DEVELOPMENT BANK OF KENYA LTD
Head Office, 16th Floor, Finance House, Loita Street
P.O. Box 30483-00100, Nairobi, Kenya

Tender Name:

DEMOLITIONS, CONSTRUCTION AND COMPLETION OF BANK PREMISES AT DEVELOPMENT BANK OF KENYA, KISUMU BRANCH

Tender No: DBK/ITT/042/2025

Date Published: Wednesday, 5th November 2025
Closing Date: Thursday, 13th November 2025 at 1200hrs

INVITATION TO TENDER

TENDER NO: DBK/ITT/042/2025

PROCURING ENTITY: Development Bank of Kenya Ltd (DBK)

CONTRACT NAME AND DESCRIPTION: DEMOLITIONS, CONSTRUCTION AND COMPLETION OF BANK PREMISES AT DEVELOPMENT BANK OF KENYA, KISUMU BRANCH

1. The Development Bank of Kenya Ltd (DBK) invites sealed tenders for the construction of **Demolitions, Construction and Completion of Bank Premises at Development Bank of Kenya (DBK), Kisumu Branch**.
2. Tendering will be conducted under the open competitive method (National) using a standardized tender document.
3. Tendering is open to all qualified and interested Tenderers.
4. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours [0900 to 1500 hours] at the address given below.
5. A complete set of tender documents may be obtained electronically from the Website: (website). Tender documents obtained electronically will be free of charge.
6. Tender documents may be viewed and downloaded for free from the website (website).
7. Tenderers who download the tender document must forward their particulars immediately to email: procurement@devbank.com to facilitate any further clarification or addendum.
8. Tenders shall be quoted in Kenya Shillings and shall include all taxes.
9. Tenders shall remain valid for (90) days from the date of opening of tenders.
10. All Tenders must be accompanied by a **"Tender Security"** of **Kenya Shillings Five Hundred Thousand (500,000/=) Only**.
11. The Tenderer shall chronologically serialize all pages of the tender documents submitted.
12. Completed tenders must be delivered to the address below on or before **13th November 2025 at 12:00 PM**.
13. Electronic Tenders **will NOT** be permitted.
14. Tenders will be opened immediately after the deadline date and time specified above. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend at the address below.
15. Late tenders will be rejected

16. The addresses referred to above are:

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

Attn: Principal Officer, Procurement
Development Bank of Kenya Limited
16th Floor, Finance House, Loita Street
P O Box 30483-00100 Nairobi
Email: procurement@devbank.com .

B. Address for Submission of Tenders.

Attn: Chief Executive Officer
Development Bank of Kenya Limited
Tender Box located at the reception on 16th Floor, Finance House, Loita Street
P O Box 30483-00100 Nairobi
Email: procurement@devbank.com .

C. Address for Opening of Tenders.

Development Bank of Kenya Limited
Boardroom 16th Floor, Finance House, Loita Street

Yours sincerely,

Johnson K Kiniti
Chief Executive Officer
Development Bank of Kenya Limited

PART 1: TENDERING PROCEDURES

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 "inwriting" 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.

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

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

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

c) Has the same legal representative as an other tenderer;

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

e) 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;

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

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

h) 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 conflicts temming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.

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

3.5 A Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. 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.

3.6 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT3.9. ATenderer 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.

3.7 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.

3.8 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.

3.9 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) byanactofcompliancewith a decision of the United Nations Security Council taken under Chapter VII of theCharterof the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.

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

3.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, 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"*.

3.11 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.

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

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

4.14 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.

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: Works' Requirements
Section V - Bills of Quantities
Section VI - Specifications
Section VII - Drawings

PART 3: **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. Incase 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 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 al so 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 accordancewithITT20.3;
f) *Qualifications:* documentary evidence in accordance with ITT 17 establishing the Tenderer's qualifications to per form 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.

1. Form of Tender and Schedules

a) 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 with out 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.

b) 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 Billof 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 incases 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 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.

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

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, insufficient 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 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 bed is qualified from the procurement process,

ii) if the contract has been awarded to that tenderer, the contract award will be set as idepending 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). At ender 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 requestTendererstoextendtheperiodofvalidityoftheirTenders.Therequestandtheresponsesshallbemadein 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 Tendersecurity.ATenderergrantingtherequestshallnotberequiredorpermittedtomodifyitsTender.

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 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 there to provided by the Tenderer; or

b) if the successful Tenderer fails to: -

   i) signthe 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 debars 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.

20.4 Incase 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 there after 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 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 authorizationtorequestthemodificationandisreadoutatTenderopening.

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's hall 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;
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 Not withstanding 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 are sponse. 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) Affecting any substantial way the scope, quality, or performance of the Works specified in the Contract;
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.

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 as pecific 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. Incase 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.

352 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.

353 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.

354 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 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 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 Anabnormally 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 Incase of a nab normally 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 a ccept 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.

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. Incase of annulment, all Tenders submitted and specifically, Tender securities, shall be promptly returned to the Tenderers.

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.

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.

i. Procurement related Complaints and Administrative Review

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

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

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 ***DEMOLITIONS, CONSTRUCTION AND COMPLETION OF BANK PREMISES AT DEVELOPMENT BANK OF KENYA, KISUMU BRANCH*** The reference number of the Contract is **DBK/ITT/042/2025**
ITT 2.4	The Information made available on competing firms is as follows: NONE / N/A
ITT 2.4	The firms that provided consulting services for the contract being tendered for are: **1. ALLIANCE ARCHFORMS LTD** Lead Consultants / Architects / Interior Design Consultants KMA OFFICE SUITES - UPPERHILL NAIROBI P.O. BOX 64317 - 00620 Nairobi, Kenya **2. MASTERBILL INTEGRATED PROJECTS** Construction Cost Planning & Management, Quantity Surveying, P.O. Box 22905 – 00400 Nairobi **3. NORKUN INTAKES LTD** Consulting Electrical & Mechanical Engineers P.O. BOX 605 - 00100 Nairobi **4. COBEAM DESIGNS** Civil & Structural Engineers P.O. Box 657 - 00100 G.P.O, Nairobi
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: ***NOT APPLICABLE CONSIDERING JOINT VENTURE ARE NOT APPLICABLE***
B. Contents of Tender Document	
ITT 7.1	(i) The Tenderer will submit any request for clarifications in writing at the Address Chief Executive Officer, Development Bank of Kenya, P.O. Box 30483-00100, Telephone: +254 20 3340401 / +254 20 3340402 Nairobi, Kenya, Email: procurement@devbank.com to reach the Procuring Entity not later than **Monday, November 10, 2025** (ii) The Procuring Entity shall publish its response at the website Monday, November 10, 2025

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 7.2	(A) A pre-arranged pretender site visit take place at the following date, time and place: **Date: 10th November 2025** **Time: 10:00 AM – 12:00 pm** **Place: Oginga Odinga Road, opposite Davis & Shirtliff, Kisumu (Site)**
ITT 7.3	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than 10th November 2025.
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**
ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: Attention: ***Chief Executive Officer*** Address: ***Development Bank of Kenya*** Floor/ Room number: ***16th Floor, Finance House, Loita Street*** City: ***Nairobi*** ZIP Code: ***P O Box 30483-00100 Nairobi*** Country: ***Kenya*** Telephone: ***+254207904800*** Electronic mail address: *procurement@devbank.com* Requests for clarification should be received by the Procuring Entity no later than: ***10th November 2025***
C. Preparation of Tenders	
ITT 11.1 (h)	The Tenderer shall submit the following additional documents in its Tender: *1. Valid Business Registration/ Incorporation Certificate* *2. Valid of Form CR12 or its equivalent (issued in the last 6 months)* *3. A copy of KRA PIN certificate* *4. Valid KRA Tax Compliance Certificate* *5. Valid National Construction Authority (NCA) certificate accompanied by Annual Practicing License.* *6.Current and Previous Litigations and Arbitrations (with an undertaking that the information provided is correct)*
ITT 13.1	Alternative Tenders : ***NOT APPLICABLE***
ITT 13.2	Alternative times for completion : ***NOT APPLICABLE***
ITT 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: : ***NOT APPLICABLE***
ITT 14.5	The prices quoted by the Tenderer shall be: ***FIXED RATES / NON-FLUCTUATING PRICES***

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 15.2 (a)	Foreign currency requirements ***NOT APPLICABLE (foreign currency fluctuations NOT applicable)***
ITT 18.1	The Tender validity period shall be Ninety (90) Days
ITT 18.3	(a) The Number of days beyond the expiry of the initial tender validity period will be ***NOT APPLICABLE*** days. (b) The Tender price shall be adjusted by the following percentages of the tender price: (i) By ***NOT APPLICABLE*** % of *the local currency portion of the Contract price adjusted to reflect local inflation during the period of extension,* *and* *(ii) By* ***NOT APPLICABLE*** *% 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 **Tender Security** ***Tender Security of KSh 500,000/= provided in the correct format and valid for 120 days from the date of tender closing.***
ITT 20.1	In addition to the original of the Tender, the number of copies is **ONE Electronic Copy of the document in PDF format on a Flash disk**
ITT 20.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: **POWER OF ATTORNEY** **OR** **AUTHORIZATION LETTER ACCOMPANIED WITH CR12 WHICH SHOULD NOT BE MORE THAT 3 MONTHS OLD**
D. Submission and Opening of Tenders	
ITT 22.1	(A) For Tender submission purposes only, the Procuring Entity's address is: (p) *Development Bank of Kenya (DBK)* (q) Physical address for hand Courier Delivery to an office or Tender Box Head Office, 16th Floor, Finance House, Loita Street, Nairobi Kenya – DBK Reception (p) Postal Address: ***P.O. Box 30483-00100, Nairobi, Kenya*** **(q)** Insert name, telephone number and e-mail address of the officer to be contacted. ***Chief Executive Officer,*** ***Development Bank of Kenya,*** ***P.O. Box 30483-00100,*** ***Telephone: +254 20 3340401 / +254 20 3340402*** ***Nairobi, Kenya,*** (4) Date and time for submission of Tenders **Date: 13th November 2025 Time: 12:00 PM** (5) Tenders **shall not submit** tenders electronically.
ITT 25.1	The Tender opening shall take place at the time and the address for Opening of Tenders provided

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	below: **(1) *Development Bank of Kenya*** **(2) Head Office, 16th Floor, Finance House, Loita Street, Nairobi Kenya** **(3) Date: 13th November 2025 Time: 12:00 PM**
ITT 25.1	If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures **specified below** ***NOT APPLICABLE (NO ELECTRONIC SUBMISSIONS)***
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: ***NOT APPLICABLE – All Pricing to be in*** Kenya Shilling.
ITT 33.2	A margin of preference ***NOT APPLICABLE***
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 ***"intends"*** *or* *Electrical Installation, Structural Cabling, CCTV, Access Control, ICT, Plumbing, Drainage, Fire Protection, Mechanical Ventilation & Air Conditioning* 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: *40% of the total contract amount.* Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience.
ITT 34.3	The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: *Electrical Installation, Structural Cabling, CCTV, Access Control, ICT, Plumbing, Drainage, Fire Protection, Mechanical Ventilation & Air Conditioning* 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	Other documents required in addition NOT APPLICABLE
ITT 50.1	The procedures for making a Procurement-related Complaint are detailed in the "Notice of

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	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: ***Chief Executive Officer,*** ***Development Bank of Kenya,*** ***P.O. Box 30483-00100,*** ***Nairobi, Kenya,*** ***Email:*** *procurement@devbank.com* In summary, a Procurement-related Complaint may challenge any of the following (among others): 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.

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1.0 GENERAL PROVISIONS

1.1 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 evaluatingTenders.

1.2 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.

1.3 EVALUATION AND CONTRACT AWARD CRITERIA

TheProcuring 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.

2.0 PRELIMINARY EXAMINATION FOR DETERMINATION OF

RESPONSIVENESS 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.

Evaluation will be conducted in three (3) main stages:

1. **Stage 1: Preliminary (Mandatory) Evaluation** (Pass/Fail)
2. **Stage 2: Technical Evaluation** (Scoring model, 100 points)
3. **Stage 3: Financial Evaluation** (Lowest Evaluated Price)

Only bidders who pass a stage will proceed to the next stage of evaluation.

2. Stage 1: Preliminary (Mandatory) Requirements (Pass/Fail)
This is a "Yes/No" compliance check. Any tender that does not meet **all** of these requirements will be deemed non-responsive and will not be evaluated further.

S/No	Requirement	Met or Not Met
1.	A copy of the Firm's Registration/ Incorporation Certificate	
2.	A copy of the firm's KRA PIN	
3.	A copy of a tax compliance certificate valid as at the tender closing date	
4.	A copy of CR12 or equivalent issued within the last SIX months	
5.	A valid National Construction Authority certificate accompanied by the Annual Practicing Licence(s)	
6.	Duly completed Tender forms in the format provided a) Form of Tender b) Confidential Business Questionnaire/ Disclosure of Interest c) Certificate of Independent Tender Determination d) Form SD1 & Form SD2 f) Declaration and Commitment to the Code of Ethics g) Bills of Quantities h) Qualification Forms	
7.	Submission of tender in the required format (One Original Document in sealed Envelope deposited on the Tender Box and ONE Electronic Copy of the document in PDF format on a Flash disk)	
8.	Tender Security of KES. 500,000.00 valid for a period of 30 days after beyond the tender validity. (121 days)	
	OUTCOME (Responsive/Non-Responsive)	

3. Stage 2: Technical Evaluation

Tenders that pass Stage 1 will be evaluated technically. Bidders must score a minimum of **75 points** to proceed to the Financial Evaluation.

S/NO	REQUIREMENT	MAX POINTS	SCORES
1.	Demonstration of sufficient Financial Capabilities: a. 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 5 *million* equivalent for the subject contract(s) net of the Tenderer's other commitments. (10 Points) b. The Tenderers shall also demonstrate, to the satisfaction of the Procuring Entity, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments. (10 Points) c. 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 *[3 years]* years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability. (10 Points)	30	
2.	General Construction Experience Provide relevant certificates/evidence for Experience under construction contracts in the role of prime contractor, Provide details of at least **One (1) project** with a minimum value of **KSh 40 Million**. (10 points)	10	
3.	**Specific Construction & Contract Management Experience (40 Points)** - Provide details of at least **Three (3) similar contracts** successfully completed in the last **Three (3) years**. "Similar" is defined as "Interior fit-out or renovation of a bank branch or high-security corporate office." (10 points per project, max 30)	30	
4.	**Key Personnel (30 Points)** - **Contractor's Representative:** 10+ years experience, Degree/HND in Construction Management/Civil Eng. (15 points) - **Site Electrical Engineer:** 5+ years experience, Degree/HND in Electrical Eng. & valid EPRA license. (10 points) - **Site Mechanical/Plumbing Foreman:** 5+ years experience. (5 points) Provide detailed Curriculum Vitae (CV's) of each staff assigned to the project. The Curriculum Vitae MUST state qualification, experience, and duration with the firm and active contacts of the staff. The contacts given in the Curriculum Vitae MUST be active email addresses. Provide Copies of academic certificates and the role of each technical staff.	30	
5	**Equipment & Methodology (10 Points)** - **Equipment:** List of key owned/leased equipment, including electrical/data testing tools. (5 points) - **Methodology:** Clear work plan and schedule (Gantt chart) submitted. (5 points)	10	
	TOTAL	**100**	

NOTES:
1. Bidders must meet all the mandatory requirements to qualify for evaluation
2. Bidder must attain a minimum score of 75% in the technical evaluation criteria to qualify for the financial stage.
3. At the financial evaluation stage, bidders will be ranked according to their bid prices.
4. Any information provided by the bidder may be verified by the Bank.

3.0 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: ……

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

(iii) Other Criteria; if permitted under ITT 35.2(j):

……

4.0 MULTIPLE CONTRACTS

4.1 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.

5.0 ALTERNATIVE TENDERS (ITT 13.1)

Alternative Tenders (ITT 13.1)

An alternative if permitted under ITT 3.1, will be evaluated as follows:

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

60 MARGIN OF PREFERENCE

61 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 share holding of Kenyan citizensis less than fifty- one percent (51%).

62 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.

63 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%).

64 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 for award. If not, the lowest evaluated tender from Group B based on the first evaluation price shall be selected.

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

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

b) Incase 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_____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]*_____

iv) 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 profit ability 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.

QUALIFICATION FORM*

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	NOT APPLICABLE	
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 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.	Form FIN – 3.1, with attachments	

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)***
		(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]* The similarity of the contracts shall be based on the following: [*Based on Section VII, Scope of Works, specify the minimum key requirements in terms of physical size, complexity, construction method, technology and/or other characteristics including part of the requirements that may be met by specialized subcontractors, if permitted in accordance with ITT 34.3]*	Form EXP 4.2(a)	

SECTION IV - TENDERING FORMS

QUALIFICATION FORMS

NOT APPLICABLE

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			

2. FORMEQU: EQUIPMENT

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

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

Omit the following information for equipment owned by the Tenderer.

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

3. FORM PER -1

Contractor's Representative and Key Personnel Schedule

Tenderers should provide the names and details of the suitably qualified Contractor's Re presentative 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*]

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]*

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:

50 be taken into consideration during Tender evaluation;
51 result in my disqualification from participating in the Tender;
52 result in my dismissal from the contract.

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

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date: (day month year): _____

4. TENDERERS QUALIFICATION WITHOUT 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.

NOT APPLICABLE

41 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: **D.** Legal and financial autonomy **E.** Operation under commercial law 2. Establishing that the Tenderer is not under the supervision of the Procuring Entity 3. Included are the organizational chart and a list of Board of Directors

42 FORM ELI -1.2

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

NOT APPLICABLE

Date:_____

ITT No. andtitle:_____

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.

43 **FORM CON –2**

Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: _____
Date: _____
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. ☐ Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.			

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

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.

4.4 FORM FIN – 3.1:

Financial Situation and Performance

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

4.4.1. 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

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.

45 FORM FIN – 3.2:

Average Annual Construction Turnover

Tenderer's Name: _____
Date: _____
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.

4.6 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		

4.7 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					

48 FORM EXP - 4.1

General Construction Experience

Tenderer's Name: _____
Date: _____
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:	

49 FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

Tenderer's Name: _____
Date: _____
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: _____
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) (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	

5.10 FORM EXP - 4.2(b)

Construction Experience in Key Activities

Tenderer's Name: _____
Date: _____
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

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

2. Activity No. Two
3. ……

OTHER FORMS

5. FORM OF TENDER

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

INSTRUCTIONS TO TENDERERS

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

(b) 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.

(c) 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 thisTender 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]*_____

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 the time stated in the Special Conditions of Contract.

3. We agree to adhereby 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.

5. We, the under signed, further declare that:

    1. No reservations: We have examined and have no reservations to the tender document, including Addenda issuedinaccordance with ITT 28;

    2. Eligibility: We meet the eligibility requirements and have no conflict of interest in accordance with ITT 3 and 4;

    3. Tender-Security in accordance with ITT 19.8;

[3] *This sum should be carried forward from the Summary of the Bills of Quantities (Amount Inclusive of VAT from From Page 125)*

4. 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];*

5. 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]*

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 obtaina Performance Security in accordance with the Tendering document;

xii) One Tender Per Tender: Weare 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) 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.")

xv) 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;

xvi) 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;

xvii) 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

xviii) 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.

xix) 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.

xx) **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.

xxi) 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 no tin 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*]

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

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

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

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

Date signed_____day of_____,_____

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

(a) **TENDERER'S ELIGIBILITY-CONFIDENTIAL BUSINESS QUESTIONNAIRE**

Instruction to Tenderer

Tender is in structed 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.	12.0 Country 13.0 City 14.0 Location 15.0 Building 16.0 Floor 17.0 Postal Address 18.0 Name and email of contact person.
6	Current Trade License Registration Number and Expiring date	
7	Name, country and full address (*postal and physical addresses, email, and telephone number*) of Registering Body/Agency	
8	Description of Nature of Business	
9	Maximum value of business which the Tenderer handles.	
10	State if Tenders Company is listed in stock exchange, give name and full address (*postal and physical addresses, email, and telephone number*) of state which stock exchange	

General and Specific Details

(b) Sole Proprietor, provide the following details.

Name in full_____Age_____
Nationality_____Country of Origin_____
Citizenship_____

(c) Partnership, provide the following details.

	Names of Partners	Nationality	Citizenship	% Shares owned
1				
2				
3				

(d) Registered Company, provide the following details.

I) Private or public Company _____

ii) State the nominal and issued capital of the Company_____

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

iii) Give details of Directors as follows.

	Names of Director	Nationality	Citizenship	% Shares owned
1				
2				
3				

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

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

If yes, provide details as follows.

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

(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.		
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		

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

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]

(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/Direct or 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

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 afore said 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

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…….....

(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 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:

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 processor 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.

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[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 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, suc has 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 hardcopy 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.*

FORM OF TENDER SECURITY-[Option 1–Demand Bank Guarantee]

Beneficiary:_____

Request forTenders No:

_____

Date:_____

TENDER GUARANTEE No.:_____

Guarantor: _____

1. We have been informed that_____(here in after called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here in after 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 there to 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.

FORMAT OF TENDER SECURITY [Option 2–Insurance Guarantee]

TENDER GUARANTEE No.: _____

(a) 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").

(b) 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 __.

(c) 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.

(d) 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.

(e) 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.

FORM OF TENDER - SECURING DECLARATION

NOT APPLICABLE

[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 ourobligation(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 Iam /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

Appendix toTender

NOT APPLICABLE

Schedule of Currency requirements

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

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

PART II - WORKS REQUIREMENTS

SECTION V - BILLS OF QUANTITIES

A. Notes and Sample Items for Preparing a Bill of Quantities

1. These Notes for Preparing a Bill of Quantities are intended only as information for the Procuring Entity or the person drafting the Tender Documents. Priced Bills of Quantities shall be part and parcel of the Contract Documents.

2. The objectives and purpose of the Bills of Quantities are to provide sufficient information on the specifications, descriptions and quantities of Works to be performed to enable tenders to be prepared efficiently and accurately and when a contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed. Inorder to attain these objectives, Works should be itemized in the Bill of Quantities insufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried outin different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and clear as possible.

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

i. Preambles
ii. Preliminary items
iii. Work Items
c) Daywork Schedule; and
d) Provisional items
e) Summary.

4. NOTES TO PREPARING PREAMBLES

4.1 The Preambles should include only those items that constitute the cost of the works but would not be priced separately as they are expected to be included in the unit prices. Care should be taken to ensure that these items are not are petition of the conditions of contract. The Preambles should indicate the inclusiveness of the unit prices and should state the methods of measurement that have been adopted in the preparation of the Bill of Quantities, that are to be used for the measurement of any part of the Works. The units of measurement and abbreviations should be defined and any mandatory national units defined and described. The methods of and procedure for re- measurement should be described in the Preambles.

4.2 Units of Measurement - The following units of measurement and abbreviations shall be used, unless other national units are mandatory in Kenya.

Unit	Abbreviation	Unit	Abbreviation
cubic meter	m^3 *or* cu m	millimetre	mm
hectare	ha	month	mon
hour	h	number	nr
kilogram	kg	square meter	m^2 *or* sq m
lump sum	ls	square millimeter	mm^2 *or* sq mm
meter	m	week	wk
metric ton	t		

4.3 The Bills of Quantities shall be read in conjunction with the Instructions to Tenders, General and Special Conditions of Contract, Technical Specifications, and Drawings.

4.4. The quantities given in the Bills of Quantities are estimated and partly provisional and are given to provide a common basis for tendering. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Architect and valued at the rates and prices tender in the priced

Bills of Quantities, where applicable, and otherwise at such rates and prices as the Architect may fix within the terms of the Contract.

4.5. The rates and prices tender in the priced Bills of Quantities shall, except in so far as it is otherwise provided under the Contract, include all Constructional Plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.

4.6. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

4.7. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bills of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

4.8. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bills of Quantities. References to the relevant sections of the Contract documents shall be made before entering prices against each item in the priced Bills of Quantities.

4.9 Provisional Sums and contingency sums included and so designated in the Bills of Quantities shall be expended in whole or in part at the direction and discretion of the Architect in accordance with Sub-Clause13.5 and Clause 13.6 of the General Conditions of contract.

4.10 In preparing the Bills of Quantities, notes should be removed as they are intended to guide the person preparing the Tender Documents. The Contractor must allow in his rates for any costs associated with and complying with the requirements in the Preambles.

4.11 Should a tenderer/contractor not price any item in any section of the Bills of Quantities including Preliminary items, it will be assumed that he/she has spread its cost in other areas that he/she will have priced. Therefore, the item or items will be executed without any additional costs or without being treated like variations.

5. NOTES ON PREPARING BILLS OF QUANTITIES

5.1 The Preliminary Items should be limited to tangible items that should be priced by the tenderer, are identifiable and can be priced separately and included in the interim valuations precisely. Such items may include such items as site office, notice boards, and other temporary works, otherwise items such as security for the Works which are primarily part of the Contractor's obligations should be included in the Contractor's rates.

5.2 The work items in the Bills of Quantities should be grouped into sections to distinguish between those parts of the Works which by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, or phasing of the Works, or considerations of cost. Such groups could be ground excavations, structures, external works, services, etc. General items common to all parts of the Works may be grouped as a separate section in the Bill of Quantities.

5.3 Quantities should be computed net from the Drawings, unless directed otherwise in the Contract, and no allowance should be made for bulking, shrinkage or waste. Quantities should be rounded up where appropriate.

5.4 Where the measured items a redeemed not to be exact because of the likelihood that the scope can change during the execution of the works, such items could be subject to re-measurement, the word **"provisional"** should be used to identify such cases. Where whole sections of the work items fall in this class, for example foundations, they should be labelled "Provisional Quantities" or "Provisional Items" so that the Tenderer/Contractor is advised up front that such items are subject to re-measurement to done before such work is cover-up.

5.5 All items that have not been measured and therefore not subject tot enders pricing should be listed in the Bills of Quantities as **Provisional Sums** for particular item or class of Work, which may be subject to a nominated subcontract or separate measurements at a later date during the execution of the works. For example, if it is deemed not possible to measure electrical works before going to tender because detail designs are not ready, a provisional sum can be allowed in the Bills of Quantities for "Installation of Electrical Works" to be executed later when actual design details are completed. To the extent not covered above, there should be in the Bills of Quantities a general provision for physical and financial contingencies made as a "Provisional Sum for

Contingencies" and "Provisional Sum for Fluctuations". The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises.

5.6 Provisional sums to cover specialized works normally carried out by Nominated Sub Contractors should be avoided and instead Bills of Quantities of the specialized Works should be included as a section of the main Bills of Quantities to be priced by the Main Contractor. The Main Contractor should be required to indicate the name(s) of the specialized firms he proposes to engage to carry out the specialized Works as his approved domestic sub-contractors. Only provisional sums to cover specialized Works by statutory authorities should be included in the Bills of Quantities.

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

i) A list of the various classes of labor, and materials for which basic.

ii) Daywork rates and prices for various categories of labor are to be inserted by the tenderer, together with a statement of the conditions under which the Contractor will be paid for Work executed on a Daywork basis.

iii) A percent a get o be entered by the tenderer against each basic Day work item.

iv) Subtotal amount for labor, materials and plant representing the Contractor's profit, overheads, supervision and other charges.

5.8 The Summary should contain a tabulation of the separate parts of the Bills of Quantities carried forward, with provisional sums for Daywork, Provisional sums and Contingencies, and provision for Total Costing. The last line should allow for tenderer to indicate any discounts before arriving at a total cost carried forward to the Form of Tender.

BILLS OF QUANTITIES

(a) Preambles

1. The method of measurement of completed work for payment shall be in accordance with *the Standard Method of Measurement, of Building Works for East Africa, Published in June 2008 by the Architectural Association of Kenya, Chapter of Quantity Survey0ors which is available for inspection at the offices of the Quantity surveyor. Exceptions to the above Standard Method of Measurements is composite descriptions incorporating items which would be subject to separate measurements are deemed to take precedence over the Standard Method of Measurement rules.*

2. The Site is situated in Development Bank of Kenya, Kisumu Branch, in Kisumu County.

   The Contractor shall visit the site and acquaint itself with its nature and position, the nature of the ground, substrata and other local conditions, positions of existing power, water and other services, access roads or any other limitations that might affect his cost or progress. No claim for extras shall be considered on account of lack of knowledge in this respect.

3. The Contractor shall obtain the Architect's approval on the siting of all temporary buildings, spoil heaps, temporary access path, and storage of materials. The Contractor shall also obtain the Architect approval and direction regarding the use of any materials found on the Site.

4. The drawings used in the preparation of these Bills of Quantities can be inspected at the offices of the Procuring Entity or Procuring Entity's Representative during normal working hours. Two sets of the Working Drawings shall be provided to the contractor but additional copies shall be provided at a cost to be determined by the Engineer.

5. The Contractor shall allow for the payment of all bank charges in connection with the procurement of Bank Guarantees and stamp charges in connection with this contract Agreement.

6. The Contractor shall carry out the various sections of the Works in such an order as the Architect May direct. The Procuring Entity reserves the right to occupy the Works by sections on completion provided that such occupation is considered to be both practical and reasonable and will not interfere with the Works. The Contractor shall allow any costs associated with such occupation.

7. The main Contractor will be fully responsible for paying his Sub-Contractor but the Procuring Entity reserves the right in very exceptional circumstances to make such payments direct in the interests of the project where the completion thereof might be jeopardized by any dispute or vicariousness between the Contractor and the Sub- Contractor involve.

8. The Contractor shall complete and deliver the Works in the period inserted in the Form of Tender as his time for completion of the Works from the date for Possession, to be agreed with the Engineer. The Contract Period is presumed to have been calculated making due allowance for seasonal inclement weather conditions. No claim for extension of time due to the normal inclement weather for this area shall be entertained.

9. The Contractor shall, upon receiving instructions to proceed with the Works, draw up a Programme and Progress Chart setting out the order in which the Works are to be carried out, with the appropriate dates thereof. This Chart shall be agreed with the Architect and no deviation from the order set out in it will be permitted without the written consent of the Engineer. The Contractor will be responsible for arranging the above programme with all his sub-Contractors and Specialties. The Contractor shall allow in his rates for carrying out this exercise, and for updating it as required.

10. The Contractor shall submit to the Architect on the first day of each week or such longer period as the Architect from time to time direct, a Progress Report and any information for the proceeding period, showing the progress during the period and the up-to-date cumulative progresson all important items of each section or portion of the Works.

11. The Contractor shall arrange for photographs of the Site to be taken by a professional photographer approved by the Engineer. The Photographs shall provide a record of the Site and adjacent are as prior to the commencement of the Works and shall cover such portion of the works in progress and completion as the Architect shall direct. All prints shall be full plate size, unmounted, and marked on the reverse side with the date of exposure, identification reference and brief description. The copyright of all photographs shall be vested in the Procuring Entity. The negatives and four prints from each negative shall be delivered to the Architect within two weeks of exposure.

12. Figured dimensions are to be followed in preference to dimensions scaled from the Drawings, but whenever possible dimensions are to be taken on the Site or from the buildings. Before any work is commenced by Sub-Contractors or Specialist Firms, dimensions must be checked on the site comparable dimensions shown on the drawings. The Contractor shall be responsible for the accuracy of such dimensions.

13. Prior to commencement of any work the Contractor is to ascertain from the relevant Authorities the exact position, depth and level of all existing electric cables, waterpipes or other services in the are aand he shall make whatever provisions may be required by the Authorities concerned for the support and protection of such services. Any damage or disturbance caused to any services shall be reported immediately to the Architect and the relevant Authority and shall be made good to their satisfaction at the Contractor's expense. Where appropriate the Contractor shall open up the ground in advance of the main work by hand digging if necessary, to locate precisely the position and details of the services which are likely to affect his operations.

14. 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 route as are permitted by the Authorities.

15. The Contractor will be required to make good, at his own expense and damage he may cause to the present road surface and pavements within or beyond the boundary of the Site, during the period of the works. All existing paths, storm water channels, etc., that may be destroyed or damaged during the progress of the Works shall be reinstated by the Contractor to the satisfaction of the Engineer.

16. The Contractor is to allow for complying with all instructions and regulations of the Police Authorities.

17. All water shall be fresh, clean and pure, free from earthly, vegetable or organic matter, acid or alkaline substance in solution. The Contractor shall provide at his own risk and cost all water for use in connection with the Works, (including works of sub–contractors). If need be, he shall make arrangements with the Local Water Authority for the installation of a separate meter for all water used by him throughout the Contract and pay all cost and fees in connection therewith. He shall also provide temporary storage tanks and tubing, etc., as may be necessary, and clear away at completion.

18. The Contractor shall provide all artificial lighting and power for his own use on the Works, (including Sub – Contractor's) including all temporary connections, wiring, fittings, etc., and clearing away on completion. The Contractor shall pay all fees and obtain all permits in connection there with.

19. The Contractor shall constantly keep on the Works a Literate English-speaking Agent or Representative, competent and experienced in the kind of work involved, who shall give his whole time to the superintendence of the works. (Including works of sub – contractors). Such Agent or Representative shall receive on behalf of the Contractor directions and instruction from the Engineer, and such directions and instructions shall be deemed to be given to the contractor in accordance with the Conditions of Contract. The Agent shall not be replaced without the specific approval of the Engineer.

20. The Contractor shall ensure that the safety of his work people and all authorized visitors to the site are protected at all times. In particular, there shall be the proper provision of guard–rails to scaffolding, protection against falling materials, tools on site, dust, nail and other sharp objects. The site shall be kept tidy and clear of dangerous rubbish. The Architect shall be empowered to suspend work on site should it be considered this condition is not being observed and no claim arising from such suspension will be allowed.

21. The are as available to the Contractor for work yards, offices and other facilities shall be directed by the Architect and any existing features to remain shall be protected from damage throughout the Contract Period and handed back in good condition when they are vacated at the end of the Contract. If additional areas are required, the contractor shall source them at own cost.

22. The Contractor shall give the Architect reasonable notice of the intention to set out or take levels for any part of the Works so that arrangements may be made for checking the work. The accuracy of setting out and leveling shall be within the tolerances specified in the Specifications or on the Drawings. The checking of setting out or leveling by the Architect shall not relieve the Contractor of his duties or responsibilities under the Contract.

23. The Contractor must take steps necessary to safe guard and shall beheld fully responsible for any damage caused to existing and adjacent property, including buildings that are not a subject of demolition. He shall make good at his own cost damage to persons and property caused there on, and he shall indemnify the Procuring Entity against any loss or claim that may arise.

24. The Contractor shall take such steps and exercise such care and diligence as to minimize nuisance arising from dust, noise or any other cause to the occupiers of the existing and adjacent property. He must provide such temporary and special screens and tarpaulins or gummy bags, hoarding, barriers, warning signs etc. as he considers necessary and sufficient for the protection of the existing and adjacent property and or prevention of nuisance etc. as directed by Engineer.

25. The Contractors attention is drawn to the standards levy order which was amended on 15th October 1998.Legal notice No.154 of 1998. The Contractor is required to pay a monthly level of 0.2% of his factory price of construction works with effect from January 1999. Tenderer shall allow for this in the build-upo f his rates.

26. The Contractor shall provide temporary sheds, offices messrooms, sanitary, accommodation and other temporary buildings for the use of the contractor and sub-contractors, including lighting furniture equipment and attendance.

27. Contractor shall provide/build labor camp sat areas to be agreed with the Engineer. Labor camps shall be complete with sanitary accommodation and fencing gates.

28. The Contractor must provide the necessary toilet facilities to the requirement and satisfaction of the Health Authorities and maintain the same in a thoroughly clean and sanitary condition and pay all conservancy fees during the period of the Works and remove when no longer required.

29. The Contractor shall provide at his own risk and cost all watching and lighting as necessary to safeguard the Works, Plant and materials against damage and theft.

30. The Contractor shall provide all necessary hoists, tackle, plant, equipment, vehicles, tools and appliances of every description for the due and satisfactory completion of the Works and shall remove the same on completion. All such plant, tools and equipment shall comply with all regulations in force throughout the period of the Contract and shall be altered or adopted during the Contract period as may be necessary to comply with any amendments in or additions to such regulations.

31. Provide, erect and maintain all necessary scaffolding, sufficiently strong and efficient for the due performance of the works, including Sub-Contract Works, provide special scaffolding as required by Sub-Contractors, alter and adopt all scaffolding as and when required during the Works, and remove on completion. No scaffolding is measured here in after and the Contractor must allow in his rates for this.

32. The Contractor shall take all necessary precautions such as temporary fencing, hoarding fans, planked footways, guard–rails gantries screen, etc., for the safe custody of the Works, materials and public protection and adjacent properties.

33. Cover up all and protect from damage, including damage from inclement weather, all finished work and unfixed materials, including that of Sub-Contractors, etc., to the satisfaction of the Architect until the completion of the Contract.

34. The Contractor shall, after completion of the works, at his own expense, remove and clear away all surplus excavated demolition materials, plant, rubbish and unused materials and shall leave the whole of the Site and Works in a clean and tidy state to the satisfaction of the Engineer, sheds, camps, etc. Particular care shall be taken to leave clean all floors and windows and tore move all paint and cement all rubbish hand dirt as it accumulates. The Contractor is to find his own dump and shall pay all charges in connection there with.

35. Concrete test cubes shall be prepared in a set of three, as described including testing fees, labor and materials, making molds, transport, handling, etc. Allow in your rates for making at least four cubes on each occasion, from different batches; the concrete being taken from the point of deposit.

36. The Contractors shall furnish at the earliest possible opportunity before work commences, and at his own cost, any samples of materials and workmanship that may be called for by the Architect for the approval or rejection, and any further samples in the case of rejection, until such samples are approved by the Engineer. Such samples, when approved, shall be the minimum standard for the work to which they apply. The procedure for submitting samples of materials for testing or approval and the method of marking for identification shall be as laid down by the Engineer. The Contractor shall allow in his Tender for such samples and tests, including those in connection with his Sub-Contractors work.

37. The Contractors attention is drawn to the Finance Bill of the year 2000/2001 on withholding tax on contractual payment section 35(7)(i)(ii) which became effective on 1st July 2000. A 3% withholding tax will be applicable to all interim payments exceeding Kshs… ..... for work done in respect of building or civil works. The contractor shall allow for any costs arising resulting there from in the build-up of rates.

38. Blasting will only be allowed with the express permission of the Architect 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 Architect governing the use and storage of explosives.

39. The National Construction Authority is a state corporation established under the national construction authority Act No.14 of 2011. The broad Mandate of the Authority is to oversee the construction industry and coordinate its development. The National Construction Authority Regulations 2014 with an effective date of 6th June 2014, regulation 25, - Allow 0.5% of the tender sum/contract sum for construction levy.

40. The Contractor attention is drawn to Finance Bill of 1993 where VAT was introduced in all contracts for construction services. The tenderer is also drawn to VAT Act Cap 476 clause 19(9). The tenderer must allow for VAT 1.19 as instructed elsewhere.

41. The contractor shall allow and pay for all insurance to cover risks and indemnities required Items 17 and 18 of the Conditions of contract and also specified in the Special Conditions of Contract.

BILL NO. 1 - PRELIMINARY ITEMS

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	PRELIMINARIES				
	BILL NO. 1				
	PARTICULAR MATTERS				
	IMPORTANT PRICING NOTES The contractor is required to price all items of preliminaries with monetary implications to the contract. Where the contractor indicates a lumpsum for all the preliminaries or where the contractor has priced some items and not others, the total preliminaries priced shall be deemed to include prices for all the items				
	PARTIES				
	The Employer is: **DEVELOPMENT BANK OF KENYA LTD** P. O. Box 30483 - 00100 Nairobi, Kenya The Architects shall be deemed to mean: **ALLIANCE ARCHFORMS LTD** Architects & Interior Design Consultants KMA OFFICE SUITES - UPPERHILL NAIROBI P.O. BOX 64317 - 00620Nairobi, Kenya The Quantity Surveyor shall be deemed to mean: **MASTERBILL INTEGRATED PROJECTS** Construction Cost Planning & Management, Quantity Surveying P.O. Box 22905 - 00400, Nairobi, Kenya The Civil & Structural Engineers shall be deemed to mean: **COBEAM DESIGNS** Civil & Structural Engineers P.O. Box 657 - 00100 G.P.O, Nairobi The Services Engineers shall be deemed to mean: **NORKUN INTAKES LTD** Consulting Electrical & Mechanical Engineers P.O. BOX 605 - 00100 Nairobi				
	LOCATION OF SITE				
	The site of the proposed work is on the Ground Floor along Oginga Odinga Street Kisumu City The approximate GPS coordinates are				

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	0°05'57.0"S 34°45'03.0"E -0.099167, 34.75083.				
	SCOPE OF CONTRACT AND DESCRIPTION OF THE WORKS				
	The works under this contract comprise demolitions, Construction and Completion of Bank Premises. The construction generally comprises Demolitions, Partitioning works, Strong room, Provisions for Future Automated Teller Machines (ATMs), Banking Hall Tellers, Walls & Floor finishes, Doors, Plumbing, Drainage, and Fire protection. Specialist works generally consist of Electrical Installations, Air conditioning & Mechanical ventilation, Structured cabling & ICT installations. The detailed scope and specification of the works is shown and described in the Bills of Quantities and in the architectural and engineering drawings listed in the appendix. The drawings are available for inspection at the Architect's / Interior Designer's offices.				
	FLOOR AREAS The Gross Floor Area of the premises where the works are to be undertaken is approximately: 1. Fit-out to existing space 271 SM 2. New construction 21 SM **TOTAL AREA 292 SM** The above is given **without warranty** but is only meant for the contractor's guidance All measured provisional works will be subject to re-measurement on completion of the same. Such remeasurement can be extended to any other works that the consultants may deem necessary The above is given without warranty but is only meant for the contractor's guidance All measured provisional works will be subject to re-measurement on completion of the same. Such remeasurement can be extended to any				

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	other works that the consultants may deem necessary				
	TEMPORARY STRUCTURES				
A	i. The contractor shall allow for providing and clearing away on completion of the works rubbish chutes, gates, planked walkways, guard rails etc. as may be necessary for the protection of the workers, the general public, and for the proper execution of the works ii. As such, temporary structures shall be constructed with the approval of the Lead Consultant/Interior Designer and to his full satisfaction and in such a manner as to cause minimum inconvenience and disturbance to occupants of adjacent buildings and users of the adjacent roads. iii. All such temporary structures shall comply in all aspects with the national laws, rules, and regulations currently in force and applicable to such structures. iv. All temporary structures shall be erected in a manner so that the unloading of materials causes minimum obstruction to the use of adjacent roads and other facilities. v. All temporary structures shall be kept properly lighted throughout the periods of darkness and any corners or projections shall be painted white. vi. Temporary structures shall not be used or permitted to be used for advertisement purposes except with the consent of the Lead Consultant/Interior Designer. vii. All temporary structures shall be maintained at all times in good order and good condition to the satisfaction of the Lead Consultant/Interior Designer. viii. All temporary structures shall be removed when so required by the Lead Consultant/Interior Designer or at the end of the period for which it is required) The Contractor shall indemnify and shall keep the	Item			

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	employer indemnified against any expenses, loss, claim or suits arising out of or in connection with the temporary structures ix. The Contractor shall pay all local authority or other charges payable in connection with temporary structures. x. The contractor shall allow for any necessary relocation of position of the temporary structures as directed or as may be necessary.				
A	The Contractor is referred to the General Specifications for building Works given with the tender and must allow for all costs in complying with these clauses. For the full description of materials, workmanship and method of execution of the works, the Contractor is referred to the General Specifications and which shall be followed in all respects unless it conflicts with the General and Particular Preliminaries, Trade Preambles or other items in this Bills of Quantities. In the event of such conflict, then the provision of the General and Particular Preliminaries, Trade Preambles and these Bills of Quantities shall take precedence	Item			
	EXISTING SERVICES TO BE RETAINED				
B	Special precaution shall be required throughout the contract period to avoid damage to existing structures, roads, lawns, cables, drains and other services. The Contractor shall allow for making good any damage arising from his actions during execution of this contract at his own expense	Item			
	LABOUR CAMPS				
C	The Contractor will generally NOT be permitted to house labor on site except on written request and subsequent express written authority from the Architect.	Item			
	SITE OFFICES				
D	a) The Contractor shall provide/erect and maintain temporary offices accommodation for his own use and the use of Nominated Sub-contractors and a team of three (3) consultants. The office may be in a suitable adjacent building or nearby space. The site office shall be constructed to the approval and full satisfaction of the Architect and shall provide new necessary furniture, new equipment such as projector and display screen and the like. The Contractor shall insure the office and	Item			

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	furniture against fire theft, and natural calamities and provide day and night security. The Contractor will specifically provide a minimum of 1) A meeting room with a sitting capacity of not less than 20 no. persons 2) Clean sanitation facilities 3) One office for the Clerk of Works and The site office must have a reliable working laptop computer which must be kept in working order throughout the period of the contract including all the necessary basic computer application programmed such as the MS Office suite, AutoCAD, MS Project, a reliable email connection, a laser printer A4 and ink printer A3, with all necessary stationery and accessories. Appropriate power and lighting shall be provided.				
	CONTRACT COMPLETION PERIOD				
A	The contract completion period in accordance with the Agreement and Conditions of Contract for Building Works must be strictly adhered to. The Architect shall strictly monitor the Contractor's progress in relation to the progress chart and should it be found necessary; the Architect shall inform the Contractor in writing that his actual performance on site is not satisfactory. In all such cases, the Contractor shall accelerate his rate of performance, production and progress by all means such as additional labor, plant etc. and working overtime all at his cost.	Item			
	MONTHLY DOCUMENTED REPORTS				
B	The contractor will be required to prepare and circulate projects reports on a monthly basis clearly indicating the status of the project in terms of work done/progress in relation to the master program given, work projections, number of laborers on site, equipment on site, materials on site, site instruction with cost and time implication issued, information/instruction required and any other item as shall be directed by the architect.	Item			
	TEMPORARY STRUCTURES AND HOARDING				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
A	HOARDING: The following minimum hoarding MUST be provided by the Contractor. Approximately 24m x 4.5m high, to be left on site on completion of demolitions - Front side and back side				
	The Contractor shall provide hoardings to the boundaries and other areas of the site including paying for all statutory charges etc. Unless authorized by the Architect or Project Manager the use of timber for supports (gum poles or timber) for the framework will not be permitted. All hoardings shall be painted to a color approved by the Architect. Hoarding around and within site shall be in accordance with design approved by the Architect & Project Manager. The locations shall be as approved by the Architect. All hoarding is to be permanent and left in place for the duration of the project. The Contractor shall allow the Employer to erect and face the Hoarding with advertising should they so require. Hoarding with overall height of 4500mm fixed to Structural steel frame on in concrete bases. External face consisting of 28 gauge painted corrugated Steel Sheets 2500mm High and Density Polyethylene wind/dust screen protection, supported on mass reinforced concrete bases in accordance with the Architectural and Engineering drawings Minimum Approximate length of Hoarding - 24m – Permanent	Item			

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A	a) The contractor shall allow for providing and clearing away on completion of the works temporary hoarding around the entire site, planked walkways, guard rails etc. as may be necessary for the protection of the workers, the general public, and for the proper execution of the works. b) As such, temporary structures shall be constructed with the approval of the Architect and to his full satisfaction and in such a manner as to cause minimum inconvenience and disturbance to occupants of adjacent buildings and users of the adjacent roads. c) All such temporary structures shall comply in all aspects with the national laws, rules and regulations currently in force and applicable to such structures. d) All temporary structures shall be erected in a manner so that the unloading of materials causes minimum obstruction to the use of adjacent roads and other facilities. e) All temporary structures shall be kept properly lighted throughout the periods of darkness and any corners or projections shall be painted white. f) Temporary structures shall not be used or permitted to be used for advertisement purposes except with the consent of the Architect. g) All temporary structures shall be maintained at all times in good order and good condition to the satisfaction of the Architect. h) All temporary structures shall be removed when so required by the Architect or at the end of the period for which it is required. i) The Contractor shall indemnify and shall keep the employer indemnified against any expenses, loss, claim or suits arising out of or in connection with the temporary structures. j) The Contractor shall pay all County Authority or other charges payable in connection with temporary structures.	Item			

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	k) The contractor shall allow for any necessary relocation of position of the temporary structures as directed or as may be necessary. l) The cost per linear metre of hoarding shall be Kshs…. /=. *Contractor to insert rate. m) Should the contractor decide to construct a permanent boundary wall in the place of hoarding, then a deduction based on the rate in item (l) above shall be applied to the total preliminaries amount.				
	PROGRESS SCHEDULE				
A	Immediately after signing the contract the Contractor is to prepare a Time progress Chart, using MS Project Software, 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 show 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 Upon the letting of the Sub-contractor's work, the Contractor is to incorporate times and details of each separate sub-contractor work which information is to be agreed by the Sub-contractor and the chart will be so designed to accommodate this information. At the end of each week the Contractor is to mark on the chart in a different color the actual time taken to complete the respective stages and sections of the work. The Contractor shall obtain the Architect's approval on the chart and then shall supply copies to the Architect and Quantity Surveyor If at any time it should appear to the Architect that the actual progress of the works does not conform to the approved programme progress schedule the Contractor shall produce at the request of the Architect a revised programme showing the modifications and accelerations to the approved programme necessary to ensure completion of the works within the agreed contract period. The submission of and approval by the Architect of such revisions and accelerations shall not entitle the Contractor to any extra payment or extension of time and shall not	Item			

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	relieve the contractor of any duties or obligations or responsibilities under the contract. Construction progamme - Condition Precedent It will be a contractual condition that the tenderer shall execute the contract to completion within the time period specified in the form of tender. The tenderer will also provide a realistic programme of execution of the works (progress chart) that shall become binding in the event of the tenderer being awarded and subject to any amendments that may be made with the approval of the Architect. Works projection progamme at every site meeting, the contractor is to give a works projection program for works to be executed as shall be directed by the Architect.				
	WIFI				
A	The Contractor shall provide the site office from the commencement to the completion of the works WIFI network or mobile phone to be permanently stationed on site throughout the duration of the contract and shall pay all fees, air time and rentals for same for the sole purpose of the supervision team.	Item			
	SIGN BOARD				
B	The Contractor shall provide and erect where directed and maintain during the whole period of the building operation and remove at completion, one approved temporary notice board to the Architect's standard design giving a brief description of the works and showing the names of the employer and the consultants, with sufficient space to append the names of the sub-contractors and suppliers when known. The lettering concerning the Architect, Quantity Surveyor and Engineer is not to be more than 50mm high. The contractor shall allow for any necessary relocation of position as directed or as may be necessary.	Item			
	SUFFICIENCY OF TENDER				
C	The contractor shall be deemed to have satisfied themselves before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices stated in the priced Bills of Approximate 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. No claim arising from his failure to comply with this	Item			

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	recommendation will be considered.				
A	The contract completion period in accordance with the Agreement and Conditions of Contract for Building Works must be strictly adhered to. The Interior designer shall strictly monitor the contractor's progress in relation to the progress chart and should it be found necessary; the architect shall inform the contractor in writing that his actual performance on site is not satisfactory. In all such cases, the contractor shall accelerate his rate of performance, production and progress by all means such as additional labour, plant e.t.c. and working overtime all at his cost.	Item			
	STANDARDS LEVY				
B	The contractor's attention is drawn to legal Notice No 267 of June 22, 1990 which requires payment by the contractor to a standard levy to the Kenya Bureau of Standards. The contractor shall allow in his preliminaries of the contract for all costs arising or resulting therefrom.	Item			
	VALUE ADDED TAX (V.A.T.)				
C	The Contractor's attention is drawn to Finance Act 2021 on V.A.T. The Contractor shall familiarize himself with the said notice and allow in all his Bills of Quantities rates (Excluding P.C. and Provisional Sums) for the net tax. (i.e. less input tax where applicable) as required by law. Any additional information and assistance concerning the application of the said Act should be directed to the office of the Commissioner of Value Added Tax	Item			
	WITHHOLDING TAX				
D	The contractor's attention is drawn to the Finance Act 2021. The contractor shall ensure that he has full knowledge of the workings of withholding tax. Withholding tax shall be deducted from all payments as applicable.	Item			
	DOWNTAKINGS				
E	All materials arising from demolitions and down takings are deemed to be the property of the employer unless stated otherwise in this contract document. No claim will be entertained on account of employer excising this right to retain the materials. All down takings shall be carefully removed, taken down, dismantled and stored on site until instructed by the Architect to remove from the site. Such materials shall only be incorporated in the new works if required by the Architect in which case appropriate adjustments will be made in	Item			

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	the final account for the cost of labour, screws etc for fixing such downtakings in the new works.				
A	The documents forming the contract are to be taken as mutually exclusive of one another. In case of any discrepancy between the documents, they documents will be interpreted as: a) Contract agreement b) Letter of acceptance c) Form of tender d) Contract drawings e) Preliminaries (Particular & General items) f) Bills of quantities g) Specifications h) Signature page and notes i) Instructions to tenderers j) Form of surety undertaking k) Drawings listed in the schedule attached to the tender document	Item			
B	i. The contract bills have been prepared in accordance with the Standard Method of Measurement, of Building Works for East Africa, Second Edition, published in June 2008 by the Architectural Association of Kenya, Chapter of Quantity Surveyors which is available for inspection at the offices of the Quantity Surveyor. ii. Exceptions to the above standard Method of Measurements: Composite descriptions incorporating items which would be subject to separate measurement are deemed to take precedence over the Standard Method of measurement rules.				
	FORM OF CONTRACT				
C	The Contractor will be required to enter into a contract with the Employer under the terms of the Public Procurement and Regulatory Authority Conditions of Contract for Building Works 2021 edition published by the Public Procurement Regulatory Authority, Kenya, copies of which may be inspected at the Quantity Surveyors office. The Contractor's attention is called to the following clauses of the conditions of Contract and additions and amendments thereto, which shall be read as incorporated herein and he shall allow any sums which he considers necessary for the observance of such conditions, together with sub-clauses used in application.	Item			
	General provisions Clause No. 1	Item			

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A	The procuring entity Clause No. 2	Item			
B	The Engineer Clause No. 3	Item			
C	The contractor Clause No. 4	Item			
D	Nominated subcontractor Clause No. 5	Item			
E	Staff & Labor Clause No. 6	Item			
F	Plant, Material and Workmanship Clause No. 7	Item			
G	Commencement, Delays & Suspension Clause No.8	Item			
	Test on completion Clause No. 9	Item			
H	Procuring Entity's taking over Clause No. 10	Item			
I	Defects Liability Clause No.11	Item			
J	Measurement & Evaluation Clause No.12	Item			
K	Variations and Adjustments Clause No.13	Item			
L	Contract Price & Payment Clause No.14	Item			
M	Termination by procuring entity Clause No.15	Item			
N	Suspension and termination by contractor Clause no. 16	Item			
O	Risk and responsibility. Clause No. 17	Item			
P	Insurance Clause No. 18.	Item			
O	Force majeure Clause No. 19	Item			
R	Settlement of claims & disputes Clause No. 20	Item			
	APPENDIX TO THE CONDITION OF CONTRACT				
M	The Appendix to the Conditions of Contract will be filled as follows:- M1) Percentage to cover professional fees for insurance purposes only: ***15 %*** M2) Name of Contractor's surety: …… M3) Amount of surety: ***10 % of contract sum*** M4) Period of submission of programme: ***2 weeks after contract commencement*** M5) Date for possession of site …… *- to be agreed* M6) Contract period: ……	Item			

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	- to be agreed M7) Date for commencement of works …… *- to be agreed* M8) Date for practical completion …… *- to be agreed* M9) Name of bank for purposes of interest calculation: CBK M10) Interval for application of payment certificate: *Fortnight (every 2 weeks)* M11) Minimum amount of payment …… *- to be agreed* M12) Percentage of certified value retained - 10% of contract sum M13) Limit of retention fund - 5% of contract sum M14) Periods for release of retention money to contractor shall be as follows: 50% on practical completion) balance of 50% on expiry of defects liability period (after practical completion and issuance of Certificate of Making Good Defects) M15) Period of final measurement and valuation - 6 months M16) Defects liability period 6 months after practical completion M1&) Damages for delay in completion Ksh 100,000/= per calendar week Signed by the said:..... EMPLOYER (Authorized signatory)				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	CONTRACTOR (Authorized signatory)				
	TOTAL FOR PARTICULAR PRELIMINARIES				
	PRELIMINIARIES				
	BILL NO. 2				
	GENERAL MATTERS				
	IMPORTANT PRICING NOTES The contractor is required to price all items of preliminaries with monetary implications to the contract. Where the contractor indicates a lumpsum for all the preliminaries or where the contractor has priced some items and not others, the total preliminaries priced shall be deemed to include prices for all the items				
	SUFFICIENY OF TENDER				
A	The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices stated in the priced 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.	Item			
	DEFINITIONS AND ABBREVATIONS				
B	Abbreviations used in the Bills of Quantities shall be interpreted as follows:-	Item			
C	"Approved" shall mean: approved by the Architect "as described" shall mean: as described in the Section No.3 (Specifications)"as directed" shall mean: as directed by the Interior designer "B.S." shall mean: the current British Standard Specifications published by the British Standards Institution, 2 Park Street, London, W.I, England KBS shall mean: The Kenya Bureau of Standards Specification	Item			
	DEFINITIONS AND ABBREVIATIONS (cont'd)				
D	"KG" shall mean: Kilogrammes"No" shall mean: Number"M" shall mean: Linear Metres"M2" shall mean: Square Metres"M3" shall mean: Cubic Metres"Ditto" shall mean: the whole of the preceding description except as qualified in the section in which it occurs in brackets it shall mean the whole of the receding description which is contained within the appropriate brackets.M/S	Item			

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	shall mean: Measured separately"B.M.S" shall mean: Both sides measured separately				
	SAMPLES				
A	The contractor shall submit a sample boards accompanied with the relevant specifications during submission of their tenders. All unsuccessful bidders will called to collect their sample boards. The contractor shall furnish additional samples at the earliest possible opportunity before work commences and at his own cost any samples of materials or workmanship that may be called for by the Architect for his approval or rejection until such samples are approved to be the minimum standard for the work to which they apply	Item			
	EXISTING PROPERTY				
B	The contractor shall take every precaution to avoid damage to all existing facilities and other services and he will be held responsible for all damages hereto arising from the execution of his contract and he shall makegood all such damages when directed at his own expense.	Item			
	EXISTING SERVICES				
C	Prior to commencement of any work the contractor is to ascertain from the relevant Authorities the exact position of services in the area and he shall make whatever provisions may be required by the authorities concerned for the support and protection of such services. Any damage or disturbances caused to any service shall be reported immediately to the Architect and the relevant Authority and shall be made good to their satisfaction at the contractor's expense.	Item			
	MATERIALS, TOOLS, PLANT AND SCAFFOLDINGS				
D	All materials and workmanship used in the execution of the works shall be of the best quality and description. Any materials for the works condemned by the Architect shall immediately be removed from the site at the Contractor's expense. The contractor shall be responsible for the provision of all materials, scaffolding, tools, plant, transport and workmen required for the works except in so far as may be stated otherwise herein and he shall allow for the provision of the foregoing except for such items specifically and only required for the use of Nominated Sub-contractors as described herein. No timber used for scaffolding, form work or similar purpose shall be used afterwards in the permanent 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	Item			

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	any amendments in or additions to such regulations				
	GOVERNMENT ACTS REGARDING WORK, PEOPLE ETC.				
A	The contractor is to comply with all local regulations and by-laws of the County Authority including serving notices and paying of fees. In addition to complying with the Occupational Safety and Health Act, 2007 (Cap 514), the contractor shall comply in all aspects with the above-mentioned rules. The contractor will be held responsible for serving on the Director of Occupational Safety and Health Services a written notice not later than seven days after the beginning of the building operations included in this contract stating the particulars required. 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 organization of the works, supply and control of labour etc., and allow accordingly in his tender. No claim in respect of want of knowledge in this connection will be entertained.	Item			
	SUPERVISION				
B	The said works shall be executed under the direction and to the entire satisfaction of the Architect and clerk of works who shall have the Architect's specifically delegated authority and shall at all times have access to the works, to the yards and workshops of the contractor or other places where goods are being prepared for the building	Item			
	TRANSPORT TO AND FROM THE SITE				
C	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. All unit rates for local or imported goods are to include freight, insurance, handling and delivery costs to the project site together with import duties, sale tax, port charges etc. and all other charges of whatever nature.	Item			
	FAIR WAGES				
D	The contractor shall pay rates of wages and observe hours and conditions of labour not less favorable than the minimum conditions of employment applicable in the district in which the work is carried out. The relevant notice must be posted up and kept posted upon the site where it can be conveniently read by the employees concerned in languages they can understand. The contractor is to comply with the Regulations of Wages and Conditions of	Item			

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	Employment Act, Building and Construction Industry Wages Council and is to be responsible for compliance of the sub-contractors employed in the execution of the contract. If required he is to notify the Architect of the names and addresses of all such sub-contractors. Any Contractor or Sub-contractors not complying will not be permitted to tender for other work for such a period as the Architect may determine Should a claim be made to the Architect alleging the Contractor's default in payment of Fair Wages to any workman employed on the contract and if proof thereof satisfactory to the Architect, may failing payment by the contractor, pay the claim out of any monies due or which may become due to the contractor under this contract. The Contractor is to furnish to the Architect, if called upon to do so, such particulars of the rates of wages, hours and conditions of labour referred to above as the Architect may direct				
	POLICE REGULATIONS				
A	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. the contractor must acquit 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. Particular attention is drawn to the Rules published in Legal Notice 179 dated 2nd June 1978 (Building Operations and work of Engineering construction)	Item			
	PROGRAMME OF WORKS				
B	Immediately after signing the contract the contractor is to prepare a Time progress Chart 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 show 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 Upon the letting of the sub-contractors work the contractor is to incorporate times and details of each separate sub-contractor work which information is to be agreed by the sub-contractor and the chart will be so designed to accommodate this information. At the end of each week the contractor is to mark on the chart in a different color the actual time taken to complete the respective stages and sections of	Item			

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	the work. The contractor shall obtain the Architect's approval on the chart and then shall supply copies to the Architect and Quantity Surveyor If at any time it should appear to the Architect that the actual progress of the works does not conform to the approved programme progress schedule the contractor shall produce at the request of the Architect a revised programme showing the modifications and accelerations to the approved programme necessary to ensure completion of the works within the agreed contract period. The submission of and approval by the Architect of such revisions and accelerations shall not entitle the Contractor to any extra payment or extension of time and shall not relieve the contractor of any duties or obligations or responsibilities under the contract				
	OVERTIME				
A	OWING THE NATURE WORKS THE CONTRACTOR MAY REQUIRED TO UNDERTAKE CERTAIN WORKS AN NIGHT OR DURING OFF PEEK OR NON-OFFICE HOUR TO MINIMIZE DISTURBANCE FROM NOISY OPERATIONS. The contractor shall be responsible for any extra costs for overtime working he considers will be necessary in order to complete the works within the contract period or time for completion apart from overtime working which may be authorized by the Architect If overtime is worked out the contractor should allow for cost in respect of such overtime over and above the basic hourly rates as laid down by the Regulation of wages and Conditions of employment Act, Building and Construction Industry Wages Council and excluding any bonuses, profits and overheads.	Item			
	WATER				
B	The contractor shall provide at his own risk and cost all water for use in connection with the works including the work of sub-contractors make arrangements with the local authority for the installation of a separate meter for all water used by him throughout the contract and pay all costs and fees in connection therewith. He shall also provide temporary storage tanks and tubing etc. as he may consider necessary and clear away at completion. All water shall be fresh, clean and pure, free from earthly vegetable or organic matter, acid or alkaline substance in solution or suspension. In the event the Contractor is to use the existing Water connection, they MUST ensure that joint metre readings are taken with the Landlord and Project Manager prior to commencement of works.	Item			

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	LIGHTING AND POWER				
A	The contractor shall provide at his own risk and cost all temporary artificial lighting and power for use on the works including all sub-contractors and specialists' requirements and including all temporary connections, wiring, fittings etc. and clearing away on completion. The Contractor shall pay all fees and obtain all permits in connection therewith. In the event the Contractor is to use the existing Power connection, they MUST ensure that joint metre readings are taken with the Landlord and Project Manager prior to commencement of works.	Item			
	PRIME COST SUMS				
B	i) The words "Prime Cost" (or the initials "P.C") appearing in the contract documents shall mean net costs exclusive of any trade, cash or other discount what soever but inclusive of the costs of the packing, carriage and delivery. Such costs shall be the same due to the sub-contract or supplier after adjustments where applicable in respect of measurements of rates. ii) Any increase or decrease in the prime costs sums resulting from the adjustments and properly paid by the contractor shall be added or deducted from the contract sum in the final account. In substantiation the contractor will require to produce to the Quantity Surveyor all quotations, invoices and receipted accounts as shall be necessary to show the details of the sums actually paid. iii) Any sum added by the contractor in these Bills of Quantities in respect of profits upon any prime costs will be deducted at the final settlement of accounts and the sum will be added to the amount of which will bear the same proportion to the sum added as the net amount properly expended to the original P.C sum.	Item			
	NOMINATED SUB-CONTRACTORS				
C	The contractor shall accept responsibility for providing the following services for nominated sub-contractors. i) GENERAL ATTENDANCE: The following services are described as "allow for general attendance" a) Use for the purpose of the sub-contract works of any scaffolding belonging to or provided by the contractor while it remains so erected upon site, provided that no warranty or other liability on the part of the contractor or of his other sub-contractors shall be created or implied in regard to the fitness, condition or suitability of the said scaffolding for the purpose of the sub-contract works. c) Use of sanitary accommodation, mess-rooms and welfare facilities. d) Provision of space for	Item			

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	erecting of offices or stores or space for storage of plant and materials.				
A	ii) SPECIAL ATTENDANCE: The following services are stated under a separate item and where described under the following headings shall mean: a) Taking delivery including the provision of unskilled labour necessary to attend upon the sub-contractors' workmen for the purpose of unloading plants and materials when received upon the site and placing in position within the sub-contractor's storage space or store. b) Hoisting including the provision of unskilled labour and the use of any contractors standing scaffolding and plant for the purpose of assisting the sub-contractors' workmen in hoisting the sub-contractor's plant and materials to the various levels but not placing in its final position. c) Providing power including the provision of power during the course of the works and during the period of commissioning and training.	Item			
	NOMINATED SUPPLIERS				
B	The contractor shall take delivery anywhere in Nairobi of all materials or goods supplied by the Nominated suppliers and shall sign a receipt as having received them in good order and condition. He shall offload, transport to site, unload, hoist, provide safe storage and thereafter be responsible for any loss or damage or replacement of any such lost or damaged articles at his own expense and shall return case if so required. Provision is made herein following each appropriate P.C sums for the costs of the foregoing services against items reading "take delivery of and fix only"	Item			
	PROTECTION OF THE WORK				
C	The Contractor shall cover up and protect all finished work liable to damage until the completion of the works. In the event of any damages occurring to the works, materials, on site in temporary possession of the contractor for the purpose of this contract either from weather, want of proper protection, defects, or insufficiency of the works or any other causes or whatsoever during the progress of the works, the contractor shall be responsible and without extra charge, make good all damage and pay all costs which may be levied.	Item			
	PREVENTION OF NUISANCE				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
A	The works and such sections of the site necessary thereafter shall be under the entire care and control of the contractor during the whole period of the contract and shall take all possible precautions to prevent any nuisance, inconvenience or injury to the holder or occupiers of the existing or surrounding properties and to the public generally, and shall at all times keep all paths and roads affected by the works in a safe and clear state, and shall use proper precautions to ensure the safety of all wheeled traffic and pedestrians.	Item			
	REMOVAL OF PLANT AND RUBBISH ETC				
B	The Contractor shall upon completion of the works remove and clear away all temporary buildings, plant, rubbish and unused materials, and shall leave the whole of the site of the works in a clean and tidy state to the satisfaction of the Architect. He shall also remove all rubbish and dirt from the site at weekly intervals or as directed by the Architect. Particular care shall be taken in leaving windows, floors and fittings clean and the removal of all paint and cement stains therefrom.	Item			
	COPYRIGHT				
C	The copyright of these documents is vested in Masterbill Integrated Projects. No part of this document may be reproduced in any form or by any means without their prior permission.	Item			

	TOTAL FOR GENERAL PRELIMINARIES				**AMOUNT Inclusive of VAT) (Kshs)**
A	Particular matters	Page	80		
B	General matters	Page	88		
	SUB-TOTAL PREIMINARIES				

BUILDERS WORKS
(WORK ITEMS)

BILL NO. 2: WORK ITEMS

(Organized appropriately into work sections, such as foundations, walls/structure, finishes, doors and windows, mechanical installations. etc.

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	BILL NO. 1				
	ENABLING WORKS				
	(ALL PROVISIONAL)				
	The quantities and nature of work indicated are provisional. The actual work done shall be ascertained, valued and adjustments made accordingly. The contractor shall take note of the items / materials that have been identified by the employer for retention.				
	Breaking/Demolition of slab to create space for the Strongroom RC wall				
A	Carefully break the existing 150mm thick concrete floor slab complete with and including BRC A142 and 500mm thick hardcore below, to create space for 300mm Strong room RC wall and dispose the resultant debris to an approved damp site; (Approximate Area : 12.96sm)		Item		
B	Ditto, to create space for 200mm thick entrance lobby masonry wall and dispose the resultant debris to an approved damp site; (Approximate Area : 3.48sm)		Item		
C	Ditto, to create space for 100mm thick ATM/ record store masonry wall and dispose the resultant debris to an approved damp site; (Approximate Area : 2.64sm)		Item		
D	Ditto to create space for 600mm wide ramp and dispose the resultant debris to an approved damp site; (Approximate Area : 6.3sm)		Item		
E	Ditto to create space for 1200mm wide ramp and dispose the resultant debris to an approved damp site; (Approximate Area : 1.2sm)		Item		
F	Ditto to create space for strong room entrance and dispose the resultant debris to an approved damp site; (Approximate Area : 2.5sm)		Item		
	Breaking/Demolition of internal and external walls to create space for the proposed new works				
G	Carefully break the existing internal 200mm thick masonry walls setting aside and properly storing salvaged stone, including making good of all disturbed works, exposed surfaces to be left ready to receive new works and dispose the resultant debris to an approved damp site; (Approximate Area : 70sm)		Item		
H	Carefully break the existing internal 200mm thick masonry wall to create space for 900mm x 2400mm door in the server room setting aside and properly storing salvaged stone, including making good of all disturbed works, exposed surfaces to be left ready to receive new works and dispose the resultant debris to an approved damp site; (Approximate Area : 2.16sm)		Item		

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
A	Carefully break the existing external 200mm thick masonry wall to create space for incoming doors and kitchen window, setting aside and properly storing salvaged stone, including making good of all disturbed works, exposed surfaces to be left ready to receive new works and dispose the resultant debris to an approved damp site; (Approximate Area : 0.68sm)		Item		
B	Carefully take out the existing plywood board fixed on frame, metal double door including frame approximate size 900 x 2400mm high and dispose leaving surface ready for other works. (Approximate Area : 2.5sm)		Item		
C	Carefully take out the existing dry wall 1500 x 3140mm high and dispose, leave surface ready for other works.(Approximate Area : 4.71sm)		Item		
D	Carefully break the existing internal 200mm thick masonry wall 1300 x 3140mm high and dispose leaving surface ready for other works. (Approximate Area : 4.08sm)		Item		
	Removal of existing wall finishes				
E	Carefully rub down existing decorative paint and prepare surfaces ready to receive new paint work; repair any wall blemishes and defects and dispose off the resultant debris to an approved damping site (Approximate area: 38sm) 		Item		
F	Ditto for decorative textured paint (Approximate area: 43sm)		Item		
G	Ditto for decorative textured paint around various columns (Approximate area: 40sm)		Item		
H	Ditto for paint to server room (Approximate area: 70sm)		Item		
	Removal of existing shopfronts				
A	Carefully take out 2 piece frameless glass shop fronts including stainless steel brackets & accessories overall size 2160 x 2725mm high. Make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site:		Item		
B	Ditto overall size 2160 x 2742mm high		Item		

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	Removal of existing glass partitions				
C	Carefully take out top & bottom frame glass partition including frameless glass door overall size 4593 x 2167mm high including all accessories. Make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site:		Item		
	Removal of existing doors				
D	Carefully take out single leaf panel doors size 900 x 2400m high with timber frame and make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site: (2 No doors)		Item		
E	Carefully take out frameless double leaf door with side light size 2160 x 2742mm high and make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site:		Item		
F	Ditto overall size 2167 x 2742mm high and make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site:		Item		
G	Carefully take out timber door size 800 x 2100m high with timber frame & plywood on frame and make good any disturbed works, and block up opening. Hand over to landlord and dispose the resultant debris to an approved damping site:		Item		
H	Carefully take out blockboard, frame & metal door 900 x 2100mm high and frame and make good any disturbed works. Hand over to landlord and dispose the resultant debris to an approved damping site:		Item		
I	Carefully take out double swing shutter door 2100 x 2400mm high and make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site:		Item		
J	Carefully take out 1no metal door 900 x 2100mm high including plywood on frame blocking up opening and make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site:		Item		
K	Carefully take out door 900 x 2100mm high including door frame and block up opening and make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site:		Item		
	Removal of existing mild steel doors				
A	Carefully take out double leaf mild steel doors overall size 1500 x 2400mm high with steel frame and make good any disturbed works, surfaces left ready to receive new works, hand over to clients maintenance team or the person in charge of storing and dispose		Item		

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	the resultant debris to an approved damping site: (1 No door)				
B	Ditto but single leaf mild steel door overall size 900 x 2400mm high (4 No door)		Item		
	Removal of existing roller shutters				
C	Carefully take out roller shutter overall size 2150 x 2550mm high and make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site: (2 No door)		Item		
D	Carefully take out roller shutter overall size 2160 x 2550mm high and make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site: (1 No door)		Item		
E	Carefully take out roller shutter overall size 2170 x 2550mm high and make good any disturbed works, surfaces left ready to receive new works, hand over landlord and dispose the resultant debris to an approved damping site: (1 No door)		Item		
	Removal of light fittings & accessories				
F	Carefully take out/remove existing ceiling down lighters and wiring and handover to landordType A Approximately: 4no Type B Approximately: 43no		Item		
	Removal of existing ceiling				
G	Carefully dismantle/remove existing gypsum ceiling and make good any disturbed works and dispose the resultant debris to an approved damping site. (Approximately: 138sm) 		Item		
	Removal of existing floor finishes				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
A	Carefully hack out existing porcelain floor tiles, make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site (Approximate area: 138sm)		Item		
B	Carefully remove step 197mm high x 1250mm wide, make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site (Approximate area: 138sm)		Item		
C	Carefully hack out existing ceramic floor tiles, make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site (Approximate area: 11sm)		Item		
D	Carefully break up existing red oxide floor finish, make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site (Approximate area: 101sm)		Item		
E	Carefully break up existing red oxide floor finish, make good any disturbed works, surfaces left ready to receive new works, hand over to landlord and dispose the resultant debris to an approved damping site (Approximate area: 19sm)		Item		

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
F	Carefully break up dilapidated concrete yard, make good anydisturbed works, surfaces left ready to receive new works,hand over to landlord and dispose the resultant debris to an approved damping site (Approximate area: 42sm)		Item		
	Removal of existing timber decking				
A	Carefully dismantle/remove existing timber decking 3705 x 9045mm and make good any disturbed works and dispose the resultant debris to an approved damping site. (Approximately: 35sm)		Item		
	Removal of existing timber shutter				
B	Carefully dismantle/remove existing timber shutter 1000 x 1000mm. Hack surrounding surface for jointing voids and cover hole in slab with reinforced concrete. Dispose the resultant debris to an approved damping site. (Approximately: 1sm)		Item		
	Removal of existing timber framed canopy				
C	Carefully dismantle/remove existing timber framed canopy with roof covering overall size 4723 x 3293mm. Hack surrounding surface for jointing voids and cover hole in slab with reinforced concrete. Dispose the resultant debris to an approved damping site. (Approximately: 16sm)		Item		
	Removal of existing ablution facility				
D	Carefully dismantle/remove existing ablution facility including 2 WC cubicles & 2 shower cubicles including sloping roof slab overall size 5510 x 1740 x 2390mm high. and dispose the resultant debris to an approved damping site leaving surface ready for new works. (Approximately: 23cm)		Item		

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	Removal of existing ceiling fans				
A	Carefully dismantle/remove existing 3no. ceiling fans handover to landlord and dispose the resultant debris to an approved damping site leaving surface ready for new works.		Item		
	Other demolition works				
B	Provisional Sum Allow provisional sum for additional demolitions		Item		
	ALTERATION WORKS				
C	Block existing flush doors with natural stone blocks including finishing with three coats rolled applied paint (Approximate Area: 4.32sm)		Item		
D	Hack walls and allow for wall ties (for jointing old and new wall). Cut existing wall & building new walling with hoop iron at alternate courses to match surrounding surfaces to block the opening (Approximate Area: 2.5sm)		Item		
E	Break up 2no. manholes 600 x 900mm set aside cover & frame for reuse. Re-build/ modify by lowering and adding additional reinforced concrete cover and frame to be finished with tiles		Item		
F	Gate repair - Rub down existing rear sliding gate, repaint, strengthen and enhance locking mechanism for external sliding door to Architects Approval		Item		
G	Supply and install Razor wire complete with Electric Fence with a minimum 8no. electric fence strands complete with energizer unit & all accessories (Approximate Length: 22m)		Item		
	DECOMMISSIONING OF SERVICE UTILITIES				
H	Carefully map out and identify all electrical services and provide a report and proposed plan for protection and decommissioning. Decommission and stop all Electrical Services including but not limited to electrical services and fittings: plug end of remaining services and terminate power as necessary		Item		

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
I	Carefully map out and identify all mechanical services and provide a report and proposed plan for protection and decommissioning. Decommission and stop all Mechanical Services including but not limited to plumbing and drainage services and fittings, sewer line & fittings : plug end of remaining services and terminate water and sewer as necessary		Item		
J	Allow for decommissioning and stopping all services below the staircase. Decommission and stop all Mechanical and Electrical Services including but not limited to electrical services, plumbing and drainage services and fittings, sewer line & fittings : plug end of remaining services and terminate water, sewer and power as necessary Architect to advise on future use of services		Item		
	SUBTOTAL ENABLING WORKS ***(carried forward to builders works summary page 122)***				
	BILL NO. 2				
	SUBSTRUCTURE				
	(ALL PROVISIONAL)The quantities and nature of work indicated in this Bill are all provisional. The value of actual work done shall be ascertained once it is completed and thereafter, the value of the Provisional items shall be substituted with the measured work and adjusted in accordance with the contract.				
	EXCAVATIONS AND DISPOSAL				
	All excavations are measured net. The contractor shall allow for any working space. The contractor shall allow for multiple handling of earthworks within the site in their rates.				
A	Excavation in compacted fill material (soil mixed with weathered rock and other material) foundation trenches depth not exceeding 1.5m deep starting from reduced level	m3	28		
B	Ditto for foundation trenches for Strong Room depth not exceeding 1.5m deep starting from reduced level	m3	20		
	BACKFILLING & COMPACTION				
	Disposal of excavated materials				
C	Load, transport and dispose from site to approved dump sites.	m3	21		
	Back filling				
D	Backfill with non expansive imported material (murram)including watering and compaction of surfaces to 98% MDD(AASTO T-99) in layers not exceeding 300mm thick	m3	26		
	SUNDRY ITEMS				
	Plunking and strutting				
E	Allow for maintaining and supporting sides of excavations and for keeping the same free from		Item		

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	falling materials				
	Dewatering				
F	Allow for keeping excavations free of water and mud by pumping, bailing or other approved means.		Item		
	HARDCORE AND BLINDING				
G	300mm thick hand packed hardcore: compacted to the Engineer's satisfaction.	m2	48		
H	50mm thick murram or quarry dust blinding to surfaces of hardcore	m2	48		
	SOIL POISONING				
	Anti- termite treatment				
I	Premise 200 SC' or other equal and approved chemical Antitermite treatment to surfaces of blinded hardcore and around foundations: apply in accordance with the manufacturer's specifications: provide a ten (10) years written guarantee against termites	m2	48		
	DAMP PROOF MEMBRANE				
A	1000 gauge polythene damp proof membrane laid under surface bed with 300mm side and end laps (measured net- no allowance for laps)	m2	48		
	PLAIN CONCRETE				
B	50mm thick mass concrete class 15 blinding under footings	m2	19		
C	Ditto under footings Strong Room footing	m2	13		
	Insitu concrete class 25 to BS 8110, vibrated and reinforced as described, in:-				
D	Strip footings	m3	4		
E	300mm Strong room strip footing	m3	3		
F	300mm Strong room RC wall	m3	6		
G	150mm thick surface bed	m2	27		
H	100mm thick surface bed	m2	21		
I	150mm thick ramps	m2	4		
J	300mm high x 200mm wide upstand beam	m3	0.1		
	REINFORCEMENT				
	Reinforcement in different sizes. High yield square twisted bars or ribbed reinforcement to KS573:2005 Kenya standard specification for cold worked high yield steel bars for reinforcement of concrete bars for reinforcement (or other equal and approved) with and including tying wire, distance blocks and ordinary spacers, all necessary cutting, bending and laying. The rate shall be deemed to include the binding wire and the spacer block.				
K	Strip foundation	kg	131		
L	Strong room strip foundation	kg	230		

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
M	Strong room RC wall	kg	675		
N	Upstand beam	kg	9		
	Mesh fabric reinforcement to B.S. 4483 and setting in concrete with 300mm side and end laps (measured nett- allow for laps)				
O	Fabric mesh ref: A142 weighing 2.22 Kg per square metre in new floor bed	m2	48		
P	Fabric mesh ref: A142 weighing 2.22 Kg per square metre to ramps	m2	4		
	FORMWORK				
	Sawn formwork to:-				
Q	Vertical sides of strip footing	m2	20		
R	Vertical sides of Strong Room strip footing	m2	6		
S	Vertical sides of Strong Room RC wall	m2	38		
T	Edges of ground floor slab over 75mm but not exceeding 150mm high	m	9		
U	Edges of ground floor slab over 150mm but not exceeding 225mm high	m	9		
A	Edges of entrance ramp over 150mm but not exceeding 225mm high	m	4		
	SUBSTRUCTURE WALLING				
	Load bearing natural/ quarry stone block walling, rough chisel dressed bonded and jointed in cement sand (1:3) mortar with and including hoop irons to every alternate course.				
B	200mm thick substructure walling	m2	14		
C	150mm thick substructure walling	m2	13		
D	100mm thick substructure walling	m2	31		
	DAMP PROOF COURSE				
	Three-ply bituminous felt damp proof course bedded in cement and sand (1:3) mortar (measured net allow for laps)				
E	200mm wide horizontal layer	m	11		
F	150mm wide horizontal layer	m	11		
G	100mm wide horizontal layer	m	24		
	SUBTOTAL SUBSTRUCTURES ***(carried forward to builders works summary page 122)***				
	BILL NO. 3				
	PARTITIONS AND WALLING				
	EXTERNAL WALLING				
	MASONRY WALLING				

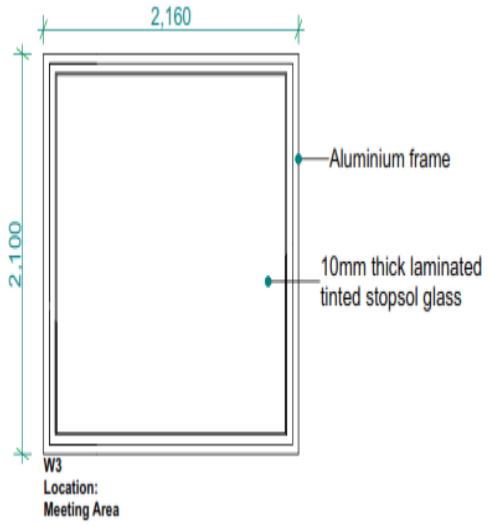
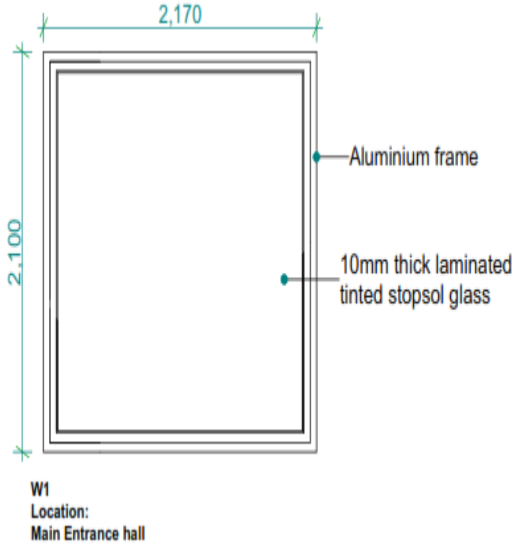
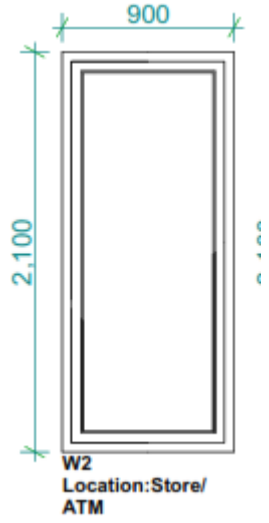
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	Machine cut approved quarry stone or concrete blocks walling bedded, bonded and jointed in cement, sand (1:3) mortar reinforced as necessary with hoop iron at every alternate course.				
H	200mm Thick walling	m2	19		
I	150mm Thick walling	m2	16		
	INTERNAL WALLING				
	MASONRY WALLING				
	Machine cut approved quarry stone or concrete blocks walling bedded, bonded and jointed in cement, sand (1:3) mortar reinforced as necessary with hoop iron at every alternate course.				
J	200mm Thick walling	m2	19		
K	100mm Thick walling	m2	79		
	INTERNAL PARTITIONS				
	GYPSUM DRYWALL PARTITIONS				
	Supply assemble and erect the following purpose madedouble panelled gypsum dry wall partitions with styrofoam or jambolene sound proofing infill comprising appropriate aluminium channel framework (allowance to be made for 3200mm high floor to ceiling height framework), 12mm gypsum board secured to both sides of framework including all accessories such as tape, filler, beadings and the like: all as per Interior Designer's details.				
A	100mm thick drywall partition walling from floor to ceiling 3000mm high with 6mm ms plate and fibre infill, styrofoam, jumbolene or other equal and approved sound proofing material	m2	139		
B	50mm thick drywall partition walling from floor to ceiling 3000mm high with 6mm ms plate and fibre infill, styrofoam, jumbolene or other equal and approved sound proofing material	m2	19		
	GLASS PARTITIONS				
	Supply and install 8mm thick clear laminated glass (4mmclear + 0.38mm PVB +4mm tinted glass) partition panels set in natural anodized aluminium framing, complete with all necessary channels, trims, gaskets, joint sealants, and accessories. Partition to be fixed securely to floor, wall, and ceiling structure as per Architect's drawings and specifications, including all necessary cutting, jointing, and polishing for a complete installation.				
C	8mm thick laminated glass (4mm clear + 0.38mm PVB +4mm tinted glass) partition set in aluminium framing, complete with all accessories and fixing to approval.	m2	32		
	METALLIC GRILL PARTITION				

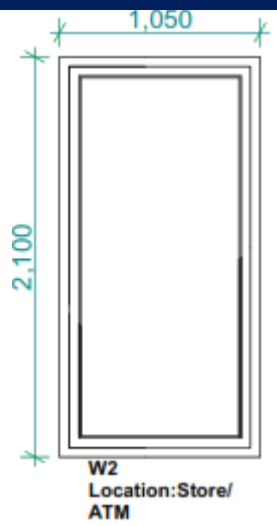
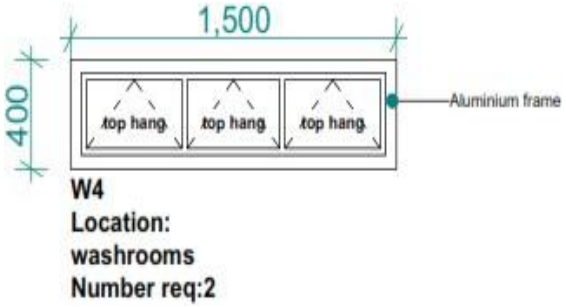
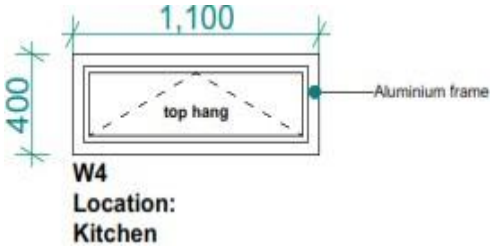
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
D	Fabricated from mild steel or stainless steel bars/ sections, welded or bolted into a rigid frame, with vertical and horizontal members spaced evenly to form a grill pattern. The partition shall be properly aligned, fixed to floor, wall or ceiling with suitable anchors, cleaned and finished with one coat of metal primer and two coats of approved powder coated finish	m2	14		
	BRANDED WALLPAPER				
E	Decorative branded film on glass to be executed as per Architects/Project Managers instructions.	m2	91		
	BULLETPROOF GLASS PARTITION				
	27mm thick approved bullet proof glass in 5No. 4mm thick with (1.76mm thick PVB 4 no. layers) polycarbonate interlayer films glazing complete with aluminium supports to sides : (100x60mm upright frames, 100x45x3mm aluminium frame, 30x25mm U-shape channel to hold bullet proof glass) fixed to aluminium frames; area measured net, allow for laps; in:				
F	1600mm high Counter screens x 1500mm wide (each teller to have 3 vertical panes with 100mm wide overlap to detail)	No	3		
G	1500mm high x 1200mm wide (each to have 3 vertical panes with 100mm wide overlap to detail)	No	2		
	ROOF LEVEL				
	Natural / quarry blue or grey stone chisel dressed				
	PARAPET WALLING				
A	200mm thick walling	m2	18		
B	150mm thick walling	m2	5		
	PRE-CAST CONCRETE COPING				
C	350 x 75 mm thick concrete copping twice weathered and throated fitted to top of walls	m	19		
	SUBTOTAL PARTITIONS & WALLING ***(carried forward to builders works summary page 122)***				
	BILL NO. 4				
	STRUCTURAL WORKS AND STRONG ROOM				
	GROUND FLOOR				
	Insitu concrete class 25, vibrated and reinforced as described, in:-				
D	300mm RC wall	m3	18		
	REINFORCEMENT				
	Reinforcement in different sizes. High yield square twisted bars or ribbed reinforcement to KS573:2014 Kenya standard specification for cold worked high yield steel bars for reinforcement of concrete bars for				

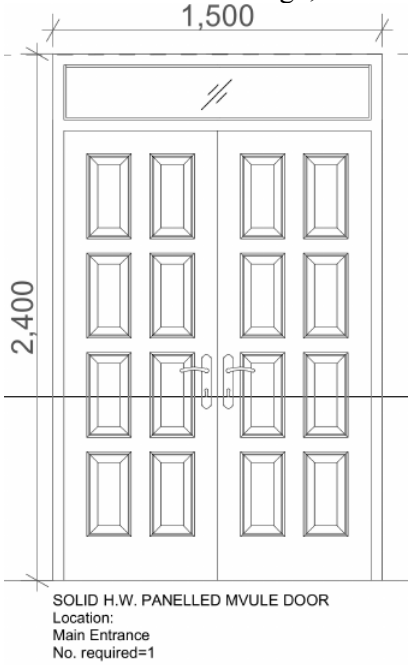
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	reinforcement (or other equal and approved) with and including tying wire, distance blocks and ordinary spacers, all necessary cutting, bending and laying. The rate shall be deemed to include the binding wire and the spacer block.				
E	300mm RC wall	kg	2,147		
	FORMWORK				
	Sawn formwork to:-				
F	Sides of 300mm RC wall	m2	119		
G	Edges of 300mm RC wall opening over 225mm but not exceeding 300mm	m	9		
	ROOFTOP				
	Insitu concrete class 25, vibrated and reinforced as described, in:-				
H	Beams	m3	2		
I	150mm thick slab - above toilet	m2	22		
	REINFORCEMENT				
	Reinforcement in different sizes. High yield square twisted bars or ribbed reinforcement to KS573:2014 Kenya standard specification for cold worked high yield steel bars for reinforcement of concrete bars for reinforcement (or other equal and approved) with and including tying wire, distance blocks and ordinary spacers, all necessary cutting, bending and laying. The rate shall be deemed to include the binding wire and the spacer block.				
J	Beams	kg	350		
A	150mm thick slab	kg	387		
	FORMWORK				
	Sawn formwork to:-				
B	Sides and soffits of beams	m2	40		
C	Edges to roof slab - 150mm thick	m	9		
D	Soffits of roof slab	m2	22		
	SUBTOTAL STRUCTURAL WORKS & STRONGROOM ***(carried forward to builders works summary page 122)***				

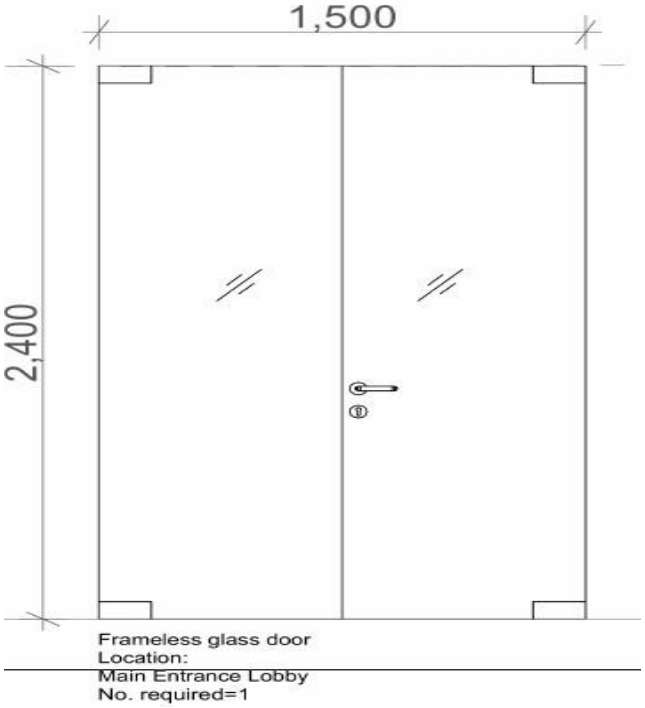
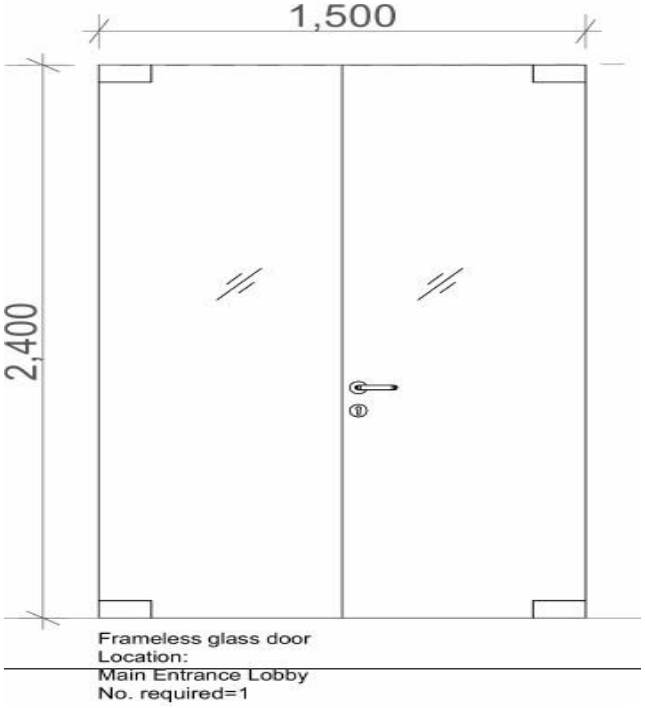
	BILL NO. 5				
	ROOF FINISHES AND DRAINAGE				
	The quantities and nature of work indicated are provisional. The actual work done shall be ascertained, valued and adjustments made accordingly.				
	ROOF COVERING AND FINISHES				
	Levelling and protective Screed				

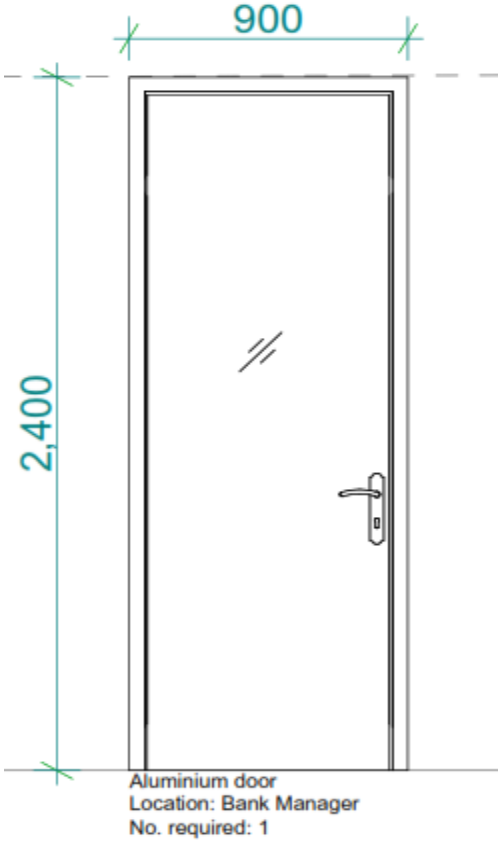
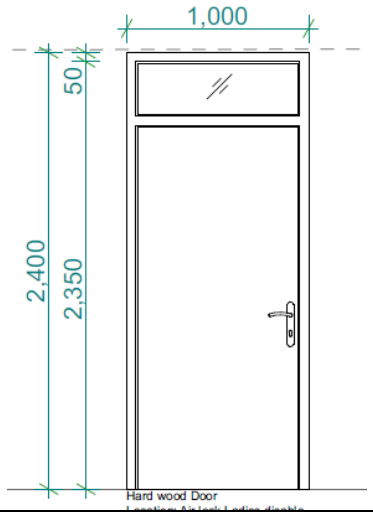
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Inclusive of VAT) (Kshs)	AMOUNT Inclusive of VAT) (Kshs)
	40mm average thick (minimum 20mm to maximum 60mm) to concrete surface sloping cement sand (1:3) screed to receive (measured separately) APP/MAPEI water proofing bottom layer and 15mm thick top layer protective screed above waterproofing to:				
A	To solid suspended roof slab	m²	20		
	Concrete Tiles				
	25mm thick interlocking concrete tiles bedded in cement sand screed (m/s); all laid in accordance with the Architects details and pattern to:				
B	Interlocking concrete tiles	m²	20		
C	100 mm high skirting	m	18		
	WATERPROOFING				
	Water proofing				
	Prepare and apply to vertical and/or horizontal surfaces 4mm thick APP water proofing or MAPEI or other equal and approved, by an approved specialist all in accordance with the manufacturers instruction catalogue including provision of a written ten (10)year anti leak guarantee. Rate to include all necessary surface preparation chasing, forming skirting, fillets works or other similar and approved				
D	Solid suspended roof slab	m²	20		
	SUB-TOTAL ROOF STRUCTURE & FINISHES ***(carried forward to builders works summary page 122)***				
	BILL NO. 6				
	BALUSTRADE				
	STAINLESS STEEL BALUSTRADES				
A	Supply, fabricate, and fix 1,000 mm high stainless steel balustrade, comprising 50 mm diameter × 3 mm thick posts at 1,200 mm centres, 50 mm diameter × 2 mm thick handrail welded to posts, intermediate horizontal rails 20 mm diameter × 2 mm at 150 mm centres, all joints ground smooth and polished to satin finish, including base plates, anchor bolts, welding, polishing, and making good disturbed surfaces; measured per linear metre.	m	8		
	SUB-TOTAL BALUSTRADES ***(carried forward to builders works summary page 122)***				
	BILL NO. 7				
	WINDOWS				
	ALUMINIUM FRAMED SHOPFRONTS				
	Supply assemble and fix the following purpose made SHOP FRONTS including all necessary accessories. Powder coated approved aluminium sections framework with 8mm laminated glass (4mm clear glass + 0.76mm pvb + 4mm clear glass) fitted with				

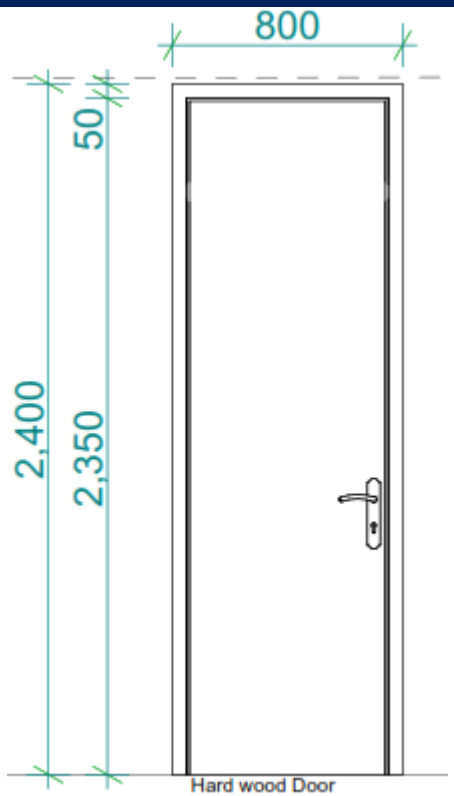
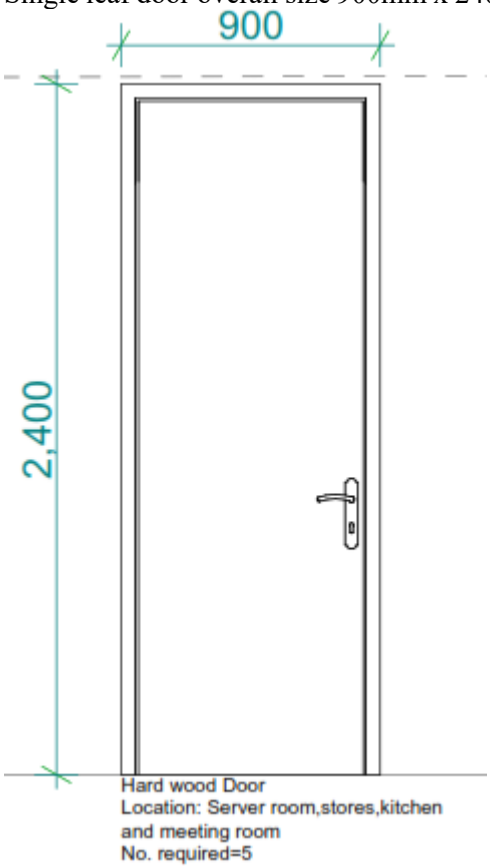
	approved glazing rubber complete with all accessories to specialist's detail and Architect's approval.				
A	Window overall size 2160 x 2100 mm high - Area : 4.54sm 	No	1		
B	Window overall size 2170 x 2100mm high - Area : 4.56sm 	No	1		
C	Window overall size 900 x 2100mm high - Area : 1.89sm 	No	1		
D	Window overall size 1050 x 2100mm high - Area : 2.21sm	No	1		

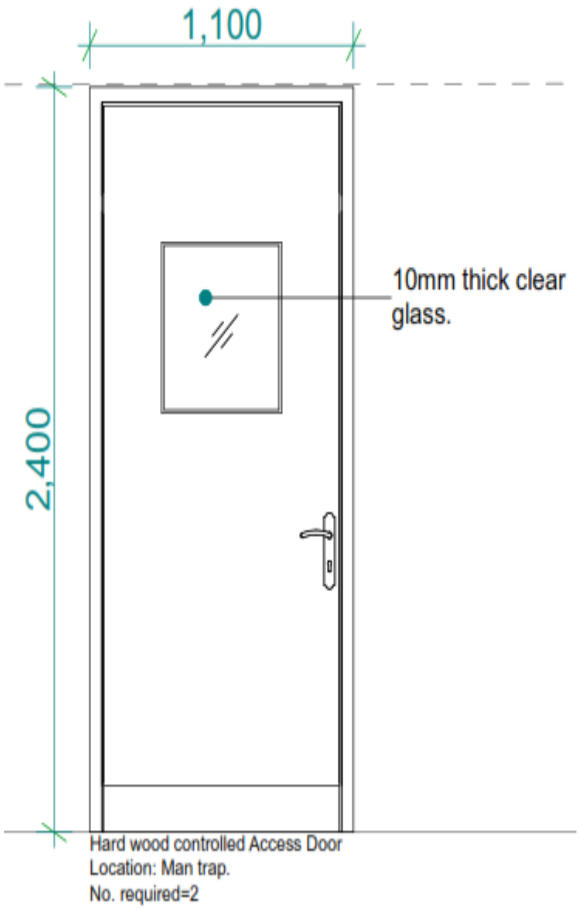
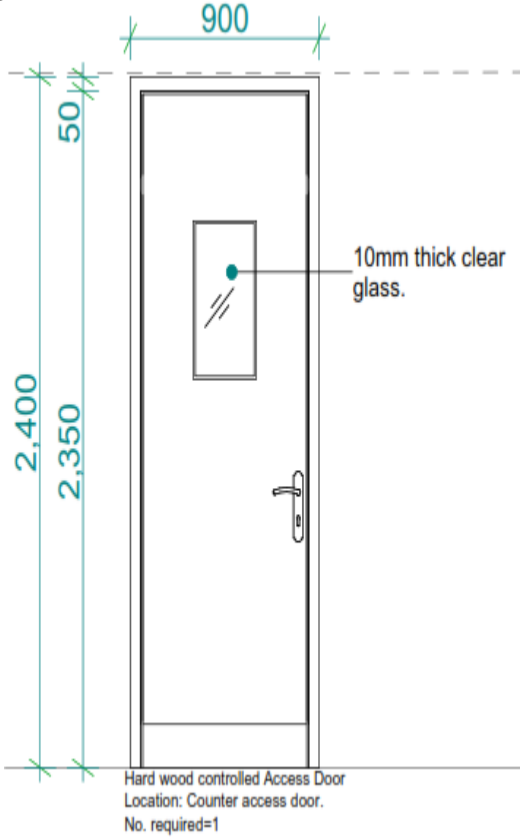
					
	ALUMINIUM WINDOW FRAMES				
	Supply assemble and fix the following purpose made aluminium windows comprising of approved powder coated aluminium sections, glazed with and including 5mm thick clear glass including all accessories such as beadings, glazing rubber & all ironmongery. Colour to be approved by architect before fabrication				
E	Window overall size 1500 x 1500mm high - Area : 2.25sm	No	1		
F	Window overall size 1500 x 400mm high - Area : 0.6sm 	No	2		
G	Window overall size 1100 x 400mm high - Area : 0.44sm 	No	1		
	BLINDS TO WINDOWS/OPENINGS				
	WINDOW BLINDS Louverlite Window Roller Blinds (perspective range or equal & approved) mounted onto beam complete with mounting bracket and metal chain all done to Interior Design details				
A	Window blinds complete with all operating accessories all to Interior Designers Approval	m²	14		
	Window Boards				
B	200 mm x 25mm thick wrot hard wood window board with rounded edge and 25mm thick quadrant and including plugging to internal windows cill with	m	12		

	steel nails: building ends to window jamb :'Pinotex' finish : all in accordance with the Architect's detail				
	WINDOW CILL				
C	250mm wide x 100mm thick weathered and throated window cill including bedding in cement and sand (1:3) mortar to racked external wall window cill : building ends to window jamb	m	6		
	SECURITY STEEL GRILL MESH				
D	Mild steel grill mesh primed, comprising of rolled steel section frames including framing fixing lugs overall size of 2160 x 2100mm high all to architect's details and approval. Area: 4.54sm	No	1		
E	Ditto but overall size of 2170 x 2100mm high. Area: 4.56sm	No	1		
F	Ditto but overall size of 900mm x 2100mm high. Area: 1.89sm	No	1		
G	Ditto but overall size of 1050mm x 2100mm high. Area: 2.21sm	No	1		
	PAINTING AND DECORATING				
	Touch up primer, prepare and apply two undercoats and one finishing coat gloss paint on metal work				
H	General surfaces of Grilles (both sides)	m²	22		
	SUB-TOTAL FOR WINDOWS ***(carried forward to builders works summary page 122)***				
	BILL NO. 8				
	DOORS				
	MVULE DOOR				
A	Supply and fix new double-leaf solid mvule door, size 1500 x 2400mm high, 	No	1		
	FRAMELESS GLASS DOORS				
A	12mm thick toughened frameless glass double leaf door overall size 1500mm x 2400mm high including	No	1		

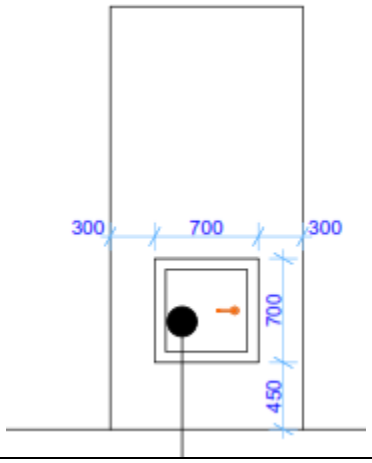
	approved ironmongery such as locks, stainless steel medium duty double action floor spring and top pin stainless steel pull handles and the like all as per Interior Designer's details - Area : 3.6sm  				
	FRAMELESS GLASS DOORS				
B	12mm thick toughened frameless glass double leaf door overall size 1500mm x 2400mm high including approved ironmongery such as locks, stainless steel medium duty double action floor spring and top pin stainless steel pull handles and the like all as per Interior Designer's details - Area : 3.6sm  	No	1		
	ALUMINIUM FRAMED DOOR				
	Supply assemble and fix the following purpose made aluminium framed door including all necessary accessories. Powder coated approved aluminium sections framework with 8mm laminated glass (4mm				

	clear glass + 0.76mm pvb + 4mm clear glass) fitted with approved glazing rubber complete with all ironmongery including pull handles, lock, hinges and accessories all to specialist's detail and Architect's approval.				
A	Door overall size 900mm x 2400mm high. 	No	1		
	TIMBER DOORS				
	Hardwood Doors complete with timber frame with damping gasket , 300mm wide fanlight and approved ASSABLOY ironmongery such as locks, brass finish medium duty double action floor spring and top pin, no. 1760mm high BRASS finish on stainless steel pull handles and the like all as per Interior designer's details				
A	Single leaf door overall size 1000mm x 2400mm high with 300mm wide fanlight and glass view panel. 	No	5		
B	Ditto but overall size 800mm x 2400mm high	No	1		

					
C	Single leaf door overall size 900mm x 2400mm high. 	No	4		
A	Double leaf door to Cleaners Store overall size 1500mm x 2400mm high.	No	1		
	TIMBER SECURITY DOOR				
	Hardwood Security door with 4mm thick plate Access controlled complete with hardwood frame				
B	Door size 1100 x 2400mm high with 10mm thick clear glass view panel	No	2		

					
A	Door size 900 x 2400mm high with 10mm thick clear glass view panel 	No	1		
B	Door size 900 x 2400mm high to ATM store	No	1		
C	Double swing door size 900 x 2400mm high to Open Yard	No	1		
	CONTROL ACCESS METAL GRILL DOOR				

A	Door overall size 1000mm x 2400mm high to Cash Vault	No	1		
	FIRE RATED SECURITY DOORS				
B	75mm thick static painted heavy duty 2hr Fire Rated Door Including rockwool in ceramic wool in fire rated gypsum in 1.2 mm thick mild steel casing complete with a stainless steel horizontal panic exit bar and Assa Abloy ironmongery overall size 900mm x 2400mm high to Server Room & Records Store	No	2		
	STRONG ROOM DOOR				
C	Supply and fix access-controlled postformed single swing door, size 1200 x 2400mm high and all necessary wiring and accessories, to Interior Designer's schedule and design specifications, finished to approval.	No	1		
	STRONG ROOM EMERGENCY DOOR				
D	Supply, deliver and install 1no. emergency-grade steel escape door, fabricated from 1 inch thick reinforced steel plate, weighing approx. 300kg. The unit to include heavy-duty frame, hinges, 1No. digital combination lock, and 1No. mechanical key lock. Opening size: 700mm (H) x 700mm (W). The door to be securely anchored and aligned. Includes all accessories, fasteners, testing and commissioning. 	No	1		

					
	IRON MONGERY				
	Supply and fix the following ironmongery with matching screws as per ASSABLOY catalogues or other equal and approved.				
A	Stainless steel double washered butterfly hinges size 100 x 76 x 2 mm thick as Assa Abloy and approved all to interior designers approval	Pairs	31		
B	Overhead Door closers as ASSA ABLOY "8916AF89"	No	2		
C	3-Lever mortice lock as ASSA ABLOY complete with approved lever handles - or other equal and approved	No	2		
D	2-Lever mortice locks complete with aluminium lever handles or any other equal all to approval.	No	5		
E	Union Cat. 'toilet locks - or other equal and approved	No	6		
F	Stainless Steel Pull / push handles				
G	Stainless Steel kicking Plate as ASSA ABLOY size 200 x 800 mm - (provisional)	No	**3**		
H	Lock with Rebate set	No	1		
	TOTAL FOR DOORS ***(carried forward to builders works summary page 122)***				
	BILL NO. 9				
	EXTERNAL WALL FINISHES				
	10mm (minimum) 1: 3 plaster, with wood float finish to receive wall tiles as described to:				
A	External Wall	m²	121		
	PAINTING AND DECORATING				
	Prepare existing surfaces by filling cracks, skimming and apply undercoat and two finishing coats of paint to match existing paint per designer's details on :-				
B	External Walls	m²	121		
	GRANITE CLADDING				
C	Decorative Granite Cladding to walls and exposed columns to be executed as per Architects/Project Managers instructions.	m²	28		
	INTERNAL WALL FINISHES				
	PAINTING AND DECORATING				
	Prepare surface by filling in any cracks, skimming and apply one undercoat and two finishing coats of				

	approved vinyl matt emulsion paint from approved paint manufacturer all as per Interior designer's details on :-				
A	To gypsum wall	m²	296		
	PLASTER WORKS				
	15mm (minimum) Two-coat lime plaster, with steel trowelled finish, as described to:-				
B	New walls	m²	326		
C	RC Vault walls	m²	144		
	PAINTING AND DECORATING				
	Prepare and apply plaster primer, one undercoat and two finishing coats of approved silk vinyl matt emulsion paint or other equal and approved as per designer's details on :-				
D	New walls	m²	326		
	RC Vault walls	m²	144		
	PLASTER WORKS	m²	129		
	12mm (minimum) 1: 3 plaster, with wood float finish to receive wall tiles as described to:-				
E	Kitchen	m²	6		
	Washroom	m²	50		
	CERAMIC TILING				
	Supply and fix 6mm thick coloured ceramic wall tiles (prime cost rate Kshs 1,800/= per sm) including bedding in tile grout and pointing with matching grout complete with stainless steel corner pieces				
F	Kitchen	m²	6		
G	Washroom	m²	50		
	GRANITE CLADDING				
H	Decorative Granite Cladding to exposed columns to be executed as per Architects/Project Managers instructions.	m²	67		
	WATER PROOFING				
	Prepare and apply (minimum 1.5 kg/sm) to vertical and "Vandex Super" , "Tecmadry Millenium" or other equal and approved water proofing all done in accordance with the manufacturers instructions. Including provision of a ten (10) year anti leak warranty/guarantee. Allow for all necessary surface preparation chasing, forming skirting, fillets, works over outlets or other similar and approved.				
I	To walls of server room	m²	68		
	SUB-TOTAL WALL FINISHES *(carried forward to builders works summary page 122)*				
	BILL NO. 10				
	INTERNAL CEILING FINISHES				
	DECORATIVE GYPSUM BOARD MULTI-LEVEL CEILING				

A	9mm thick gypsum plastered board ceiling fixed to and including 50 x 50 mm galvanised metal channel grids brandering at 600mm centres both directions fixed with clout headed nails and set out in symmetrical panels with 'V' joints including formation of recesses, cuttings, bulk heads, niches, effects for light features, and making around all services such as light fittings, mechanical ventilation outlets & inlets and the like	m²	24		
B	Gypsum cornice	m	36		
	ACOUSTIC CEILING				
C	Supply and fix approved 600 x 600 suspended acoustic ceiling including all grid suspended with approved galvanised wire necessary battens, cornices, beadings, gauze wire and accessories	m²	239		
	PAINTING AND DECORATING				
	Prepare and apply plaster primer, one undercoat and two finishing coats of approved silk vinyl matt emulsion paint or other equal and approved as per designer's details on :-				
D	To surfaces of gypsum ceiling	m²	24		
	WATERPROOFING				
	Prepare and apply (minimum 1.5 kg/sm) to horizontal and "Vandex Super" , "Tecmadry Millenium" or other equal and approved water proofing all done in accordance with the manufacturers instructions. Including provision of a ten (10) year anti leak warranty/guarantee. Allow for all necessary surface preparation chasing, forming skirting, fillets, works over outlets or other similar and approved.				
E	To ceiling of server room	m²	17		
	SUB-TOTAL CEILING FINISHES ***(carried forward to builders works summary page 122)***				
	BILL NO. 11				
	FLOOR FINISHES				
	PREPARATORY WORKS				
	SCREED				
	Insitu cement and sand (1:3) screeded beds, with steel trowelled finish, on concrete				
A	32mm Screed finished to receive non slip ceramic tiles floor finish	m²	30		
	WATER PROOFING to Wet Area				

	Prepare and apply (minimum 1.5 kg/sm) to vertical and/or horizontal surfaces "Vandex Super" , "Tecmadry Millenium" or other equal and approved water proofing all done in accordance with the manufacturer's instructions. Including provision of a ten (10) year anti leak warranty/guarantee. Allow for all necessary surface preparation chasing, forming skirting, fillets, works over outlets or other similar and approved.				
A	To surfaces of floors - washrooms (Ladies, Gents)	m²	30		
	NON-SLIP CERAMIC TILING				
	Supply and fix 8mm Thick approved coloured non slip ceramic floor tiles (Prime Cost Rate Ksh 1200/= per sm) including bedding, bonding, jointing with cement grout pointing in stained cement laying to falls where necessary				
B	300 x 300mm non slip ceramic floor tiles to washrooms	m²	30		
	SCREED				
	Insitu cement and sand (1:3) screeded beds, with steel trowelled finish, on concrete				
C	32mm Screed finished to receive polished granito tiles floor finish	m²	218		
	POLISHED GRANITO TILES				
	Supply and fix 8mm thick approved Polished granito floor tiles (Prime Cost Rate Ksh 3500/= per sm) including bedding, bonding, jointing with approved tiling adhesive pointing of joints with approved stain of grout, where necessary making neat door thresholds, necessary transition joints or expansion joints with approved filler where required				
D	Polished Granito Floor Tiles (indicative sizes 600 x 600 x 8mm)	m²	218		
E	Polished stainless-steel skirting (Code 304/316 - 0.8 or 1mm thick) fitted around 95 x 20mm MDF backing including cutting, jointing and all necessary adhesive to Interior Designers detail and specification	m	111		
	NON-STATIC RUBBER FLOOR-Server Room				
F	RUBBER FLOORING, Thickness is 15mm & density of the SBR; rubber is 900 to 950kg/m3; Abrasion resistance 165mm3 (ISO 4649); Residual indentation 0.08mm (EN433); Fire-proof Bfl-S1 (EN13501-1); Hardness 85 "± 5 Shore A (ISO 7619); Classification U4, P3, E2, C1 (UPEC) all to interior designer approval.	m²	17		
G	100mm high x 1.5mm thick black flexible antistatic pvc skirting	m	17		
	SUB-TOTAL FLOOR FINISHES ***(carried forward to builders works summary page 122)***				
	BILL NO. 12				
	TELLER COUNTERS				

	25mm thick plain Blockboard fixed to 40x40x3mm RHS sections (primed and painted in 3 coats of gloss oil paint): form holes size 380x280 and 75mm diameter on the board and fix to masonry walling				
A	Teller worktop front	m²	6		
B	8mm thick MS Plate on MS grille between the blackboard and mild steel support	m²	6		
	Mild steel, wire brushed and primed before fixing framed; welded to B.S 449 to rates include cutting, bending, bolt holes, fillets welding and grinding to structural engineers' detail and approval				
C	50 x 50 x 3mm thick SHS supports	m	34		
	MARBLE SLAB				
	25mm thick approved polished Marble slabs form holes size 380x280 and 75mm diameter on the Marble slab: fixed to 25mm blockboard backing with approved adhesive in:				
D	Worktops	m²	4		
E	Writing top		4		
F	200mm fascia	m²	10		
	ACCESSORIES				
G	Stainless Steel cash scoop/tray as "CHUBB MK III" or other equal and approved size 380x280x150mm deep including brass knob and slides and fixing to counter top	No	3		
H	75mm diameter plastic grommet caps to manufacturer's specifications and fixing to counter top	No	3		
I	CPU Holders and Foot Rest including Mild steel square hollow sections cut and welded together primed with red lead oxide and painted in three coats gloss oil paint after fixing: 250x500x20 mm thick beech effect laminated MDF board: 50x3mm Circular Hollow Section foot rest with 50mm long x 10mm diameter solid bar bracing members plugged to masonry wall	No	3		
	COUNTER DIVIDERS				
	ABOVE THE COUNTER BULK- HEAD				
J	Gypsum board sheets: fixing with recommended screws to steel studs and tracks including skimming	m²	10		
	ABOVE THE COUNTER FASCIA				
	20mm Thick Laminated Medium Density Fibre (MDF) Board Fixed to 100x45x3mm aluminium frame Powder coated aluminium sections from Booth Extrusions Ltd; including cutting riveting and fixing into position,				
K	20mm thick laminated MDF board to fascia	m²	5		
L	12 mm thick board to ceiling (drop ceiling) to detail	m²	10		

A	50 x 50 x 3mm Powder coated aluminium frame above Teller counters with 25 x 25 x 3mm powder coated aluminium members	m²	8		
	PAINTING AND DECORATING				
	Prepare and apply one undercoat and two coats of matt emulsion paint from approved manufacturer				
B	Gypsum board bulk head	m²	10		
	SUB-TOTAL TELLERS COUNTERS ***(carried forward to builders works summary page 122)***				
	BILL NO. 13				
	FITTINGS AND FIXTURES				
	PLINTHS				
	Plinths for Fixtures				
A	100 mm thick plain concrete (1:3:6-38mm aggregates) benching including formwork to sides of plinths	m²	1		
	Screed				
	Insitu cement and sand (1:3) screeded beds, with steel trowelled finish on concrete				
B	12mm thick cement and sand (1:3) screed with smooth finish	m²	4		
	KITCHEN CABINETS				
	Supply and fix the following kitchen cabinets consisting of 20mm thick Laminated MDF doors and blockboard carcase, complete with approved granite top (20mm thick), divisions, shelves, drawers and the like, ironmongery, all assembled in accordance with the manufacturer's instructions.				
C	Low level cabinets size 4000mm long x 600 mm deep x 900 mm high	No	1		
D	High level cupboard overall size 2800 mm long x 600mm deep x 800 mm high	No	1		
	LACTATING MOTHERS ROOM CABINET				
	Supply and fix the following kitchen cabinets consisting of 20mm thick Laminated MDF doors and blockboard carcase, complete with approved granite top (20mm thick), divisions, shelves, drawers and the like, ironmongery, all assembled in accordance with the manufacturer's instructions.				
E	Low level cabinets size 2100mm long x 600 mm deep x 900 mm high	No	1		
F	High level cupboard overall size 2900 mm long x 600mm deep x 800 mm high	No	1		

	Supply and fix Approved Granito tiles (prime cost rate Kshs 3,500/= per sm - 300mm x 300mm x 8mm thick minimum) including bedding in cement grout and pointing with coloured grout				
A	Granito tiles to vanity top including fascia and skirting	m²	4		
	Counter Tops				
	Supply and fix Approved Polished Granite slab including bedding in cement grout and pointing with colored grout				
B	20mm thick Polished Granite 800mm wide, 600mm deep and 850mm from finished floor level to counter top including 225fascia and 100mm high matching backslash on laminated particle board carcass	m	2		
	SIGNAGE				
	PROVISIONAL Allow for approved DDK Branded Signage				
C	Branded Illuminated Signage- Main Entrance	No	1		
D	Photo-luminescent with brush aluminum frame signage - various locations	No	10		
E	No smoking / No use of Cell Phones / Premises under surveillance signs	No	4		
F	"Authorized personnel" sign to restricted zone	No	5		
G	Danger signs to generator room door/power room	No	1		
H	Danger sign / Caution signs	No	2		
I	Signage to ladies' washroom	No	1		
J	Signage to gents' washroom	No	1		
K	Branded bulk heads to service counters	No	7		
L	Branded notices board	No	7		
	SUB-TOTAL FITTINGS AND FIXTURES ***(carried forward to builders works summary page 122)***				
	BILL NO. 14				
	BUILDERS WORKS IN CONNECTION TO SERVICES INSTALLATIONS				
	The quantities and nature of work indicated are provisional. The actual work done shall be ascertained, valued and adjustments made accordingly.				
	Builders work in connection with plumbing and drainage installations				
	Cut hole through the following for small pipe (not exceeding 55 mm) and make good finishes				
A	200mm Wall	No	30		
	Cut hole through the following for large pipe (over 55 mm but not exceeding 110 mm) and make good finishes				
B	200mm Wall	No	30		

	Chases				
	Cut horizontal or vertical chase for small pipe and make good finishes				
A	Masonry or concrete block walling	m	20		
	Plinth for pipes				
B	300mm high x 200mm wide concrete plinth or encasing to stacks with 1:3 cement sand render and filling or plaster finish to match surrounding surfaces	m	10		
	Pipe sleeves				
C	Allow for PVC 100mm diameter or 150mm diameter sleeves in concrete beam or wall for sprinkler pipes or other service pipes all to Structural Engineer/ Services Engineer's approval	m	20		
	ELECTRICAL INSTALLATIONS				
	Builder's work in connection with Electrical Installation including cutting away for and forming chases, holes and recesses, notching timber etc. making good all finishes and leaving to the satisfaction of the Architect (Provisional).				
D	Lighting points.	No	24		
E	Power outlets single or double.	No	89		
F	Television aerial outlet	No	2		
G	Water heater point	No	1		
H	Cooker control unit	No	1		
I	Meter panel	No	1		
J	Consumer Units	No	2		
K	Distribution board	No	1		
L	Main switch board	No	1		
	ADDITIONAL BUILDER'S WORK				
M	Provide the provisional sum of kshs. Twenty Thousand (Kshs. 20,000/=) only for additional builders work in connection with the CDM Gauge machine measured and valued by the Quantity Surveyor in accordance with the contract on completion	Item	1		
N	Provide the provisional sum of kshs. Eighty Thousand (Kshs. 80,000/=) only for additional builders work in connection with services to be authorised by the architect and measured and valued by the Quantity Surveyor in accordance with the contract on completion	Item	1		
O	Provide the provisional sum of kshs. Sixty Thousand (Kshs. 60,000/=) only for additional builders work in connection with improvement to external drainage to be authorised by the architect and measured and valued by the Quantity Surveyor in accordance with the contract on completion	Item	1		
	TOTAL FOR BUILDERS WORK IN CONNECTION TO SERVICES ***(carried forward to builders works summary page 122)***				

	BUILDERS WORK SUMMARY				
1	Demolition and Enabling works	96			
2	Substructure	99			
3	Partitions and walling	101			
4	Structural Works and Strong Room	102			
5	Roof structure, Roof Finishes and Drainage	102			
6	Balustrading	103			
7	Windows	105			
8	Doors, Door Frames & Ironmongery	112			
9	Wall finishes	113			
10	Ceiling finishes	114			
11	Floor finishes	115			
12	Teller Counters	117			
13	Fittings, Fixtures and Branded Signage	118			
14	Builders works in connection to services	119			
	CARRIED TO GRAND SUMMARY (Page 125)				
	PROFIT & ATTENDANCE FOR SERVICES INSTALLATIONS				
	BILL NO. 1				
	ALLOW FOR PROFIT AND ATTENDANCE FOR WORKS TO BE UNDERTAKEN BY NOMINATED SPECIALIST SUB-CONTRACTORS INCLUDING BUT NOT LIMITED TO: **1) SANITARY, PLUMBING, DRAINAGE & FIRE PROTECTION** **2) ELECTRICAL INSTALLATIONS, UPS, VOLTAGE STABILIZER, GENERATOR, STRUCTURES CABLING, ICT WORKS, SECURITY INSTALLATIONS, ACCESS CONTROL, CCTV & AND THE LIKE**				

	3) MECHANICAL VENTILATION & AIR CONDITIONING				
	Provide a Prime FOR ELECTRICAL & MECHANICAL SERVICES INSTALLATIONS Installations to be executed complete by a Nominated sub-contractor.		Item		
	Add for profit			%	
	Allow for general and special attendance		Item		
	CARRIED TO GRAND SUMMARY				
	DAYWORKS & CONTIGENCIES				
	BILL NO. 1				
	THE DAYWORKS RATES PRICED HERE BELOW SHOULD INCLUDE ALL OVERHEADS AND PROFITS				
	PROVISION OF LABOUR				
A	Semi skilled labour	Hrs			RATE ONLY
B	Skilled labour	Hrs	0		RATE ONLY
	PROVISION OF PLANT (any plant to be provided must be in good working condition. The day works rate provided must be inclusive of all running costs and overheads)				
C	Lorry (minimum 8 tonne ccapacity or similar)	Hrs	0		RATE ONLY
D	Tipper (8 tonne capacity of similar)	Hrs	0		RATE ONLY
E	Compressor	Hrs	0		RATE ONLY
F	Water pump	Hrs	0		RATE ONLY
G	Hand tools - (power drills, grinders, torque wrenches, etc)	Hrs	0		RATE ONLY
H	Portable generator	Hrs	0		RATE ONLY
J	3 Phase power generator	Hrs	0		RATE ONLY
	PROVISION OF MATERIAL (any materials to be provided must be of good quality and upto standard for use in permanent works. The rate provided must be inclusive of all delivery costs and overheads)				
K	Ordinary portland cement @ 50Kg	No	0		RATE ONLY
A	Clean river sand	t	0		RATE ONLY
B	12 - 20mm graded course aggregate	t	0		RATE ONLY
C	Manufactured sand / Quarry dust / 0 -6mm aggregate	t	0		RATE ONLY

E	Reinforcement steel	kg	0		RATE ONLY
F	Sawn timber 100 x 50mm	m	0		RATE ONLY
G	Sawn timber 150 x 50mm	m	0		RATE ONLY
A	Clear glass 4mm	m2	0		RATE ONLY
B	Water	l	0		RATE ONLY
C	Diesel fuel	l	0		RATE ONLY
	SPECIALIZED WORKS				
D	Core cutting /drilling 25mm to 50mm	Item	0		RATE ONLY
E	Ditto 51mm to 150mm	Item	0		RATE ONLY
	Carried to Collection				
	CONTINGENCIES				
	BILL NO. 1				
	CONTINGENCY SUM				
F	Provide the Provisional sum of Kenya shillings Six Hundred Thousand (Ksh600,000.00) only to meet or offset cost of works or expenses which cannot be foreseen to be omitted or expended in whole or in part subject to instructions given by the Interior designer.	Item			600,000
1	Day Works	120			
2	Contingency allowance	120			
	CARRIED TO GRAND SUMMARY				

GRAND SUMMARY PAGE

ITEM NO	GRAND SUMMARY PAGE			AMOUNT Inclusive of VAT (Kshs)
1	PRELIMINARIES	80		
2	FITOUT / BUILDERS WORKS	122		
3	PROFIT & ATTENDANCE FOR SERVICES INSTALLATIONS	123		
4	DAYWORKS & CONTINGENCY ALLOWANCE	124		
	GRAND SUMMARY (Inclusive of VAT) - Carried forward to FORM OF TENDER			
	Main Contractor (Architects) (Authorised signatory). _____ Date _____ **DEVELOPMENT BANK OF KENYA** (Employer) (Authorised signatory). _____ Date _____ (Main Contractor) _____ (Authorised signatory). _____ Date _____			

SECTION VI – SPECIFICATIONS

SPECIFICATIONS

PART NO	TITLE	PAGE
1.	GENERAL	2
2.	DEMOLITIONS & ALTERATIONS	5
3.	CONCRETE WORK	9
4.	WALLING	25
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6.	METAL WORKS	40
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12.	ELECTRICAL WORKS	89

PART ONE:

GENERAL SPECIFICATIONS

A. MATERIAL GENERALLY

All materials used on the works shall be new and of the qualities and kinds specified herein and equal to approved samples. Deliveries shall be made sufficiently in advance to enable samples to be taken and tested if required. No materials shall be used until approved and all materials which are note approved or which are damaged, contaminated or have deteriorated in any way or do not comply in any way with the requirements of this specification shall be immediately removed from the site at the Contractor's expense.

B. MATERIALS FOR WHICH THERE IS A KENYA BUREAU OF STANDARDS SPECIFICATION

All materials used in the works for which a Kenya Bureau of Standard Specification has been published shall conform with the latest edition thereof in every way. The Architect reserves the right to demand that the Contractor shall obtain at his own expense a certificate in respect of any material to state that it is in accordance with the Kenya Bureau of Standard Specifications.

C. MATERIALS FOR WHICH THERE IS NO KENYA BUREAU OF STANDARDS SPECIFICATION

All materials used in the works for which no Kenya Bureau of Standard Specification has been published shall conform with the British Standard Specifications for such material. If there are no published standard as specified for any materials, the quality of such materials shall be generally of a Standard equal to those for which there is a Kenya Bureau of Standard or British Standard Specification.

D. ALTERNATIVES TO PROPRIETARY BRANDS

Where materials are specified by their proprietary names or where fittings are specified by catalogue numbers, or descriptions, the contractor may offer material or fittings of alternative manufacture which are of equal quality. Such alternatives must be approved before being used in the works and the Contractor shall allow for this, but prior to tendering he may submit to the Architect for approval the names of any suppliers or manufacturers whose products he intends to use, together with catalogue numbers and descriptions and/or samples but the decision of the Architect will be final.

E. SAMPLES

The Contractor shall furnish for approval, with reasonable promptness all samples of material and workmanship required by the Architect. The Architect shall check and approve such for conformance with the design concept of the works and for compliance with the information given in the Contract Documents. The work shall be in accordance with approved samples.

(a) All material samples shall be delivered to the Architect's Office with all charges in connection therewith paid by the Contractor.

(b) Duplicate final approved samples, in addition to any required for the Contractor's use, shall be furnished to the Architect, one for office use and one for the site.

(c) Samples shall be furbished so as not to delay fabrication, allowing the Architect reasonable time for consideration of the sample submitted.

(d) Each sample shall be properly labelled with the name and quality of the material, manufacturer's name, name of project, the Contractor's name and the date of submission and the specification number to which the sample refers.

A MEASUREMENT AND TESTING EQUIPMENT

The Contractor shall provide the following equipment for carrying out measuring and control tests on the site and maintain in full working order:

(a) Straight edges 2 metres and 4 metres long for testing the accuracy of the finished concrete.

(b) A glass graduated cylinder for use in the silt test of organic impurities in the sand.

(c) Slump test apparatus

(d) 150 mm steel cube moulds with base plates and tamping rod to BS 1881.

(e) Two 30 metre steel tapes

(f) One dumpy or quickset level and staff.

(g) Micrometer

PART TWO

DEMOLITIONS & ALTERATIONS SPECIFICATIONS

DEMOLITIONS AND ALTERATIONS

A. DEMOLITIONS

Demolitions, taking out and cutting away shall be carefully performed and every precaution shall be taken to ensure the safety of the work. If damage should occur in the carrying out the demolitions or alterations the contractor shall reinstate and make good the same at his own expense.

B. PROTECTION

Supply, erect and maintain during the cutting of openings etc., all necessary protection to the existing premises against damage by weather or other cases.

C. LAYING THE DUST

Allow for laying the dust as far as possible during the alteration by watering with a hose or other means

D. MAKING GOOD

All making good of block work, building up of opening etc., shall be solid block work unless otherwise described, in cement mortar (1:4) properly cut, toothed and bonded and pinned up to existing work and pointed where necessary.

E. CREDIT FOR MATERIALS

Unless otherwise specified materials arising from the demolitions and alterations will become the property of the contractor. If the Contractor wishes to allow a credit for any such materials the appropriate allowance should be included in the credit column of the Bills of Quantities. In the event that the Employer wishes to take possession of any such materials the contractor will only be entitled to receive compensation to the amount of credit indicated.

F. DEFINITIONS OF TERMS

The following definitions explain and simplify the terms indicated in the description of the works.

Removal shall include:

Dismantling/pulling down/taking out/taking up/stripping etc., at the site of the works, getting from the site of the works to the outside of building by whatever means is necessary and disposal.

Disposal shall include:

Handling on site to store or to pick up point for loading
Loading into skips or lorries
Transporting away from site to yard, store or tip
Payment of all tip charges.

Making out shall include:

infilling to voids, openings, gaps and the like and matching materials and construction to existing work as last described consequent on the carrying out of other work.

DEMOLITIONS & ALTERATIONS SPECIFICATIONS

Definitions of Terms (cont'd)

Form opening in brick work or block work shall include:

Shoring up and needling as required, cutting the opening
Designing, providing and inserting required beam or lintol and providing any calculations if required and obtaining building regulation approval.
Providing and inserting cavity gutters and the like forming new arches and the like in face work to match existing.
quoining up jambs
Sealing cavity of hollow walls, at jambs and cill and providing and inserting damp proof course
Making good face work and features to match existing
Forming new external sub-cill or sub-thresholds to match existing
Making good the plasterwork or other applied finishes including making out into reveals and providing metal angle beads to arises where required.
Removing debris.

Block in/ Blank off/ Fill in opening in brick work or block work shall include:

Carefully cutting out any flooring in opening and levelling and preparing for raising new work
Cutting toothing for bonding in new work
Filling the opening with brickwork or block work to match existing
Making out face work including cutting out arches, cills or ornamentation around the opening and continuing any general face work pattern
Wedging and pining to existing soffits
Providing and inserting matching damp proof course
Making out plasterwork including and continuing any existing patterns of labours and making good between new and old work so that after decoration or weathering the original opening cannot be discerned.
Remove debris

Remove partition shall include:

Sorting up if required
Sizing, providing and inserting required timber beam if the partition is load bearing
Taking off skirting, picture rails and the like
Stripping off lath plaster or other finished and insulation quilts
Taking out doors, borrowed lights, hatches and the like, frames, linings and architraves and the like within any area of partitioning to be removed
Dismantling and taking studding or framed work
Making good plasterwork or other wall and ceiling finishes including cornices and other enrichments
Making good or making out floor boarding and any applied finishes
Taking out timber skirting, picture rails and the like and removing debris.

Repair roof covering shall include:

The term repair as applied to a tiled or slatted roof includes any or all of the following operations as are necessary:
Renew broken or missing tiles/slates to match existing including nailing with composition nails securing with copper tingles
Re-wedge and re-point flashings and making out with new as required
Re-make tile/slate verges or eaves including any bedding and pointing
Renew defective or missing ridge or hip tiles
Remove debris.

Definitions of Terms (cont'd)

Renew roof covering shall include:

The term renew roof covering as applied to a tiled or slatted roof includes:
Lift and afterwards re-fix flashings, soakers, ridge, hip and valley coverings etc.
Strip existing roofing and battens, sort and set aside sound tiles/slates
Renew battens and re-lay existing tiles/slates together with new tiles/slates as required all to
Match existing including skirting felt underlay whether previously provided or not, and including any special tile/slates to eaves, verges, ridges and valleys
Re-wedge and re-point flashings
Remove debris

The term renew roof covering as applied to a sheet metal, felt or asphalt roof includes:
Strip existing roofing
Remove sub-base as required
Lift and afterwards re-fix flashing
Renew roof covering to match existing
Re-wedge and re-point flashings
Remove debris.

Renew flashings and the like shall include:

The terms renew flashings and the like as applied to pitched or flat roofs includes any or all of the following as may be applicable:
Strip existing flashings, soakers, gutters, ridge and hop covering
Renew all work previously removed in material or similar quality and substance
Re-wedge and re-point all new flashings
Remove debris.

Ease and adjust shall include:

The term and adjust as applied to doors, cupboards doors, casement sashes and the like includes:
Re-hanging on existing hinges
Planing edges as necessary
Oiling locks and hinges and leaving in working order

Overhaul shall include:

The term overhaul applied to doors, cupboard doors, casement sashes and the like includes any or all of the following operations as are necessary:
Cramp up loose tenon joints and wedge or re-wedge including gluing wedges
Piercing in any existing hinges or renewing hinges if required
Plane edges
Plane off protruding tenons
Re-fix ironmongery and locks or renew if required
Oil locks and hinges
Renew glass where cracked or broken
Renew putties where loose, missing or defective

Strip existing installation shall include:

The term strip existing installation in relation to electrical installation includes:
Disconnecting at mains and making safe
Disconnecting and taking out all existing conduit, wiring and fittings (except where conduit is to be re-used)

Definitions of Terms (cont'd)

Strip existing installations in relation to plumbing and engineering installations shall include:

Turning off incoming supplies
Disconnecting and taking out all existing appliances, fittings and pipe work
Removing defunct pipe clips, fixing and the like
Making good walls, floors, ceiling as required
Removing debris

PART THREE

CONCRETE WORK SPECIFICATIONS

CONCRETE WORK

GENERAL

A. AUTHORITATIVE STANDARDS AND CODES OF PRACTICE

The following authoritative standards are referred to hereinafter:

British Standard Specifications are published by the British Standards Institutions 2 Park Street London W.1, England (Abbreviated in text to BS)

BS	Date	Title
12:Pt.2	1971	Portland cement (ordinary and rapid hardening)
812	1975	Methods for sampling and testing of mineral aggregates, sand and fillers
882,1201: Pt.2	1973	Aggregate from natural sources for concrete (including granolithic)
1881:	1970-71	Methods of testing concrete
1926:	1962	Ready mixed concrete
2499:	1973	Hot applied joint sealants for concrete pavements
3148:	1959	Tests for water for making concrete
3921:	1974	Clay bricks and blocks
4251	1974	Truck type concrete mixers
4449:	1969	Hot rolled steel bars for the reinforcement of concrete
4461	1969	Cold worked steel bars for the reinforcement of concrete
4466	1969	Bending dimensions and scheduling of bars for the reinforcement of concrete
4483	1969	Steel fabric for the reinforcement of concrete

American society for Testing and Materials Standard as published by the American Society for Testing and Materials, 1916 Race St., Philadelphia PA 19103, U.S.A (abbreviated in text to ASTM)

General (cont'd)

ASTM	Date	Tile
C88-	73	Soundness of Aggregates by use of Sodium sulphate
C234-	71	Comparing Concretes on the basis of the Bond development with Reinforcement steel
C282-	71	Potential Reactivity of Aggregates (Chemical Method)

The following codes of practice are referred to hereinafter:

The British Standard Codes of Practice published by the Council of Codes of Practice, British Standards Institution 2 Park St, London W.I England (Abbreviated in text to C.P)

C.P	Date	Title
110:Pt.1,2 &3	1972	The structural use of concrete
116:Pt.2	1976	Structural use of pre-cast concrete
BS 5337:	1969	The structural use of concrete for retaining aqueous liquids

Should the Contractor wish to substitute any other authoritative standard or code of practice for any listed above he should submit details of any such together with two complete copies to the Engineer for approval with his Tender. Approval will only be given to the use of such standards where the Engineer considers the proposed standard or code of practice will give a quality or finished work equal to or better than the specified standard.

All in-situ concrete shall be in accordance with CP 110 except where superseded by this Specification. All pre-cast concrete shall be in accordance with CP 116 except where superseded by this specification.

A. BENDING SCHEDULES

The Engineer will issue bar bending schedules in accordance with BS 4466. The Contractor should check these against the drawings before any cutting bending or construction involving the schedule is started. Any discrepancy should be reported to the Engineer immediately for his clarification. The contractor shall be responsible for any delays or additional work caused solely by his failure to check the schedules.

B. APPROVALS

Well before construction commences the Contractor shall supply to the Engineer for his approval details of his proposed layouts of concreting plant and on site workshop; details of formwork systems and the construction devices, e.g., cranes, chutes, scaffolding, which he proposes to use for the structural work. The information is to be sufficiently detailed to enable the Engineer to approve or otherwise.

The Contractor should note that further approvals are required by the Specification before construction starts. The contractor is wholly responsible for obtaining these approvals and no claim for delays will be entertained due to the contractor's failure to obtain such approvals in adequate time.

CONCRETE WORK SPECIFICATIONS

MATERIALS

A. CEMENT

Cement, unless otherwise specified, shall be ordinary Portland cement complying with BS12. The contractor shall obtain a manufacturer's certificate of test in accordance with the appropriate standard for each consignment of cement delivered to the site and shall immediately forward copies of the same to the Engineer for his retention.

Notwithstanding the manufacturer's certificate the Engineer may require that any cement delivered to the site be sampled and tested. Any batch so tested which fails to comply with this specification will be rejected.

All cement shall be delivered to the site in the original sealed bags of the manufacturer or in approved bulk containers.

Cement, unless delivered in bulk, shall be stored in a weatherproof shed, the floor of which shall be raised at least 150 mm above the ground to allow free air circulation. Cement delivered in bulk shall be stored in a weatherproof silo. All cement shall at all times be protected from deterioration.

Each consignment of cement shall be kept separate, identified and used in order of delivery. No two types of cement shall be used in combination.

Any cement which upon inspection is considered by the Engineer to have deteriorated in any way will be rejected.

B. AGGREGATES OF CONCRETE

Aggregates for concrete shall, unless otherwise specified, be aggregates from natural sources complying with BS 882. Additionally, the flakiness index when determined by the sieve method described in BS 812 shall not exceed 35 for any size of concrete aggregate. Fine aggregate within or finer than zone 4 of BS 882 shall not be used.

When tested for soundness in accordance with ASTM Test C 88 -73 the loss of weight after 5 cycles shall not exceed 5 percent for any aggregate.

Aggregate that is potentially reactive when tested in accordance with ASTM Test C289-71 for the alkali aggregate reaction shall not be used. The standard for acceptance being that test shall plot to the left of the solid which is shown in figure 2 of the test standard.

Well before any concreting work, the Contractor shall forward to the Engineer for approval details of his proposed source of supply of aggregate giving the aggregate group classification and typical physical properties as required by BS 882.

The Contractor shall provide the Engineer with a certificate for his retention showing that all aggregate regularly comply with the requirements of his Specification.

The Engineer may require that any aggregate be tested for soundness in accordance with ASTM Test C88 - 73 before giving approval to any proposed source of supply. The Engineer may require that any aggregate be tested for potential reactivity in accordance with ASTM Test C289-71.

Notwithstanding any certificate of compliance, the Engineer may at any time require that any aggregate delivered to the site be sampled and tested. Any aggregate so tested which fails to comply with this specification will be rejected.

Coarse aggregate shall be delivered ready screened or screened on site separate nominal single sizes within the limits given in BS 882.

Aggregate for concrete (cont'd)

Aggregates of different sizes of types shall be stored in different hoppers or different stockpiles or approved well drained paved areas which shall be separated from each other.

Stockpiles shall be protected against contamination from any source.

Any aggregate which has become contaminated or which does not conform with the above requirements may be rejected by the Engineer.

A. WATER FOR USE WITH CEMENT

Water for use in mixing with cement or for curing concrete shall be from any approved source, clean, fresh and free from organic and other deleterious matter.
The Engineer may require that any water be sampled and tested by the method given in BS 3148. Water failing the criteria given in the appendix to BS 3148 will be rejected.
Water for use in mixing with cement shall neither be hotter than 25 degrees centigrade (77 degrees Fahrenheit) nor colder than 5 degrees centigrade (41 degrees Fahrenheit) at the time of mixing.

B. STEEL BARS FOR THE REINFORCEMENT OF CONCRETE

Steel bar for reinforcement shall conform to

KS573:2005 KENYA STANDARD SPECIFICATION FOR COLD WORKED (HIGH YIELD) STEEL BARS
FOR THE REINFORCEMENT OF CONCRETE

Where cold worked high yield bars are to be used these shall be square twisted bars formed by a torsion controlled process.

The contractor shall obtain a manufacturer's certificate of test in accordance with the appropriate standard for each steel batch relating to reinforcement delivered to site and shall immediately forward copies of the same to the Engineer for his retention.

Where hot rolled high yield deformed bar are to be used the results of bond tests to ASTM 234-71, using concrete of the same quality as that to be used in the works, shall be forwarded to the Engineer.
Notwithstanding the manufacturer's certificate, the Engineer may require that any reinforcement delivered to the site be sampled and tested. Any reinforcement so sampled and tested which fails to comply with this specification will be rejected.

All reinforcement shall be stored in clean conditions in an orderly manner to the satisfaction of the Engineer such that the batch to which each piece belongs can be readily identified.

C STEEL FABRIC REINFORCEMENT

Steel fabric reinforcement shall be electrically cross welded steel mesh reinforcement complying with BS 4483 and of the size and weight specified and made of wire to B.S. 4482.

D TYING WIRE

Tying wire for fixing reinforcement shall be either:

(a) No. 16 gauge soft annealed iron wire, or

(b) No. 18 gauge stainless steel wire.

A SPACERS

Spacers block required for ensuring that the reinforcement is correctly positioned shall be as small as possible consistent with their purpose, of a shape acceptance to the Engineer, and designed so that they will not overturn when the concrete is placed. Unless otherwise approved they shall be made of concrete with 10 mm maximum aggregate size and mix proportions to produce the same strength as the adjacent concrete.

Wire shall be cast in the block for the purpose of typing it to the reinforcement. Spacer block of concrete shall not be used until at least 7 days old.

B ADMIXTURES

No admixtures or cements containing additives shall be used in concrete unless specified or approved by the engineer. Such approval will not be given unless in the Engineer's opinion specific benefit to the density or quality of the concrete will result.

C WALL TIES

Wall Ties between concrete and adjoining block or block walling shall be "Abbey" slots and anchors as supplied by Abbey Building supplies Ltd or similar approved.

D JOINT FILLERS

Joint fillers unless otherwise stated shall be "flexcell" as manufactured by Expandite Ltd, or similar approved and placed in accordance with the manufacturer's instructions.

E JOINT SEALANTS

Joint sealants shall be as described in the drawings and approved by the Engineer. Sealant shall be used strictly in accordance with the manufacturer's instructions.

F HOLLOW CLAY POTS

Pots shall be burnt clay blocks conforming to BS 3921 or similar approved. They shall be true to shape and free from cracks or distortion.

G WATER STOPS

Water stops unless otherwise stated shall be Sika waterbar. As manufactured by Sika International or similar approved and placed and jointed in accordance with the manufacturer's instructions.

WORKMANSHIP

H FIXING STEEL REINFORCEMENT

Reinforcement shall be bent accurately in accordance with BS 4466 to the shape and dimensions shown in the schedules. All reinforcement shall be bent at temperatures in the range of 5 and 100 degrees centigrade.

Cold worked or any high yield bars shall not be straightened or bent again once having been bent. When it is necessary to bend mild steel reinforcement already cast in the concrete the internal diameter of such bends shall be not less than twice the diameter of the bar.

No welding of reinforcement shall be carried out without the approval of the Engineer. All reinforcement shall at the time of concreting be free from mud, oil mortar droppings, loose rust, paint grease, mill scale or other deleterious still "blue" from the mill shall not be used.

All reinforcement shall be fixed in the position shown on the Drawings by the adequate use of spacers, tying wires, chairs, stools etc., and shall be so maintained during the concreting operations.

Laps in reinforcement shall be where indicated on the Drawings or approved by the Engineer. Unless otherwise indicated the minimum lap length for rod reinforcement shall be 40 diameters and for mesh reinforcement two complete meshes.

A steel fixer shall be in attendance at all times when concreting is in progress to correct any errors, omissions or movement in the reinforcement.

In severe test conditions reinforcement shall be shaded from direct sunlight and hosed down with clean water prior to concreting to keep the reinforcement below 25 degrees centigrade (77 degrees Fahrenheit).

(a) Nominal Concrete Cover to Reinforcement

Unless otherwise directed the nominal concrete cover to steel reinforcing bars (including links and distribution) in any face shall be:-

Foundations against earth face	75mm
Foundation against blinding	50mm
Columns (main bars)	40mm
Slabs and stairs	20mm
Wall (main bars)	20mm

The tolerance on placing of bars achieve nominal cover ! 5mm

A FORMWORK

Formwork shall include all temporary or permanent forms required for forming the concrete, together with all temporary construction required for their support.

All formwork shall be so constructed that there shall be no loss of material from the concrete. After hardening the concrete shall be in the position and of the sample, dimensions, and surface finish described in this specification or on the Drawings.

Where internal metal ties are permitted they or their removable parts shall be extracted without damage to the concrete and the remaining holes filled with mortar. No permanently embedded metal part shall have less cover than that indicated for adjacent steel reinforcement.

When holes are to be provided in formwork for weep holes and the like, they shall be neatly trimmed to fit the pipe and caulked with the approved material to form a grout tight joint.

When concrete is to be deposited to a steeper slope than 15 degrees to the horizontal top forms shall be used to enable the concrete to be properly compacted. The Engineer may require details and/or calculations of any proposed formwork to be submitted for approval prior to work starting. Such approval if given shall not in any way relieve the contractor of his responsibilities for the safety or adequacy of such for its purposes.

The inside surfaces of forms, except for permanent formwork, or unless agreed by the Engineer, shall be coated with an approved material to prevent adhesion of the concrete. Such approved material shall be applied strictly and shall not come into contact with reinforcement or other cast-in items.

Immediately before concreting, all formwork shall be thoroughly cleaned out. In the case of deep sections an opening shall be left at the base to enable such cleaning to be adequately completed.

In the case of beams, slabs of like members the formwork shall be so arranged that the sides or edges may be removed without disturbance to the soffit or propping system. The erection, easing and striking of the formwork shall be done under the personal supervision of a competent foreman.

Formwork shall be struck at such a time and in such a manner as to cause no damage to the structure. The contractor shall inform the Engineer before he intends to strike any formwork. The time at which the formwork is struck shall be the contractor's responsibility but the minimum periods between the completion of any concreting bay and the removal of forms shall be as follows:

Vertical formwork	24 hours
Soffits to beams	21 days
Soffits to slabs	14 days
Cantilevers	28 days

The periods given above are based on the removal of all props and formwork using ordinary Portland cement under average weather conditions or different cement may cause the above periods to be increased. Should the contractor wish to make use of reduced striking times then he must satisfy the engineer that the strength of the concrete at such time and the structural system is adequate to withstand the dead and imposed loads applied to it. Before making use of reduced striking times the Engineer's agreement must be obtained in writing.

Where the structure is of multi storey construction props with head trees and braces shall be provided to distribute the imposed load below the floor being cast. This will normally be 2 storey height below the floor being cast unless otherwise stated.

Where sawn formwork finish is specified or in all cases where no alternative finish is specified the surface of the concrete shall be not worse then that obtained by the use of properly designed moulds of closed jointed sawn boards. Small surface blemishes caused by entrapped air will be permitted but the surface should be free of voids, honeycombs or other defects.

Where "fair faced" finish is specified the irregularities of the finish shall be no greater than those obtained from the use of wrought thickened square edge boards arranged in a uniform pattern. The concrete surface shall be smooth, free from fins, lipping, board marks or other irregularities, and even with sharp true arises. Only very minor blemishes or voids shall occur and there shall be no staining or discolouration. The finish is intended to be left as struck and the only treatment generally permitted is light manual abrasion with a Carborundum stone to remove minor marks. Patches of any description will not normally be permitted.

Where a "fair faced" finish or other finish part from sawn formwork finish is specified the contractor shall provide a sample panel at least 2.4mxl.2m in vertical surface area including a typical horizontal and vertical joint in the shuttering. The sample panel shall be constructed using the system of shuttering and the construction techniques that the contractor proposes for the actual works. The sample when approved will form the standard for the entire works. All unsuccessful samples shall be removed from the site. Should any concrete in the works in the opinion of the Engineer fail to match the standard sample in surface finish then the Engineer may for this sole reason order the removal of all such substandard concrete which shall be replaced with acceptable concrete all at the contractor's expense.

When the striking of formwork would in the opinion of the Engineer cause damage to or prejudice the safety of the structure the formwork shall be left in. If, in the opinion of the Engineer, the necessity for leaving in the formwork arises from the contractor's method of working then the cost shall be borne by the contractor, but if it is due to circumstances beyond his control then formwork shall be paid for at rates to be agreed.

A. CONSTRUCTION, CONTRACTION AND EXPANSION JOINTS

Construction joints will be permitted only at the positions shown on the Drawings and as instructed on the site by the engineer. These joints will in general be spaced to allow a maximum plan area for any bay of 100 sm of maximum length of 12 m in any one dimension.

Vertical construction joints shall be properly made to form a vertical grout tight joint. Where reinforcement passes through the face of the joint the stopping off board shall be drilled so that the bars pass through, or the board shall be made in sections with half round indentation in the joint faces for each bar. Under no circumstances shall concrete when being deposited be allowed to, tail off. Construction joints formed with expanded metal or similar will not be permitted for reinforced concrete work.

At all construction joints, both horizontal and vertical the surface of the already placed concrete shall be suitably roughened to remove laitance and by exposing the coarse aggregate form a key for adjacent concrete. This work shall be carried out to the satisfaction of the Engineer by the following or other approved method:

(a) After the initial set has taken place but before final set of coarse aggregate shall be exposed by the use of a water jet and brushing

(b) After final set has taken place the laitance shall be removed and coarse aggregate shall be exposed by bush hammering or chiselling.

In both cases the surface is to be thoroughly cleaned after roughening. At least 72 hours shall be left between completion of concreting one bay and the start of concreting any adjacent bay. Contraction joints shall be formed as detailed where shown on the drawings.

Expansion joints shall be formed as detailed at the positions shown on the drawings.

B. CONCRETE MIXES - DESIGNS MIX

Mixes for each class of concrete specified or shown on the drawings shall be designed by the contractor to achieve the specified minimum cube strength combined with high density and adequate workability for the purpose. In order to allow for unavoidable variation the design strength should exceed the specified works cube strength by twice the expected standard deviation. In the absence of previous information a standard deviation of 7MN/M2 should be assumed.

Details of any proposed mix design shall be forwarded to the Engineer not less than 60 days before that class of concrete is required to be used on the work for his approval in principle. The details shall include at least the following information:-

(a) Source nature and grading of coarse and fine aggregate.
(b) Source of cement
(c) Nominal maximum size of aggregate
(d) Cement content
(e) Aggregate/Cement ratio
(f) Water/Cement ratio
(g) Design density
(h) Design slump or compacting factor
(i) Design strength

Classes of concrete will be referred to by the minimum 28 days work cube strength and the maximum size of aggregate. Classes of concrete shall meet the criteria shown in Table I. The maximum water/cement ratio is herein defined as the ratio of the weight of the "free" water to the weight of the cement. The "free" water is that quality of water available for cement. Any water required to be absorbed by aggregate is excluded.

The workability of the concrete shall be the minimum consistent with producing a dense, well compacted mass. Due regard shall be paid to size and shape of the section together with any congestion of reinforcement.

After the Engineer has approved a design mix in principle the contractor shall prepare a trial mix on site using the plant and materials intended for the works. Each batch of concrete shall be sampled and the following prepared, in accordance with BS1881:

Concrete mixes-design mix (cont'd)

(a) nine 150 mm cubes, three for test at 7 days, three for test at 14 days and three for test at 28 days; and

(b) three slump tests or where the design slump is less than 25 mm then
(c) three compacting factor tests.

No structural concrete shall be placed in the works until the Engineer has approved the preliminary tests. Thereafter, the approved mix proportions shall be adhered to throughout the work and may only be varied with the prior approval of the Engineer.

A. CONCRETE MIXES - NOMINAL MIXES

Mixes for each class of concrete specified of shown on the Drawings shall be used by the contractor. They shall be mixed to achieve high density combined with adequate workability for the purpose.

Details of any proposed mix shall be forwarded to the Engineer not less than 5 days before that class of the concrete is required to be used on the works for his approval in principle.

Classes of concrete will be referred to by their nominal mix proportions. Classes of concrete shall meet the criteria show in Table II.

The workability of the concrete shall be the minimum consistent with producing a dense, well compacted mass. Due regard shall be paid to the size and shape of the section together with any congestion of reinforcement. The Engineer may at his discretion require preliminary tests of concrete quality for nominal mixes unless satisfactory evidence of strength is produced from reliable sources. Where required, these tests shall be in accordance with BS 1881.

A. CONCRETE MIXES - GENERAL

The standard of acceptance of any preliminary tests will be similar to the standard for normal works cubes, slump or compacting factor, except that the minimum cube strengths required shall be those given "minimum Preliminary cube strength at 28 days" in Table I or II.
For all structural concrete the following representative samples shall be taken and tested in accordance with BS 1881.
One each day on which less than 50 cm of concrete is being poured:

(a) six 150mm cubes - three for test at 7 days and three for test at 28 days; and

(b) two slump tests; or

(c) two compacting factor tests

On any day when greater qualities of concrete are being poured then six additional cube tests and two additional slump or compacting factor tests shall be carried out for each 50 cm or part thereof.

All cubes shall be marked with the date of casting and a reference number. For each cube a record shall be kept of the position in which the batch of concrete from which it was sampled was placed. All cubes shall be tested by an approved testing authority.

The concrete cubes tested at 7 days are intended to be indicative only and the target works strengths at 7 days given in Table I are not normally mandatory. It should be noted however, that it is unlikely that cubes failing the 7 days target will subsequently pass the 28 days cube strength. The concrete cubes tested 28 days shall be taken to represent the concrete placed in the works. The standard of acceptance for cube strength tests shall be as follows:

The cube strength shall be calculated from the maximum load sustained by the cube at failure. The appropriate strength requirements as given in Table I, shall be considered to be satisfied if

(a) None of the strength of the three cubes is below the specified cube strength, or if

(b) The average strength of the three cubes is not less than the specified cube strength and the difference between the greatest and the least strengths is not more than 20 percent of that average.

The standard of acceptance for the slump test during the production of concrete shall be the design slump +/- 25mm. The standard of acceptance for the compaction factor test during the production of concrete shall be design compacting factor +/-0.03.

Any concrete which fail to meet the above standards of acceptance shall be either further tested or condemned at the Engineer's sole discretion. Any such tests or the removal of condemned concrete, replacement and associated costs shall be at the contractor's expense. If the strengths required are not attained or maintained throughout the contract will also be required to redesign the mix and resubmit trial mixes in accordance with clause 04.00 of this specification so as to give a concrete which does comply with requirements of this specification.

Mass concrete shall normally be a 1:3:6 mix unless otherwise specified.
Blinding concrete shall normally be a 1:4:8 mix unless otherwise specified.

A. READY MIXED CONCRETE

Ready mixed concrete shall be used only with the approval of the Engineer. When such approval is given it shall be supplied in accordance with BS 1926 except where these conflicts with this specification shall prevail.

Truck mixer units and their mixing and discharge performance shall comply with the requirements of BS 4251.

The use of ready mixed concrete shall not relieve the contractor of any of his obligations and the appropriate clauses of this specification shall apply equally to the ready mixed concrete.

Concrete test cubes and slump tests shall be taken on the site at the point and time of discharge in accordance with this specification irrespective of any cubes that the supplier may take at his own works.

B. MIXING AND TRANSPORTING CONCRETE

All materials for concrete shall be measured by weight in approved weight batching equipment. Such equipment shall be checked at weekly intervals at the contractor's expense and shall be accurate to within 2 percent. Certificates of accuracy shall be submitted immediately to the Engineer.

All concrete shall be mixed in approved power driven mixers of a type and capacity suitable for the work. The mixers shall be checked at weekly intervals at the contractor's expense. Certificates of accuracy shall be submitted immediately to the Engineer.

All materials shall be thoroughly mixed before water is added and the mixing of each batch shall continue for a period of not less than two minutes after the water is added or such longer period as recommended by the manufacturer of the mixer. The mixture shall be of uniform colour and distribution on discharge and the entire contents of the mixer shall be discharged before recharging. The volume of mixed material shall not exceed the rated capacity of the mixer.

Mixers shall at all times be kept in a clean condition. Prior to the first mix each day being agitated in the mixer a rich cement/sand mix shall be used to cast the inside of the drum, the surplus material being emptied away and not used in the works.

Mixing and transporting concrete (Cont'd)

The moisture content of the coarse and fine aggregate shall be checked by the contractor at frequent intervals and the amount of water added to the mix adjusted to maintain the design workability. Concrete shall be discharged from the mixer onto a clean, level, water-tight platform or into a clean watertight container. It

shall be transported in a manner which ensures that it is of the correct quality and consistency at the point of deposition. All platforms and containers shall be cleaned of the old concrete before the fresh concrete is discharged onto them.

Concrete shall not be dropped from a height, thrown or otherwise treated so that segregation, undesirable finish, or defective structure quality results.

No extra water shall be added to the concrete mix after it has left the mixer. The concrete shall take adequate precautions to protect concrete in transit from the effects of the weather.

Pumping of concrete, which will require a special design mix, will only be permitted with the approval of the Engineer. Should the concreting be stopped due to mechanical malfunction, accident, or other similar cause then the contractor shall inform the Engineer immediately so that necessary measures and precautions can be taken. The cost of any additional work by these stoppages shall be the responsibility of the contractor.

A. PLACING AND COMPACTING CONCRETE

All concrete shall be vibrated unless otherwise specified. The vibration shall be carried out by experienced operators and with immersion type vibrators to the Engineer's satisfaction.

Placing of concrete shall be carried out in layers not exceeding 60mm deep and in sequence from one end of the form to the other. Concrete in foundation and other underground work shall be protected from contamination with fallen earth or rock during and after placing.

Any concrete which shows signs of initial setting before or during placing shall not be used, it shall be removed at the contractor's expense. Sufficient vibrators shall be provided to correspond with the rate of deposition of concrete. The vibration shall be continuous throughout the placing of the concrete. Standby vibrators shall be on site during all concrete placing.

Vibration must not be allowed to disturb any recently placed concrete that has begun to set. Any water accumulating on the surface of newly placed concrete shall be removed by approved means and no further concrete shall be placed thereon until such water is removed.

Suitable means shall be provided to ensure that the temperature of the concrete on placing does not exceed 30 degrees centigrade (86 degrees Fahrenheit). Concrete shall not be placed around reinforcement or against surfaces which are at temperatures above 30 degrees centigrade (86 degrees Fahrenheit). All surfaces shall be thoroughly damped immediately prior to placing fresh concrete to prevent excessive absorption of water.

B. UNFORMED FINISHES FOR CONCRETE

Where a concrete surface is specified for receiving a further applied finish or in all cases where no other finish is specified the concrete shall be uniformly levelled and screeded to produce a ridged surface. No further work shall be applied to the surface.

Where a concrete surface is specified as exposed with no further applied finish the concrete shall be uniformly levelled and screeded to produce a plain surface. After the concrete has hardened sufficiently, the surface shall be hand or machine floated sufficiently to produce a uniform surface free from screed marks.

C. CURING AND PROTECTING CONCRETE

Immediately after compacting and for 7 days thereafter concrete shall be protected against harmful effects of weather including rain, rapid temperatures changes, and from drying out. The methods of protection used shall be subject to the approval of the Engineer. The method of curing used shall prevent loss of moisture from the concrete.

During the curing period horizontal surfaces shall be protected by the following or other approved means:

(a) Covering with damp hessian canvas sacks or similar absorbent materials kept constantly damp and

wholly covering the exposed concrete surface.

(b) Covering with an impermeable material raised approximately 50mm over the surface so to prevent loss of moisture

(c) An approved membrane curing compound.

During the curing period other surfaces shall be protected by the following or other approved means:

(a) Formwork in close contact with the concrete but kept cool at all times.

(b) Direct and continuous application of water preferably in the form of mist so as not to damage the surface.

(c) Covering as (a) to (c) above

All concrete faces or edges, particularly those which are exposed without rendering in the final structure, shall be adequately protected from damage and discolouration at all times.

Concrete structures shall not be loaded until the concrete is at least 21 days old or 28 days in the case of cantilevers. With the prior approval of the Engineer the structure may be loaded after this time but in no case will loading greater than the final design loading be permitted.

A. TOLERANCE

All in situ concrete work shall be dimensionally accurate to within the following tolerances:

(a) Between the centre line 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.

(b) In storey height
+/- 5mm floor to floor

(c) In plumb of columns and walls
+/-10mm on any storey or overall the structure

(d) In level of floors
+5mm/- 3mm of the true prescribed horizontal surface level.

(e) In cross sectional dimensions of column beams and walls +5mm/-3mm in any dimension up to 2 metres overall

(f) Cover to reinforcement
+5mm/-0 of the stated covers

B. MISCELLANEOUS ITEMS

Holes, chases, indentations and the like shall be provided where indicated on the Drawings. All such shall be formed in the concrete and not cut after the concrete has hardened.

Miscellaneous items (cont'd)

Should the contractor or any sub-contractor require additional hoes or the like these requirements shall be submitted to the Engineer for his approval prior to concreting.

Pipes, conduits, fixing bolts and other such cast-in items shall be provided where indicated on the Drawings.

Should the contractor or any sub-contractor require additional cast-in items these requirements shall be submitted to the Engineer for his approval prior to concreting. Hollow pots shall be laid in the position shown on the Drawings, care being taken to ensure that the units maintain the full specified rib widths throughout. The gaps between adjacent units shall not exceed 3mm.

A. PRE-CAST CONCRETE

The materials for pre-cast work shall be similar to the materials for in situ work. The workmanship for pre-cast work shall comply with CP 116 except where this conflicts with this specification when the specification shall prevail.

The contractor shall prepare, for each type of pre-cast unit, a drawing indicating his proposed formwork construction, casting methods, de-moulding and handling procedure for the Engineer's approval.

Moulds and formwork shall be so constructed that the dimensions of the finished concrete members are within the specified permissible tolerance given clause 407 of CP 116: part 2:1969.

Where pre-cast concrete is described as "fair faced" the mould shall be of metal, or are to have metal or hardboard linings, or are to be other approved moulds which will produce a smooth, dense fair face to the finished concrete and free from all shutter marks, holes, fins, and the like.

Pre-cast concrete shall be made of the mixes described on the drawings in suitable moulds, true in form to the shapes required thoroughly tamped into the moulds and around reinforcement and vibrated. All pre-cast work shall be carried out under cover and the period before removal from forms and the period of storing shall be determined and agreed by the Engineer and contractor with due regard to the type of unit, i.e. load bearing or non-load bearing, difficulties of casting, projections, holes and other points which require particular attention.

The method of lifting, position of lifting points and curing time before lifting shall be agreed with the Engineer before casting of any units.

Extreme care should be taken when handling pre-cast units and any units damaged during the transporting and/ or positioning shall be replaced at the contractor's expense.

B. CONCRETE FOR WATER RETAINING STRUCTURES

Concrete and its constituents for water retaining structures, in addition to the general and particular provisions in this specification shall comply with the following requirements in this section. In addition to the requirements of clause 4.5 aggregates for concrete in water retaining structures shall have a low drying shrinkage and absorption, as measured in accordance with BS 812 not greater than 3 percent. The Engineer may before approval is given to an aggregate or at any time thereafter require that the aggregate be tested for absorption in accordance with BS 812. Any aggregate failing to comply with this specification will be rejected.

In addition to the requirements of clause 4.20 concrete for the water retaining structures shall have a maximum cement content of 400 kg/m3.

Blinding concrete under water retaining structures shall be a maximum of 75 mm thick and shall be in class 15/40 concrete.

Class 15/40 concrete shall comply with the following requirements:-
Minimum works cube strength at 28 days 15MN/M2

Concrete for water retaining structures (cont'd)

Maximum size of aggregate 40mm
Mix proportions 1 cement: 2.5 fine aggregate:
5 course aggregate

This is a nominal mix and no cubes will be required to be taken.

For water retaining structures the provisions of clause 4.19 paragraph are modified. The construction joints will in general be spaced to allow a maximum plan area for any bay of 40 sm or maximum lengths of 7.5m in any one dimension.

For water retaining structures the provisions of clause 4.19 paragraph five are modified. At least 96 hours shall be left between completion of concreting one bay and the start of concreting any adjacent bay.

A kicker of minimum height 150mm shall be cast integrally with the base slab for all water retaining structures.

The surface of all concrete for water retaining structures shall not be permitted to dry out even after the 7 days curing period specified in clause 4.27.

All pipes passing through concrete walls or slabs for water retaining structures, shall be cast in at the time of concreting and not subsequently fitted. All such pipes shall be provided with a puddle flange fitted to form a seal against the pipe and of an outside diameter 20mm greater than the outside diameter of the pipe.

Joint sealants shall be applied not less than 7 days after completion of the structure.

On completion of the water structure at a time decided by the Engineer it shall be tested for water-tightness in the following manner. Structures which are elevated shall be filled at a uniform rate not exceeding 1 metre rise in head per 24 hours and allowed to absorb water for 3 days. After this period the water level shall be brought up to the top water level and left for 7 days. During this period the exposed faces shall show no sign of leakage and shall remain apparently dry. Structures founded on or in the ground shall be tested prior to backfilling unless otherwise stated. The structure shall be filled as specified above. After filling to top water level no further water shall be introduced for the next 7 days. The structure will be deemed to be watertight if at the expiration of this time the total drop in surface level does not exceed 10mm after making due allowance for evaporation and absorption and no signs of leakage are observed.

Water for testing shall be provided at the contractor's expense.

If the structure fails the test above any defects shall be made good or such taken to eliminate leakage as the Engineer shall direct. All such work shall be at the contractor's expense.

After completion of any repairs the structure shall be retested using the procedure specified above.

Swimming pools should be tested prior to applying internal finishes.

(a) Pre-cast Concrete

General

Unless otherwise approved by the Engineer, all pre-cast concrete construction shall be carried out on the Site and shall conform to requirements given elsewhere in these preambles.

The maximum size of coarse aggregate concrete shall not exceed 20mm except for thickness less than 75mm where it shall not exceed 10mm.

The compacting of pre-cast concrete shall conform with requirements given elsewhere in these preambles except for thin slabs where use of immersion type vibrators is not practicable. The

(a) Concrete for water retaining structures (cont'd)

Concrete in these slabs may be consolidating on a vibrating table or by any other methods approved by the Engineer.

Steam curing of pre-cast concrete will be permitted. The procedure for steam curing shall be subject to the approval of the Engineer.

The pre-cast 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 materials kept constantly wet. It shall then be stacked in the open for at least a further seven days to season before being set in position. Where steam curing is used these times may be reduced subject to the approval of the Engineer.

Pre-cast concrete units shall be constructed in individual forms. The method of handling the pre-cast concrete units after casting, during curing and during transport an direction shall be subject to the approval of the Engineer, providing that such approval shall not relieve the Contractor of responsibility for damage to pre-cast concrete units resulting from careless handling.

Repair of damage to the pre-cast 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 units shall be replaced by the Contractor at his own expense.

Except where pre-cast work is described as "fair face" or as having "exposed aggregate" or terrazzo finishes 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 sawn moulds.

Where pre-cast 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 shutter marks, holes, pittances, etc. In his prices for such pre-cast work the Contractor shall include for all rubbing down to produce the finish required to the satisfaction and approval of the Engineer. Where pre-cast work is to have an "exposed aggregate" or terrazzo finish the moulds shall be constructed to the requirements given for moulds "finished fair" work. The method of achieving the exposed aggregate finish shall be aggregate transfer" or other approved method.

(b) Pre-cast Concrete Cladding Units

These shall be cast to the general details shown on the drawings. The Contractor shall submit working/shop drawings for each type of the cladding panels to the Engineer for approval before he commences casting operations

The panels shall be cast in special yards and shall be cured adequately before being hoisted into position in the structure, taking care that no parts are broken in the process. The units shall then be joined together with in-situ concrete and flexibility connected to the top and bottom beams to allow for limited movement of the combined unit.

(c) Hollow Block Suspended Construction (Composite Floor Slab)

Concrete hollow blocks for use in the composite floor slabs shall be of the standard sizes required or a shown on the drawings and are to be of adequate strength to support the concrete during placing and consolidation by vibration. Blocks are to be manufactured in accordance with the procedure specified in B.S. 6073 and to be of a mix not weaker than 1:4:8 cement: sandstone using maximum 10mm size aggregate.

Concrete blocks are to be cured for at least 28 days before use on the site. During the first seven days of curing, blocks are to be kept permanently damp and protected from exposure to sun and wind.

Concrete blocks are to be well wetted before the pouring of cement.

Hollow Block Suspended Construction (Composite Floor Slab) (cont'd)

Hollow clay filler blocks for use in the composite floor slabs are to be of the sizes shown on the drawings and to be of adequate strength to support the concrete during placing and consolidation by vibration. They shall be obtained from an approved manufacturer. Before any orders are placed, at least 6 sample clay blocks shall be provided for the approval of the Engineer. Any clay blocks subsequently delivered to site which ion the opinion of the Engineer are not of equal standard to the approved samples shall be rejected.

Rejected blocks shall immediately be removed from the site and shall not be used in the works. Clay blocks are to be fully cured before delivery or use on site.

Clay blocks are to be well wetted before pouring of concrete.

(d) Composite Floor Construction

The hollow block floor construction is generally to be as shown on the Engineer's Drawings.

Care shall be taken in placing blocks to ensure that they are set out in accordance with the details shown on the Drawings and that they run truly in line without encroaching on the width of the in-situ ribs.

The open ends of hollow blocks, if adjacent to concrete to be placed in-situ are to be plugged or stopped to prevent the concrete from flowing into the void and the Contractor is to include for this in his prices.

The Contractor should note that slip tiles are not to be used to the Soffits if ribs and he is to take this into consideration in pricing the items of formwork to the soffit of hollow block floor construction. Before concreting is carried out the blocks are to be thoroughly wetted.

Care should be taken during concreting that the width of ribs between the rows of blocks and the solid in-situ concrete shown on the Drawings adjacent to supporting beams is not encroached upon by the blocks.

It is essential that the concrete topping be poured at the same time as the ribs between hollow blocks.

Reinforcement shall be positioned accurately with required cover in accordance with the drawings and using the particular spacing blocks with wire ties as previously described. Spacer blocks shall be provided in ribs at not more that 0.2 m centres. Care must be taken during concreting that the reinforcement is not displaced.

Where holes or services occur, the necessary holes or pockets shall be accommodated by the replacing of a hollow block or in-situ concrete or the widening of a rib all in accordance with the Engineer's instructions.

Prices for such holes through block construction are to include the rearrangement or substitution of the hollow block with solid concrete in addition to the actual formation of the hole.

PART FOUR

WALLING SPECIFICATIONS

MATERIALS

A. CEMENT

Cement used for making mortar shall be as described in concrete work.

B. LIME

The lime for making mortar shall be obtained from an approved source and shall comply with BS 890 Class A for non-hydraulic lime. The lime to be run to putty in an approved lined pit or container. The water to be first run into the pit or container and the lime to be added until it is completely submerged, stirred vigorously until all lumps are disintegrated and shall be kept constantly covered with water and regularly stirred for at least four weeks. The resulting milk-lime then to be through a fine sieve and run into a pit or other container and kept clean and moist for not less than two weeks before being used in the works and moist for not less than two weeks before being used in the works.

C. SAND

Sand used for making mortar shall be clean well graded siliceous sand of good sharp hard quality equal to samples which shall be deposited with and approved by the Architect. It shall be free from lumps of stone, earth, loam, dust, salt, organic matter and other deleterious substances, passed through a fine sieve and washed with clean water if so directed by the Architect.

D. WATER

Shall be as described in concrete work.

E. CONCRETE BLOCKS

Concrete blocks shall comply with the requirements of BS 2028, 1384 except where amended or extended by the following clause. Blocks shall have square arises and corners. For fair faced work damage to arises and corners shall not exceed the removal of 6mm of the blocks depth or thickness.

Concrete blocks shall have a minimum crushing strength of 3.5 N/mm2 except when below the damp course level or in contact with soil when they shall have a minimum crushing strength of 7 N/mm2, unless noted otherwise on drawings.

Hollow concrete blocks shall not be used below the damp course level or in contact with soil.

Concrete blocks used for external walls shall be class ‘A’ and for internal load bearing walls they shall be at least Class ‘B’. Class ‘C’ blocks shall only be used for non-load bearing partitions.

No pre-cast blocks shall be incorporated into the work unless approved by the Architect. The delivery of present blocks from which samples tested do not comply with this specification shall be deemed defective. Any work constructed with blocks from which samples tested do not comply with this specification shall be deemed to be defective.

Concrete blocks (cont'd)

From every 1,000 pre-cast concrete blocks delivered to site ten blocks samples shall be provided for testing. The pre-cast block samples shall be selected in accordance with BS2028, 1364. Samples of pre-cast concrete blocks for testing shall be tested for the following properties in accordance with the methods given in BS 2028, 1364 and the test results shall comply with the requirements of BS 2018, 1364 except where amended by this specification:-

(a) Drying shrinkage
(b) Compressive strength or transverse breaking load (as applicable)
(c) Wetting expansion*
(d) Density
(e) Dimensional Tolerance
(f) Cavity size

*Test only applicable for concrete blocks made with clinker aggregate.

Blocks shall also be tested to determine the suction rate. The test shall consist of weighing the block, placing in a tray of water such that only 3mm of the block side is immersed for a period of sixty seconds +/- 2 seconds; quickly wiping off excess water and reweighing. The suction rate is the increase in weight due to water absorbed and shall not exceed 2 kg/m2/minute. Blocks which have a suction rate exceeding 2kg/m2/minute may be used if the contractor uses an approved water reactive additive in the mortar or can show that the blocks will have a suction rate not exceeding 2kgm2/minute for a period of 24 hours from being laid and provided the blocks comply with all other requirements.

Concrete blocks shall be stacked on prepared dry areas free of clinker, ashes and sulphate bearing strata. Blocks of different strengths shall be stacked separately and clearly marked to differentiate the strengths. Blocks shall not be used for a minimum of 7 days after manufacture and shall not be loaded for at least 14 days after laying. For the first 7 days after manufacture, block shall be cured by maintaining in a damp condition, e.g. covering with polythene sheeting after wetting blocks.

F. HOLLOW CLAY BLOCKS

Hollow clay partition blocks shall comply with the provisions of BS 1190 section 1 and are to be hard, well burnt, true to size and shape and with sharp arises and keyed faces and joints are to be obtained from an approved manufacturer and to be equal in every respect to a sample to be deposited with, and approved by the Architect.

Blocks are to be 190 mm high (to give 200mm height including the joint) and of the thickness given herein. Cutting of blocks is to be avoided wherever possible and full use is to be made of quarter, half and three quarter blocks, and blocks with conduit recesses.

G. LOUVRE BLOCK WALLING

i) To be pre-cast concrete mix 1:1.5:3 or 25N/mm2 (12mm aggregate) but with 10mm finished fair on all exposed surfaces, built in cement and sand (1:5) mortar with straight horizontal and vertical joints to flush pointed both sides.

ii) Each block to be size 200mm x 400mm x 200mm high and consisting of two ends each 200m x 200mm x 50mm thick joined with a 50 mm thick twice cranked louver with top end of louver projecting 40mm above top of block..

H. STONE

All stone shall comply with the requirements of CP121.202 for masonry and rubble walls respectively except where amended or extended by the following clauses.

Stone (Cont'd)

Unless otherwise noted, all masonry walls shall be course squared rubble walling with mortar joints. The size of stones for rubble walling shall be such that the length of stone does not exceed three times its height. For coursed squared rubble walls block shall not exceed 300 mm in height and shall be not less than 150 mm in height.

Where random rubble walls are specified; the rubble shall not be less than 100mm square on the exposed face. Stone for masonry shall have a minimum compressive strength of 10 N/mm2 (stone shall not be required to be tested to failure). The density of stone for masonry shall be not less than 230 kg/m3. The drying shrinkage of stone shall not exceed 0.05%.

Samples of stone provided for testing shall be tested for the following in accordance with the methods given in BS 2028, 1364 and the test results shall comply with the requirements of this specification.

(a) Compressive strength
(b) Density
(c) Drying shrinkage

The colour and texture of stone shall be uniform and consistent. Prior to delivering any stone to site the contractor shall supply the Architect with a sample of stone in order that he may approve the colour and texture. The contractor shall ensure that sufficient suitable stone is available for the whole of the project prior to ordering the stone.

Where cast stone including described as artificial stone, reconstructed stone, etc., is specified the stone shall comply with the requirements of BS 1217. Masonry shall be of stone, having no irregular faces and only the back face if not visible shall be left as from the saw.

Prior to ordering dry stone the contractor shall demonstrate that the stone is durable. This may be done by supplying details of building constructed with stone from the same quarry and which has been exposed to the same environment condition for at least ten years. The maximum projection from the face of stone for rubble walls shall be 20mm beyond the specified face of the wall.

The contractor shall provide six samples of stone measuring 150mm x 150mm for testing prior to delivering any stone to site. As work proceeds the contractor shall provide six samples 150 x150 x 150mm for testing from every 300 sm of work. All stone shall be stacked on prepared dry areas free of clinker, ashes and sulphate bearing strata.

I. WALL REINFORCEMENT

Where described walls and partitions shall be reinforced with a 25mm wide strip of No.20S.W.G hoop iron built into alternate horizontal joints in the wall centre. The reinforcement shall be lapped and hooked at running joints, angles and intersections and carried at least 115mm into abutting walls at junctions.

J. WALL TIES

To be 3mm diameter galvanized mild steel wire twisted butterfly wall ties

K. DAMP - PROOF COURSES

The bituminous felt sheeting for damp-proof courses shall be hessian based bituminous felt complying with BS743 TYPE 4A weighing not less than 3.85 kg per square metre. The sheeting is to be lapped 150mm at running joints and the full width of walls at angles.

WALLING SPECIFICATIONS

WORKMANSHIP

A. CEMENT MORTAR

Mortar described as cement mortar 1:4 shall be composed of 1 cubic metre (1498 kg) of Portland cement and 4 cubic metres of sand. Other mixes such as 1:3, 1:5 etc. shall be similarly construed.

B. MIXING MORTAR

The constituent materials shall be measured separately when dry in specially prepared gauge boxes of sizes to give the proportions specified without consolidation of the contents by ramming and shaking. The mortar shall be mixed in an approved power driven mixer for not less than two minutes per batch and using the minimum quantity of water necessary to obtain a working consistency. The mixer shall be used as close as practicable to the works and mortar shall be used within 30 minutes of mixing. No partially or wholly set mortar will be allowed to be used or re-mixed.

C. GENERAL CONSTRUCTION

(a) Setting out

The contractor shall provide proper setting out rods and set out all work on same for course, openings, heights etc., and shall build the walls, piers etc., to the widths, depths and heights indicated on the Drawings and as directed by the Architect.

(b) Building in Wood Frames

Openings for doors, ventilators etc., are to be set out and left un-built until the wooden frames have been fixed in position.

(c) Building in Metal windows and doors

The opening for metal frames shall be wide enough for the frames to fit without being forced into position. Build the lugs into the joints of the walling and fill into the space between the walling and frames with cement mortar well tamped into the channel of the frames and point all round externally.

All frames must be set plumb and level and free from twist.

(d) Walls to Receive Plaster & Similar Finishes

All faces of walls to be plastered etc., to have all projections dressed off and joints raked out as key.

A. BUILDING WALLING

(a) Laying and Jointing

All blocks shall be well wetted before being laid and the top of walling where left off shall be well wetted before commencing. Walls to be kept wet three days after building. All walls throughout the works shall be carried up evenly in 200mm courses except where courses of less depth are required to bring walling up to level of floors, windows and the like and where otherwise described, no part being allowed to be carried up more than one metre higher at one time than any other part and in such cases the joining shall be made in long steps so as to prevent cracks arising and all walls shall be levelled round at each stage. Not more than 3 metres height of wall shall be laid in any one day.

(b) Bonding

The blocks shall be properly bonded together and in such a manner that no vertical joint in any one course shall be within 115mm of a similar in the courses immediately above or below. All walling of 300mm thickness or less shall be built in single thickness of blocks. Walling exceeding 300mm in thickness shall be built with through bonders not more than 1070mm apart in each course as directed by the Architect.

Alternate courses of walling at all angles and intersections shall be carried through the full thickness of the adjoining wall. All perpends, reveals and other angles of the walling shall be built strictly true and square.

(c) Tolerances

All courses of walls shall be level with a maximum deviation of +/- 3mm in any one metre length and a maximum overall deviation on 10mm for lengths of wall exceeding 3 metres. Walls shall be plumb with a maximum deviation of +/- 3mm in any metre height of wall with a maximum deviation of +/-10 mm in the total height of the wall or any storey.

All corners of walls which are shown as being at right angles shall be square with a maximum deviation of 3 in 1000. All walls should be straight with a maximum deviation of +/-3mm in any one metre length and a maximum overall deviation of 10mm in any length exceeding 3 metres.

All bed and vertical joints shall be an average of 10mm thick with a maximum deviation of +/-3mm of block work, and stone rubble walls. Joints for stone masonry walls shall be 6mm +/- 1 mm thick.

(d) Curing

All walls shall be maintained in a damp condition for at least 24 hours after laying. Walls under construction shall be dampened by applying water with a brush and no hosing directly on to the wall shall be permitted. When work ceases on any section of 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) Cavities

Cavity walls shall be of the overall thickness shown on the drawings.

Cavities above ground level between leaves of block or masonry shall be free of mortar droppings or their debris. The Contractor shall take proper precautions to prevent mortar or debris entering the cavity.

Cavity below ground level shall be filled with mortar for cavities up to 75mm wide and for cavities over 75mm wide filling shall be concrete mix 1:3:6. Cavities shall be filled such that there is maximum of three times the thickness of the thinner leaf of the wall filled with wet mortar or concrete unless the wall is continuously supported for the depth.

(f) Backfilling

Earth backfilling against walls shall be carried out such that the level of the backfill is always equal on each side of the wall. When a wall has filling material on one side only to a fill width of more than three times the wall thickness, the wall shall be continuously supported during backfilling.

Backfilling shall not be carried out until at least seven days have elapsed since the laying of the blocks or stone.

A. REINFORCEMENT WALLS

Steel reinforcing bars in walls shall be carefully placed and spacers used to ensure that a minimum of 20mm cover is given to the reinforcement unless otherwise specified.

Reinforcement walls (Cont'd)

Horizontal reinforcement in mortar joints shall be laid such that the reinforcement is not contact with the blocks or stone.

B. WALL TIES

Wall ties shall be provided to connect walls to steel or concrete columns and beams to connect two unbounded leaves of wall.

Walls ties shall be provided at 450mm centre both vertically and 900mm centres horizontally and shall be staggered when used to connect two leaves of un-bonded wall. Wall ties shall be embedded to each material by a minimum of 50mm.

C. FAIR FACE

All concrete and hollow clay block work described as finished with a fair face is to be built to a true and even face with the joints finished as specified hereinafter.

D. POINTING

Pointing of walls shall be carried out as the work proceeds wherever possible. When coloured mortar is specified for pointing only the pointing shall be carried out after work has been completed.

Existing walls shall be prepared for pointing by raking out all loose friable material to a minimum depth of 15mm to form a square recess. The joints shall then be wetted and new mortar shall be forced into joints and finished as directed.

E. HOLES, CUTTING AND CHASING

(a) All putlog holes shall be not less than one course deep and carefully filled with a block cut to fit size of opening with beds and joints filled with mortar well tamped in after scaffolding is removed, and if in faced walls to match facing.

(b) Where walling is cut, holed or chased for conduits, pipes and the like all such cuttings etc., shall be filled in solid with cement mortar (1:4) prior to the application of finishes.

PART FIVE

CARPENTRY & JOINERY SPECIFICATIONS

CARPENTRY & JOINERY

A. GENERALLY

All woodwork shall be carried out in accordance with the drawing and the principals of first class joinery construction. Unless specifically stated otherwise, sizes shown on drawings are finished sizes and the contractor must allow for wrot faces.

MATERIALS

B. QUALITIES OF TIMBER

(a) The qualities of timber stated hereinafter are in accordance with the latest Kenya Government Grading Rules.
(b) All timber described as prime Grade is to be first Grade (Grade 1)
(c) All timber described as selected Grade is to be second Grade (Grade 11)
(d) All hardwood is to be prime Grade (Grade 1)
(e) All timber for permanent use in the building shall before use be approved by the Architect for quality in accordance with the foregoing specification for its respective grade. Any timber not so approved by the Architect shall be removed from the site forthwith.

C. INSECT DAMAGE

All timber, whether graded or un-graded, and including shuttering, scaffolding and the like shall be free of live borer beetle or other insect attached when brought upon the site. The contractor shall be responsible up to the end of the maintenance period for executing at his own cost all work necessary to eradicate insect attack of timber which becomes evident including the replacement of timbers attacked, or suspected of being attacked, notwithstanding that the timber concerned may have been inspected and passed as fit for use.

D. SEASONING OF TIMBER

All carpentry timbers are timbers are to be seasoned to an average moisture content of not more 20%. All joinery timbers are to be seasoned to an average moisture content of not more than 15%. The contractor is to make available on site a metre of testing moisture content of all timber delivered.

E. PREPARATION AND PROTECTION OF TIMBER

(i) All timber necessary for the works is to be purchased immediately the contract is signed, and when delivered is to be open stacked for such further seasoning as may be necessary. Preparation of the timber is to be commenced simultaneously with the commencement of the works generally.

(ii) All timber and assembled woodwork is to be protected from the weather and stored in such a way as to prevent attack by decay fungi, termites or other insects.

A. SPECIES OF TIMBER

Only those timbers specified are to be used for the works, unless alternatives are authorised by the Architect in writing.

B. PRESSURE IMPREGNATED TIMBER

(i) All timber described as pressure impregnated shall be impregnated under vacuum and pressure with celcure. or Tanalith. Wood preservative with an average absorption of not less than 6.7 kg of dry salt per cubic metre. In case of resistant species where this retention cannot be obtained the timber shall be treated to refusal point. All treated timber shall not be exposed to wet conditions for at least 14 days after treatment has been carried out. All cut ends, drilling or fabrications on the site producing new surfaces shall be thoroughly brushed or soaked with celcure B. salts applied in accordance with the manufacturer's instructions.

(ii) Any other method of timber impregnations will only be allowed at the Architect's approval.

C. HARDWOOD

All hardwood will comply with the requirement of BS 1186 part 1 BS 4047. It shall show a straight and regular grain throughout.

Hardwood shall be free from wooly texture, soft heart, sap wood, splits, shakes, all evidence of insect of fungi attack and rot and all faults caused by compression failure. There shall be no waney edges. Hardwood shall be free from knots on exposed faces. Any hardwood showing visible imperfections will be rejected.

Preservatives shall not be used without the Architect's permission. Where indicated on the drawings, internal hardwoods will be treated with clear sealants as specified elsewhere.

D. SOFTWOOD

Softwood timber for carcassing work shall be either podo carpus or cypress to the approval of the Architect and shall be dimensions specified on the drawings.

Timber shall be accordance with the Groups listed in this clause.

All softwood shall comply with the requirements of BS1186 part 1. Timber shall be free from wooly texture, soft heart, sap wood, splits, shakes, pith showing on the surface, sloping grain exceeding one in eight checks, knots exceeding 25mm of diameter, loose knot or knot holes and any evidence of insect or fungi attack. There shall be no waney edges.

Where indicated on the drawings, the softwood will be treated with clear sealer or painted with gloss paint. All softwood is to be pressure impregnated against insect attack before delivery to site. Any ends cut after treatment shall be given two liberal coats of preservative.

A. PLYWOOD

All plywood shall comply with the requirements of BS 1455, be obtained from a manufacturer to be approved by the Architect and be of the thickness shown on the drawings.

Plywood shall be Exterior Grade except where otherwise stated. Plies shall be bonded together with adhesives complying with the requirements of BS 1203 grade WBP. Plywood shall be free from end joints (including joints in veneers) overlaps in core veneers, dead knots, patches and plugs, open defects, depressions due to defects in cure, insect attack (except isolated pinworm holes through face veneers only), fungal attack and from discolouration differing from that normally associated with species.

Plywood (Cont'd)

Face veneers shall be hard and durable and shall be capable of being finished to a smooth surface. Face veneers shall closely match the general joinery timber supplied.

B. CHIP BOARD

Chipboard shall be medium density wood particle board complying with BS 2604 part 2, produced in factories by an approved process.

C. BLOCK BOARD

Block board shall be of approved local or imported manufacture to BS 3444 glued throughout and softwood or hardwood faced as hereinafter specified and equal to a sample to be deposited with the Architect for approval and which when so approved shall form the standard for the works.

D. FIBRE BOARD

Shall be insulating board to comply with BS 1142 of the types specified and of approved manufacture.

E. TEMPERED HARDBOARD

To be approved manufacture according in all respects with BS 1142 suitable for painting, prepared and fixed in accordance with the maker's instructions.

F. WOOD BLOCK FLOORS

(i) To be supplied and laid in 460 mm x 460 mm panels by a specialist all to the approval of the Architect.

(ii) On completion and immediately prior to applying the clear finish, the surface is to be twice machine sanded using first coarse and the fine sandpaper and brushed perfectly clean.

G. TIMBER DOORS

Doors are to be designed, manufactured and fixed in accordance with the relevant British standards summarised below:-

BS	476	part 8	1972	fire tests etc.
BS	4787	part 1	1972	Door dimensions etc.
BS	1186	part 1	1971	Quality of timber and workmanship.
BS	1227	part 1A		Hinges
BS	3827			Builder's hardware - glossary

A. FLUSH DOORS

Generally, the requirement for flush doors is that they have a minimum thickness of 40mm. They shall be faced both sides and there shall be hardwood lipping to all edges. Hollow core and semi-solid types shall contain adequate provision within the core for ironmongery (e.g. lock blocks etc).

All hollow and semi-solid doors shall be faced with WBP bonded Exterior grade plywood. Except where indicated doors shall have hardwood veneered faces.

Vision panels where required shall be 150mm wide 900mm deep.

Flush doors (cont'd)

Flush doors shall be obtained from a supplier to be approved by the Architect. Flush doors shall comply with the requirements of BS 459 parts 1,2 and 3. All edges shall be lipped with hardwood tongued into edge of the door.

Fire resistant flush doors are to be constructed in accordance with BS 459 part 3.

The core of solid core flush doors shall be constructed of longitudinal laminations of precision planed timber, butt joined and glued with resin based adhesive under hydraulic pressure, the whole forming a rigid fire resistant raft.

Where doors are indicated as fire resistant they shall be constructed so as to exceed the requirements stated when tested in accordance with BS 476 part (1972) section 7.

B. HARDWOOD VENEERS

(a) Veneer facings shall be selected to the approval of the Architect.
(b) No glass or synthetic fibre stitching will be permitted for jointing veneer leaves together.
(c) Veneer shall be free from splits, dote, glue, stains insect or fungi attack and rot.
(d) Filling or inlaying of any kind will not be accepted.
(e) All wood veneers shall be bonded to the core material in such a way that no lifting and blistering shall occur.

C. LAMINATED PLASTIC VENEERS

Laminated plastic veneers shall be a decorative sheet 1.6mm thick complying with BS 3794 class 1. The pattern will be selected by the Architect. The laminate shall have decorative (pattern) finish on one face only. Patterns will be selected from the manufacturer's standard range.

D. MISCELLANEOUS MATERIAL

(a) Tapered timber pellets for filling screw holes must be cut across the grain and shall be of the colour and grain being plugged.

(b) Metal fixing devices must be fully rust-proofed cramps, brackets, plugs, bolts etc., must be of a type, make and pattern approved by the Architect.

(c) Adhesives must be suitable for use in the local conditions and be compatible with the materials with which they are in contact.

E. NAILS AND SCREWS

Nails shall comply with BS 1201, screws shall comply with BS 1494 and bolts shall comply with BS 916.

WORKMANSHIP

A. TOLERANCES

The method of construction must accommodate tolerance as shown on the drawings and allow for ensuring that repetitive units can be accurately located in relation to grid lines and that tolerances do not accumulate. Reasonable tolerance shall be provided at all junctions between joinery and the building carcass, whether of masonry or frame construction, so that any irregularities or movement may be adequately compensated.

B. JOINTING

(a) All joints must be made as specified or detailed and the execution of all jointing shall be to the satisfaction of the Architect.

Jointing (Cont'd)

(b) Joining surfaces of all connections exposed to the weather are to be thickly primed except where gluing is specified. Surfaces are to be in good contact over the whole area of the joint before fastenings are applied.

(c) No nails, screws or bolts are to be placed in any end split. If splitting is likely or is encountered in the course of the work, holes for nails are to be pre-bored at diameters not exceeding 4/5 of the diameter of the nails. Clenched nails must be bent at right angles to the grain. Lead holes are to be bored for all screws.

(d) Where the use of bolts and washers is specified the holes are to be bored from both sides of the timber and to be a diameter D+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.

(e) Joints in joinery must be as specified or detailed and designed and secured as to resist or compensate for any stresses to which they may be subjected. All nails, springs etc., are to be punched and puttied.

(f) Loose joints are to be made where provision must be made for shrinkage, glued joints where shrinkage need not be considered and where sealed joints are required. All glued joints shall be cross-tongued or otherwise reinforced.

(g) Glues for load bearing joints or where conditions may be damp must be of the resin type. For non-load bearing joints, or where dry conditions can be guaranteed, resin or organic glues may be used.

C. FRAMED WORK

The word "framed" shall mean and include all the best known methods of jointing woodwork together by mortice and tenon, dovetail or other methods, and for forming all necessary stops, mitres or mason' mitres in members which are moulded, rebated etc.

A. PLUGGING

Plugging and fixing to wall in all trades shall be executed by "Rawl plugging" or similar approved proprietary methods all in accordance with the manufacturer's printed instructions. Hacking of holes and filing with timber plugs will not be permitted under any circumstances

B. CARPENTRY WORK

(a) All carpentry shall be executed with workmanship of the best quality. Scantlings and board shall be accurately sawn and shall be uniform in width and thickness throughout and shall be as long as possible and practicable in order to eliminate joints

(b) All work shall be left with a swan surface except where specified to be wrot.

(c) All work shall be accurately set out and in strict accordance with the drawings, and shall be framed together and securely fixed in the best possible manner with properly made joints. Provide all braids, nails, screws etc., as necessary and as directed and approved.

(d) Actual dimensions of scantling for carpentry shall not vary from the specified dimensions by more than +3mm or -1mm. Sizes and thickness of wrot carpentry timber are nominal, that is to say a variation of 3mm from the specified sizes will be allowed from each wrot surface unless the thickness or size id described as finished in which case no variation from the stated thickness or size will be permitted.

C. JOINERY WORK

All joinery work shall be wrot unless otherwise described.

(a) Sizes and thickness of joinery are nominal that is to say a variation of 3mm from the specified sizes will be allowed from each wrot surface unless the thickness or size is described as finished in which case no variation from the stated thickness or size will be permitted.

(b) No joinery to be put in hand until the details have been supplied or approved by the Architect and in all cases the details are to be worked to.

(c) All joinery shall be executed with workmanship of the best quality in strict accordance with the detailed drawings, moulding shall be accurately and truly run on the solid and all work planed, sandpapered and finished to the approval of the Architect. All arises to be slightly rounded. All framed work shall be cut out, and framed together as soon after the commencement of the building as is practicable but should not be wedged up until the building is ready for fixing the same and any portions that warp, get in winding, develop shakes or other defects shall be replaced with new. In-door frames etc., the heart face of the timber shall be fixed away from the wall. As soon as required for fixing in the building the framing shall be glued together with glue as described and properly wedged or pinned etc., as directed.

(d) All beads, fillets and small members shall be fixed with round or oval braids or nails well punched in and stopped. All larger members shall be fixed with screws, the screws let in and pelletted over with wood pellets to match the grain.

(e) Cups and screws for fixing beads and fillets shall be spaced 150mm apart and 25mm from angles.

(f) All joinery immediately upon delivery to the site is to be sorted and protected from the weather.

(g) All joinery is to be primed before fixing but no work is to be primed until it has been approved by the Architect.

(h) All fixed joinery which is liable to become bruised or damaged in any way, shall be properly cased and protected by the contractor until completion of the work.

(i) When natural finish is specified, the timber in adjacent pieces shall be matched and uniform or symmetrical in colour and grain.

A. SOFTWOOD

Fixing shall be by means of non-rusting screws with counter sunk heads to proprietary plugs or ground. Nails will not be permitted.

Sections shall be neatly and accurately cut so as to avoid splitting of the wood.

B. HARDWOODS

Hardwoods are as described.

In jointed panels each piece shall be of the same species. Joinery for oiling shall have all surfaces of the same species and same character of grain.

Fixing shall be by means of brass screws with countersunk heads to proprietary plugs or grounds. Where work is face screwed heads of screws shall finish not less than 6mm below the surface and be covered with round teak pellets of appropriate thickness. Pellets shall be chosen and fixed so as to match colour and pattern of grain so far as is practical. Nailing will not be permitted. Sections shall be neatly and accurately cut with fine toothed saws.

C. PLYWOOD

Plywood of the required thickness shall be used. The Contractor will not be allowed to make up thickness by gluing together sheets of thinner plywood.

Where cutting is required, it shall be neatly and accurately performed with fine toothed saws so as to avoid splitting the face veneers and intermediate plies.

D. CHIP BOARD

Where cutting is necessary it shall be neatly and accurately performed with fine toothed saws so as to avoid splitting the face veneers. Where raw edges arise from cutting these shall be faced with a matching hardwood fillet cut pinned and glued to match factory produced edges.

A. BLOCK BOARD

Where cutting is necessary it shall be neatly and accurately performed with fine toothed saws so as to avoid splitting the face veneers. Where raw edges arise from cutting these shall be faced with a matching hardwood cut pinned and glued to match factory produced edges.

B. LAMINATED PLASTIC VENEER

Laminated plastic veneers are to be fixed with an approved adhesive, care being taken to eliminate all air from beneath the laminate on fixing. The laminate is to be free from chipped or cracked portions and work so disfigured is to be moved and replaced. When the adhesive is set the laminate is to be neatly bevelled off along all rises with a plane.

Where plastic laminate is fixed to doors or shelves etc., without a laminate to the outer edge, a raised lipping is to be provided and the laminate finished flush against the lipping.

C. FIXING DOORS AND FRAMES

Doors shall be properly fitted to give a uniform clearance of not more than 3mm all round and the hinges shall be let into doors.

Doors frames shall be properly framed at angles. Door stops shall be housed into grooves in frames. Architraves shall be provided to conceal finishes. Frames shall be fixed to grounds or plugs. Fixing shall be by means of non-rusting screws with countersunk heads. For hardwood frames screw heads shall be finished not less than 6mm below surface of the wood and shall be covered with matching round hardwood pellets of appropriate thickness. Pellets shall be chosen and fixed so as to match colours and pattern of grain so far as is practical. Nailing will not be permitted.

Fixing doors and frames (Cont'd)

Except where indicated doors shall be kept clean for clear polyurethane varnish.

Door frames shall be treated to match doors.

Glazing shall be wired glass 6mm thick with edges wrapped in wash leather and secured with hardwood glazing bead size 10mm x 15mm mitred at angles secured with brass screws and cups.

D. CONSTRUCTION OF DOORS

(a) Flush doors specified as solid construction shall have a 100% solid core of vertical laminate Cedar or equal and approved.

(b) Flush doors specified as semi-sold construction shall be constructed with timber stiles and rails, infill with horizontal intermediate rails spaced equally apart and tenoned into stiles.

(c) Unless otherwise specified, doors scheduled to receive a clear or veneered finish shall be lipped on all edges.

(d) Where panels over doors are specified, such panels shall be constructed in the same way and with the same materials as the doors above in which they are situated, and the panels shall match the doors in every respect.

(e) For doors specified as plywood faced, the plywood shall not be less than 3mm thick, complying with the requirements of BS 1455, WBP type. Face veneers shall be Grade 1 for painted doors in every respect.

(f) All doors shall be provided with lock blocks of minimum size 300mm x 75mm.

(g) Glass beading strips shall be approved wash leather self adhesive tape turned up over both sides of the glass and glazing surfaces and turned to the straight line.

(h) All screws shall be countersunk, and screwed and pelleted in un-painted work.

(i) Timber pellets shall be glued and tapped into the hole, making sure the grains line up, and are carefully trimmed back flush with joinery to give a clear, smooth overall surface.

A. FITTINGS AND FIXTURES

The fittings, etc., are to be accurately constructed in accordance with the detailed drawings. The doors, drawers, etc., are all to fit and open and close smoothly and all work next to walls, floors and ceilings is to be soundly fixed and scribed to fit snugly against same.

B. MOULDINGS

Moulded work shall be accurately worked to the full size details supplied by the Architect. Mouldings shall be worked on the solid unless otherwise stated.

C. CIRCULAR WORK

When circular work is specified it shall be built up with an appropriate number of pieces cut to the required shapes. The pieces shall be put together in two (or three) thickness so that they break joint, and shall be secured with hardwood keys and wedges or with hardwood pins (whichever is more appropriate).

D. SCRIBING

Skirting, architraves, plates and other joinery works shall be accurately scribed to fit the contour of the irregular surface against which they will be required to form a close butt connection.

E. FINISH

All joinery which is to be oiled and painted shall be finished smooth and cleaned by rubbing down by hand with fine glass paper.

F. COMPLETION OF WORKS

Protection of all joinery and ironmongery must be maintained until completion of the contract as a whole. All joinery and glass is to be thoroughly cleaned before the building is handed over.

G. DEFECTIVE WORK

All work judged to be defective must be removed and replaced as directed by the Architect.

IRONMONGERY

H. GENERALLY

(a) Ironmongery shall be fixed with suitable screws to match and prices shall include for this

(b) All locks and ironmongery shall be fixed before the woodwork is painted, handles shall be removed before the painting commences carefully stored and re-fixed after completion of painting.

(c) 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.

(d) The keys of all locks shall have labels attached with door references marked on before handling to the Architect.

(e) All locks shall be provided with a master key system and prices shall include for this as required by the client, and as instructed by the Architect. The client's requirements are to be obtained by the contractor before ordering.

PART SIX

METAL WORK

A. STEEL QUALITY

Structural steel shall comply with the requirements of B.S.4360 and shall be new and unused. It shall be free of imperfections, distortion, rust, scales of other deterioration or contamination by grease, paint and similar items.

B. TESTING

The Engineer may, where he so desires call manufacturer's work test certificates in respect of all steel, which tests shall have been performed in accordance with B.S.18. The Engineer may also carry out such further tests as he may consider necessary.

C. SECTIONS

The dimensions and properties of hot rolled structural steel sections and hollow sections shall be in accordance with B.S.2, part 1 and 2, or B.S.4848 for metric sized sections.

D. MINIMUM THICKNESS

All steelwork sections other than gauge metal sections, including cleats, gusset plates, etc. shall be not less than 8mm thick unless specifically indicated on the Drawings.

E. FORGING

All steel for forging and all forgings shall comply with the requirements of B. S. 29, and shall be subject to inspection and approval of the Engineer.

F. CASTING

All material used in the manufacture of castings and all castings shall comply with the requirements of B.S. 309, 1452 and 3100 and shall be subject to inspection and approval of the Engineer.

G. GAUGE METAL SECTIONS

Sections shall be manufactured from continuously hot dipped galvanised steel coil to B.S.2989 using steel to B.S.1449, part 1A and 1B, classification CR4 with a guaranteed minimum yield stress of 280 N/mm2.

The sections shall be cold formed to the basic shapes given in B.S 2994 with the design and details conforming to Addendum No. 1 to B.S.449 (PD4064).

Section shall be sawn and holes may be punched so as to produce a neat round hole with no distortion . Holes and cut ends shall be painted with zinc rich paint as soon as possible after cutting.

H. "Z" PURLINS

"Z" purlins shall be fabricated in the longest practicable lengths with staggered joints. All connections shall have a minimum of four bolts. Sag rods and apex ties shall be provided where indicated.

STRUCTURAL STEELWORK AND OTHER METAL WORK SPECIFICATIONS

A. TUBULAR SECTIONS

For tubular construction, due allowance is to be made for sealing the ends of all tubes and hollow square or rectangular sections with welding or welded plates. Where end make connections to other members, they shall be welded on true and square.

Shop joints required in tubular members shall be full penetration but welds on to split backing rings.

B. STORAGE

Steel shall be stored at least 150mm above the ground and protected against rust and corrosion.

C. FABRICATION

Structural steelwork shall be fabricated in accordance with B.S.449.

D. SHOP DRAWINGS

The contractor shall prepare fully detailed working drawings of the structural steelwork and obtain the Engineer's approval before commencing any fabrication. The drawing to be submitted at least one week before it is planned to start fabrication.

E. EDGE PREPARATION

The longitudinal edges of all plates and cover plates forming plate girders or built-up girders and columns and all edges of gusset plates over 12mm thick shall be machined. Edges which are subsequently wholly incorporated in weld may be machine flame cut. The abutting ends of the parts of all compression members including the caps and bases of stanchions, built-up columns and stiffeners transmitting load through direct contact shall be machined after the members have been fabricated so that all the parts shall be in close contact when the joint is made. The edges of the other members may be machine flame cut, sawn, sheared or cropped but hand flame cutting will not be permitted. All burrs shall be removed by grinding, and sheared and cropped edges shall be dressed.

F. STRAIGHTENING

All plates, bars and rolled sections shall be carefully trued, straightened and taken out of winding by pressure before they are drilled. Heating or hammering rolled sections and plates will not be permitted.

G. TEMPLATES

The templates throughout the work shall be mild steel. In cases where actual members have been used as templates for drilling similar pieces, the engineer will decide whether they are fit to be used in the finished structure.

H. HOLES

All holes in the steelwork shall be drilled out and not punched. Whenever holes are drilled in one operation through two or more separate parts the parts shall be separated after drilling and the burrs removed by grinding. All slotted holes shall be finished with sides of the holes straight and parallel.

A. JOINTS

No joints shall be made in any plate, bar or rolled sections except where shown on the Drawings or described in the specification.

B. ASSEMBLING AND MARKING

All steelwork shall be inspected in the fabricator's yard by the Engineer and where directed the steelwork shall be assembled to check the accuracy and inter-changeability of the work. Before despatch from the fabricator's yard all steelwork shall be cleaned down and clearly marked in paint or stencilled and stamped to facilitate sorting at the site. The markings shall be in conformity with the approved working and erection drawings.

C. WELDING GENERALLY

No welds will be permitted in any part of the permanent work except where shown or described on the approved working Drawings.

All welding of steel shall be executed in accordance with the provisions of BS 5135 and the workmanship shall be of the highest quality in all respects throughout. All welds shall be of the appropriate dimensions, they shall be sound, free from porosity, slag inclusion, undercutting and other defects, and shall be of clean and regular appearance throughout, and the execution shall be such as to ensure that the parts connected are properly aligned and positioned, free from distortion and so fixed together as to produce a homogeneous section of the correct dimensions. As much of the welding as is practicable shall be executed by means of automatic or semi-automatic processes and manual welding shall be kept to a minimum.

All welders shall have completed the tests described in part 6 or B.S.449 and may be required to carry out any of those tests in the presence of the Engineer.

D. ELECTRODES

All covered electrodes for the manual metal are welding of grades of steel to B.S4360 shall comply with the requirements of B.S639 and B.S.1719: part 1. All electrode wires and fluxes for the submerged arc welding of grades of steel to B.S.4360 shall comply with the requirements of B.S 4164.

All electrodes shall be of a type, size and quality appropriate to the class of work for which they are intended and shall be supplied by approved manufacturers and shall be of the heaviest gauge consistent with obtaining adequate penetration. Each batch of electrodes shall be accompanied by the manufacturer's certificates stating the date of manufacture, together with certificates giving the results of the initial test and of the most recent periodic check tests.

All electrodes shall be stored in their original unbroken bundles or packages in a warm dry and well ventilated place to which the Engineer shall have access.

All electrodes for welding shall be used strictly in accordance with manufacturer's instructions and shall be so chosen that the properties of the deposited metal are in no way inferior to those of the parent metal. Under no circumstances shall electrodes be used in a damp condition and any electrodes which have parts of the flux covering broken away or damaged in any respect whatsoever shall be discarded.

A. WELDING TRIALS

Whenever so directed by the Engineer and prior to the commencement of fabrication, welding and flame cutting procedure trials shall be carried out on typical examples of the various types and categories of welded members and joints using representative samples of the materials to be employed in the work. These trials shall demonstrate to the satisfaction of the Engineer the suitability and adequacy of the methods and procedures to be adopted in the fabrication.

The samples of material to be used in the aforesaid trials shall be selected and marked by the Engineer when the materials are inspected at the rolling mills and the various types and categories of members and joints shall be

Welding Trial (Cont'd)

welded in a manner simulating the most unfavourable conditions that will be experienced during fabrication or assembly. After completion of welding the various examples shall be sectioned for subsequent examination and testing.

Any approval by the Engineer of the welding methods and procedures shall in no way limit or restrict the right and authority of the Engineer to subsequently reject any welds or welded joints that in his opinion fall below the standard appropriate to the class of work.

B. WELD TESTING

The contractor, his subcontractor and/or his fabricator shall be responsible for the preparation of all welded test pieces as and when required by the Engineer and for the provision, maintenance and efficiency of all apparatus and equipment necessary to the conducting of such tests in accordance with the procedure laid down in B.S.709.

Non-destructive testing of welds on completed member and joints shall be carried out by the Engineer during the course of fabrication as required and any length of weld or any welded joints exhibiting any defects shall be rejected and all such defects shall be cut out and replaced with sound work. The entire cost of making good or replacing any such rejection shall be borne by the contractor.

The contractor, his sub-contractor and/or his fabricator, shall be responsible for all preparations necessary for the carrying out of non-destructive testing of welds on completed members and completed members and joints to the satisfaction of the Engineer and shall provide all assistance required for conducting such tests.

C. WELDING PLANT

All plant used for shop and site welding shall be capable of maintaining at the fusion face the voltage and current specified by the manufacturer of the electrodes and the contractor, his sub-contractor and/or his fabricator shall provide the necessary instruments for measuring the voltage and current as and when required by the engineer.

D. BOLTS

Black bolts and nuts shall be in accordance with B.S. 4190 and shall have their bearing faces machined. Close tolerance bolts and nuts shall be in accordance with B.S3692 and shall have their bearing faces machined, be turned on the shank and shall be screwed with unified coarse threads to B.S.1580. Flat and taper steel washers shall be in accordance with B.S4320. Washers shall be provided under the nuts of all black bolts and close tolerance bolts so that the nut, when screwed up tight, does not bear on the shank of the bolt.

Taper washers of correct angle of taper shall be provided under all bolt-heads and nuts that are required to bear on bevelled surfaces.

A. HIGH STRENGTH FRICTION GRIP BOLTS

High strength friction grip (H.S.F.) bolts, nuts and washers shall be of either high strength load indicating bolts and nuts of an approved pattern or shall be provided with load indicators of an approved pattern under the heads of the bolts. The dimension of high strength friction grip bolts and nuts shall be in accordance with B.S.4395 except only for the dimensions of the load indicating washers shall be supplied by manufacturers approved by the Engineer.

Non load indicating bolts or washers may be used with prior approval of the Engineer. The part-turn method of tightening shall be used with these bolts.

High strength friction Grip Bolts (cont'd)

All bolts shall have clear distinctive marks to identify them. The bolts and washers shall be electro-zinc plated or zinc coated sheradizing and the nuts cadmium plated by the manufacturer to ensure that the nuts do not cease under tension. All components shall be stored carefully to ensure no deterioration of finish.

B. USE OF HIGH STRENGTH FRICTION GRIP BOLTS

The use of high Strength friction Grip Bolts shall be in accordance with B.S.4604.

C. SURFACES

Surfaces of plates in joints shall be free of paint or any other applied finish (except galvanising), oil, dirt, rust, loose scale, burrs or other defects which would prevent solid seating of the parts or would interfere with the development of friction between them.

D. MINIMUM PLY THICKNESS

General Grade Bolts - no outer ply, and wherever possible no inner ply, shall be smaller in thickness than half the bolt diameter or 10mm whichever is the less.

High Grade Bolts - no outer ply, and wherever possible no inner ply, shall be less than 10mm.

E. SPACING OF BOLTS

This shall be as shown on the Drawings or otherwise in accordance with B.S.449. The tool to be used for tightening should be taken into account when arranging the disposition of bolts in a joint.

F. ASSEMBLY OF JOINT

Holes shall be lined up with draft pins until bolts in the remaining holes are fully tightened. Driving of bolts will not be permitted. The ends of the bolts and nuts shall be clear and lightly lubricated. No lubricant shall come into contact with the ply faces. Each bolt and nut shall have a flat round washer and taper washer as necessary. Load indicating washers shall be fitted with the protrusions against the bolt head or against a special nut face washer when fitted at the nut end.

A. TIGHTENING

Tightening shall be in a staggered pattern agreed with the Engineer before hand, working from the centre of joint outwards. Each bolt tightening operation shall be carried out speedily until the required gap under the load indicating washer is reached. This shall be measured using a feeler gauge.

Appropriate allowance shall be made in the gap for the location of the indicating washer relative to the bolt. Tightening may be carried out using manual or power wrenches but not torque wrenches and must be carried out until the bolt reaches the minimum specified tension.

Full details must be obtained from the manufacturer regarding details of the installation, tightening and use of load indicating washer to confirm the correct tension has been developed in the bolts.

B. BOLT FAILURE

If after final tightening a nut or bolt is slackened off for any reason, or becomes slack, the nut, bolt and washer must be discarded and not used again.

C. PAINTING

The gap under the load indicating device shall be filled with paint.

D. PART TURN TIGHTENING

In certain circumstances the part turn method may be permitted. The sequence of tightening bolts in a group shall be agreed before hand with the Engineer. The bolts shall be tightened initially with a standard podger spanner to bring the joint surfaces into close contact. This must be checked before the tightening process is completed.

A permanent mark shall be cut on the nut and protruding end of the bolt using a cold chisel and the nut finally tightened with an impact wrench to turn it relative to the bolt and specified amount to produce the required minimum tension.

E. SHOULDERED BOLTS AND NUTS

Shouldered bolts and nuts shall be black bolts and nuts in accordance with B.S.2078 and shall be screwed with unified coarse threads to B.S. 1580 and shall be of the dimensions shown on the Drawings. Shouldered bolts shall be provided at all expansion and other sliding joints and shall be supplied with all necessary washers.

F. ANCHOR BOLTS AND NUTS

Anchor bolts and nuts for setting in concrete shall be as shown on the Drawings or as approved by the Engineer and shall be fixed in accordance with the manufacturer's technical information sheets giving full particulars of the bolts including the mechanical properties of the bolts, the safe working loads and methods of fixing and usage.

A. PACKING FOR SHIPMENT

All cleats, gussets, stiffeners, brackets and other projecting material arising out of fabrication shall be protected from damage while being transported in such a manner as to prevent distortion. All machine surfaces shall be suitably protected. All straight bars, except small pieces, shall be shipped in bundles of convenient size and shall be temporarily bolted together or bound with annealed steel wire.

All bolts, nuts, washers, screws, small pieces and other small articles shall be adequately packed in crate or other suitable containers. Each piece, packing, bundle and crate shall be clearly marked with its weight and with the appropriate shipping marks before despatch from the fabricator's yard.

B. ERECTION OF STRUCTURAL STEELWORK

The erection of all structural steelwork at the site shall be in accordance with the provision of B.S.449. When lifting and fitting steelwork into position, care shall be taken that the members are not twisted, bent or damaged.

Suitable slings, blocks, tackles, shear legs, derrick, cranes and other types of lifting appliances and equipment shall be provided and every care and precaution shall be taken to ensure the safety of all persons engaged in such work.

The erection of the steelwork shall be carried out in such a manner as not to subject any of the members to overstressing, or reversal of loading, which the members are not designed to support. During erection the steelwork shall be securely braced, propped or otherwise temporarily supported until such time as the steelwork is lined, levelled and braced and bolted in its final position.

C. ERECTION BY OTHERS

Where the steelwork is to be erected by parties other than the fabricator, then the fabricator shall supply complete drawings of the steelwork with itemised and numbered pieces corresponding to the references stencilled on the actual pieces together with all necessary bolts, washers of all kinds required for the complete erection of the steelwork.

Erection by others (Cont'd)

The fabricator shall also provide any special instructions on the method and sequence of erection and any notes maintaining stability, or pointing out any erection procedures which can cause overstress or collapse.

The erector, if in doubt of any methods proposed by himself or laid down by the fabricator shall consult with the Engineer and the fabricator before continuing.

Notwithstanding all instructions the responsibility for erection in a proper manner shall lie with the erector.

D. SETTING OUT

The steelwork shall be set out accurately to line and level and plumbed vertically (or such other angle as required) in accordance with the Drawings and no permanent fixing or final tightening up of the bolts or other connections or concreting in of steelwork shall be carried out until the steelwork has been approved by the Engineer.

A. HOLDING DOWN BOLTS

Holding down bolts shall normally be placed and concreted in by the main contractor. The steelwork erector shall check the accuracy of the position and level of the bolts before the bolts are concreted in.

Any pockets formed for adjustment or placing of the bolts after the main concrete base is cast shall be as shown on the Drawings or to the Engineer's approval.

B. BEDDING OF BASE PLATES

Steel stanchions with base plates shall be supported on steel shims or wedges to obtain the correct line and level of the stanchions and the holding down bolts tightened by hand. Prior to bedding the base plates, the space under the plates shall be cleaned out.

The base plates shall be bedded using cement/sand 1:2 mortar with sufficient water to make the mortar flow under pressure or by vibration or by rodding until the whole space under the base is completely filled. The steel shims or wedges shall be left in. After hardening of the mortar the holding down bolt shall be tightened by spanner as required.

C. CONCRETING IN OF MEMBERS

Where any portion of a steel member is designed to be cast into concrete, the surfaces in contact with concrete shall be thoroughly cleaned of paint or other adherent matter.

When members are to be concrete in, whether supplied with temporary positioning bolts or otherwise, they shall be lined and levelled and plumbed and firmly supported before concreting in.

If base plates are shown on the drawings, these shall be grouted in as above prior to concreting.

D. NAILS, SCREWS AND BOLTS

Nails, screws and bolts shall be of best quality mild steel of lengths and weights approved by the Architect. Nails shall be to B.S.1202 and bolts to B.S.916.

Bolts shall project at least two threads through nuts and all bolts passing through timber shall have washers under heads and nuts.

D. FIXING METAL WINDOWS, DOORS, ETC

The contractor's prices for fixing metal windows, doors, etc., shall include for assembling and fixing, including screwing to wood frames and cutting mortice for lugs in concrete or walling and running with cement mortar (1:4), bedding frames in similar mortar and pointing in mastic, bedding sills, transomes, mullions in mastic, making good plaster around both sides, and fixing, oiling and adjusting all fittings and frames.

E. METAL WINDOWS

Metal windows shall be steel standard section windows supplied and installed by the contractor or an approved specialist, sub-contractor. In the case of a specialist sub-contractor, the contractor shall provide any general or special attendance as may be required by the sub-contractor.

PART SEVEN

ALUMINIUM WORKS

GENERAL

Scope of Work

The work generally comprises the design, fabrication and installation of fixed and opening glazing shop fronts, windows and doors.

The Contractor shall be responsible for the design, sourcing, fabrication, testing, delivery to the works, storage, setting out, installation, removal of any protection, cleaning down, inspection, supervision and co-ordination of the work, all in accordance with the requirements of the Drawings and bills of quantities.

Within the scope of the dimensions and general requirements shown on the
Drawings, the Contractor is to propose the type and sections of all extrusions and provide typical Drawings of the sections.

The work includes but is not necessarily limited to the following:

(a) Extruded aluminium frames to be fixed and opening glazing complete with glass units, and all associated plates, joint sleeves and decorative caps, etc, finished in polyester powder coating.

(b) Fixing plates, brackets, minor framing, anchors, screws, bolts, butts and washers etc.

(c) Windows complete with glass units, glazing gaskets and seatings and ancillary glazing components, metalwork finished in polyester powder coating.

(d) External seals and flashings.

(e) Finishings in polyester powder coating.

The Drawings are schematic and indicate requirements only. This specification sets out the minimum standards of performance to be achieved and the minimum standards of materials and workmanship required.

The Contractor shall be responsible for developing his design proposals as necessary to provide a detailed solution to the Architect's approval and for ensuring that the whole of the work meets or exceeds the minimum performance levels and materials and workmanship standards specified herein.

Dimensions: the dimensions shown on the Contract Drawings are structural opening dimensions. It will be the responsibility of the Contractor to check all sizes before manufacture commences.

Samples: before a firm order is placed, the Contractor will be required to provide, as required by the Architect, samples of extrusions, fittings, ironmongery and typical finished windows for approval.

The work shall comply with the Building Regulations and all current amendments thereto.

The Contractor will be deemed to have allowed in the Contract sum for full compliance with all current Building Regulations, Local Building By Laws, Safety Regulations and all statutory regulations.

British Standards with current amendments referred to in this specification shall be the latest edition.

Materials and components of foreign origin shall comply with the relevant national standard but shall not be inferior in any way to the quality specified in the mot relevant British Standard.

Inspections Sample Approvals

The Contractor shall allow the Architect and his representative(s) unrestricted access to his office and factory and those of his Contractors or suppliers to inspect materials, components, assembled units, manufacturing methods and processes and all related quality control procedures etc. control samples of all materials to be incorporated in the

Contractor's works must be submitted to the Architect for approval.

MATERIALS

Aluminium

Aluminium extrusions shall be from alloys designated 6060, 6063, 6261, 6282 and sheet alloys designated 1200 and 3004 or 5251. The extrusions shall comply with BS 1474.

Powder coated finishes

Certain references under this specification refer to the South African Bureau of Standards (SABS). Powder coating substrates is to be to SABS 1274 – 1979. no powder coating is to be carried out on a fabricated product. Coatings are to be applied by the Powder Coating Process.

All surfaces shall be coated with a nominal thickness of between 50 and 80 microns.

The powder type to be used in the coating process shall be either Interpon D or Vedoc HI-Q or other equal and approved and shall comply with the requirements of BSS 6426 of 1984 with particular reference to section 2, and moreover carry a manufacturers guarantee of a minimum of 10 years. This guarantee must be valid in the Republic of Kenya. The guarantee is to be provided by the Architect on completion of the work.

The applicator shall be on the approved list of applicators as published by the powder manufacturer and shall comply with the requirements as stated above.

Colours will be established from the FA2 standard published architectural range.

The gloss level shall be satin.

The process conditions must comply with the requirements of and as described in Section 3 of BS 6496 and where applicable SABS 1274 1979.

The Contractor shall immediately repair any damage that occurs by using the repair procedure as recommended by the powder manufacturer. These repair materials are to be confined to the repair of minor scuffmarks or small scratches.

Scratch and blemish inspection will be viewed at a distance of three metres under normal lighting conditions. Normal lighting conditions shall mean 'reasonable lighting conditions under which the product is normally viewed.'

Scratches in aluminium are defined as being a mark on the aluminium surface, which penetrates the painted surface thereby exposing the natural metal. If blemishes are visible when viewed from a distance of three metres under the lighting conditions described, the product will be rejected.

Prior to the installation of the work, a thorough check is to be made by the Contractor for compliance with this specification and he is to submit this in writing to the Architect. This is to include inter alia:

1. The production of relevant AAAMSA test certificates.
2. Proof that the powder coat finishes comply with this specification.

DESIGN AND PERFORMANCE

SPECIFICATIONS

General

The work provided shall exclude wind and rain from the building's interior and shall assist in maintaining the desired internal environment. All elements shall be strong enough to resist the forces that are likely to act upon them, but they should achieve this necessary strength and rigidity without adding undue load to the building structure. They shall be durable and perform their functions for the life of the building which will be in excess of 50 years.

Rainwater penetration

The shop fronts, windows and doors shall be designed, fabricated and installed to prevent leakage to the interior even during periods of heavy rain combined with high winds.

The cladding system in all elements shall incorporate two positive lines of defence against the passage of rainwater to the interior by way of a drained framing system. The space between the two lines of defence shall be drained and ventilated to the exterior.

The outer line of defence shall comprise neoprene, EPDM or silicone gaskets, which shall be designed, manufactured and installed to prevent rainwater penetrating into the aluminium framing members/glazing chambers.

General

The design and construction of the aluminium framing members shall be such that all corner, butt and angular joints which are intended to remain closed are sufficiently strong and rigid to remain completely and permanently water tight when the joints are subjected to the effects of repeated thermal movements, building movements, fluctuating wind forces, impact forces and the forces generated during transportation and handling.

Construction tolerances

Adequate allowances shall be made for all relevant construction tolerances associated with the building structure, which will be concrete framed.

All structural fixing brackets shall be designed to provide adequate three way adjustments which does not rely on the use of an excessive thickness of packing shims, the combined maximum thickness of which shall not exceed 10mm.

Manufacture of frames

Joints in frames and sashes shall be made by mechanical means (cleating, screwing, etc) or by welding. Joints may have flush, stepped or lapped surfaces to approval. Mitred joints shall only have flush surfaces. The windows, doors, etc shall be free from all sharp edges, burrs and the like. Welded joints shall be cleaned off smooth on surfaces abutting closing faces, i.e. glazing rebates, etc. hardware and fittings shall be removable without removing the aluminium frames form the structure. Sliding members shall be constructed so that no metal-to-metal sliding contact occurs.

Corners, joints and glazing beads are to be accurately mitred or notched and there must be no sharp edges or unsightly gaps when viewed from a distance of 3 metres under normal lighting conditions.

All corners and intersections vulnerable to water penetration should have adequate sealant applied to ensure weather tight installation.

Sealing of frames

The external perimeter of the frames is to be continuously sealed against the surrounding structure.

Weather sealing shall be of materials that are compatible with aluminium and shall be such that any degradation, shrinking, warping or adherence to sliding or closing surfaces does not impair the performance of the installation.

No contact of dissimilar metals is to be permitted. PVC or other approved separators are to be provided in all such conditions.

Glazing beads, gaskets and glazing compounds shall be of materials that are compatible with the aluminium, finishes, the glass and any other glazing materials.

Hardware, bearing devices and fittings in general must be made of materials resistant at atmospheric corrosion, and shall be of a design so as to be accessible for adjustment, repair and replacement after the windows etc have been installed.

Fastenings shall be of material, which is compatible with aluminium, and aluminium finishes.

Ancillary members

Ancillary members such as cills, flashings, infill panels and the like may be formed from flat sheet material shall be made from an appropriate alloy selected from alloy designations – 1200 or 3004 or 5251, of a temper suitable for the method of forming, and a composition suitable for anodizing or painting as required. Alloys shall comply with BS 1470.

Thermal movement

The design of all aluminium framing members shall take into account external surface temperature extremes in the range 10 degrees C to 80 degrees C and will permit any glazing panel to be partially shaded/partially exposed to sun, without any risk of cracking or damage to glazing due to 'thermal shock' and temperature differentials.

Greater surface temperature extremes shall be allowed for should the Contractor be of the opinion that it is necessary to do so in order to provide a problem-free installation which satisfied the minimum standard of performance specified therein.

Differences between these surface temperatures and the ambient temperatures at the time of fabrication and installation and shall be taken into account.

The design, fabrication and installation of the work shall be such that thermal and other movements and the effects of wind and air movements do not cause 'cracking', 'rattling', whistling' or any other noise.

Opening windows

All opening windows shall be gasket-glazed units fabricated from extruded aluminium sections. Opening windows other than central pivot windows, will be restricted to a maximum opening of 300mm. This restrictor will be key openable to allow window cleaning where required.

The windows shall be fully weather-stripped. The weather-stripping shall take the form of compressible neoprene, EPDM or silicone gaskets extruded complete with integral projections designed to engage in grooves in the aluminium framing components.

The windows shall be capable of adjustment to achieve adequate and uniform compression of the weather-stripping.

The windows shall be fitted with:

i) Locking level handles to all ground floor opening lights. Level handles to upper floors.
ii) Sliding friction stays restricted to limit the open angle of the lower window to 300mm.
iii) Central pivoting hinges, reversible for cleaning.
iv) Permanent ventilation slots with mosquito gauze to Nairobi City Council, or similar regulations.

All window ironmongery shall be finished in satin anodized aluminium.

Cleaning and hand-over

Prior to hand-over of any sections of the work, such sections inclusive of any adjacent areas dirtied by the Contractor shall be thoroughly cleaned by him.

The Contractor shall remove any protective material and clean down and hand over reasonably sized sections of the work at such times as are mutually agreed upon between the Contractor and his sub-Contractor, subject to approval. Provided further that the removal of protection and cleaning down and the subsequent hand over shall be done as

soon as is possible.

Testing

One sample of each fully finished element shall be submitted to the Architect for testing for weathertightness. This is to be done in due time for detailed modification of the units and any retesting necessary, so as to allow for the whole of the work to be manufactured and installed in accordance with the Contractors programme.

The test is to include for a procedure that will establish whether the system will produce any audible 'whistling' noises above 25 db, measured 200 from the work, in winds of a velocity of more than 26 kph. Wind noise in excess of this is not acceptable.

Damaged work

All aluminium damaged prior to the date of hand-over of the work shall be timeously replaced at the cost of the Contractor.

Protection of aluminium

All aluminium delivered to site shall be protected by tightly wrapping all members in plastic strip and/or by robust self-adhesive material, to approval.

GLAZING

MATERIALS

General

Glass used in glazing and for mirrors shall be best quality clear glass free from visible defects so as to afford uninterrupted vision or reflection as appropriate, and without obvious distortion.

Standards

Glass for glazing and mirrors shall be of approved manufacture and is to comply with BS 952 in all respects free from flaws, bubbles, specks and other imperfections.

Clear sheet glass etc.

The clear sheet float glass shall be ordinary glazing (OG) quality.

Plate Glass

Polished plate and Georgian wired polished plate glass to be selected glazing (SG) quality.

Obscured glass

To be of type described and as approved by the Architect.

Laminated glass

The Contractor shall provide details of the specification and manufacturers of laminated glass for the Architects approval before ordering.

Laminated glass in this specification is referenced to the South African Bureau of Standards (SABS).

Laminated glass is to be installed in accordance with:

(a) The recommendations of the glass manufacturer

(b) SABS Code of Practice 0137 and SABS 1263.

All safety glass is to be clearly marked by means of either sandblasting, acid etching or the application of transparent labels in accordance with the requirements of SABS 1263.
Part 1: “Safety performance of Glazing Materials under Human Impact”.

The marking is to be to the minimum SABS marking requirement and is to state the type of materials i.e. laminated glass, toughened glass, polycarbonate, etc.

All glass is to be cleaned prior to inspection. Scratches in glass, which are acceptable, are those, which are less than 75mm long in any area, and those, which are longer than 75mm, which do not encroach more than 75mm from the exposed visible edge.

No interlayer bubbles will be accepted in the laminated glass.

Glazing method for laminated glass

There is to be no glass to metal contact.

All opening sections shall be fitted with vinyl or other approved weather strips and draught excluders.

Fittings are to be fitted to the frame with stainless steel set screws .the riveting of screws or brackets will not be accepted.

The bit on the glazing material in the rebate is to be sufficient to meet the requirements of the application, and no

edges of the glazing material may be visible.

No excess sealant or spillage shall be visible when viewed from a distance of three metres.

Sealants used are to have no gaps or air pockets and are to be visible on both sides of the glass when bead glazed. Where translucent structural silicone sealant is used without glazing beads, small air bubbles are accepted provided these are not at the exposed surfaces.

Gaskets are to be continuous and not loose or unsightly at corners. If metered corners are used, only corner joints are permissible.

Glazing gaskets

Glazing to metal frames shall be secured with clip-in gasket of butyl rubber. The gaskets shall be of size and section to suit the frame and glazing so as to provide a weather and airtight seal. The mechanical properties of the gasket shall be such as to resist the climatic conditions experienced in Kenya.

Wash leather

Wash leather shall be best quality chamois oil cured natural colored. Where wash leather is called for an approved substitute may be employed.

WORKMANSHIP

General

Glazing of all types and in all locations shall be carefully executed by artisans skilled in this type of work and in conformance with the recommendations of CP 152. Glazing shall be carefully fitted so that it is not subject to pressure and stresses imposed by being an overtight fit within the framing.

Measurements

Each element (door, window, etc.) to receive glass shall be accurately measured to ensure a perfect fit subsequently.

Single glazing

Single glazing shall be executed with glass of the various types described herein. Ordinary (non-safety) glass may be pre-cut or cut on site.

Wired glass

Wired glass shall be cut so that the wires embedded are truly vertical and horizontal (i.e. at right angles to the cut edges).

Laminated glass

Laminated glass shall be factory cut before delivery to site. Site cutting will not be permitted.

Storage and handling

Glass shall be delivered to site in stout containers and clearly marked. The containers shall incorporate sling attachment points for lifting bridles. Glass shall be stored under cover so that the panes are truly vertical.

Protection

After fixing glass shall be boldly marked with paper or whitewash so that it is clearly visible. In positions where damage due to construction traffic or activity is likely to occur stout screens composed of hardboard or fireboard on battens shall be arranged to protect the glass.

Damage

Should any glass delivered to site be found to be damaged it shall not be incorporated into the works without the

express permission of the Architect. Should glazing installed be damaged for any reason it shall be removed and replaced free of charge to the satisfaction of the Architect. Should any adjacent works be damaged this shall equally be reinstated free of charge to the satisfaction of the Architect.

Defective work

All glass shall be checked before installation to ensure that defective glass is not installed. Notwithstanding this, if in the opinion of the Architect, any installed glazing is defective it shall be removed and replaced free of charge to the satisfaction of the Architect.

Glazing to wood

Glazing shall be secured to wood framing with hardwood beads. Edges shall be wrapped in wash leather finishes just below the surface of the bead. No adhesives shall be used.

Glazing to metal

Glazing shall be secured to metal framing with clip in butyl rubber gaskets.

Glass thickness

Glass thickness shall conform to the recommendations of CP 152 and the manufacturers recommendations for sizes of panes relative to the position in the building and the effects of wind pressure (both negative and positive).

Cleaning

All windows glazed panels and mirrors shall be cleaned both inside and out immediately prior to the handing over of the building to the satisfaction of the Architect.

IRONMONGERY

Generally

(a) Ironmongery shall be fixed with suitable screws in matching finish and prices shall include for this.

(b) All locks and ironmongery shall be fixed before the woodwork is painted, handles shall be removed before the painting commences, carefully stored and re-fixed after completion of painting.

(c) 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.

(d) The keys of all locks shall have labels attached with door references marked on before handing to the Architect.

(e) All locks shall be provided with a master key system and prices shall include for this as required by the Client and as instructed by the Architect. The client's requirements are to be obtained by the Contractor before ordering.

All locks are to be provided with two keys and no key is to operate any but its own lock except for master keys. All keys are to be provided with a key ring and plastic tag on which is to be firmly written the door reference number.

(f) Ironmongery for doors and for aluminium windows to be stainless steel brushed finish or satin anodized aluminium finish.

(g) Where items of ironmongery are not specified by manufacturers' catalogue reference, the Contractor shall submit proposals for the Architect's approval within one month of the date of commencement of the works. Specifications including manufacturers catalogue reference numbers of the items he proposes to purchase.

(h) Prior to fixing any item of ironmongery, the Contractor shall obtain the Architects approval of a sample.

METALWORK

MATERIALS

Generally

All materials shall be the best of their respective kinds free from defects and all work is to be carried out in the most workmanlike manner and as strictly as directed by the Architect. The materials in all stages of transportation, handling and stacking shall be kept clean and prevented from injury by breaking, bending or distortion and weather action.

Mild steel

Mild steel shall comply with BS 7668-1994.

Hollow section tubing

Square and rectangular hollow section tubing shall be hot rolled mild steel in accordance with Grade 43C of BS 4360 or the equivalent grade in BS 7668.

Bolts, nuts and washers

These shall be fabricated from materials, which comply with BS 7668, and each manufactured item shall comply with the appropriate BS.

Galvanized sheet steel

To be No. 24 S. W. G of approved manufacture to BS EN 10143-1993 of best quality mild steel sheets cold rolled close annealed patent flattened and hot dip galvanized.

Aluminium

Aluminium shall be extruded sections with an anodized or powder coated finish, either natural or colored, to give a 25 micron minimum depth to European norm EWAA.

The Contractor shall submit with each item or batch of items delivered, test certificates or such other documentary evidence as the Architect shall require that the depth of anodizing or powder coated finish specified has been achieved.

Stainless steel

Stainless steel shall be Austenitic steel BS 6323 comparable to BS 1449 type 316 S 16.

PART EIGHT

GLAZING

MATERIALS

A GENERAL

Glass used in glazing and for mirrors shall be best quality clear glass free from visible defects so as to afford uninterrupted vision or reflection as appropriate, and without obvious distortion.

B STANDARDS

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.

C CLEAR SHEET GLASS ETC.

The clear sheet glass shall be ordinary glazing (OG) quality.

D PLATE GLASS

To be of type described and as approved by the Architect.

E OBSCURED GLASS

To be of type described and as approved by the Architect.

I Putty

(a) The putty for glazing to wood sashes is to be linseed oil putty all as B.S.544.

(b) The putty for glazing to metal windows is to be gold size metal window putty specially designed for tropical use, or patent mastic putty if approved by the Architect.

(c) All putty shall be delivered on site in the original manufacturer's sealed cans or drums and used direct therefrom, with the addition only of pure linseed oil if necessary. No mineral or other oils may be used in the putty except genuine linseed oil.

A MIRRORS

Mirrors shall be polished float glass silvering quality, protected at back with electro-copper backing coated with shellac varnish and paint. The mirrors are to be fixed with chromium plated dome headed mirror screws with plastic or rubber distance pieces and washers unless otherwise stated and rates shall include for this.

WORKMANSHIP

B GENERAL

Glazing of all types and in all locations shall be carefully executed by artisans skilled in this type of work and in conformance with recommendations of C.P.152. Glazing shall be carefully fitted so that it is not subject to pressure and stress imposed by being an over tight fit within the framing.

C MEASUREMENTS

Each element (door, window etc.) to receive glass shall be accurately measured to ensure a perfect fit subsequently.

D SINGLE GLAZING

Single glazing shall be executed with glass of the various types described herein. Ordinary (non –safety) glass may be pre-cut or cut on site.

E WIRED GLASS

Wired glass shall be cut so that the wires embedded are truly vertical and horizontal (i.e. at right angles to the cut edges).

F SAFETY GLASS

Safety glass shall be factory cut before delivery to site. Site cutting will not be permitted.

G STORAGE AND HANDLING

Glass shall be delivered to site in stout containers and clearly marked. The containers shall incorporate sling attachment points for lifting bridles. Glass shall be stored under cover so that the panes are truly vertical.

H PROTECTION

After fixing glass shall be boldly marked with paper or whitewash so that it is clearly visible. In positions where damage due to construction traffic or activity is likely to occur stout screens composed of hardboard or fibre board on battens shall be arranged to protect the glass.

A DAMAGE

Should any glass delivered to site be found to be damaged it shall not be incorporated into the works without the express permission of the Architect. Should glazing installed be damaged for any reason it shall be removed and replaced free of charge to the satisfaction of the Architect. Should any adjacent works be damaged this shall equally be reinstated free of charge to the satisfaction of the Architect.

B DEFECT WORK

All glass shall be checked before installation to ensure that defective glass is not installed. Notwithstanding this, if in the opinion of the Architect, any installed glazing is defective it shall be removed and replaced free of charge to the satisfaction of the Architect.

C GLAZING TO WOOD

Glazing shall be secured to wood framing with hardwood beads. Edges shall be wrapped in wash leather so that the wash leather finishes just below the surface of the bead. No adhesives shall be used.

D GLAZING TO METAL

Glazing shall be secured to metal framing with clip in butyl rubber gaskets.

E GLASS THICKNESS

Glass thickness shall conform to the recommendations of C.P.152 and the manufacturer's recommendations for sizes of panes relative to the position in the building and the effects of wind pressure (both negative and positive).

F CLEANING

All window glazed panels and mirrors shall be cleaned both inside and out immediately prior to the handing over of the building to satisfaction of the Architect.

PART NINE

FINISHINGS SPECIFICATIONS

FINISHINGS

GENERAL

A. OTHER SPECIFICATIONS

All other specifications of this contract where applicable are deemed to apply equally to the finishing specifications.

B SAMPLES

The contractor shall prepare at his own cost sample areas of the paving, plastering and rendering as directed until the quality, texture and finish required is obtained and approved by the Architect after which all work executed shall conform with the respective approved samples.

C FINISHED THICKNESSES

The thicknesses of floor finishes quoted in this section of the specification shall be the minimum requirements.

Suspended floors shall have a constant structural thickness and have level top surfaces. The finished floor surface will equally have constant level and any adjustment needed to achieve this effect with the varying floor finish materials is to be made in the screeds beneath the same.

Slabs bearing on the ground may be cast to varying levels, and be of constant thickness with varying formation levels, or have varying thicknesses at the option of the contractor. This stipulation in no way relieves the contractor of the requirements of the specifications for the structural work.

D MATERIALS GENERALLY

All materials shall be of high quality, obtained from manufacturer's to be approved by the Architect. Cement, sand and water shall be as described under concrete work and Block work.

E BONDING

Bonding compounds, etc., for use in applying plaster and similar finishes direct to surfaces without the use of backings or screeds are only to be used if approved by the architect and are to be used strictly in accordance with the manufacturer's printed instructions.

F. CHASES, OPENINGS AND HOLES

All chases, holes and the like which were not formed in the concrete or walling shall be cut, and all service pipes shall be fixed and all holes and chases filled with mortar before paving and plaster work is commenced. In no circumstances will the contractor be permitted to cut chases, holes and the like in finishes paving or plasterwork.

INSITU FINISHINGS

A GENERALLY

The term plastering refers to the operation internally and rendering to the same operation externally but for ease of reference the term plastering has generally been used in this specification to describe both operations.

B MIXES

The methods of measuring and mixing plaster shall be as laid down under concrete work and the proportions and minimum thickness of finished plaster shall be in accordance with the following:-

Item of work	Mix	Minimum Thickness and finish
Internal Plaster	1 part cement ¼ part lime 4 parts sand	16mm finish to walls and ceilings. wood float finish unless otherwise specified.
External Render	1 part cement 4 parts sand	12mm finish in two coats
Tyrolean finish	Ditto	6mm finished thickness in two coats on 10mm plastered backing

To obtain greater plasticity a small quantity of lime may be added to the mixes for external plastering at the Architect's discretion but in any case this is not to exceed ¼ part lime to 1 part cement.

With regard to the lime mortars gauged with cement, of the cement to small quantities of the lime/sand mix shall preferably take place in a mechanical mixer and mixing shall continue for such time as will ensure uniform distribution or materials and uniform colour and consistency. It is important to note that the quality of water used shall be carefully controlled. Plaster may be mixed either in a mechanical mixing machine or by hand.

Hand mixed plaster shall first be mixed in the dry state being turned over at least three times. The required amount of water should then be added and the mix again turned over three times or until such time as the mass is uniform in colour and homogeneous.

The plaster shall be completely used within thirty minutes of mixing and hardened plaster shall not be remixed but removed from the site.

C PREPARATION OF SURFACES FOR PLASTER ETC.

Irregularities in the surfaces to be plastered or rendered shall be filled with mortar, without lime, twenty four hours before plastering is commenced. Joints in block work etc., are to be well raked out before plastering to form a good key. Smooth concrete surfaces to be plastered shall be treated with an approved proprietary bonding agent or hacked to provide an adequate key for the plaster.

All surfaces to be plastered or rendered shall be clean and free from dust, loose mortar and all traces of salts. All surfaces shall be thoroughly sprayed with water and all free water allowed to disappear before plaster is applied.

As far as practical plastering shall not be commenced until all mechanical and electrical services, conduits, pipes and fixtures have been installed.

Before plastering is commenced all junctions between differing materials shall be reinforced. This shall apply where walls join columns and beams, particularly where flush and similar situations where cracks are likely to develop and as directed by the Architect. The reinforcement shall consist of a strip of galvanised wire mesh. Expament or equal approved 15cm wide which shall be plugged, nailed or stapled as required at intervals not exceeding 45mm at both edges. The surfaces to which such mesh shall be applied shall be painted with one coat bituminous paint prior to fixing the mesh.

FINISHINGS SPECIFICATIONS

A APPLICATION OF PLASTER AND RENDER

After preparation of the surfaces a key coat of cement slurry shall be applied to the wetted surface to be plastered. When this coat is dry the plaster coat shall be applied, by means of a trowel between screeds laid, ruled and plumbed as necessary. This coat which shall be to the required thickness shall be allowed to be so hard and then cured as described. Surfaces are to be finished with a wood or steel float to a smooth flat surface free from all marks.

Tyrolean finish shall be applied with an approved machine to give a finish of even texture and thickness. The sprayed finish shall be applied in two separate coats allowing time for drying between coats.

Application in one continuous operation to build up a thick layer will not be permitted. The total finished thickness of the two sprayed coats shall be not less than 6mm.. the sprayed finish shall not be applied until all repairs and making good to the undercoat are completed. any plaster which adheres to pipes, doors, windows and the like shall be carefully removed before it has set. Curing shall take place after the application of the second coat. The pressed finish as directed by the Architect. Where coloured tyrolean is required this shall be obtained by the addition to the mix of any approved colour pigment.

All plastering and rendering shall be executed in a neat workman like manner. All faces except circular work shall be true and flat and angles shall be straight and level or plumb. Plastering shall be neatly made good around pipes or fittings. Angles shall be rounded to 6 mm radius.

All tools, implements, vessels and surfaces shall be at all times kept scrupulously clean and strict precautions shall be taken to prevent the plaster or other materials from being contaminated by pieces of partially set material which would tend to retard or accelerate the setting time.

B CURING OF PLASTER

Each coat of plaster is to be maintained in a moist condition for at least three days after it has developed enough strength not to be damaged by water.

They shall be securely plugged, nailed or stapled as required at intervals not exceeding 450mm at both edges.

C ANGLE BEADS

Where required by the Architect, salient external angles of plastered walls shall be protected with galvanised mild steel angle beads complying with BS 1246 Fig.7 profile C3.

They shall be securely plugged, nailed or stapled as required at intervals not exceeding 450mm at both edges.

A PLASTER STOPS

Where shown on details, plasterwork shall be stopped against “expamet” galvanized steel plaster stop reference 565 which shall be securely nailed to wall in the positions indicated on the drawings.

B CEMENT AND SAND SCREEDS

Screed shall be mixed and formed as described.

C GRANOLITHIC PAVING

The granolithic paving shall be laid by a specialist floor layer and constructed as follows:-

Granolithic paving (Cont'd)

Curing compounds if specified or approved by the Architect shall be used in strict accordance with the manufacturer's instructions.

Surface hardening solutions of sodium silicate if purchased as liquid shall be of the grade sold for this purpose. Fourteen days after curing the surface shall be sprayed with three coats of sodium silicate solution and spread evenly with a mop or soft brush. Unabsorbed silicate left on the surface after the last application is to be washed off.

Solution is to 1:4 by volume for first coat, 1:3 for second, 1:2 for third, applied at 24 hour intervals.

The base concrete structural floor shall be finished with a tamped surface. Shortly before the granolithic topping is to be laid the surface of the base concrete is to be thoroughly prepared to provide a good bond. The base concrete shall be hacked by hand or mechanically so that its laitance is completely removed to expose clean coarse aggregate. All traces of dust formed as a result of hacking etc., shall be removed. The base concrete shall be thoroughly wetted prior to laying. Any excess water shall be removed prior to the grouting.

The prepared surface of the base concrete shall be covered with a grout consisting of one part cement and one part sand mixed to the consistency of thick cream and it shall be scrubbed into the surface with a stiff broom.
The granolithic topping shall be mixed in the following proportions by weight:-

1 part cement, 1 part fine aggregate and 2 parts coarse aggregate.

The water content of the granolithic topping shall be kept as low as possible consistent with obtaining full compaction of the topping with the plant available in order to avoid segregation of excessive laitance and in no circumstances must water/cement ratio exceed 0.42 by weight.

The granolithic topping shall be mixed for a period of not less than 11/2 minutes after all the materials have been placed in the mixer drum. No concrete shall be removed from the drum so that some water will enter the drum before the cement and aggregates. Each batch shall be discharged completely before the next batch is introduced. No extra water or other material shall be added to the mix after it has left the mixer.

If electrical conduit, trunking or any other items are required to be buried within the granolithic topping and the thickness is reduced at any point the contractor is to ensure that steps are taken to eliminate the possibility of cracking in the granolithic topping by means of galvanised wire mesh reinforcement in the flooring or other approved method. The extent of buried conduits, etc., should be ascertained prior to tendering and allowance for complying with this requirement will be deemed to be included in the rates for granolithic flooring.

The granolithic toping shall be laid in areas not exceeding 14M2. The length of any bay should not exceed 1½ times the width of that bay. Joints shall be made in the granolithic topping over all joints in the base concrete and over all supporting beams for suspended floors.

Unless otherwise indicated on the drawings all contraction and construction joints in the granolithic topping shall be simple but joints without filler.

The forms shall be fixed rigidly on a firm foundation and supported throughout their length so that they will not be disturbed by the spreading and compacting of the concrete. The forms shall be true to line within + or -1mm and to level within + or -2mm. The forms shall be set well in advance of laying the topping and shall be checked for level immediately before concreting starts.

The granolithic topping shall be placed as soon as possible after being mixed in two courses each 31mm thick. In no circumstances should the depth of granolithic spread in one operation be greater than that which can be fully compacted by the means available. No more than 1 hour should elapse between placing the courses. The mix proportions and water content of the granolithic shall be identical in each course.

Granolithic paving (cont'd)

The lower course must be compacted before the upper course and each course of topping shall be fully compacted with neither segregation nor excessive laitance. Particular care shall be taken to ensure full compaction of the concrete should be placed to an adequate surcharge to ensure full compaction.

After the topping concrete has been placed, levelled and fully compacted it shall be trowelled at least three times at intervals during the ensuing 6 - 10 hours so as to produce a uniform and hard surface with high resistance to abrasion. Under no circumstances should cement be sprinkled on the surface and trowelled in to absorb surplus water.

As soon as the surface has been finished it shall be protected against rapid drying out by erecting barriers against wind or draughts and against strong sunlight. As soon as the concrete has hardened sufficiently to prevent damage to its surface the floor shall be cured continuously for a minimum of 7 days by one of the following means:-

1. By means of wet canvas or straw mats or 50mm thickness of damp sand laid on the surface and kept continuously damp in position for the full curing period.

2. By means of building paper, plastic or other waterproofing sheeting which shall be kept in close contact with the surface of the concrete. The covering overlap the sides and ends of the slab and shall be lapped 75mm at all joints. The covering shall be securely held in position for the full curing period.

3. By spraying the surface with an approved proprietary curing medium not less than one gallon of which shall be applied to every 20 m^2 of surface.

At the end of the curing period the contractor shall take all precautions required by the Architect to ensure that the floor will dry out slowly. Under no circumstance will artificial heating be permitted in the building for a period of at least six weeks after the topping has been laid and thereafter the temperature shall not be increased rapidly. Side forms shall not be removed from freshly placed granolithic until it is at least 12 months old and then only with the Architect's approval. Care shall be taken to avoid damaging the granolithic. If any damage occurs the contractor will be responsible for making good to the Architect's satisfaction.

A INSITU TERRAZZO WORK

The terrazzo paving and screeds under are to be laid and polished complete by an approved specialist firm.

Where the screed is to be bonded to the concrete structural sub-floor, the latter shall be finished with a tamped surface and left clean and free from dust and grease.

Before laying the screed the surface shall be covered with a grout of one part sand and one part cement brushed in with stiff broom. The screed is to be laid before the grout has set.

All screeds under in-situ and pre-cast terrazzo paving are to be laid by the approved specialist firm. The screeds shall consist of one part ordinary Portland cement to three parts sharp washed sand. This mix may be varied by agreement on the responsibility of the approved specialist firm.

Granolithic paving (cont'd)

The screed is to be reinforced with 22 gauge galvanised steel wire netting with mesh not exceeding 1" laid direct on the sub-floor of bays exceeding 1 square metre.

The screed backing in-situ skirting is to be such as to adhere firmly to the various materials of the walls.

The thickness of in-situ terrazzo finishes are minimal and they may be increased if the specialist considers it necessary with corresponding reductions to the screed thicknesses providing the overall thickness of the finished flooring is maintained and without adjustment to the price quoted. The following thicknesses are assumed in measuring the terrazzo:-

	Finish	Bedding	Screed	Total
In-situ paving	25	-		40
In-situ margins	25	-		40
In-situ skirting	8	-		12

If electrical conduit, trunking or other items are required to be buried within the depth of the screed and flooring and the total thickness is reduced at any point the flooring specialist is to ensure that steps are taken to eliminate the possibility of cracking in the screed and consequent damage to floor finish by means of galvanised wire mesh reinforcement in the screed and flooring or other approved method. The extent of buried conduit, etc., should be ascertained prior to tendering and allowance for complying with this requirement will be deemed to be included in the rates for terrazzo paving and screeds under.

The in-situ terrazzo paving is to consist of two parts of white marble chippings to one part of white Portland cement to B.S.1014. The marble chippings to be fine (graded 3mm to 6mm in equal proportions) rounded granular clean and free from dust and impurities.

In-situ terrazzo paving should be laid on the screed as soon as practicable and not more than three days after the laying of the screed. After laying the surfaces are to be kept moist until ready for polishing.

The in-situ terrazzo paving should be laid in panels separated by dividing strips in the positions shown on the drawings. Dividing strips are to be white plastic the full depth of the paving and screed and bedded into the screed with the tip edges truly levelled with the finish polished floor level. The thickness of the dividing strips is to be 5mm.

Polishing of in-situ terrazzo paving is to be carried out by a mechanical polisher with graded abrasives and any necessary water. Making good of any defects during polishing is to be done with cement grout matching in colour that used in the terrazzo paving.

The finish of in-situ terrazzo paving is to be smooth and imperforable and is to be approved by the Architect.

The terrazzo paving is to be washed clean on completion and covered with a thick bed of sawdust or other approved protective layer. This should be maintained and renewed as necessary and cleared away on completion.

Lay in-situ skirting to match paving or of approved colour and finish coved at junction with paving of floor finish to 20mm radius. Execute all required angles and stopped or fair returned ends.

Vertical dividing strips to match those used in paving are required at not more than three feet intervals. A diving strip is required between paving and skirting at the commencement of the coving.

Facing of diving strip nearest to wall to be 200mm from face of skirting.

In-situ Terrazzo Work (cont'd)

A horizontal diving strip is required at top skirting finished flush with wall finish over.

Where in-situ terrazzo skirting are required under door frames, etc., a pencil round junction is to be made threshold paving in lieu of coving as shown on drawings.

In-situ margins shall have dividing strips to match those used in paving. They shall be positioned at junctions with paving and skirting and transversely at not more than three feet intervals to continue vertical strip in skirting.

All internal angles and coves are to be rubbed by hand with carborundum block to be polished finish matching the finish of the paving to the Architect's approval.

A SURFACE HARDENERS

Floor hardeners shall comprise an approved type guaranteed by the makers to produce a hard dense concrete with high abrasive resistance, impervious to the penetration of heavy oils, acid or alkali solutions and to be used strictly in accordance with the maker's instructions.

The first dressing of sodium silicate for granolithic flooring shall be one part of sodium silicate to six parts of water by volume. Subsequent dressing shall be composed of one part of sodium silicate to four parts of water by volume, for all surfaces. The two liquids shall be well mixed together, sprayed over the flooring and spread evenly with a mop or soft brush, any excess being wiped off and the flooring allowed to dry at least 24 hours after dressing. After final drying, floors shall be washed with clean water.

B RATES OF IN-SITU WORK

The rates for in-situ work shall include for raking out joints of block workonding coat or spraying cement slurry on new concrete surfaces to form key, for work in narrow widths, small and isolated areas round arises, fair and chamfered edges, for making good up to boundaries of other work for making good working around pipes, brackets etc., and for all other incidental labours.

Rates shall also include for masking before the application of spray finishes work executed overhead, temporary rules, supports, screeds and templates.

TILES, SLAB AND BLOCK FINISHINGS

B VINYL ASBESTOS TILES

Vinyl asbestos floor tiles shall comply with B.S 3260 of an approved manufacturer to patterns as directed by the Architect. Adhesives are to be recommended by the manufacturer in writing and approved by the Architect.

The tiles are to be laid and bedded direct in adhesive on to a cement and sand bed to make up the total paving thickness.

The cement and sand screed is to be finished with a steel trowel to a perfectly smooth surface before the application of the mastic and tiling.

On completion, vinyl asbestos tiles are to be sealed and polished with wax all in accordance with the manufacturer's printed instructions.

C CLAY TILE PAVING

Clay tile paving are to be in 150mm x 150mm tiles obtained from an approved manufacturer, and are to be laid on prepared screeds. The tiles are to be bedded in cement and sand (1:4) with straight joints in each direction. Upon completion grout in cement and wash and clean down. Tiles are to be cut with an electric tile cutting saw.

D GLAZED WALL TILES

Glazed wall tiles shall be in accordance with B.S1281 and shall be 150mm x 150mm x 6mm tiles from the standard colour range with cushion edges. Wall tiling shall be carried out in accordance with C. P.212.

E PRECAST CONCRETE PAVING SLAB

To be all in accordance with B.S.368. The slabs are to be of the sizes given herein and bedded, jointed and pointed in cement lime mortar. (1:2:9).

F RATES

The rates for tile, slab and block finishing shall include for rounded edge tiles and angles, cutting and fitting up to boundaries and around pipes, brackets, etc., and waste; for work in narrow widths, small and isolated areas and for all other incidental labours.

PART TEN

SPECIFICATIONS PAINTING & DECORATING

PAINTING AND DECORATING

MATERIALS

A MANUFACTURERS

Except where stated all materials shall be obtained from approved manufacturers. The contractor shall state the name and address of the manufacturer whose materials he proposes to use. Once approval has been given the contractor shall not obtain materials from other sources without the prior written agreement of the Architect.

B GENERAL

Each succeeding coat of priming, undercoating and finishing (pigment) or clear coating shall be sufficiently different in color as to be readily distinguishable.

All primers and paints in one system upon a particular surface shall be obtained from the same manufacturer.

The mixing of paints, etc, of difference brands before or during application will not be permitted.

C EMULSION PAINTS

Emulsion paints shall be matt to satin finish vinyl emulsion paint. The first (mist) coat shall be thinned in accordance with the manufacturer's instructions.

D GLOSS PAINT

Gloss paint shall be hard gloss finish oil paint.

E LEAD BASED PAINT

The use of lead based paints will not be permitted.

F CLEAR FINISHES

Clear finishes internally shall be clear polyurethane varnish (one pack).

G PRIMERS AND UNDERCOATS

Unless otherwise specified, primers and undercoats shall be the type recommended by the manufacture of the finishing coats specified for a particular surface. Primer for external bare metalwork surfaces shall comply with B.S 2523.

H KNOTTING

Shellac knotting shall comply with B.S 1336

A WHITE SPIRIT

The white spirit shall comply with B.S. 245.

B TIMBER STAIN

Timber stain shall be oil based pigmented stain. The application of these materials shall be strictly in accordance with the manufacturers written instructions. Tint and degree of application shall be to the approval of the Architect.

C STOPPING

The stopping shall be as follows:-

(a) Plasterwork shall be plaster based filler.

(b) Concrete and brick work shall be similar material to the background and finished in a similar texture.

(c) Internal woodwork, plywood and block board shall be putty complying with B.S.544.

(d) External woodwork shall be white lead paste complying with B.S 2029.

(e) Internal clear wood finishes: the stopping shall be that recommended by the clear lacquer manufacturer.

D FILLERS

The fillers for internal joinery shall be the type recommended by the paint manufacturer for use with his type of paint or lacquer.

Stopper and fillers shall be tinted to match the under coat, and shall be compatible with both undercoats and primers.

All materials shall be used strictly in accordance with manufacturer’s instructions.

E TEXTURED COATING

Textured coating is to be of proprietary manufacture approved by the architect and of an approved color.

Technical information concerning the coating is to be submitted to the Architect before ordering, but the minimum qualities of the coating are to as follows:-

(a) Suitable for application internally and externally, plastered, rendered, concrete, block stone, brick, asbestos and timber surfaces.

(b) Minimum durability of 10 years even in exposed conditions

(c) Maintenance free

(d) Built- in mould resistant fungicide.

WORKMANSHIP

A GENERAL

Workmanship generally shall be carried out in accordance with B.S.C.P 231, unless otherwise specified. Before painting is commenced floors shall be swept and washed over; surfaces to be painted shall be cleaned before

General (Cont'd)

applying paint as specified, and all precautions taken to keep down dust whilst work is in progress. No paint shall be applied to surfaces structurally or superficially damp and all surfaces must be ascertained to be free from condensation, efflorescence, etc.., before the application of each coat. No painting shall be carried out externally during humid, rainy, damp, foggy or freezing conditions or conditions where surfaces have attained excessively high temperatures or during dust storms. No new primed or undercoated woodwork and metal work shall be left in an exposed or unsuitable situation for an undue period before completing the process.

No dilution of paint materials shall be allowed except strictly as detailed by the manufacturer's own direction, either on the containers, or their literature, and with special permission of the Architect. For external work dilution of paints will not be allowed whatsoever. For internal work, where permitted by the Architect, undercoats may be thinned by the addition of not more than 5% thinners. Gloss finish shall not be thinned at all.

Metal fittings such as ironmongery etc., not required to be painted shall first be fitted and then removed before the preparatory processes are commenced. When all paining is completed the fittings shall be cleaned as necessary and re-fixed in position.

B BRUSHWORK

Unless otherwise specified, all primers and paints shall be brush applied. Written permission must be obtained from the Architect's if an alternative method of application is to be used.

C STOPPING AND FILLING

Unless otherwise specified by the manufacturer all primers and undercoats shall be stopped flush and rubbed down to a smooth surface with an abrasive paper and all dust removed before each succeeding coat is applied. Care shall be taken to prevent burnishing of the surface.

D STIRRING

Unless otherwise specified by the paint manufacturer all paint materials shall be thoroughly mixed and/or stirred before and during use, and suitably strained as and when necessary.

E INSPECTION

No priming coats shall be applied until the surfaces have been inspected and the preparatory work has been approved by the Architect. No undercoats of finishing coats shall be applied until the previous coat has been similarly inspected and approved.

A. PAINT APPLICATION

Each coat of paint shall be so applied as to produce a film of uniform thickness. All paint shall be applied in accordance with the manufacturer's instructions. Special attention shall be given to ensure that all surfaces including edges, corners, crevices, welds and rivets receive a film thickness equivalent to that of adjacent painted surfaces.

B DRYING

All coats shall be thoroughly dried before succeeding coats are applied. Allow a minimum of 24 hours between applications on any one surface, unless otherwise specified by the manufacturer.

C UNPRIMED WOODWORKS

Unprimed woodwork scheduled to be painted shall be rubbed down with abrasive paper and dusted off. Care shall be taken to prevent 'burnishing' of the surface. All knots and resinous areas shall be coated with two coats of knotting. Pitch on large, open unseasoned knots and all other beads or streaks of pitch shall be scrapped off, or if still soft, shall be removed with white spirit before applying the knotting.

Apply one coat of priming to all surface, two coats to all end grain, to be subsequently painted. Backs of all wood frames in contact with concrete, brick work, block work, and metalwork or similar materials shall be primed before fixing. After priming all joints, holes, cracks shall be stopped and filled, rubbed down and dusted off.

D PRIMED WOODWORK

Woodwork delivered primed shall be lightly rubbed down with abrasive paper, and dusted off. Touch up bare areas with similar priming including open grained ends. After touch priming all joints holes, cracks and open grained ends shall be stopped and filled, rubbed down and dusted off.

E PLYWOOD AND BLOCKBOARD

Edges of exterior plywood and block board shall be sealed with two coats of aluminium primer and the backs treated with a lead primer.

F CLEAR FINISHED WOODWORK

All woodwork scheduled to receive a clear finish shall be well sanded with the grain removing all dirt etc.., to give as smooth a surface as possible. Resinous timber shall be swabbed down with white spirit and dried thoroughly.

Split or end grain shall be filled with suitable filler recommended by the clear lacquer manufacturer in accordance with their instructions, and of the appropriate shade.

G BARE METALWORK

Bare metalwork shall be thoroughly cleaned off all dirt, grease, rust and scale by means of chipping, scrapping and wire brushing; particular attentions should be given to the cleaning of welded, brazed and soldered joints. Wash down with white spirit and wipe dry with clean rags. Apply a coat of metal primer immediately the cleaned surfaces have been approved by the Architect.

A GALVANIZED METALWORK

Galvanized metalwork scheduled for painting shall be thoroughly cleaned of dirt, grease dusted and washed down with white spirit and wiped dry with clean rags. Any minor areas of rust shall be removed by wire brushing and spot primed with a zinc rich primer. Apply at least one coat of calcium plumbate primer at all surfaces subsequently to be painted.

B PRIMED METALWORK

If the priming coat of pre-primed metalwork has suffered damage in transit, or during erection on site, the affected areas shall be cleaned off by wire brushing abrading and dusting off, the bared patches touched up with a primer of a similar type to that already applied.

C COPPER

Copper scheduled for painting shall be lightly abraded with emery cloth, washed with white spirit and wiped dry with clean rags. Apply a coat of each primer immediately the cleaned surfaces have been approved.

D BRICKWORK, CONCRETE ETC.

All brickwork, block work, concrete, rendered and plaster surfaces scheduled to be painted shall be brushed down, all holes and cracks filled, all projections such as plaster or mortar splashes etc., removed to leave a suitable dust free surface. All traces of mould oil shall be removed from concrete surfaces by scrubbing with water, detergent and rinsing with clean water. All these surfaces shall be thoroughly dry before any primer or paints are applied. Apply a coat of alkali resisting primer where surfaces are to be finished with oil paints or alkyd type emulsion.

Asbestos cement surfaces scheduled for painting shall be brushed down to remove powdery deposits, and a coat of alkali resisting primer applied where such surfaces are to be finished with oil paints or alkyed resin type emulsion.

E COLOURS

The color will, be selected by the Architect from the paint manufacturer's standard color range.

F TOXIC WASH

Concrete, block work, plaster and timber surfaces which are to be painted shall be washed down prior to painting with a toxic wash applied by brush or spray. A second wash shall be applied two days after the first wash. The surfaces shall be then allowed to dry out completely before application of paint.

G PROTECTION

Proper care must be taken to protect surfaces while still wet by use of screens and 'wet paint' signs where necessary.

A DAMAGE

Care must be taken when preparing surfaces, or painting etc., not to stain or damage other work. Dust sheets and covers to the satisfaction of the Architects shall be used to protect adjacent work. Any such stains or damage shall be removed and made good at the Contractor's expense.

B CLEANLINESS

All brushes, tools, pails, kettles and equipment shall be clean and free from foreign matter. They shall be thoroughly cleaned after use and before being used for different colors, types of classes of material. Painting shall not be carried out in the vicinity of other operations that may cause dust. Waste liquids, oil soaked rag etc., shall be removed from the building each day. Waste liquids shall not be thrown down in any sanitary fittings or drains.

C PERFORMANCE

If, while the work is in progress, the paint appears to be faulty, such as consistency of color, drying time, or quality of finish, the work shall be stopped at once and the manufacturer consulted.

The manufacturer's of the materials shall be given every facility for inspecting the work during progress in order to ascertain that the materials are being used in accordance to their directions, and to take samples of their products from the site if they so desire for tests.

The finishing coats of the various paints or surface finishing shall be free from sags, brush marks, runs, wrinkling, dust, bare or 'starved patches, variations in color and texture, and other blemishes.

Performance (Cont'd)

When the work has been completed, the finished surfaces shall not be inferior in quality, color and finish to the samples approved by the Architect, and imperfections in manufacture shall not be apparent through these finished surfaces.

In the event that the Architect is not satisfied that the quality of finish does not comply with the required standards and/or the sample panel the contractor will be required to repaint at his own expense, such work to the satisfaction of the Architect. If in the opinion of the Architect it is necessary to remove completely the unsatisfactory paintwork this shall also be done under the direction of the Architect at the expense of the contractor.

D Packaging, Delivery and Storage

All paints and surface coatings shall be delivered in sound sealed containers, labeled clearly by the manufacturers, the label or decorated container must state the following:-

(a) The type of product
(b) The brand name and color
(c) The use for which it is intended
(d) The manufacturer's batch number
(e) The B.S number if applicable
(f) All labels shall be printed – containers bearing type written labels will not be acceptable

Materials shall be stored under cover in accordance with the manufacturer's instructions, and with local fire and safety regulations. The store itself must be maintained at temperature of not less than 50 degrees f (10 degrees C) and must not be subjected to extreme changes of temperature.

A VINYL EMULSION PAINT

Surfaces to be painted shall receive one mist coat followed by two full coats of vinyl emulsion paint. Application may be by means of rollers or brushes.

B GLOSS FINISH PAINT

Surfaces to be painted shall be primed then painted with two undercoats followed by one coat gloss finish paint.

C CLEAR POLYURETHANE VARNISH

Surface to be clear varnished shall be treated with two coats polyurethane varnish

D TEXTURED COATING

The manufacturer's instructions concerning application of the coating are to be strictly followed under the direction of the Architect.

All surfaces to receive textured coatings are to be clean and dry with surfaces scrapped and brushed before application of the coating.

Application of the coating is to be with textured roller or fibre brush as directed by the Architect with a minimum spreading capacity of 1 kilogramme per square metre. Under no circumstances is the coating to be thinned.

SPECIFICATIONS

PLUMBING AND DRAINAGE WORKS

PART ELEVEN

PLUMBING SPECIFICATIONS

PLUMBING

GENERAL

A REGULATIONS ETC.

The whole of the plumbing works is to be executed by a registered plumber and drain layer in strict accordance with the regulations of the local Authorities and to the satisfaction of the Architect.

MATERIALS

B BLACK STEEL PIPE WORK

All black steel pipe work up to 65 mm nominal bore shall be manufactured in accordance with B.S 21. All fittings shall be malleable iron and manufactured in accordance with B.S 143.

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

All black steel pipe work, 80 mm nominal bore up to 150 mm nominal bore, shall be manufactured to comply in all respects with the specifications for 65 mm. Pipe, except that screwed and bolted flanges shall replace unions and couplings for the jointing of pipes to valves and other items of plant.

All flanges shall comply with requirements of B.S. 10, to the relevant classifications contained hereinafter under section c of the specification.

C GALVANISED STEEL PIPEWORK

Galvanized steel pipe work shall be manufactured to comply in all respects with the standards described for black steel pipe work in paragraph (B) above.

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

D COPPER TUBING

All copper tubing shall be manufactured in accordance with B.S 2871 from C.160'Phosphorus Deoxidized Non-arsenical copper' in accordance with B.S 1172.

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

Short copper connection tubes between galvanized pipe work and sanitary fitments shall not be used because of the risk of galvanic action. If, as may occur in certain circumstances, it is not possible to make the connections in any other way than by the use of copper tubing, then a brass straight connector shall be positioned between the galvanized pipe and the copper tube in order to prevent direct contact.

A CAST IRON PIPEWORK

Internal iron pipe work and fitting for use above ground in connection with internal building services shall be

Cast iron pipe work (Cont'd)

manufactured with spigot and socket joints of the weight required by the local Authority and shall comply full with the requirements of B.S 416.

All joints on cast iron spigot and socket pipes shall be made with an approved cold caulking compound and contraction which may take place.

All cast iron pipe work branches, tees, bends and other fittings shall be supplied complete with inspection covers for cleaning purposes. These inspection covers shall be included as part of the fittings and shall comply with the requirements of B.S 416.

B. ASBESTOS CEMENT PRESSURE PIPES

Where asbestos cement pressure pipes and fittings are used in connection with external, above, ground or buried water services, they shall by manufactured in accordance with the requirements of B.S 486.

The classification of these pipes falls into four classes:

A., B., C., and D, respectively, and the class to be used shall depend upon the pressure conditions pertaining at site.

Where cast iron detachable joints are used by connecting pipes, the material shall comply with B.S 1452 and be suitable protected with a non-toxic compound against corrosion.

When jointing components are made in any other material for which there is no B.S specification, then the materials used shall be of quality not less than that required by this standard.

Rubber jointing rings shall be used for sealing purposes and shall comply with the requirements of B.S 2494, except where they are likely to be contaminated by the oil products, in which case the gaskets shall be manufactured in accordance with B.S 3514.

C. P.V.C. (HEAD) PRESSURE PIPE AND FITTINGS

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

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

All bends, valves and hydrant tees etc., in the line of the water main shall be adequately anchored to resist thrust due to internal water pressure. A concrete block shall be cast under and around the pipe and between it and sides of the trench. Well rammed material shall be used to support the pipe and either side of the concrete.

Pipes shall be uniformly laid on a 75mm thick bed, (the full width of trench) of fine grained materials (sand or red soil) and must not be allowed to rest on the joint or on stones etc.

In underground installations care shall be taken to ensure that heavy components such as valves are fully supported so that no weight is carried by the pipeline.

For the protection of the pipe initial backfilling shall be carried out as soon as possible after laying. The initial backfilling shall be fine grained material thoroughly compacted around the pipe and consolidated to a depth of 6" above the crown of the pipe and at no time shall heavy rocks, stones or other objects be included in the balance of the backfilling that might protrude through the initial layer and come into contact with the pipe.

P.V.C. (Head) pressure pipe and fittings Cont'd

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

A. A.B.S. WASTE SYSTEM

Where indicated on the drawings and schedules, the sub-contractor shall supply and fix A.B.S waste pipes and fittings.

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

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

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

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

B. P.V.C SOIL SYSTEM

The sub-contractor shall supply and fix P.V.C soil pipe and fittings as indicated on the drawings and schedules. Pipes and fittings shall be in accordance with relevant British Standards, including B.S 4514, and fixed to the manufacturer's instructions, and B.S 5572.

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

Connections to W.C and pans shall be effected by the use of W.C connector, gasket and cover, sized to suit pan outlet.

Suitable supporting brackets and pipe clips shall be provided at maximum of one metre centres. The sub-contractor shall be responsible for the joint into the Gully Trap and Drain as indicated on the drawings.

VALVES

A DRAW-OFF TAPS AND STOP VALVES (UP TO 50 MM NOMINAL BORE)

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

B GATE VALVES

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

Gate Valves (Cont'd)

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

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

C GLOBE VALVES

All globe valves up to and including 65 mm nominal bore shall be of bronze construction in accordance with the requirements of B.S 3961.

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

D CHECK OR NON-RETURN VALVES

All check or non-return valves 80 mm nominal bore and above shall be of the swing check type of cast iron construction in accordance with the requirements of B.S 4090.

The pressure classification of all check or non-return valve shall depend upon the pressure conditions pertaining to site of the works.

E BALL VALVES

All ball valves for use in connection with hot and cold water services shall be of the Portsmouth type in accordance with the requirements of B.S 1212, constructed from bronze or other corrosion resistant materials. These valves fall into three pressure classifications as follows:-

(i)	Low Pressure	-	3.58b maximum
(ii)	Medium pressure	-	7.72b maximum
(iii)	High pressure	-	12.62 maximum

The pressure classification required for each ball valve will be designated in the description of its associated equipment contained in section IV of the specification.

A MANUALLY OPERATED MIXING VALVES

Mixing valves for shower fittings and other appliances being provided under the sub-contractor works shall be manufactured in accordance with the requirements of B.S 1415 from bronze or other corrosion resistant materials.

WASTE FITMENTS TRAPS

B STANDARD AND DEEP SEAL P & TRAPS

Where standard or deep seal traps are specified they shall be manufactured in suitable non-ferrous materials in accordance with the full requirements of B.S 1148.

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

C ANTI-SYPHO TRAPS

Where anti-syphon traps are specified, these shall be similar or equal to the range of traps manufactured by Terrain-their self-resealing Traps or by Marley Extrusions Ltd – their Antisyphon Traps.

PIPES SUPPORTS

D GENERAL

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

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

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

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

The sub-contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection work commences.

E STEEL AND COPPER PIPES AND TUBES

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

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

Size Minimal Bores	**Copper Tube To B.S 659**	**Steel Tub to B.S 1237**
15mm	1.25	2.0m
20mm	2.0m	2.5m
25mm	2.0m	2.5m
40mm	2.5m	3.0m
50mm	2.5m	3.0m
65mm	3.0m	3.5m
80mm	3.0m	3.5m
100mm	3.0m	4.0m
125mm	3.0m	4.5m
150mm	3.5m	4.5m

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

A CAST IRON AND ASBESTOS CEMENT SPIGOT SOCKOT JOINTED PIPES

Cast iron and asbestos cement socketed pipes shall generally be supported at every socket joint by means of either

Cast iron and Asbestos cement spigot socket Jointed pipes

holder bats secured rigidly to the structure, or purpose made straps for attachment to rigid steel support brackets.

When holder bats are used, they shall conform to the requirements of B.S 416.

Suitable anchors shall be provided at all changes of pipe directions, junctions and tees, to counteract the effect of end thrust loads.

B. ASBESTOS CEMENT PRESSURE PIPES

Asbestos cement pressure pipes with either cast iron detachable joints or asbestos cement screw joints shall be supported and anchored on either side of the joint.

Pipe hangers and trapeze type supports shall not be suitable for the suspension of asbestos pressure pipes unless they are designed with suitable restrictions to prevent swinging while at the same time providing the necessary support requirements.

Within building, asbestos pressure pipes shall be carried either on concrete supports or on rigidly fixed steel wall brackets. Suitable anchors shall be provided at all changes of pipe direction, junctions and tees to counterpart the effect of end thrust loads.

A EXPANSION JOINTS AND ANCHORS

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

The sub-contractor shall pay particular care when supporting cast iron and asbestos cement pipes in order to ensure that settlement and building movement do not break the pipe joints.

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

The Sub-contractor when arranging his piping shall ensure that no expansion movements are being transmitted from pumps to piping systems or vice versa.

B JOINTING PIPES

Joints shall be made strictly in accordance with the manufacturer's instructions. The sub-contractor shall make use of the technical advisory services offered by manufacturers for instructing pipe jointers in the methods of assembling joints.

Where manufacturers recommend the use of special jointing tackles, the sub-contractor shall use these for the assembly of all joints to pipes. Sockets shall be laid looking uphill unless otherwise approved.

Before making any joints, all jointing surfaces shall be thoroughly cleaned and dried and maintained in such condition until the joints have been completely made or assembled.

Notwithstanding any flexibility provided in the pipe joints, pipes must be securely positioned to prevent avoidable movement during and after the making of the joint. The space between the end of the spigot and the shoulder of the socket of flexibly jointed pipes when jointed shall be as recommended by the manufacturer or ordered by the Engineer.

Jointing Pipes (Cont'd)

After flexibly jointed pipes, other than PVC pipes have been jointed the gaps between the barrel of the pipes and internal face of the socket shall be sealed with puddle clay, uncaulked rope yarn or other approved materials. The rope yarn or other material must have been treated so as not to support bacterial growth.

Where loose collars are used to join the pipes cut for closers, special tools shall be employed to keep the inside of the pipes flush and the collar concentric with the pipe while the joint is being made.

Pipes provided with spigot and socket joints of the self-centering instantaneous joint type, such as the rubber ring push fit joint, shall be laid and jointed strictly in accordance with the makers instructions. Generally the joint ring shall be cleaned and inspected for cuts and defects, and socket and spigot examined to ensure freedom from oil, grease, tar and grit. The makers recommended lubricant will be used.

A CAST IRON JOINT FITTINGS

Cast iron detachable joint collars and flanges shall be tested by striking lightly with a spanner immediately before they are placed and if they fail to ring true shall be set aside and not incorporated in the work until proven sound. The flanges shall be correctly positioned and the component parts including any insertion ring cleaned and dried.

Insertion rings shall be fitted smoothly to the flange without folds or wrinkles. The face and bolt holes shall be brought fairly together and the joints shall be made by gradually and evenly tightening bolts in diametrically opposed positions. Only standard length spanners shall be used to tighten the bolts. The protective coating if any, of the flange shall be made good when the joint is completed.

Bolts threads shall be wrapped with PTFE tape where directed before use. No washers shall be used on flanged pipe work to be laid below ground. Bolts shall be as specified and shall be of the correct length, leaving a maximum of two threads exposed.

B SOLVENT WELDED JOINTS

Only the solvent cement recommended by the manufacturer for his pipe joint system shall be used and his instructions on the making of the joint shall be closely followed.

Excess solvent cement shall not be applied to the inside of the pipe socket and all surplus solvent shall be removed from the joint and the pipe. Any solvent falling on the trench formation shall be removed by excavating the contaminated soil.

Solvent welded pipes jointed outside the trench shall not be lowered into the place until the elapse of time recommended by the manufacturer. The time allowed for curing shall be increased with lower temperatures.

CONNECTIONS

C CONNECTION OF TUBING TO COLD STORAGE TANKS, HOT WATER CYLINDERS AND SANITARY FITTINGS

Each connection of tubing to cold water storage tanks shall be made by drilling a hole in the tank side and using a long screw, union and two back nuts all well screwed up in red lead. Joints of tubing to flanged and bossed connections of hot water cylinders shall be made with a boiler screw, union and back nut screwed up in red lead.

Connections to sanitary fittings shall be made with 450 mm lengths of copper tubing bent to shape as required with copper to iron coupling at each end, and red lead joint to union of fittings and tubing.

All sanitary-ware and fittings shall be left in a clean and good condition to the satisfaction of the Engineer.

Connection of Tubing to cold storage tanks, hot water cylinders and sanitary fittings Cont'd)

All fittings shall be fixed in accordance with the manufacturer's instructions and shall comply with the general requirements of B.S. code of practice 305 and the particular requirements of the latest applicable B.S specification.

Lavatory basin brackets shall be cut and pinned to walls in cement mortar including making good rendering, tiling or plastering etc.

A. PIPE SLEEVES

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

B CUTTING PIPES

Iron pipes shall be cut by a method and with apparatus which provides a clean square cut of the pipe and of the lining, if any, without damage to pipe or lining.

All cut or trimmed ends, and the parts of any pipe on which the coating may have suffered damage shall be recoated with bitumen before the pipes are laid. The external area at cut spigot ends of ductile iron pipes shall be ground for a distance of at least 125 mm.

Asbestos-cement pipes shall be cut by hacksaw or other approved means to a square and even finish without splitting or fracturing the wall of the pipe. A percentage of the pipes ordered shall be supplied with fully turned barrels and these pipes will set aside for use in cutting specific lengths. When no fully turned pipes are available a hand operated turning machine shall be used to prepare the ends of cut pipes for Johnson Couplings, barrel joints or collar joints.

Pitch-impregnated fibre pipes shall be cut by saw and where necessary the end shall be filled or machined to the required 2 degrees taper. Concrete pipes shall be cut to a square and even finish without splitting or fracturing the wall for the pipe. Reinforcement shall be cut back flush with the concrete and bare metal protected with bituminous paint or cement grout as directed.

Only steel pipes supplied rounded throughout their length shall be used as cut pipes to form closures. The cutting shall be done by an approved method and apparatus which provides a clean spare cut, without separation of the lining form the pipe wall. Minor damage to the lining may, of permitted, be repaired on site in accordance with the manufacturer's instructions. Where in the opinion of the Engineer the damage is serious the pipe or special shall be returned to the manufacturer for reconditioning.

C PIPES BUILT INTO STRUCTURE

The outside surface of pipes

D PIPES BUILT INTO STRUCTURE

The outside surface of all pipes and special castings to be built into structures shall be thoroughly cleaned immediately before installation. Where ordered protective coatings to metal pipes shall be removed from the sections to be built in, while the external surfaces of fireclay and concrete pipes shall be roughened to form a key for concrete or mortar. Sheathing to steel pipes shall be cut away from the sections to be building and after erection the protection shall be completed by applying approve bituminous material around the barrels of pipes of the junctions with structures.

Pipes built into structure (cont'd)

Pipes passing through water retaining walls and floors shall, where possible, be built into the structure in-situ. Shuttering shall be formed closely to the outside of the pipes, and concrete shall be placed and compacted thoroughly round pipe and puddle flange, if any.

Where fixing in the course of construction is not possible, temporary openings in structures, formed to the dimensions shown by the Engineer shall be left where indicated or directed to accommodate the subsequent erection of pipes and special castings. In water retaining structures, they shall taper to a smaller dimension towards the external faces of structures and shall include where indicated a water top. In basements, dry chambers at pumping stations etc., temporary openings shall taper to a smaller dimension towards the internal faces of structures and shall also include, where indicated a water stop. Prior to in filling, all surfaces against which fresh concrete is to be placed shall be prepared as specified, while the external surfaces of pipe work shall be prepared as described in this clause.

A SETTING VALVES

Care must be taken to prevent damage to all valves, fire hydrants and the like, and their ancillary equipment. Valves etc. and ancillary apparatus shall be stored in clean condition and in a manner that excludes all water. Where directed, head-stock, motors, gearing or indicators shall be removed, adequately labeled for identification, stored carefully in weather proof premises and be reconnected after erection of the valves. Frost cocks shall be kept clean and free from obstruction. Electrical equipment shall be protected from damp and the damp-proofing seals shall remain intact until the electrical is ready to connect up the equipment.

The gunmetal faces and seats of all valves must be kept clean. No valve shall be closed without first wiping the faces with a clean cloth. The cavity beneath the valve door shall be thoroughly cleaned by hand. In the event of accident, fouling matter shall be either dissolved for carefully removed by methods that do not involve scraping of gunmetal faces.

All valves shall be set so that operating spindles are truly vertical unless otherwise detailed or directed. Every stuffing box shall be examined when the main is charged with water and leaking boxes shall be adjusted or replaced with square plaited lubricated hemp packing of approved manufacturer. The stuffing box shall not be so tightly packed as to materially affect the friction of the packing on the spindle.

No air valve shall be stored before erection in the open in sunlight, or upside down to expose the balls and air cavities. Air valves shall be checked before the main is charged to ensure that the balls and faces are not scored or split and that that all passage ways are clean. The installation of special types of valve and metering equipment must be strictly in accordance with the manufacturer's instructions. The direction of opening of the valve shall be indicated on the headstock and on the underside of hydrant covers.

Fire hydrants, frost plugs and similar fittings shall be checked before being incorporated in the line and before the main is changed to ensure that all passageways are clean. The installation of special types of valve and metering equipment must be strictly in accordance with the manufacturer's instructions.

The direction of opening of the valve shall be indicated on the headstock and on the underside of hydrant covers.

A PRESSED STEEL PLATE STORAGE TANKS

The water capacity of the tanks and the diameter of all pipes and pipe connections therewith will be as detailed on the Drawings and Bills of Quantities. Unless otherwise detailed the proportions of a tank will be such that the height is not less than three quarters of the length and not less than the width. All dimensions must be approved by the Engineer.

Elevated pressed steel plate storage tanks will comply with B.S 1564 and will be constructed of 4.76 mm (top row)

Pressed steel plate storage tanks (Cont'd)

only) and 6.35 mm thick galvanized pressed steel tank plates, 1.22 mm or 1.00m square nominal size, embossed and with external flanges bolted together. Where detailed in the sub-contract the tank will be partitioned centrally, the division wall to be adequately stayed to permit emptying of either half of the tank whilst maintaining full water depth in the other half.

The tank will be complete with a pitched or vaulted cover and gable ends of 3 mm thick steel plates lap jointed and supported on bearers and gable end frames respectively; No. 75 mm square access manhole with hinged insect proof cover, 1 No. Float operate water lever indicator; and will be provided with internal and external ladders as follows. Where the tank is constructed to operate in two halves 2 No. Access manholes and internal ladders will be provided.

The external ladder will have 40 mm x 6 mm mild steel flat stringers with 12 mm diameter mild steel rugs and will be cleated to the tank at 1.2m intervals. The stringers will be taken 750 mm above the tank cover and bent to return to the cover of a distance of 450 mm from the edge. This ladder will be complete with 40 mm x 3 mm mild steel flat safety hoops of 600 mm diameter, space at 1.2 m vertical centres, truly bent and welded to the stringers. The safety hoops will be joined by 3 No. 40 mm x 3 mm mild steel flat vertical guard strips, evenly spaced and flat fillet welded to the hoops.

The internal ladders will have 65 mm x 12 mm steel flat stringers with 20 mm diameter mild steel rings and will be cleated to the tank at 1.2m intervals.

The tank bottom plates will be provided with a single pipe pad for the washout pipe connections and double pipe pads for all other pipes which pass through the bottom of the tank. The tanks will be provided and erected complete with all bolts, nuts, washers, internal braces and approved nom-toxic jointing materials (fibre-glass or bitumen impregnated filler strip or approved equal).

The whole of the tank steelwork and plates will be galvanized as specified before dispatch and after erection, painted with an approved etching primer and two coats of bitumen based aluminium paint externally and two coats of non-toxic black bitumen paint internally, both as specified.

The tank after final erection on its permanent foundation will be filled with water to overflow lever for a period of 24 hours. Any leaks which become apparent will be made good to the satisfaction of the Engineer before acceptance of the work. Both halves of the tank will be tested separately.

B PIPEWORK FOR PRESSED STEEL TAN

All pipe work associated with the tank and stand will be mild steel pipe to B.S 534 with flanged joints. The pipe work will comprise one bell mouthed standing inlet pipe at designed top water level, one outlet pipe with bell-mouth and approved strainer to take water from the level as detailed on the Drawings. Where not detailed the outlet pipe will take water form not less than 75 mm above the tank bottom. One bell mouthed standing overflow pipe with its lip 50 mm above designed top water level, and one washout pipe which will be capable of completely draining the tank will be provided. Where the tank is
constructed to operate in two halves the inlet, outlet overflow and washout pipes will be duplicated in each half of the tank

ABOVE GROUND INSTALLATION

A GENERAL

Installation of all pipe work valves, fittings and equipments shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The sub-contractor shall be responsible to the main contractor for ensuring that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

B WATER SERVICES

Before any joint is made, the pipes shall be hung in their supports and adjusted to ensure that the joining faces are parallel and any falls which shall be required are achieved without springing the pipe. Where falls are not shown on the contract Drawing or stated elsewhere in the specification, pipe work shall be installed parallel to the lines of the buildings and as close to the walls, ceilings, columns etc. as is practicable.

All water system shall be provided with sufficient drain points and automatic air vents to enable them to function correctly. Valves and other user equipment shall be installed with adequate access for operation and maintenance where valves and other operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach from a short step ladder, extension spindles with floor or wall pedestals shall be provided.

Screwed piping shall be installed with a sufficient number of unions to facilitate easy removal of valves and fittings, without the need to cut the pipe. Full allowance shall be made for the expansion and contraction of pipe work precautions being taken to ensure that any force produced by pipe movements are not transmitted to valves, equipment or plant.

All screwed joints to piping and fittings shall be made with P.T.F.E. Tape in accordance with B.S 4375.

The test pressure shall be maintained by the pump for about one hour and if there is any leakage, it shall be measured by the quantity of water pumped into the main in that time. A general leakage of one gallon per 25 mm of diameter, per 1.6 kilometre per 24 hours per 30 metres head, may be considered reasonable but any visible individual leak shall be repaired.

C SANITARY SERVICES

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

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

The sub-contractor shall provide all necessary rodding and inspection facilitates within the draining system in position where easy accessibility is available. Where a branch requires rodding facilities in a position to which normal access is unobtainable, then that branch shall be extended so as to provide a suitable purpose made rodding eye in the nearest adjacent wall or floor to which easy access is available. The vent stacks shall terminate above roof level and where stack passes through roof, a weather skirk shall be provided. The sub-contractor shall be responsible for sealing the roof after installation of the stacks. The open end of each stack shall be fitted with a plastic coated, or galvanized steel, wire guard. Access for rodding and testing shall be provided at the foot of each stack.

A SANITARY APPLIANCES

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

SITE TESTS – PIPEWORKS SYSTEMS

B UNDERGROUND WATER MAINS

After laying, jointing and anchoring, the main shall be slowly and carefully charged with water, so that all air is expelled and allowed to stand full for three days before testing under pressure.

A long main shall be tested in sections as the work of laying proceeds and all joints shall be exposed for inspection during the testing.

The open end of the main may be temporarily closed for testing under moderate pressure by fitting a water pipe expanding plug, of which several types are available. The end of the main and the plug should be secured by struts or otherwise, to resist the end thrust of the water pressure in the main.

If the section of main terminates with a sluice valve, the wedge of the valve shall not be used to retain the water, instead the valve shall be fitted temporarily with blank flange, or if a socket valve with a plug and the wedge shall be placed in the open position while testing. The sub-contractor shall provide suitable end supports to withstand the end thrust of the water pressure in the main.

C ABOVE GROUND INTERNAL WATER SERVICE INSTALLATION

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

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

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

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

A ABOVE GROUND SOIL WASTE AND VENTILATION PIPE SYSTEM

All soil, waste and ventilating pipe system forming part of the above ground installation, shall be given a smoke test to a pressure of 38 mm of water gauge and this pressure shall remain constant for a period of not less than three minutes.

Water tests on above ground soil, waste and ventilating pipe systems shall not be permitted.

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

Any defects revealed by the tests shall be made good by the sub-contractor and the test repeated to the approval of the Engineer. In all other respects, tests shall comply with the requirements of B.S 5572.

B SITE TEST – PERFORMANCE

Following satisfactory pressure tests on the pipe work systems, operational tests shall be carried out in accordance with the relevant B.S code of practice on the systems as a whole to establish that special valves, gauges, controls, fittings, equipment and plant are functioning correctly to the satisfaction of the Engineer. All hot water pipe work shall be insulated with performed fibre glass sectional lagging to thickness of 25 mm.

Site test – performance (cont'd)

Cold water pipe work shall be installed with performed fibre glass lagging to a thickness of 25 mm where the pipe runs above a false ceiling or in areas where the ambient temperature is higher than normal with the result that pipe sweating, due to condensation will cause nuisance. All lagged pipes which run in a visible position after erection shall be given a canvas cover and prepared for painting as follows: -

(i) Applying a coating of suitable filler until the canvas weave disappears and allow to dry.

(ii) Apply two undercoats of an approved paint and finish in suitable gloss enamel to colors approved by the Engineer.

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

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

The test pressure shall be applied by means of a manually operated test pump or, in the case of long main or mains or larger diameter, by a powerdriven test pump which shall not be left unattended. In either case precautions shall be taken to ensure that the required pressure is not exceeded. Pressure gauges should be recalibrated before the tests. The sub-contractor shall be deemed to have included in his price for all test pumps, and other equipment required under this clause of the specifications.

The test pressure shall be one and a half times the maximum working pressure except where a pipe is manufactured form a material for which the relevant B.S specification designates a maximum test pressure as in the case of cast or spun iron pipes, where the test pressures should not exceed 120, 180 and 240 metre/head of clause B, E or D pipes, respectively.

A STERILIZATION OF HOT AND COLDWATER SYSTEMS

All underground water mains and above ground water distribution systems, cisterns, tanks, calorifiers, pumps, etc, shall be thoroughly sterilized and flushed out after the completion of all tests and before being fully commissioned for handover.

The sterilization procedures shall be carried out by the sub-contractor or specialist employed by the sub-contractor in accordance with the requirements of B.S. code of practice 310, clause 409, to the approval of the Engineer.

SPECIFICATIONS

ELECTRICAL WORKS

DEFINITION OF TERMS

A. : shall mean amperes

V. : shall mean volts

W. : shall mean watts

Hz : shall mean Hertz or cycles per second

PVC : shall mean polyvinyl chloride

SWA : shall mean single wire armoured

S.P. & N. : shall mean single pole and neutral

T.P. & N. : shall mean triple pole and neutral

NO. or No. : shall mean numerical number

dia. : shall mean diameter

rpm : shall mean revolutions per minute

B. S. & B.S.C.P. : shall mean British Standard Specification & British Standard Code of Practice

Ditto : shall mean in all respects as described in a previous item in the bills of quantities

I.E.E. : shall mean the Institution of Electrical Engineers of the United Kingdom

L.V. : shall mean low voltage as defined by the 16th edition of the I.E.E. wiring Regulations

H.V. : shall mean high voltage as defined by the 16th edition of the I.E.E. wiring Regulations

NOTES FOR TENDERERS

1. DOCUMENT CHECK

Before submitting his tender, the tenderer is required to:

a) check that no page/s of this document is/are missing or illegible and to have this rectified
b) ensure that all ambiguities, doubts or obscure points in this document are cleared with the engineer.

No claims for alleged deficiencies in the information given in this document shall be considered at a later date.

2. ALTERATION TO THIS DOCUMENT

Unauthorised alteration or qualification made to the text of this document by the tenderer shall disqualify the tenderer.

3. CORRECTION OF TENDERS

Arithmetic errors in the tenders will be corrected by the engineer in the following manner:

a) ***Errors in Extensions***

If a total extension figure is entered, the extended total shall be a product of the tendered unit rate and the quantity of the item, and the product shall be added to the tender sum.

If the total extension entered in the bill of quantities is less than the product of the tendered unit rate and the quantity of the item, a corrected unit rate shall be obtained by dividing the extension total and the quantity of the item. The tender sum shall thus not be amended.

If the total extension entered in the bill of quantities is greater than the product of the tendered unit rate and the quantity of the item, the extension total shall be reduced to the correct product of the tendered unit rate and the quantity of the item, and the tender sum shall be reduced correspondingly.

b) ***Omission of Unit Rates:***

If an extension total is entered in the bill of quantities but no unit rate is entered therein, the unit rate shall be calculated as the extension total divided by the quantity of the item.

c) ***Omission of Extension Rate & Extension Total:***

If no unit rate and extension total is entered against any item in the bills of quantities, it will be assumed that the cost of the item is fully and completely covered elsewhere in the bills of quantities.

d) ***Errors in Addition:***

All errors in addition, irrespective of where they occur in the bills of quantities shall be corrected and the tender sum amended correspondingly.

4. DISCOUNTS

No lump sum discounts shall be made in the tender and if such a discount does appear in the tender, it shall be disregarded and the tender sum will be considered to be the total of the bills of quantities.

PART THIRTEEN

ELECTRICAL SUB-CONTRACT

GENERAL SPECIFICATIONS

2.1 GENERAL CLAUSES

This section specifies the general requirements for plants, equipment and materials forming part of the electrical sub-contract and shall apply unless otherwise specified.

2.1.11 Regulations and Standards applicable

This specification covers the requirements of lighting and power installations.
All apparatus and material supplied and all work carried out shall comply with local Statutory Regulations. Installations should also be generally in accordance with the Requirements for Electrical Installations of the "IEE Wiring Regulations Sixteenth Edition" issued by the Institution of Electrical Engineers, London, which should be used as a "Code of Practice", except where they conflict with Local Legislation regarding electrical installations.

Except where otherwise indicated in this specification the sub-contract works and all manufactured items shall comply with the relevant B.S. In each case the latest editions of such specifications shall apply.

Should it be desired to offer equipment covered by other national or international standards, the approval of the engineer must be obtained, in writing, before completion of the tender.

2.1.2 Scope

The electrical sub-contractor shall supply all labour and install, fix, connect, test, label, commission and deliver the electrical work clean, complete and working in every detail as described elsewhere in the specification and on the drawings listed in the schedule of drawings and to the satisfaction of the engineer.

2.1.3 Record Drawings

The sub-contractor shall mark accurately on one set of the drawings the conduit laid during the progress of the work. This information must be made available on site for inspection by the engineer.

At the completion of the sub-contract the sub-contractor shall supply the engineer with one set of transparent originals and two sets of prints showing the complete installation. The drawings shall include the location of all apparatus, conduits and cable routes and a schematic diagram of main distribution indicating the phasing of the system.

These drawings shall be stamped "Record Drawings".

In addition the sub-contractor shall supply drawings in soft copy computer Compact Disks (CD)

2.1.4 Contract Drawings

These drawings forming part of the specification are to be read in conjunction with this specification to enable the sub-contractor to prepare a tender. These drawings are not intended to be used as working drawings unless they are released for that purpose.

2.1.5 Working Drawings

The sub-contractor shall prepare the working drawings as may be necessary. These shall be submitted to the engineer. Working drawings to be prepared by the sub-contractor shall be detailed as below but not be restricted only to these:-

1. General arrangement drawings showing plant, main switchboard, distribution boards, consumer units, fittings, switches, socket outlets etc.

2. Layout drawings of concealed and surface conduits, ducts, trunking etc.

3. Any other drawings that are not called for in the specification.

Two copies of all working drawings shall be submitted to the engineer for approval. Thereafter, the sub-contractor shall submit copies of the approved working drawings for distribution to the parties concerned. The sub-contractor shall not be relieved of any of his obligations under the sub-contract or from correcting any errors on site or elsewhere found consequently in the approved working drawings by the engineer.

2.1.6 Materials

The electrical sub-contractor shall supply all materials required for the completion of the electrical installation works detailed in the specification and contract drawings unless otherwise instructed. Equipment of similar type to those quoted in the specification and drawings may be used subject to the prior approval of the engineer in writing.

2.1.7 Labels

All switch gear, moulded case circuit breakers, distribution boards, etc shall be clearly labelled with black and white background engraved labels to indicate the name, purpose and the position of the gear. All conduits in distribution boards shall be clearly identified in respect of the number and location of the miniature circuit breaker (MCB). The chart shall be securely fixed inside the cover of the distribution boards.

2.1.8 Galvanising

Galvanising shall be applied by the hot process and shall consist of a smooth clean zinc coating free from defects and be uniform in the thickness. The thickness shall not be less than 610 grammes of zinc per square metre of surface and tested in accordance with the requirements of B.S. 729 where applicable. Sheradizing or other alternative processes shall not be used without approval in writing of the engineer. The preparation for galvanising itself shall not adversely affect the mechanical properties of the coated material. Surfaces which are normally in contact with oil shall not be galvanised or cadmium plated. All outdoor structures, access ladders, platforms and equipment cubicles shall be galvanised.

2.1.9 Cleaning and Painting

Having the regard to the destination and climatic conditions under which the plant is to operate, extreme care shall be exercised in the manufacture of the equipment to prevent the formation of any corrosion. All equipment shall be cleaned of all dust, oil, grease, dirt, scale and rust by power tool operated metal brush or preferably by shot or sand blasting and then ground smooth where necessary. Unless otherwise approved, they shall then immediately have applied on them two coats of approved primer paint. After inspection any rough surface shall be filled in and smoothed over and further painting in the factory shall be as follows:-

a) All interior surfaces of cubicles, kiosks, boxes, etc. containing wiring or other apparatus and internal components of the plant which are dispatched to site in an assembled condition, shall be finished painted with at least two coats of white enamel. The final coat shall be of white anti-condensation finish, where specified.

b) The external surface of the panels shall be finished in grey stove enamel to B.S. 381 C Shade 631 or other shade as may be approved by the engineer.

c) All interior surfaces of tanks and other oil filled chambers and external surfaces of piping therein shall be painted finally with an oil resisting coating to the approval of the engineer.

d) All wall and floor mounted junction boxes, loose starters etc. throughout the works shall be finished in grey stove enamel to B.S. 381 C Shade 631 or other shade as may be approved by the engineer.

After all erection has been completed at site, the contractor shall make good all defects in painting and galvanising which have arisen during transport, storage and erection on site and shall apply one undercoat

and one finished coat of gloss paint to B.S. 381 C .
Shade 631 or other shade as may be approved by the engineer, to the external surface of all equipment.

Where galvanising metal work has been damaged, it shall either be repaired by cold galvanising at site or alternatively, at the discretion of the engineer, be returned to the manufacturer for galvanising by the hot process.

2.1.10 Fire Precautions

All apparatus, connections and cabling shall be designed and arranged to minimise the risk of fire and any damage which might be caused in the event of fire.

2.1.11 Radio Interference

All equipment shall be designed so as to minimise radio interference.

2.1.12 Padlocks

Padlocks or other approved locking devices for circuit breakers, isolating devices, control switches, valves, marshalling kiosks, cubicles, screened enclosures and other equipment shall be supplied under this sub-contract.

2.1.13 Tools

Where specified the sub-contractor shall supply in steel boxes, complete with keys, any special tools that may be required for making adjustments to equipment during normal operation or maintenance period. All tools shall be of alloy steel and stamped with an approved identification.

2.1.14 Expansion Joints

Building expansion joints occur in the building works. Wherever the contract drawings indicate such joints the sub-contractor shall ensure that conduits are suitably sleeved, set and flexibly coupled.

2.2 MAIN SWITCHBOARDS AND SWITCH GEAR

2.2.0 General

The switchgear shall be designed throughout to ensure safety during operation, inspection, cleaning and maintenance and shall be so arranged as to minimise the risk of fire arising and spreading.

The switchboard shall be manufactured in accordance with B.S. 162 which co-ordinates the requirements for electrical 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.

2.2.1 Switchboard Cubicles Construction

The switchboard shall be of 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. Modular construction shall be used wherever practicable and provision shall be made for simplifying servicing, replacement and maintenance throughout major dismantling.

The switchboards shall be constructed from not less than 3.25 mm thickness welded bright steel for

framework and structural sections and 1.63 mm thickness for doors and panels which shall be adequately stiffened by folding or welded stiffeners. The switchboard base shall be of heavy gauge tube or section to allow moving rollers. All doors shall be properly stiffened and fitted with heavy cadmium plated concealed hinges 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 fastenings shall be heavily cadmium plated. No self tapping screws shall be used.

All steelworks 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 a final coat of first quality sprayed baked enamel the colour of which shall be to approval of the engineer.

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 moulded case circuit breakers shall be capable of being padlocked in the 'Off' and '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 termination in a cable area separate from the bus bars.

All switches shall be operable from floor level, all circuit breakers shall be within 2000 mm off the floor and flush mounted indicating meters within 1650 mm.

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 in position such that any one section may be removed to facilitate installation of cables.

2.2.2 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 outgoing 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.

Provision shall be made in the construction of the bus bars and connections for expansion with variations in temperature.

Interconnections between bus bars and the connections fastened to the sub-bars shall be rigidly supported.

All contact areas of the bus bars and 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.

2.2.3 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 mega volt amperes (MVA) at 415 V. and shall carry a Certificate of Rating to B.S.

116 issued by an 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. 3659. They shall have a minimum breaking capacity of 31 MVA at 415 V. and shall carry a Certificate of Rating to B.S. 3659 issued by an approved testing authority.

Each circuit breaker shall be fitted with telescopic rails to allow the breaker to be withdrawn clear of the cubicle and racking mechanism. Safety shutters shall be provided to protect against accidental contact with the stationery 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 racked position without the use of the racking mechanism.

d) The cubicle cannot be opened when the circuit breaker is in the racked position.

e) The circuit breaker can be operated only when it is in the fully racked in 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 30 V. D.C. trip coil energised by a 30 V. nickel cadmium battery and charger set. The battery and its trickle charger shall be mounted in a naturally ventilated, floor mounted steel cubicle and locked as shown on the drawings. This battery shall be suitable for tripping two medium voltage circuit breakers. A manual trip push button which shall be independent of the operator's speed of operation shall be provided.

The trip coil latching lever and 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 of 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.

2.2.4 Oil Switches

Oil switches shall be identical to the oil circuit breakers, to B.S. 116, except that the tripping devices are not required. Means of locking the switches in the 'Off' position shall be provided.

2.2.5 Air Break Switches

Air break switches shall be suitable for the system conditions indicated and shall be in strict accordance with B.S. 861, Class II Switches. Means of locking the switches in the 'Off' position shall be provided.

All individually mounted air break switches shall be of 660 V. 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 performance of the air break switch shall be in accordance with B.S. 861: parts 1 and 2.

2.2.6 Moulded Case Circuit breakers

Moulded case circuit breakers (MCCBs) shall comply with IEC 157-1 and B.S. 4752 Part 1 1977.

All MCCBs shall be of the current limiting type enabling full use of current limitation and hence cascading techniques. Failing this the breaking capacity of the circuit breakers shall be at least equal to the prospective fault level at the point of the distribution system, where the breaker is to be installed.

All MCCBs shall be designed for horizontal or upright mounting, without any adverse effect on electrical performance.

The operating mechanism shall be of the quick make, quick break type, with the speed of operation independent of the operator and mechanically trip free from the operating handle, to prevent the contacts being held closed against a short circuit or overload condition. The operating mechanism shall be constructed to operate all poles in a multi-pole breaker simultaneously during opening, closing and tripping operations.

The breakers shall be operated by a toggle, solenoid, rotary handle or motor mechanism, which will clearly indicate the three fundamental positions of On, Off, or Tripped. The breaking and extinction of the arc created during switching shall be achieved by means of non welding contacts and arc chutes surrounding these contacts, with polyamide inserts to produce an arc quenching gas under short circuit conditions.

The breakers shall be complete with positive contact indication, which shall be maintained should the breaker be closed or fitted with any operating accessory, e.g. Rotary handle or motor mechanism.

All breakers shall be manufactured with a double insulation of the front face, insulating the auxiliary compartments from the main power poles, hence allowing the installation of auxiliaries without full isolation of the unit.

All accessories and electrical auxiliaries, such as shunt trips, under voltage releases, auxiliary contacts, motor mechanisms, shall be manufactured in such a way as to allow easy installation, either at manufacturers' works or on site.

The current limiting MCCBs, with very high breaking capacities shall be made of two parts:

a) a standard circuit breaker to break small and medium fault currents

b) a current limitation block to break and limit large short circuit currents

The current limiter block shall be of the electro-mechanical type (fuse free) and factory fitted to the standard breaker.

Each pole of the MCCB shall be provided with a bimetallic thermal element for inverse time delay protection and a magnetic element for short circuit protection. The thermal release shall be of the adjustable type and may be equipped with a sealing facility, should this be required.

Adjustments are to be made simultaneously on all poles with a common adjustment facility.

MCCBs of 250 A. up to 630 A. with thermal magnetic trip units shall have fully interchangeable trip units.

Above 400 A. the trip unit may be of a solid state type energised by internally mounted current transformers. It shall not require an external power supply to operate the tripping mechanism.

The current limiting MCCBs with very high breaking capacities must be capable of offering cascading and selectivity simultaneously.

The manufacturer shall be able to supply full current discrimination tables showing overload and short circuit discrimination and additionally, a full set of transparency characteristic curves to enable discrimination systems to be checked.

The MCCBs shall be as manufactured by Merlin Gerin or an equivalent approved by the engineer

2.2.7 Power Circuit Breakers

Power circuit breakers shall comply with B.S. 4752 and IEC 157-1.

The breaking capacity of a circuit breaker shall be at least equal to the prospective short circuit current at the point of the distribution system where the breaker is installed. All breakers shall be designed for upright mounting.

The breakers shall be designed with a quick-make/quick-break contact arrangement, with the speed of operation being independent of the operator and the trip mechanism trip-free, to prevent the contacts being held closed in the event of a fault such as a short circuit or overload.

All breakers shall clearly indicate three positions, i.e. 'On', 'Off', Tripped and this shall be shown by the toggle position, providing the breaker with positive contact indication (PCI).

All electrical auxiliaries, such as shunt releases and under voltage releases, and mechanical accessories, such as motor mechanisms, shall be manufactured in such a way that they can be easily fitted/adapted on site.

The breaker shall have an electrodynamic withstand of 32000 A. for three seconds and carry a P2 breaking capacity of 50,000 A. in full accordance with relevant standards.

A fourth pole shall be available to be added to the standard three pole version. All breakers shall be of one physical size, from 1250 A. to 3200 A. ratings.

Each pole of the breaker (unless non-automatic) shall carry a current sensing element which shall provide a signal to an integral solid state electronic protection unit which, depending on the required level of sophistication shall provide:

Overload and short circuit instantaneous protection
Overload and short circuit protection plus time delay protection
Overload and short circuit plus time delay and earth fault protection.

A full test kit shall be available to test control units.

All breakers shall be fully tropicalised, for use in climates with relative humidity of up to 95% at 45 degrees Centigrade or 80% at 55 degrees Centigrade.

The power circuit breakers shall be as manufactured by Merlin Gerin or an equivalent approved by the engineer.

2.2.8 Earth Bars

A high conductivity copper earth bar of not less than 50 mm x 6 mm section, adequately rated for the anticipated earth fault current, shall be installed the full length of the switchboard. Earth connections for the outgoing cables shall be made 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.

All points of contact on the earth bars shall be silver plated.

2.2.9 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.

The bar shall be drilled for each outgoing circuit and allowance shall be made for reduction in neutral bar section due to this drilling when sizing the neutral bar.

Connection to the neutral bar shall be made with approved cable lugs and high tensile steel nuts and bolts

with washers as specified for the phase bus bars.

All the points of contact on the neutral bar shall be silver plated.

2.2.10 Small Wiring

All small wiring necessary for connecting the relays, instruments and other devices shall be included and shall have a conductor size of not less than 7/0.85 mm with a thermoplastic flame retarding type of insulation.

The wiring shall be distinctly coloured and marked with ferrules of an approved type at each end.

All wiring within the switchboard, not installed in conduit, shall be neatly laid and cleated to the panel structure of each switchboard or its auxiliary equipment.

Where wiring passes through a hole in the metalwork, 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 metalwork.

2.2.11 Instruments

Instruments shall be fitted on the main switchboard and in the sub-main switchboards in accordance with the requirements given on the distribution diagrams.

Ammeters shall be M.I.C.S. 150 mm square dial flush mounting pattern with rotary selector switch enabling phase to phase to neutral currents 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 arrangements of the indicating instruments, their scale and deflections, current transformation ratios and all information that the switchboard manufacturers may require, prior to the manufacture of the switchboard.

2.2.12 Phase Failure Relays

Where the requirements are shown on the drawings phase failure relays shall be installed for the operation of emergency lighting.

Phase failure relays shall be connected across each phase and neutral of the supplies as indicated for the operation of the emergency lighting.

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 phases 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.

2.1.13 Cabling

A cabling zone clear of bus bars and circuit breaker chambers etc., shall be provided in such a manner as to give minimum difficulty in connecting sub-main cables entering the switchboard for connection to 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.

2.2.14 Distribution Boards

Distribution boards shall be metal clad, surface or recessed pattern with the number of circuit ways, rating and phase arrangement (single or three phases) 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 rating of 60 A. and over detachable drilling plates and soldering lugs for incoming cable termination shall be provided.

Where the requirement for miniature circuit breakers (MCBs) is indicated on the drawings, the distribution boards shall be fitted with moulded thermoplastic units of the combined thermal overload and magnetic short circuit tripping to B.S. 3871, part 1. MCBs of all rating shall have a minimum short circuit current breaking capacity of
3000 A.

Where the prospective fault current exceeds 2500 A. or where specified, careful consideration shall be given to back-up protection or the installation of MCB a short circuit capacity in excess of 3000 A. 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 Appendix 6 of the 16th Edition of I.E.E. Regulations.

2.2.15 Labelling of Switchgear and Distribution Boards

All switchgear shall have engraved labels indicating the services fed from them. The inscription shall be in white 10 mm 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 numbers on the contract drawings) fed from each MCB and the size of the circuit breaker rating. All these phase boards shall be labelled in white on red, ‘Danger 415 Volts’.

2.3 POWER CABLES

2.3.1 Polyvinyl Chloride (PVC) Insulated Single Wire Armoured and PVC Sheathed Multicore Cables with Stranded Copper Conductors

PVC insulated, single wire armoured and PVC sheathed multicore cables shall have stranded copper conductors and shall be 600/1000 V. grade, manufactured in accordance with B.S. 6346.

The cable cores shall be identified in accordance with the current edition of B.S. 6346.

2.3.2 Glands for PVC Insulated Single Wire Armoured PVC sheathed Cables

The cables shall be terminated at the equipment served by a mechanical type of cable gland. The glands shall be complete with armouring clamp suitable for bonding the armouring to the unit served by means of copper tape, and the bonds shall be carried out at the time of making the joints. PVC shrouds shall be fitted over terminal cable glands.

2.3.3 Installation

Cable routes are indicated on the drawings for tender purposes but the exact final routes shall be agreed with the engineer.

All work except builders’ work shall be carried out by the electrical sub-contractor, who is to include for the supply and installation of all materials, cable supports and steel racking. The cable shall be installed and tested in accordance with the appropriate clauses of the I.E.E. Regulations and B.S. 6346 PVC Insulated Cables.

Cables shall be 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 the 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 tolerated. In all cases care shall be taken to break the rotation of the drum and the cable shall not be dragged over loose earth, concrete or any surface but shall be adequately supported on rollers or manhandled into position.

The electrical 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 200 mm clearance of any equipment or pipe work 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 electrical sub-contractor may be called upon to divert or adjust the route of any cable so affected.

Cables passing through structural floors shall be tightly wrapped with asbestos tape and grouted in with hardwood filling below, shaped to suit the cables passing through.

Where cables are run vertically, heavy gauge sheet steel metal guards shall be supplied and fixed to he wall. The casing shall be fixed from floor level to the underneath side of the appropriate end dividing box or to a height of 1.5 m. above floor level.

Detailed drawings showing dimensions and method of manufacture of the 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 where they run through stoneware or PVC ducts or are buried direct in the ground.

2.3.4 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 by the engineer. Hangers shall be of the non-ferrous metal or of steel and shall be treated with one coat of lime primer and two coats of anti-corrosive paint and shall be suitable horizontal and vertical mounting either cast in or secured to concrete structure using such brackets and adapters as are available from the manufacturers.

Hangers shall be spaced according to I.E.E. regulations, Table B2 or the manufacturers' recommendations, as appropriate, for the support of the cables. The electrical sub-contractor shall take particular care to avoid sagging or stress on any cable by wrongly positioned or inadequately spaced hangers.

Single and multi-way cable 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 the cleats shall be selected such that all cleats can be tightened down without exerting undue pressure or strain on the cables.

In 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 run without fixings and the engineers' approval shall be sought for all cable hangers and racks before installation.

Where cable runs are subject to numerous changes in level and direction, additional cable hangers shall be provided to satisfactorily negotiate such obstructions.

Where cables are spaced some distance from a supporting surface, 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.

2.3.5 Cable Identification Discs

Identification discs for cables installed within buildings shall be supplied and attached with galvanised wire to each cable at intervals not greater than 15 m. and at all conspicuous positions such as within cable trenches, manholes, and at all cable termination.

Discs shall be machine engraved from non-deteriorating black 'traffolite' or similar material, each engraving indicating the design voltage, the designation of load, and the number and cross sectional area of the cores.

The characters shall not be less than 3 mm high and shall be clearly legible.

2.3.6 Cable Ducts in Internal Roads

Unless otherwise stated in the bills of quantities the main contractor will supply and lay the PVC ducts indicated on the relevant drawings. It will be the responsibility of the electrical sub-contractor to provide accurate details to the main contractor of the required positions of termination and before the trenches are back-filled to make sure that the ducts are laid in such a way that the cables can be drawn in without being damaged.

After installation of the cables all ducts shall be adequately sealed to prevent the ingress of moisture. The sealing substance shall be of the non-hardening type.

2.3.7 Terminal Sealing Boxes

All sealing boxes shall be of an approved make and design. The casing shall be of the split type secured together with bolts and nuts and treated inside and outside with a suitable preservative compound and shall be made of close grained cast iron, free from all holes and flaws. The halves of the casing shall be machined and so arranged to form an effective seal.

The box shall be provided with an external armour clamp.

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 electrical sub-contractor shall ensure that the lead sheath and wire armouring is efficiently bonded to the metal parts of the apparatus served, with 25 mm x 3 mm 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.

The 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.

2.3.8 Underground Cables

Unless otherwise stated underground cables shall be copper of the PVC/SWA/PVC type having a rating appropriate to the system voltage. Particular attention shall be paid to trenching with regard to depth (600 mm in open ground, 750 mm under roadways), sifting of soil (75 mm below, 50 mm above) and laying of cable tiles which should be continuous and without gaps between. Where passing under roadways, ducting shall be provided as specified. After laying of cables and tiling but before back-filling, the sub-contractor shall call upon the engineer to the site to inspect the work. No trench shall be back-filled without the approval of the engineer.

Cable tiles shall be to the standard design. Cables shall be "snaked" along their route to allow for ground subsidence or settlement and a 2% allowance shall be added to the measured route length. All cable measurements shall be deemed to include this allowance.

Aluminium cables shall only be allowed where specifically called for or on the written authority of the engineer. Special care shall be taken when terminating aluminium conductors. Conductors to be terminated in a pillar type shall be mechanically swared and fitted with a phosphor bronze sleeve whilst those to be terminated with lugs shall have these fitted with a purpose made compression tool.

No deviations from the cable routes shown on the contract drawings shall be made for economy or for any other reason without the written approval of the engineer. Cable markers of the standard design shall be installed where shown on the drawings.

After installation, cables shall be tested and the result recorded.

Provision shall be also be made for connection with the neutral of the incoming supply. Where P.M.E. is approved and after the supply authority has made its connection, the electrical sub-contractor shall similarly connect the neutral of each distributor main to the earth at its remote end under the supervision of the engineer.

The bonding of other services or connections of neutral to earth shall be made after satisfactory completion of earth continuity and line earth loop impedance tests. Tests of the resistance to earth of each electrode system shall also be carried out and the results recorded. The maximum reading shall not exceed that laid down by Power Supply Authority and in any case shall not exceed 10 ohms. Means shall be provided, e.g. by means of a test clamp, to isolate the electrode from the system for periodic testing.

Internal earthing and bonding shall comply with the current edition of the I.E.E. Regulations except that insulated switches and lighting fittings, however, may require to be earthed to effect proper operation.

All cable glands for steel wire armoured underground type cable, wherever installed, shall be fitted with an approved earthing washer having a tag for the connection of an earth lead. Every such washer installed shall be an earthing terminal by means of a lug or washers on the adjacent switchgear or other equipment.

2.3.9 Trenching

Trenching, laying, tiling and back-filling for the underground cables shall be carried out by the main contractor if not otherwise stated on the bills of quantities.

Cables in trenches are to be laid at a minimum depth of 600 mm for low voltage (L.V.) and 1000 mm for high voltage (H.V.) cable and are to be on 100 mm bed of sifted soil or sand and a further 100 mm shall be added before laying cable covers in position. The sand bedding and covering will also be carried out by the main contractor unless otherwise stated.

Where laid in trenches the cables are to be completely protected by interlocking concrete or other approved cable covers indelibly marked ‘DANGER-HATARI’, to be supplied by the electrical sub-contractor.

The electrical sub-contractor shall supply and install concrete marker posts at each cable entry into a building, each change of direction, each road or pathway crossing and throughout the length of the cable at intervals of not exceeding 50 m.

The posts shall indicate the voltage depth and distance from the face of the post of each cable installed.

Posts shall also be provided at the positions of all underground troughs or joints and shall in addition, to those functions detailed above, indicate the type of joint.

The position of all cable marker posts shall be agreed with the engineer before installation.

2.3.10 Testing

Before back-filling trenches and subsequent to all terminals jointing having been completed, L.V. cables shall be subjected to an insulation test of 1000 V.

2.3.11 Cable Lengths, Types and Sizes

The electrical sub-contractor’s attention is drawn to the fact that all cable sizes and circuit breaker ratings given in the specification and/or contract drawings are based on the use of cables with copper conductors unless specifically specified to the contrary.

The electrical sub-contractor shall be deemed to have allowed in his price for supplying sufficient cable lengths of each type and size to complete the system and for making allowance for any additional length for

cutting and waste.

In the event that alterations to the system cable routes become necessary the contract drawings will be revised and any adjustments in lengths shall be measured there from and a variation order will be issued to the electrical sub-contractor.

2.4 APPROVED WIRING SYSTEMS

2.4.1 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.

2.4.2 System B - Cables enclosed in Steel Screwed Conduit or Trunking fixed to the surfaces of Walls or Ceilings

The wiring shall be carried out in an approved type of single core, plastic insulated cable closed 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.

2.4.3 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 of 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 the building, and either run in roof space or buried in structural slabs.

2.4.4 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 of 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.

2.4.5 System E - Mineral Insulated 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 or ceilings, in the roof space or concealed in walls and floors.

2.4.6 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 cores 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 there is no reasonable access from above. They shall be fixed to the walls and the sides of roof members or in such other positions as may be approved by means of non-corroding saddles or buckle clips with non-corroding fixings spaced at intervals not exceeding 225 mm. 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 terminals of accessories or by approved mechanical connector in suitable joint boxes. Under no circumstances will taped joints be

permitted.

The cable sheathing shall be carried into the switch, ceiling rose or other accessories.

Cables shall not be installed within 300 mm of a metal roof, unless clipped to the lower side of wooden joists or otherwise protected from radiant heat.

2.4.7 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.

2.4.8 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 frames 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 non-ferrous material and shall not be fixed in contact with other metals with which they are liable to set up electrolytic action. All spacing of cable hangers and supports shall not exceed those laid down for the relevant size and type of cable in the I.E.E. regulations.

2.5 CONDUITS, TRUNKING, CABLE TRAYS AND ASSOCIATED FITTINGS

2.5.1 Steel Conduits, Steel Trunking

Conduits shall be of heavy gauge Class B welded to B.S. 31. In no case will conduit smaller than 20 mm be used on the works. Conduits installed within buildings shall be black enamelled finish except where specified otherwise. Where installed externally or in damp conditions they shall be galvanised. Conduit fittings shall also be galvanised or otherwise as approved by the engineer.

Metal trunking shall be fabricated from mild steel of not less than 1.22 mm thickness similar in pattern to that manufactured by “Walsal Conduits Limited” or as specified. All sections of trunking shall be rigidly fixed together and attached to the framework or fabric of the building at intervals of not less than 2 m. Joints in trunking shall not overhang fixing points by more than 0.5 m.

All trunking shall be made electrically continuous by means of 25 mm x 3 mm copper links across each joint with electro-tinned bolts (head inside trough) nuts (6 mm diameter, minimum) flat washers and spring washers, and where the trunking is galvanised, the links shall be made by galvanised flat iron strips.

All trunking fittings (i.e. bends, tees, etc) shall leave the main 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.

The inner edge of bends and tees shall be chamfered where cables larger than 35 mm^2 are employed.

Where trunking passes through ceilings and walls the cover shall be solidly fixed to 150 mm either side on ceilings and floors and 50 mm either side on walls.

Screws and bolts securing covers to trunking or sections of covers together shall be arranged so that no damage to cables in the trough occurs.

Where trunking is used to connect switchgear or circuit breaker boards, 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 4.5 m. in length, staggered tie-off point shall be provided at 4.5 m. intervals to support the weight of cables.

Unless otherwise stated all trunking systems shall be painted as for conduit.

Where a wiring system incorporates galvanised conduit and trunking, the trunking shall be deemed to be galvanised unless specified otherwise.

The number of cables to be installed in trunking shall be such as to permit easy drawing in without damage to cables, and shall in no circumstances be such that a space factor of 45% is exceeded.

Conduit and trunking shall be mechanically and electrically continuous. Conduit shall be tightly screwed between the various lengths so that they butt at the socketed joints. The internal edges of conduit and all fittings shall be smooth, free from burrs and other defects. Oil and any other insulating substance shall be removed from the screws and threads. Where conduits terminate in circuit breakers, distribution board, adaptable boxes, non-spouted switch boxes, etc., they shall, unless otherwise stated, be connected thereto by means of smooth bore male brass bushes, compression washers and sockets. All exposed threads and abrasions shall be painted using an oil paint for black enamelled tubing and galvanising paint such as 'Rust Anodl' manufactured by "C.P. Developing Company (London) Limited" for galvanising tubing immediately after the conduits are erected. All bends and sets shall be made cold without altering the section of the conduit. The inner radius of the bend shall not be less than four (4) times the outside diameter of the conduit. Not more than two right angle bends will be permitted without the inter-position of a draw-in box. Where straight runs of conduit are installed, draw-in boxes shall be provided at distances not exceeding 15 m. No tees, elbows, sleeves, whether of inspection or solid type, will be permitted.

Conduit throughout shall be of sufficient section and so arranged with draw-in boxes to allow drawing in and out of any one or all the cables in the conduit.

Conduits shall be swabbed out prior to the drawing in of cables, and they shall be laid so as to drain off condensate without injury to end connections.

Conduits and trunking shall be run at least 150 mm clear of hot water and steam pipes, and at least 75 mm clear of cold water and other services unless otherwise approved by the engineer.

Conduits installed and buried in walls shall allow a minimum of 15 mm 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.

Surface conduit shall be run in square symmetrical lines and shall be marked on site for approval before installation. Conduits shall be fixed by means of distance saddles spaced at no more than 1.2 m. for 20 mm and 25 mm conduit and 1.5 m. for larger sizes. Conduits shall be fixed each side of conduit boxes at a distance not exceeding 250 mm, and saddles shall be equally spaced.

Where conduit runs enter specified areas requiring flameproof equipment, barrier boxes shall be inserted immediately before the conduit enters the flameproof area. All conduits 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 C.P. 1003.

In no case shall conduits from different distribution boards be connected to 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, to 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 conduits.

Box lids where required shall be heavy gauge metal, secured by means of zinc plated or cadmium plated steel screws.

All adaptable boxes and lids of the same size shall be interchangeable.

Boxes used on surface work are to be tapped or drilled to line up with the conduit fixed in distance type saddles allowing clearance between the conduit and wall without the need for setting the conduit.

Where used in conjunction with mineral insulated copper sheathed cable, boxes shall be galvanised and painted after erection.

Draw-in boxes in the floors are generally to be avoided but where they are essential they must be grouped in positions approved by the engineer and covered by suitable floor traps, with non-ferrous trays and covers.

The floor trap covers are to be recessed and filled with a material to match the floor surface.

The sub-contractor must take full responsibility for the filling in of all covers, but the filling 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 is to be painted with two coats of approved bitumistic composition before covering up. Paint damaged and joints under screed are to 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.

2.5.2 Aluminium Trunking

Aluminium trunking shall be carried out in extruded aluminium similar to that manufactured by Thorsman type INKA. Alternatives approved by the engineer may be accepted.

Where not specified otherwise the specification for steel trunking is also valid for trunking in aluminium.

2.5.3 Cable Tray

Cable tray shall be fabricated from un-perforated mild steel sheet of minimum 2.03 mm thickness with returned flanges and coupling pieces for rigidity and strength similar to that manufactured by “H.Greening (Wolverhampton) limited”, catalogue No.7 type.

Unless otherwise stated in the specification of works, 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 8 mm diameter mild steel. Brackets or suspension supports shall be provided as necessary, the spacing of which shall not exceed 2.0 m.

Where the cable tray changes direction the minimum radius of bends shall not be less than 300 mm 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.

2.5.4 Non-Metallic Conduit

General

The cables shall be drawn in at accessories, switchgear, and distribution boards after the erection of the conduit system.

Under no circumstances shall it be permitted to draw a cable into an incomplete section of the conduit installation. The wiring shall be carried out by the looping-in principle. All joints shall be made at the terminals of main switches and socket outlets, etc., and fixed apparatus only. No joints shall be made in boxes unless approved.

The cable shall be run in the conduit so as not to exceed the capacities as set out in Table B.5 of the I.E.E. regulations (15th Edition) with current amendments.

Conduit shall be best quality new super high impact grade heavy gauge Class 'A' rigid PVC un-plasticised conduit as manufactured by "Egatube Africa Limited", suitable for plain connections specified.

Manipulation

The conduit shall be bent and formed strictly in accordance with manufacturer's instructions.

i) Small size conduits i.e. 20 mm diameter and 25 mm diameter 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 degrees to allow for "spring back".

ii) Larger sizes of conduit shall be pre-heated before inserting rubber cord to prevent kinking. Conduit badly formed or bent, or damaged in any way, shall not be used.

Jointing 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 the conduit.

Conduit Fittings

All conduit fittings and accessories including couplers, ordinary clips, saddles, pipe hooks, reducers, stopping plugs, locknuts and male and female bushes shall be manufactured dimensionally, similar to B.S. 31/1940 where applicable. 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 approval of the engineer.

Where it eases the installation of cast-in-situ back entry boxes on the loop-in-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.

Fixing of Conduit

Conduit shall be installed in the loop-in system and shall be either cast-in-situ in the concrete wall, or chases cut in solid partition walls; run in ceiling spaces or in hollow partitions or floor; 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 shall be fixed by mild steel pipe hooks or non-metallic saddles spaced not more than 0.9 m. Where conduit is concealed behind plaster it shall be sunk to a depth of either 15 mm below finished plaster level, or installed flush with the structural wall level before application of plaster, whichever is the lesser depth.

Conduit fixed on the surface of walls or ceilings shall be fixed at distances not exceeding 0.9 m. Surface conduit shall also be fixed on both sides of all boxes at a distance not greater than 0.2 m.; 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 0.9 m. 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 not be less than 20 mm and conduits shall not cross.

Conduits shall be installed in such a manner as to prevent interference with other services and shall be kept at least 150 mm clear of gas or water pipes, and heat in excess of 70 degrees Centigrade.

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 marker on removal of 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. Where straight run of conduits are installed, draw-in boxes shall be provided at distances not exceeding 12.2 m.

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 fixing to aluminium section, rawl nuts, spring toggles, gravity toggles or rawl bolts 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.

Circular Inspection Boxes

Boxes will not be permitted in floors unless approved by the engineer. Boxes cast-in-situ must face downwards from the ceiling/floor section.

Small standard circular non-metallic conduit boxes conforming dimensionally with B.S 31/1094 with standard circular non-metallic 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 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 degrees Centigrade and the box shall be fitted with 'Egafrica' steel insert clips.

Stopping Plugs

All spare ways in junction boxes etc. left for possible future extension shall be fitted with stopping plugs.

Continuity

Where fittings and accessories require earthing, an earth continuity conductor shall be run through the conduit. The earth continuity conductor shall be a bare copper wire of minimum size 2.5 mm^2 and shall be continuous between terminals.

Where the test terminal is formed by a brass screw and washer, 'Ross Courtney' termination 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 and the earth bar in the distribution board or consumer's control unit protecting the particular final sub-circuit.

Expansion Joints

A means of expansion shall be provided in conduit runs in excess of 10 m. Without any bend or set, by the use of 'Egatube' expansion couplings, which shall also be used at building expansion joints.

Flexible Joints

Conduit connections to motors and equipment shall be made using a minimum of 0.5 m. waterproof

flexible conduit. Unless otherwise stated in the specification of works, the solid conduit shall terminate in a large BESA or adaptable box enclosing sufficient coils or motor cables to enable "Tong Test" readings to be taken in each
conductor. Earth continuity shall be maintained by means of copper conductor sized in accordance with the I.E.E. Regulations Chapter 54 subject to a minimum of 1.5 mm^2 and have green insulation.

This conductor shall be run internally within the flexible conduit connecting apparatus to solid being brought out of the conduit at each and adjacent to a purpose made connecting adapter, and shall be secured to the connecting adapter by an approved means.

Unless otherwise stated in the specification of works and/or drawings, all adapters are to be solid bronze or brass pattern with standard thread for conduit connection and
a thread to receive the flexible conduit. The adapter is to be sweated solid to the flexible conduit and the grub screw fully tightened.

All galvanised boxes in a situation where the air flow is unlikely to cause excessive condensation shall have a rubber gasketed lid, as "Wallsal" List No. 215G.

Telephone Conduits

The arrangement and size of telephone conduits is to be such as will accommodate the number of circuits as indicated on the contract drawings. Where conduits enter adaptable boxes each conduit is to be numbered to indicate the outlet point which it feeds. Unless otherwise stated on the drawings, conduits will 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 0.72 mm thickness are to be left in all telephone conduits. Draw-in boxes are required in telephone conduits on the same basis as laid down for power and lighting.

Telephone outlet boxes, draw-in boxes are to be marked internally with yellow paint to distinguish them from boxes provided for other services.

Television Conduits

Television conduits are to be 20 mm diameter 'Egatube' plastic type. Outlet points are to be "Belling and Lee" type 1480 complete with plug type L734/PAL fitted to a flush plastic box to B.S. 1363. Draw-in wires as provided for telephone conduits are to be installed.

2.6 BUS-BAR TRUNKING INSTALLATION

The rising main bus-bar system shall comprise a sheet steel metal enclosure containing copper bus-bars rising through the building via the riser duct, and supplying the distribution system at suitable tap-off positions.

The total length of the system shall be determined from the drawings for tender purposes, but the measurements most be checked on site prior to manufacture.

The bus-bar shall be contained in a trunking of not less than 1.63 mm thickness sheet steel with detachable cover plates providing a reasonably dust proof 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 1.8 m. intervals.

All steel work is to be given a rust preventative undercoat, and finished in gloss enamel in approved colour. All screws, bolts, nuts and washers are to be rustproof.

Bus-bars shall be 4 pole with full neutral rated at the current indicated on the 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 50 degrees Centigrade.

Copper fish plates shall be used for connection between the lengths of bars. A high degree of conductivity is to be maintained.

The bars shall be anchored rigidly in the vertical and horizontal 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 manufacturer 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-tracing insulation and designed to withstand 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.

Tap-off units shall be of the type and current rating indicated on the drawings. All connections to the bus-bars shall be made by means of bolted type clamps designed to ensure maximum conductivity at all times. Drilling of bus-bars will not be permitted.

A 25 mm x 3 mm 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 1.2 m. by means of 10 mm brass bolts, washers and lockable nuts.

2.7 CABLES IN CONDUIT OR TRUNKING

2.7.1 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 line conductors are to be readily identified.

2.7.2 PVC cables in Conduit

Unless otherwise specified, cables shall conform to B.S. 6004; 1969 and shall be of a manufacture approved by the engineer. They shall be 600/1000 V. grade, single core. No cable smaller than 1.5 mm^2 shall be used. Cable sizes shall comply with circuit details as indicated on the drawings. Where practicable, some slack cable must be left at all points of connection.

When used with pinch type terminals the cable shall be prepared as follows:-

i) 1.5 mm^2 - the strands well twisted together and then the conductor doubled back on itself to present a double thickness.

ii) 2.5 mm^2 - the strands well twisted together to make as solid a conductor as possible.

iii) 2.5 mm^2 and above - the strands seated solid or fitted with cable lugs.

Care must be taken when pulling PVC cable into conduits, to ensure that no crossed cables are allowed to enter the conduits. At all draw-in boxes, sufficient cable shall be left to allow an easy sweep from one conduit entrance to another.

All cables shall be drawn in after the erection of the complete conduit and trunking system and all plaster has dried out. Draw wires, tapes or cables shall not be threaded in at the time conduits are being installed.

The load and return conductors of the same circuit or circuits shall, in all cases, be drawn in the same conduit.

The conductors forming the various systems are to be run in separate conduits.

In general the following cable sizes shall be adopted unless otherwise indicated. Neither the detailing of these sizes or the indication of specific cable sizes on the drawings shall be held to vitiate the electrical sub-contractor’s responsibility in respect of voltage drops and current densities.

The voltage drop between the final distribution board and the point or outlet position shall not exceed 1.5% under full load conditions.

Cables feeding 13 A. socket sub-circuits shall be 2.5 mm^2 ring main or 4 mm^2 for up to five sockets if on a radial circuit.

No more than six final sub-circuit cables shall be run in conduits 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.

The maximum cable capacities of conduits indicated in the Tables of the 16th edition of the I.E.E. Regulations shall not be exceeded.

Flexible cords shall be of 250 V. grade VR or PVC insulated and shall comply with B.S. 7. No flexible cord smaller than 0.75 mm^2 shall be used. Flexible cords for pendant fittings shall be circular, heat resistant type, white finish.

The colours of the core shall comply with the colour code requirements of the I.E.E. Regulations.

2.8 WIRING ACCESSORIES - SWITCHES, SOCKET OUTLETS ETC. AND LIGHTING FITTINGS

2.8.1 Lighting Switches

Lighting switches shall be of the all insulated rocker-operating plate switch type to B.S. 3676 of ample rating. Switch inserts shall be white, set in white or ivory cover plates.

Switches controlling points in bathrooms shall be placed outside the bathroom or consist of a ceiling switch operated by a non-conducting cord as specified. Switches mounted outdoors shall be of the weatherproof pattern.

Switches shall be one way, two ways or intermediate as specified and where a number of switches are mounted together they shall be fitted in a common box.

Ceiling switches shall be of white or ivory semi-recessed pattern, and shall only be used where specified. Pull cords shall be fitted with shock absorbing springs.

Lighting switches shall be as manufactured by “M.K. Electric Company Limited” or other approved equal.

2.8.2 Socket Outlets

In all areas, general power outlets shall be of the 13 A. 3 pin fused plug type complying with B.S. 1363. They shall be flush pattern, with white or ivory cover plates unless otherwise specified on the drawings. Where the circuits are supplied from a common feed, two outlets shall form a twin unit in a common box. The earthing terminal of every socket outlet shall be connected to the earth continuity conductor of the final sub-circuit by an appropriately sized insulated copper conductor. Unless otherwise stated they shall be mounted at 300 mm above finished floor level.

One plug top shall be supplied for each socket outlet installed. Fuses shall be 13 A. Unless otherwise specified socket outlets and plug top shall be as manufactured by “M.K. Electric Company Limited” or other approved equal.

2.8.3 Fused Connection Units

All fused connection units shall be 13 A. with fuse and neon indicator lamp. Boxes shall be flush type with white or ivory cover plates and shall be switched type unless otherwise specified on the drawings.

All fused connection units shall be fitted with 13 A. fuses, unless otherwise specified.

The front plate of each fused connection unit shall, unless otherwise specified, be engraved with the name of the appliance connected to it. They shall be as manufactured by “M.K. Electric Company Limited” or other approved equal.

2.8.4 Telephone Outlets

The sub-contractor shall provide all telephone outlets as shown on the contract drawings together with any conduits required by Service Provider. These shall consist of steel box with single or double telephone cord outlet plates, ivory, BMZ or matt chrome as manufactured by "M.K. Electric Company Limited" or approved equal. Draw-wires shall be left in all conduits.

2.8.5 Television/Radio Outlets

Television outlets, where required, shall be flush mounted in a steel box at a height of 300 mm above finished floor. The mounting box shall be linked to the roof space or elsewhere if specified by means of 20 mm diameter conduit. Draw-wire shall be left in all conduits. The outlet plates shall be as manufactured by "M.K. Electric Company Limited" or other equal and approved make. The electrical sub-contractor shall provide galvanised metal bracket for holding the T.V. aerial.

2.8.6 Cooker Control Unit

These shall be white flush type with pilot lamp, installed in an aluminium stove enamelled box, with earth terminals as manufactured by "M.K. Electric Company Limited" or other equal and approved make. The electrical sub-contractor shall supply and install a flush connector box for the cooker control unit, 300 mm above finished floor level, complete with wiring in 6 mm^2 PVC cables in 25 mm diameter conduit and with earth terminal block and moulded white cover plate as manufactured by "M.K. Electric Company Limited" or other equal and approved make.

2.8.7 Ceiling Roses

Ceiling roses, ivory or white, shall be of the 3 plate pattern and fitted at all pendant points. An earthing terminal shall be provided and connected to the earth continuity conductor of the final sub-circuit where applicable.

Ceiling roses of the white porcelain semi-recessed pattern shall be used for surface installation, and shall be of the all insulated type for flush installation.

2.8.8 Lamp Holders

Lamp holders shall generally be of plastic construction with porcelain interiors, and bayonet fittings. Lamp holders for lamps rated 200 watts and above shall be of the Edison screw type. Batten type lamp holders shall be of the all insulated bayonet type.

2.8.9 Lighting Fittings

The sub-contractor shall supply and fit all lighting fittings of the type indicated on the drawings and in the schedules. All fittings shall be suitable for operation on a 240 V. 50 Hertz supply. Lighting fittings rated other than 240 V. will not be accepted. All lighting fittings shall be supplied with lamps.

Fluorescent fittings shall generally be of the batten type, with control gear contained within the supporting channel. All fittings shall be supported from conduit boxes and shall be suspended by two 20 mm diameter conduits to give a clearance of 25 mm between the top of the fittings and the ceiling. In the ceiling the conduit boxes to B.S. 31, shall be fitted with dome covers to which the suspension conduits shall be joined, so that the lighting fittings hangs vertically below the conduit boxes. Fittings shall comply with B.S. 3820 Class 1, indoor normal temperature.

All reflectors for fluorescent fittings shall be made of sheet steel metal suitably shaped and stiffened, and shall be white enamel finish.

2.9 PLANT POWER WIRING

Wiring to motor outlets and control panels 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 size and type of cables, and rating of circuit breakers are shown on the schematic drawing.

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 of connections and details of any special requirements such as the provision and specification of screened cables to ensure that the equipment is suitable for electrical characteristics of the supply available.

2.10 EARTHING

The extent of earthing equipment to be installed as part of the sub-contract works shall be as follows:-

2.10.1 Earthing System for High Voltage Supply

A main earth bar of 55 mm x 6 mm 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 conductor 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 sizes of the earth continuity conductors shall be as follows:-

Maximum prospective Fault Current	Insulated Stranded Conductor	Bare Copper Conductor Conductor
14 KA	19/2.52 (95 mm^2)	25 mm x 9 mm
9 KA	19/2.14 (70 mm^2)	25 mm x 3 mm

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 5 m. long by 15 mm diameter, extendible type as 'Copperweld' or other approved equal, each pair of electrodes shall be located not less than 3 m. apart, the
first pair being not less than 3 m. from the building. The head of the rods shall be driven to 300 mm below the surface of the ground and enclosed in a concrete box with a concrete inspection cover.

The metal sheath of all H.V. and L.V. cable shall be adequately bonded to the appropriate switchgear frame.

2.10.2 Earthing System for L.V. Supply

Where the supply is taken at L.V. from either a sub-station on the site or a remote sub-station, the following earthing equipment shall be installed:-

1. In the main switch room (supply intake)

   A copper earth bus-bar, as described in clause 2.10.1

A bare 25 mm x 3 mm copper conductor from each item of isolated switchgear, connected to the earth bus-bar.

A complete earth electrode system, installed as specified in clause 2.11.1 connected by an insulated earth continuity conductor to the earth bus-bar.

2. In the switch rooms of the isolated buildings on the site:-

   A similar earthing system installation to that described in (1) above.

3. In the event of Power Supply Authority providing an earth terminal at the intake position, the earth electrodes and earth continuity conductors, described in (1) and (2) above, shall be omitted.

2.10.3 Protective Multiple Earthing

Where protective multiple earthing (PME) is provided by Power Supply Authority in concurrent with Telephone Supply Authority. The earthing lead shall be so arranged that the connection to the neutral conductor of the incoming supply can be carried out by Power Supply Authority.

The earthing of the installation shall comply with the requirements laid down in Appendix VI of the I.E.E. Regulations. The earthing system for H.V. supply described in clause 2.10.1 shall be amended for the provision of separate earth electrodes for 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.

2.10.4 Consumer's Earth

The consumer's earth is deemed to be the earthing terminal at:-

1. The main switchboard

2. The 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.

2.10.5 Bonding

All conduit, trunking metal enclosures, the metallic sheathing of cables, the cases and enclosures of switchgear, circuit breakers 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 the resistance of the earth continuity conductor shall comply with the I.E.E. regulations. In particular, attention is drawn to Part 4 of the 16th 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 so as to ensure that no difference in electrical potential can arise between these items.

The sub-contractor shall be responsible for rectifying any fault in the earth continuity conductor at his own expense.

2.11 TESTING ON SITE

2.11.1 Installation Tests

The sub-contractor shall conduct during and at the completion of the installation and, if required, again at the expiration of the maintenance period, tests in accordance with the relevant section of the current edition of the I.E.E. regulations and Power Supply Authority 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 each earth pin is effectively bonded to the earth continuity of all conductors of each 'ring' circuit.

Phase tests shall be carried out on the completion of the installation to ensure that correct phase sequence is maintained throughout the installation. The sub-contractor will be required to issue to the engineer the requisite certificates upon completion as required by the Regulations referred to above.

Any faults, defects, or omission or faulty workmanship. 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.

Earthing systems are to be tested in accordance with Appendix 6 of the I.E.E. Regulations, and if the minimum impedance required by the Regulations is not indicated or obtained the engineer is to be informed.

The sub-contractor shall make tests as the work proceeds to ensure that this value is not exceeded. It is particularly essential that such tests shall be carried out systematically when a concealed wiring system is being installed.

The electrical sub-contractor will be responsible for rectifying any fault in the earth continuity conductor at his own expense.

The 415 V. electrical installation has been designed for close excess current protection, i.e. earth fault current to exceed 2.4 times the circuit breaker rating at any point in the installation.

The results of the impedance tests shall be recorded on a test certificate (supplied by the engineer) which shall be signed by the electrical sub-contractor and counter signed by the engineer or his representative. Two copies of each such certificates shall be provided.

The installation shall not be considered complete until test certificates and "Record" drawings have been submitted by the electrical sub-contractor and approved by the engineer. Retention money will not be released until drawings and test certificates have been received.

Additionally, in the case of underground cables, tests shall be carried out to establish the continuity and phase, also high voltage tests if required by the engineer.

The sub-contractor shall have at his disposal a set of test instruments in good working order and suitable for carrying out the required tests including insulation, continuity, earth. These instruments shall be made available for inspection and test when required by the engineer.

2.11.2 Test 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.

2.11.3 Attendance to other Contractors

The sub-contractor shall generally attend to other contractors employed on the project and carry out such electrical tests as may be necessary.

2.11.4 Equipment, Plant, Apparatus and System

The sub-contractor shall test to the engineer's approval and as specified elsewhere in this specification or in the standards and regulations already referred to, all equipment, plant and apparatus forming part of the works and before connecting to any power or any other 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 approval of the engineer.

2.11.5 Commissioning

All installations shall be tested to the statutory requirements of the electricity supply authority, and commissioned in the presence of and to the satisfaction of the engineer.

Four copies of the test reports shall be provided within seven days of carrying out the tests; and the reports shall include full details of how each test was carried out, and a copy of all the readings taken.

3.2 CONTRACT DRAWINGS

The work to be executed shall be as described in this specification and as set out in the electrical services drawings which are to be read in conjunction with the specifications.

3.3 SCOPE OF SUB-CONTRACT WORKS

The sub-contract works shall comprise the supply, delivery, erection, testing, commissioning and setting to work the electrical engineering services as detailed in this specification and the accompanying contract drawings.

The sub-contractor shall include for all appurtenances and appliances not called for in this specification or 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 difference 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 be limited to the following:-

i) Sub-main cabling
ii) Consumer units, distribution boards and sub-switchboards
iii) Lighting installations
iv) Power system
v) Fire alarm system
vi) Wireways for telephone/data systems
vii) Lightning protection
viii) Earthing

3.4 MAIN SUPPLY

The main 415/240 V., 50 Hertz three phase supply will be provided, generators to the meter board in the flats and bungalows.

The sub-contractor shall be responsible for the supply and installation of the meter boards, meter boxes and associated works in a manner acceptable to the Power Supply Authority.

The sub-contractor shall liaise with the Power Supply Authority as to the most economical method of connection which is acceptable to Power Supply Authority.

3.5 METER BOARD

The meter board and boxes shall be recessed wall mounted with front access incorporating the equipment as detailed in the electrical distribution schematics shown on the contract drawings. It shall be supplied complete with all internal connections and cable glands or boxes.

The engineer reserves the right to make such variations to the layout and dimensions of the meter box as he deems necessary to suit the site conditions.

The meter board and boxes shall be weatherproof and vermin proof.

3.6 SUB-MAINS DISTRIBUTION

From the meter board the sub-contractor shall install sub-mains cables in a conduit where indicated on the drawings to the consumer units and water heaters as shown on the contract drawings.

3.7 EARTHING AND BONDING

The earthing system shall be as specified and in accordance with the I.E.E. Regulations. The armour of the main cables shall be bonded to the earth bar in the main switchboard.

3.8 LIGHTING INSTALLATION

From the distribution board and consumer unit positions the sub-contractor shall supply and install 1.5 mm^2 PVC cables enclosed in 20 mm diameter heavy gauge PVC conduit concealed in the building fabric to the lighting points and lighting switches. The various approximate positions of the lighting points are indicated on the contract drawings. The exact positions of these outlets shall be determined on site and it is the responsibility of the sub-contractor to confirm the exact positions with the engineer.

The lighting fittings shall be supplied by others. The sub-contractor shall price for taking delivery and installation.

The switches shall be of the number of gangs shown on the contract drawings and shall be as manufactured by “M.K. Electric Company Limited” or approved equal. All switches shall be of the same manufacture, design and colour.

All lighting fittings with metal parts shall be earthed as required by the I.E.E. regulations.

3.9 SOCKET OUTLET INSTALLATION

From the distribution board and consumer unit positions the sub-contractor shall supply and install 2.5 mm^2 PVC cables enclosed in 25 mm diameter heavy gauge PVC conduit concealed in the building fabric or in trunking, where indicated, to the socket outlets.

The socket outlets shall be as manufactured by “M.K. Electric Company Limited” or approved equal. All socket outlets shall be of the same manufacture, design and colour as the lighting switches.

Generally the socket outlets shall be mounted at 300 mm from finished floor level in all areas unless otherwise stated.

3.10 TELEPHONE OUTLET INSTALLATION

The sub-contractor shall run 25 mm diameter heavy gauge PVC conduit from the position shown on the contract drawings for the main telephone entry to the telephone outlets. The telephone outlets shall be as manufactured by “M.K. Electric Company Limited” or equal and approved. Suitable draw wires shall be left in all conduits accessible at each outlet. The actual wiring of the outlets shall be carried out by others.

3.11 TELEVISION AERIAL OUTLET INSTALLATION

The domestic sub-contractor shall run 38 mm diameter concealed heavy gauge PVC conduit from the chimney position on the roof to the TV aerial outlet positions shown on the contract drawings. The TV aerial outlets shall be inter linked to the chimney position. The TV aerial outlets shall be as manufactured by “M.K. Electric Company
Limited” or approved equal. Suitable draw wires shall be left in all conduits accessible at each outlet. The actual wiring of the outlets shall be carried out by others.

3.12 LIGHTNING PROTECTION

3.12.1 Copper Tape on Roof and Down Conductors

The sub-contractor shall supply and install copper tapes of 20mm x 3m cross section on the roof and on top of high rising protrusions if any.

The roof tape shall be fixed onto the roof by means of purpose made clamp of the right size spaced at a distance of not more than 1.2m run of conductor. The distance shall be decreased where necessary to obtain the necessary rigidity. All sections of the roof tape shall be bonded to suitable down conductors including roof top water tanks and other metal work projecting from the roof.

The sub-contractor shall supply and install down conductors of a similar copper tape terminating at the earth test clamps mounted 3000mm above ground level. No soldered or bottled joints shall be made in any concealed length of conductor or termination.

3.12.2 Earth Electrode and Resistance

The earth electrode made of solid hard drawn copper of 15mm diameter driven into the ground to a minimum depth of 3.6m and made up of three sections of 1.2m each with internal screw socket joints and fitted with hardened steel tip and driving up shall be provided at least 3000mm away from the building in the vicinity of the down conductors.

The earth electrodes and the earth test clamps shall each to each be connected by means of copper welded tapes of at least 20mm x 3mm cross section.

The earth resistance for each electrode system shall not exceed 10 Ohms maximum and steps shall be taken to use a sufficient number of electrodes to reduce the resistance below this figure.

Bimetal connections shall be used for all copper to aluminium connections unless the Engineer specifically approves in writing another method of effecting these connections.

The earthing network for the lightning protection system shall be bonded to the buildings main earth as indicated on the contract drawings.

The cold water incoming main and other incoming metal service pipes shall be bonded to the buildings main earth.

BILLS OF QUANTITIES

A. The bills of quantities have been prepared in accordance with the standard Method of Measurement of Building Works for East Africa, First Edition, Metric 1970, published by the Architectural Association of Kenya, Chapter of Quantity Surveyors with the following deviations:

CONDUIT BOXES

B. Notwithstanding clause R4(b) conduit boxes are deemed to be included with the items of conduit and the sub-contractor shall include in his rates for such.

FINAL SUB-CIRCUITS

C. Notwithstanding clauses R4 to R12 inclusive, final sub-circuits from the distribution boards, consumer units, fire alarm panels and the like have been enumerated on a point basis and described stating the size and type of cable, the type of conduit and the type of installation. Classification of points shall be as follows:

a) Socket outlet or switched socket outlet and the like
b) Lighting point (one point being counted for each outlet irrespective of the number of lamps or of the switching)
c) One way switch
d) Two way switch

e) Intermediate switch
f) Dimmer or time switch
g) Telephone point
h) Fire alarm point

Conduit accessories including all conduit boxes required for the installation, all fixing, bending, cutting, screwing and jointing shall be deemed to be included.

MARKING POSITIONS etc.

E. Notwithstanding clause R17, marking the positions of holes, matrices, chases and the like in the structure shall be deemed to be included with the items.

PLATES, DISCS, LABELS etc.

F. Notwithstanding clause R18, plates, discs and labels for identification of plant, equipment, cables etc. shall be deemed to be included with the items.

SPECIAL NOTES:

1. Where an omission which leads to the works not being possible to be given complete and working, this omission shall be corrected before tendering and after reference to the engineer.

2. The sub-contractor must satisfy himself that he has enough information to submit a tender that will lead to complete and operational works.

3. Where fittings have been specified, the makes and catalogue numbers must be adhered to. Under no circumstances will substitute fittings to be allowed except when approved in writing by the Engineer.

4. Prices quoted for the quantities given in the following pages shall be for the supply, installation, connection and setting to work of the portions of the work.

5. The sub-contractor shall not alter or otherwise qualify the text of these bills of quantities. Any alteration or qualification made without authority will be ignored and the text of the bills of quantities as printed will be adhered to.

6. The sub-contractor shall be deemed to have made allowance in his prices generally to cover items of preliminaries or additions to Prime Cost Sums or other items, if these have not been priced against the respective items.

7. All items of measured work shall be priced in detail and tenders containing lump sums to cover trades or groups of work must be broken down to show prices of each item before they will be accepted.

8. In no case will claims for any expenses incurred by the sub-contractor in preparation their tender be allowed.

9. The tenderer must include with the tender descriptive information of all equipment referred to in the tender documents such as names of the manufacturers, suppliers, country of origin, availability, codes, etc.

SECTION VII – DRAWINGS

The bidder is to further confirm that they have reviewed / studied the following tender drawings.

Item No.	Drawing Title	Drawing Number	Drawing / Info reviewed (□ or □) mark appropriately	
	Architect's Drawings		**Yes □**	**No □**
1	Floor Plan design			
2	Door Schedule			
	Interior Designer's Drawings			
3	Floor Plan furniture layout			
4	Partition and elevation details.			
5	Ceiling Finishes Detail			
6	Floor Finishes Detail			
	Structural Engineer Drawings			
7	Foundation and Ground floor Layouts			
8	Roof Slab details			

PART III - THE CONDITIONS OF CONTRACT

SECTION VIII - GENERAL CONDITIONS OF CONTRACT (GCC)

[Name of Procuring Entity]

[Name of Contract]

[Architect Name and Address]

General Conditions of Contract

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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" meansthedateofcompletionoftheWorksascertifiedbytheEngineer.

"Contract Price" means the price defined in the contract and there after 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'sPersonnel" 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 timeby 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 [ApplicationforFinalPaymentCertificate].

"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.

"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

"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.

"Testson 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, sentor transmitted to the addressf or 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 addressfromwhichtherequestwasissued.

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 ofthe 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 formannexed 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 bythe 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, theParty 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 Asagreed 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 permitor 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 ofthe 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 thetime (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 ofanyfoundation, 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'sPersonnel

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 action ssimilar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) ofSub-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 Architectis 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 approvalis required, then (for the purposes of the Contract) the contractor shall require the Architect toprovideevidence 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 shallbedeemedtoactfortheProcuring 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) anyact 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 Not withstanding 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 anytime) instructions and additional or modified Drawings which may benecessary 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 Architec tor 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

IftheProcuring Entity intends to replace the Engineer, the Procuring Entity shall, in not less than 21 days before theintendeddateofreplacement, 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 agreeor 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.

3.5.1 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 designor 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 Architectthe "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 executedand 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 copyof 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 with held 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 an other 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 interpreter savailable 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 theyweret heacts 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 Wher epracticable, 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 cause sthe Contractor to suffer delays and/ortoincur 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 thise.

4.8 Safety Procedures

The Contractor shall:
a) Comply with all applicable safety regulations,
b) Takec are 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 entitledto audit any aspect of the system.

4.9.2 Details of all procedures and compliance documents shall be submitted to the Architectf or 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 TheContractor 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 shal ldescribe 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 Contractorwhen submitting the Tender, which shall be made available by the Contractor, but shall not be bound by the Contractor'sinterpretationofanysuchevidence.

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 out side 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 be tween 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 a vailability 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 thetransport 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 Entitys hall 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 [NominatedSubcontractors]),

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 adjacentl and.

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 hisobligations 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, directto 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 theContractor.

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 Lab or 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

Nowork 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 loca lhealth 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 what ever 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 itsoccurrence. 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 super intendence 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 ofthe 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 Sitea n 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 there of 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 placef ort he 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, not withstanding 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 thespecified tests have be enpassed, 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 Not withstanding any previous test or certification, the Architect may instruct the Contractorto:

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 in corporated 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) thedisposal of material from demolitions and excavations and of other surplus material (whether natural orman-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 [Terminationby Contractor].

8.1.3 The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date and shal lthen 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 Testson 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].

83 Programme

83.1 The Contractor shall submit a detailed time programme to the Architect within1 4 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 anytime, 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 Architec tshall 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 anytime:

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 mayrequire 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 anytime 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 a gainst 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 ProlongedSuspension

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 receivingf rom the Architec tan 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 resultsof 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 Testson 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 carryout 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 asaccurate.

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 out standing 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 undert his 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 thel ast 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 there after 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 (fairwear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable there after, 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 appl yto any defectsor 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[Costo f 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) Requirethe 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 Contractas 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

Unti lthe 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 defecton 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 there after 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 Completionn 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 AN DEVALUATION

12.1 Works to be Measured

12.1.1 The Works shall be measured, and valued for payment, in accordance with this Clause. The Contractorshall 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 agreet her ecords 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 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 paymentofthe 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 workd one 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, wouldhavebeen 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 otherc haracteristics 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 Priortoany 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 Work srendered useless by any such variation,
b) Thecostof 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 financec osts, 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 TheContractor 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 writinga 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 a waiting 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 Paymentin 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 inpart, in accordance with the Architect instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include onlysuch 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, Materialso r 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 delive reach 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 Not withstanding 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** a recoefficients **specified in the SCC,** representing then on adjustable and adjustable portions, respectively, of the Contract Price payable and
I m is the index prevailing at the end of the month being invoiced and **Io**c 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, itshall 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 Incases 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 applicableo n 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 a dvance 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 thec ase 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 aform 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 there porton 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 I fthe 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 a resatisfied:

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 Statemen tif 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], which ever 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 [Terminationby 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 isissued.

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 inter bank 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:

- the value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works,
- any further sums which the Contractor considers to be due, and

- 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 be comes 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 out standing 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 theContractor 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 in demnification 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) otherpaymentsanddeductions 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 theseacts 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, incompeting 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

Assoon 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 [Procurin 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-Clausein 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 bea nd 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 [Terminationby 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/ori ncurs 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 PaymentonTermination

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 outo for 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 Contractorisresponsiblefor 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 TimeforCompletion], and
(b) paymentofany 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 be ingused 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 IfaPartyisentitledtobeindemnified 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 requipment 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 know how 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 anyW orks, 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, liabilitieso r 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, Material sand 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) Shal lbe 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,t his 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 inorder 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 asthe 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 Contractoror any othe rof 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 over come, 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, s olong 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 lock out by persons other than the Contractor's Personnel,
d) munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as maybeattributabletotheContractor'suseofsuchmunitions, 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 Not withstanding 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 a ccordance 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) theamountspayableforanyworkcarriedoutforwhichapriceisstatedintheContract;

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'sdisposal;

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

Not withstanding 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 Partyofsucheventorcircumstance:

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 TheContractorshallkeepsuch contemporary records as may be necessary to substantiate any claim, either on the Site or at an other 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 eventor 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 Conditionsor 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 afte rthe 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 arbitrationa fter 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 Not withstanding 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.

20.5.5 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.

20.5.6 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.

20.5.7 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 Thetermsofthere muneration 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 Contractis with national contractors, arbitration proceedings will be conducted in accordance with the Arbitration Laws ofKenya. 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 Failureto 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 even tthat 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	*Insert*
Name and Reference No. of the Contract	Heading and 1.1	*Insert*
Engineers Name and address	Heading and 3.1.1	*Insert*
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	_____days
Sections	1.1	*If Sections are to be used, refer to Table: Summary of Sections below*
Electronic transmission systems	1.3	
Time for the Parties entering into a Contract Agreement	1.6	Within 30days
Commencement Date	8.1.1	
Time for access to the Site	2.1.1	No later than the Commencement Date, and not later than _____days after Commencement Date
Architect Duties and Authority	3.1.6 (b) (ii)	Variations resulting in an increase of the Accepted Contract Amount in excess of___% shall require approval of the Procuring Entity._
Performance Security	4.2.1	The performance security will be in the form of a _____*[insert either one of "demand guarantee" or "performance bond"]* in the amount(s) of *[insert related figure(s)]* percent of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract Amount.
Normal working hours	6.5	Specify
Delay damages for the Works	8.7 & 14.15(b)	_____% of the Contract Price per day. *If Sections are to be used, refer to Table: Summary of Sections below*
Maximum amount of delay damages	8.7.1	_____% of the final Contract Price.
Provisional Sums	13.6. (b)(ii)	*[If there are Provisional Sums, insert a percentage for adjustment of Provisional Sums]* %
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"]*

Conditions	Sub-Clause	Data
Total advance payment	14.2.1	___% Percentage of the Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable *[Insert number and timing of installments if applicable]*
Repayment amortization rate of advance payment	14.2.5 (b)	_____%
Percentage of Retention	14.3.2 (c)	%
Limit of Retention Money	14.3.2 (c)	% 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].*
	14.5.3(c)(i)	Plant and Materials for payment when delivered to the Site *[list].*
Minimum Amount of Interim Payment Certificates	14.6.2	_____% of the Accepted Contract Amount.
Publishing source of commercial interest rates for financial charges in case of delayed payment	14.8	Specify _____% rate per month of delayed payment.
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]*
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.]* _____days days
Maximum amount of deductibles for insurance of the Procuring Entity's risks	18.2.4 (d)	*[Insert maximum amount of deductibles]*
Minimum amount of third-party insurance	18.3.2	*[Insert amount of third-party insurance]*
The place of arbitration	20.7.2	*Insert city and Country*

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 TOAWARD 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 ProcuringEntity]*

   ii) Project: *[insert name ofproject]*

   iii) Contract title: *[insert the name of thecontract]*

   iv) ITT No: *[insert ITT reference number from ProcurementPlan]*

   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) OtherTenderers

   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 receip tof 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 a vailable 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. Standstill Period

i) DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).
ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.
iii) The Standstill Period may be extended as stated in paragraph Section 5(d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature: _____

Name: _____

Title/position: _____

_____

Telephone: _____

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 *[amoun tin 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 Worksknownas_____should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Worksand 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) theNotification 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.

   INWITNESS 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.

   Signeda nd 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 informedthat_____(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. Atthe 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],* inresponse tot he 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.*

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[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 a readvised to use Performance Security – Unconditiona lDemand Bank Guarantee in stead of Performance Bond due to difficulties involved in calling Bond holder to action]*

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[insertnameandAddressof*ProcuringEntity*]*

Date: _____*[Insert date of issue]*

PERFORMANCE BONDNo.:_____

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond_____ as Principal (hereinafter called "the Contractor") and _____] as Surety (hereinafter called "the Surety"),are held and firmly bound unto_] as Obligee (hereinafter called "the Procuring Entity") in the amount of_____for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the_____day of_____,20_____, for_____in accordance with the documents, plans, specifications, and amendments 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 a vailable 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 upto 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_____

Inthepresenceof_____

SIGNED ON_____on behalf of_____

By_____in the capacity of_____

Inthepresence of_____

FORM NO. 7 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]
[Guarantor letterhead]

Beneficiary:_____*[Insert name and Address of* ProcuringEntity*]*

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, oronthe_____dayof_____,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.*

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[1] *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency of the advance paymen tas 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 executionof_____*[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 demands upported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifyingthedemand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or showgrounds 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 ofApplicant'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 actua lcompletion 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]*

- 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	50.0 Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No---- 51.0 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					
	Occupation or profession					
2.	Full Name		Directly------	Directly……		

	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)
	National identity card number or Passport number		----- % of shares Indirectly----- -------- % of shares	…….% of voting rights Indirectly---------- % of voting rights	I) Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No---- II) 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……
	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**						

- 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.*

- 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:

1. holds at least ten percent of the issued shares in the company either directly or indirectly;
2. exercises at least ten percent of the voting rights in the company either directly or indirectly;
3. holds a right, directly or indirectly, to appoint or remove a director of the company; or
4. exercises significant influence or control, directly or indirectly, over the company.

- 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