABLE FIRE EXTINGUISHERS & ACCESSORIES	-
	TOTAL FOR GATE HOUSES TO BQ GRAND SUMMARY PAGE	**-**

BILL OF QUANTITIES
POWER HOUSE

BILL NO. 07: POWER HOUSE

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
1.0	**INTERNAL DRAINAGE** 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.				
A	**MuPVC and uPVC Waste and Soil pipework - Heavy Gauge Class 41.**				
i)	100mm diameter heavy gauge grey mUPVC pipe	12	Lm		-
B	**Bends**				-
i)	100mm diameter sweep bend	2	No.		-
C	**Tees**				-
i)	100mm diameter sweep tee	2	No.		-
D	**Access Caps**				-
i)	100mm diameter access cap	2	No.		-
E	**Pit Traps**				-
	300 x 300mm pit traps with a stainless steel grating	2	No.		-
F	**Inspection Chamber**				-
	Standard 600 x 450 x (600-1000)mm inspection chamber complete with Cast Iron cover as made by East african Foundry or Equivalent.	1	No.		-
G	**Masonary Trap gulley**				-
	450x450mm by 300mm deep masonary bult trap gully chamber complete with 100mm seat PVC gully trap.	1	No.		-
H	**Weathering Slates and Vent Cowls**				-
i)	100mm diameter weathering slate and apron.	1	No.		-
ii)	100mm diameter vent cowl	1	No.		-
I	**Supporting Brackets**				-
	Allow for suitable supporting stainless steel grade316 brackets for anchoring and supporting drainage pipes bends on the Ground floor. To be painted to match the walling colour.	2	No.		-
J	**Light liquid/Oil separator**				-
	Supply and install Light Liquid/ oil Separator for below ground installation of capacity 1m3 as ACO or equally approved & manufactured in accordance with EN858. The oil separator to be of dimensions 1,594mm high and a diameter of 1,100mm, complete with an inlet and outlet pipe of 100mm nominal diameter, a cast iron cover and all the necessary ACCESSORIES	1	No.		-
	Total for Internal Drainage C/F To POWER HOUSE BQ Main Collection Page				**-**

BILL NO. 07: POWER HOUSE

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
2.0	**ROOF DRAINAGE** Supply and fix uPVC pipes to BS 4660 and BS 4515 and MuPVC pipes to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework & also where necessary, for pipe fixing clips, holder bats plugged & screwed for the proper & satisfactory functioning of the system.				
A	**Pipes**				
i)	150mm diameter heavy gauge grey mUPVC down pipes	36	Lm		-
B	**Bends**				
i)	150mm diameter 45 degrees bend	12	No.		-
ii)	150mm diameter sweep bend	6	No.		- -
C	**Fulbora**				
i)	150mm diameter UPVC fulbora	6	No.		-
i)	100mm diameter UPVC fulbora	0	No.		-
	Total for Roof Drainage C/F To POWER HOUSE BQ Main Collection Page				-

BILL NO. 07: POWER HOUSE

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
3.0	**PORTABLE FIRE EXTINGUISHERS & ACCESSORIES**				
	Supply, deliver, install, test and commission the following:				
A	5 Kg carbon dioxide gas fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	12	NO.		-
B	6 Kg dry powder fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	12	NO.		-
C	9 Ltr water fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	12	NO.		-
D	Fire Safety Signage, Fire Point signs and Fire Action Plan signs, to Engineer's approval.	12	NO.		-
E	9" (225mm) manual operated alarm bell (Gong)	1	NO.		-
F	**Automatic Dry Chemical Powder Fire Extinguisher**				-
	12kg dry chemical podwer fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	8	No		-
G	**Automatic Foam Fire Extinguisher**				-
	12kg foam fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		-
	Total for Portable Extinguishers C/F To POWER HOUSE BQ Main Collection Page				-

POWER HOUSE BQ MAIN COLLECTION PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	INTERNAL DRAINAGE	-
2.0	ROOF DRAINAGE	-
3.0	PORTABLE FIRE EXTINGUISHERS & ACCESSORIES	-
	TOTAL FOR POWER HOUSE CARRIED TO BQ GRAND SUMMARY PAGE	**-**

BILL OF QUANTITIES
EXTERNAL WATER STORAGE TANKS

BILL NO. 08: BULK WATER STORAGE TANKS INSTALLATIONS

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	WATER STORAGE TANKS				
A	**Supply, install and commission Galvanized Pressed Steel Tanks to EN 10088-1:2005, panels according to BS1564:1975 and plates according to BS EN 10240. The tanks to be complete with the following:-**				
	*1,000 x 6mm thick steel plate *Galvanized Steel Internal & External ladders to BS 4211 *Steel bearers *Water level indicator *100mm dia overflow *100mm dia washout and gate valves *100mm diameter vent with mosquito net *Flanged 75mmØ inlet pipe connection with high pressure ball valve/float switch *100mmØ flanged outlet pipe connectors for domestic water with gate valve *150mmØ flanged outlet pipe connectors for fire fightinginstallations with a gate valve *50mmØ flanged outlet pipe connectors for hosereel installation with a gate valve				
i)	**Ground Level Water Storage Tank**				
	507,000 Litres Treated Water Storage Tank of 13,000 x 13,000 x 3,000 mm	0	No		-
					-
ii)	**Elevated Water Storage Tank complete with the tower structure**				
	210,000 Litres Treated Water Storage Tank of 10,000 x7,000 x 3,000 mm The tank to be installed on 30m high painted tower complete with all necessary tower accessories	1	No		-
	TOTAL FOR WATER STORAGE TANKS CARRIED TO BQ GRAND SUMMARY PAGE				**-**

BILL OF QUANTITIES
EXTERNAL RETICULATION

BILL NO. 09: DOMESTIC WATER BOOSTER PUMPS & WATER RETICULATION INSTALLATIONS

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
1.0	**DOMESTIC WATER BOOSTER PUMPS & WATER RETICULATION INSTALLATIONS** **Supply, deliver, install test and commission the following:**				
A	**Water Booster Pump** Automatic electrically driven booster pump capable of delivering 20m³/hr against a head of 30 meters with a Single phase power source.The pump to be as Grundfos or approved equivalent. Pump installation to include pressure switches, time delay switch, a switch to protect against dry run, timer, gate valves, inline strainer and non-return valves. Control panel for above pump with contactors, over voltage and under voltage protection relays, MCBs, timer, start/stop push buttons, internal buttons, 'running' and 'trip' neon lights control system and button for for change from automatic to manual operation. All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet that is oven powder coated . There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to maimum six hours per day, cables, low level cut-out switch in low level tank and regulator. NB: The pumpset shall be supplied with the	1	SET		-
B	**Control Panel** Control panel for above pumps with contactors, over voltage and under voltage protection relays, MCBs, timer, start/stop push buttons, internal buttons with automatic changeover, 'running' and 'trip' neon lights control system and button for change from automatic to manual operation. There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to not more than 6 per hour, float switch cable, low level cut-out switch in low level tank and regulator.	1	NO.		-
	Total Carried Forward to the Next Page				**-**

BILL NO. 09: DOMESTIC WATER BOOSTER PUMPS & WATER RETICULATION INSTALLATIONS

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total Brought Forward from the Previous Page				-
	WATER RETICULATION PIPEWORK Supply of HDPE, PN 20 materials - All Polyethylene material shall be 16.0 KG/SQ.CM (unless otherwise stated) suitable for butt fusion jointing and the rate shall include for supply and delivery to the work site of all pipes, jointing fittings & specials including all other associated accessories (to suite PN 16 flange), required for complete installation to relevant local standards. Or approved equivalent				
A	**HDPE Pipes**				
	i) 50mm HDPE Pipes	112	LM		-
	ii) 63mm ditto	360	LM		-
	iii) 75mm ditto	110	LM		-
	iv) 90mm ditto	380	LM		-
	v) 100mm ditto	50	LM		-
B	**Elbow and Bends**				
	i) 50mm Bend/Elbows	60	NO.		-
	ii) 63mm ditto	80	NO.		-
	iii) 75mm ditto	32	NO.		-
	iv) 90mm ditto	68	NO.		-
	iv) 100mm ditto	10	NO.		-
C	**Tees**				
	i) 50mm Tees/Equal Tee	12	NO.		-
	ii) 63mm ditto	10	NO.		-
	iii) 75mm ditto	10	NO.		-
	iv) 90mm ditto	8	NO.		-
	v) 100mm ditto	4	NO.		-
D	**Reducers**				
	i) 50x40mm Reducer	12	NO.		-
	ii) 63x50mm ditto	8	NO.		-
	iii) 75x63mm ditto	8	NO.		-
	iv) 90x75mm ditto	6	NO.		-
	v) 100x75mm ditto	4	NO.		-
	vi) 100x90mm ditto	4	NO.		-
E	**Unions**				
	i) 50mm diameter Union	26	NO.		-
	ii) 63mm ditto	88	NO.		-
	iii) 75mm ditto	28	NO.		-
	iv) 100mm ditto	90	NO.		-
F	**Sockets**				
	i) 50mm Socket	20	NO.		-
	ii) 63mm ditto	74	NO.		-
	iii) 75mm ditto	18	NO.		-
	iv) 100mm ditto	38	NO.		-
	Total Carried Forward to the Next Page				-

BILL NO. 09: DOMESTIC WATER BOOSTER PUMPS & WATER RETICULATION INSTALLATIONS

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Total Brought Forward from the Previous Page				-
G	**Male/Female Adaptors**				
	i) 50x40mm Male/Female Adaptor	18	NO.		-
	ii) 63x50mm ditto	32	NO.		-
	iii) 75x63mm ditto	16	NO.		-
	iv) 100x75mm ditto	32	NO.		-
H	**Isolation Valves**				
	i) 50mm Isolation Valves	10	NO.		-
	ii) 63mm ditto	10	NO.		-
	iii) 75mm ditto	6	NO.		-
	iv) 100mm ditto	2	NO.		-
I	**Pressure Reducing Valves (PRV)**				
	i) 25mm PRV	2	NO.		-
	ii) 32mm ditto	2	NO.		-
	iii) 40mm ditto	2	NO.		-
	iv) 50mm ditto	2	NO.		-
J	**Stand Pipe** Chrome plated 15mm diameter hose bib tap suitable for connecting hose pipe complete with threaded adaptors. The tap to be complete with 1meter long 20mm diameter GMS pipe class B, bends support, etc.	15	NO.		-
K	**Excavation** Excavate trench for HDPE & fire hydrant water reticulation pipework not exceeding 1500mm depth and 750mm width on average, part refill and ram, and surplus cart away.	1,012	LM		-
L	**Water Line Markers** Standard pre-cast concrete water line marker, post marked "WL", set in concrete (1:3:6) base, including form work, excavations, back-filling and disposal. Plate to be painted blue with gloss oil paint and engraved letters in black. All to the satisfaction of the engineer	40	NO.		-
M	**Bulk Water Meters**				
i)	40mm Bulk Water Meter	1	NO		-
ii)	50mm ditto	1	NO		-
N	**Sterilization** Allow for sterilization including flushing out water and chlorine	1	ITEM		-
	TOTAL FOR DOMESTIC WATER BOOSTER PUMPS & WATER RETICULATION INSTALLATIONS CARRIED TO BQ GRAND SUMMARY PAGE				-

BILL OF QUANTITIES
GRAND SUMMARY PAGE

GRAND BQ SUMMARY PAGE

ITEM	DESCRIPTION	AMOUNT (KSH)
1.0	BILL NO. 01: PRELIMINARIES & CONDITIONS OF CONTRACT	-
2.0	BILL NO. 02: CBK MAIN BUILDING	-
3.0	BILL NO. 03: ACCOMODATION	-
4.0	BILL NO. 04: POLICE POST	-
5.0	BILL NO. 05: CIT LOUNGE	-
6.0	BILL NO. 06: GATE HOUSES	-
7.0	BILL NO. 07: POWER HOUSE	-
8.0	BILL NO. 08: BULK WATER STORAGE TANKS INSTALLATIONS	-
9.0	BILL NO. 09: DOMESTIC WATER BOOSTER PUMPS & WATER RETICULATION INSTALLATIONS	-
	TOTAL FOR THE MECHANICAL WORKS	**-**

GENERAL SUMMARY

Note:

1. The Total Amount on General Summary shall be carried to Form of Tender

ITEM	DESCRIPTION	PAGE NO.	AMOUNT(KSHS.) FOR TENDERER'S USE	AMOUNT(KSHS.) FOR CONSULTANTS USE
	GENERAL SUMMARY			
1	PARTICULAR PRELIMINARIES	PP / 14		
2	GENERAL PRELIMINARIES	GP / 23		
3	VAULT	VAULT / 33		
4	CURRENCY PROCESSING HALL	C.P.H / 36		
5	OFFICES AND VERIFICATION	O.V / 1		
6	BANKING HALL	B.H / 1		
7	ACCOMMODATION BUILDING	A.B / 1		
8	EXTERNAL WORKS	EW / 28		
9	PROVISIONAL SUMS	P SUMS / 1		
10	DAYWORKS AND SCHEDULE OF RATES	DW-SCH / 9		
11	ELECTRICAL INSTALLATIONS	GS-1		
12	MECHANICAL INSTALLATIONS	MECH-SUMMARY		
TOTAL CARRIED TO FORM OF TENDER				

AMOUNT IN WORDS: ……

……

BIDDER'S NAME: ……

ADDRESS: ……

SIGNATURE AND STAMP: …… DATE: ……

WITNESS'S NAME: ……

ADDRESS: ……

SIGNATURE: …… DATE: ……