REPUBLIC OF KENYA

**MINISTRY OF LANDS, PUBLIC WORKS, HOUSING & URBAN DEVELOPMENT**
***State Department for Public Works***

# PROPOSED CONSTRUCTION OF ARDHI HOUSE AT DELMONTE/MAKENJI, MURANGA COUNTY. (PHASE 1)

## W.P ITEM NO.D1112/CE/MUR/2601 JOB NO. 11716A

**Invitation to Tender**
**No.……**

# TENDER DOCUMENTS

**PROCURING ENTITY**
**STATE DEPARTMENT FOR LANDS AND PHYSICAL PLANNING**
**P.O. Box 30450 - 00100 NAIROBI**

**PROJECT MANAGER**
**WORKS SECRETARY**
**STATE DEPARTMENT FOR PUBLIC WORKS**
**P.O. BOX 30743-00100**
**NAIROBI.**

**QUANTITY SURVEYOR**
**CHIEF QUANTITY SURVEYOR**
**STATE DEPARTMENT FOR PUBLIC WORKS**
**P.O. BOX 30743-00100**
**NAIROBI.**

**STRUCTURAL ENGINEER**
**CHIEF ENGINEER (STRUCTURAL)**
**STATE DEPARTMENT FOR PUBLIC WORKS**
**P.O. BOX 30743-00100**
**NAIROBI.**

**INTERIOR DESIGNER**
**CHIEF DESIGNER**
**STATE DEPARTMENT FOR PUBLIC WORKS**
**P.O. BOX 30743-00100**
**NAIROBI.**

**ARCHITECT**
**CHIEF ARCHITECT**
**STATE DEPARTMENT FOR PUBLIC WORKS**
**P.O. BOX 30743-00100**
**NAIROBI.**

**ELECTRICAL ENGINEER**
**CHIEF ELECTRICAL ENGINEER**
**STATE DEPARTMENT FOR PUBLIC WORKS**
**P.O. BOX 30743-00100**
**NAIROBI**

**MECHANICAL ENGINEER (B.S)**
**CHIEF ENGINEER – MECHANICAL (BS)**
**STATE DEPARTMENT FOR PUBLIC WORKS**
**P.O. BOX 30743 - 00100**
**NAIROBI.**

**OCTOBER,2026**

# MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN PLANNING

## STATE DEPARTMENT FOR LANDS AND PHYSICAL PLANNING

## PROPOSED CONSTRUCTION OF ARDHI HOUSE AT DELMONTE/MAKENJI, MURANGA COUNTY. (PHASE 1)

## W.P ITEM NO.D1112/CE/MUR/2601 JOB NO. 11716A

## TENDER DOCUMENTS

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# PROPOSED CONSTRUCTION OF ARDHI HOUSE AT DELMONTE/MAKENJI, MURANGA COUNTY.

## (PHASE 1)

## TENDER DOCUMENTS

**Supplied as part of Contract No. W.P ITEM NO.D1112/CE/MUR/2601 JOB NO. 11716A**

**Prepared by: -**

**Quantities and Contract Department,**
**State department for Public Works,**
**Ministry of Lands, Public Works, Housing, Urban Development.**
**P. O. Box 30743-00100,**
**NAIROBI.**

The contract for the above-mentioned works entered into this……. day of ……. 2026 by the undersigned refers to these Tender Documents and the Ministry of Transport, Infrastructure, Public Works, Housing, and Urban Development and public General Specification dated March, 1976 (together with any amendments issued thereto) shall be read and construed as part of the said contract**.**

**…….**
**……**

| | |
|---|---|
| **THE CONTRACTOR** | **PRINCIPAL SECRETARY,**<br>**STATE DEPARTMENT FOR LAND AND PHYSICAL PLANNING** |
| **Date: ……** | **Date: …….** |

**SPECIAL NOTES**

The Contractor is required to check the numbers of the pages of these Bills of Quantities and should he find any missing or in duplicate or figures indistinct he must inform the Principal Secretary for State Department for Public Works, Head Office, Ngong Road, Nairobi at once and have the same rectified.

Should the Contractor be in doubt about the precise meaning of any item or figure for any reason whatsoever, he must inform the Principal Secretary, State Department for Public Works, Head Office in order that the correct meaning may be decided before the date for submission of tenders.

No liability will be admitted nor claim allowed in respect of errors in the Contractor's Tender due to mistakes in the specifications, which should have been rectified in the manner, described above.

**SIGNATURE PAGE AND NOTES**

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# PROCURING ENTITY

**PROCURING ENTITY**

**STATE DEPARTMENT FOR LANDS AND PHYSICAL PLANNING,**

**P.O. BOX 30450–00100,**

**NAIROBI.**

**NAME OF TENDER: PROPOSED CONSTRUCTION OF ARDHI HOUSE AT DELMONTE/MAKENJI- MURANGA COUNTY. (PHASE 1)**

**IDENTIFICATION OF TENDER: W.P ITEM NO.D1112/CE/MUR/2601 JOB NO. 11716A.**

**TENDER DOCUMENTS FOR PROCUREMENT OF WORKS (BUILDING AND ASSOCIATED CIVIL ENGINEERING WORKS)**

*1.1.1.1.1.1 1) NAME AND CONTACT ADDRESSES OF PROCURING ENTITY*

**NAME:** STATE DEPARTMENT FOR LANDS AND PHYSICAL PLANNING

**ADDRESS:** P.O. 30450 – 00100, NAIROBI.

**EMAIL ADDRESS**: info@ardhi.go.ke;procurement@ardhi.go.ke

**2) Invitation to Tender (ITT) No.**……

**3)** Tender Name: **PROPOSED CONSTRUCTION OF ARDHI HOUSE AT DELMONTE/MAKENJI, MURANGA COUNTY. (PHASE 1)**

## 1.1.2 INVITATION TO TENDER

**PROCURING ENTITY:** STATE DEPARTMENT FOR LANDS AND PHYSICAL PLANNING

P.O. BOX 30450 00100, NAIROBI

**CONTRACT NAME AND DESCRIPTION:** PROPOSED CONSTRUCTION OF ARDHI HOUSE AT

DELMONTE/MAKENJI, MURANGA COUNTY. (PHASE1)

1. The **STATE DEPARTMENT FOR LANDS AND PHYSICAL PLANNING** invites sealed tenders for the **PROPOSED CONSTRUCTION OF ARDHI HOUSE AT DELMONTE/MAKENJI, MURANGA COUNTY. (PHASE 1)**
2. Tendering will be conducted under open competitive method (**National)** using a standardized tender document. Tendering is open to all qualified and interested Tenderers.
3. Qualified and interested tenderers registered by the National Construction Authority in category NCA 4 and above may obtain further information and inspect the Tender Documents during office hours 0800 to 1700 hours at the address given below. Tender documents may be viewed and downloaded from the website (https://egpkenya.go.ke).
4. Tenders shall be quoted be in Kenya Shillings and shall include all taxes. Tenders shall remain valid for 154 days from the date of opening of tenders.
5. All Tenders must be accompanied by a "tender Security" of of the Kshs. 5,000,000.00. The type of Tender security shall be either a guarantee from a reputable local bank or insurance company approved by PPRA.
6. The Tenderer shall chronologically serialize all pages of the tender documents submitted (The filled sections and supporting attachments as required in Egp).
7. Completed tenders must be submitted electronically (https://egpkenya.go.ke).
8. Tenders will be opened immediately after the deadline date and time specified in the Egp system (3rd /11/2026 at 11:01 a.m) or any date and time specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend as provided in the eGP.
9. The addresses referred to above are:

**A.** *Address for obtaining further information*

(1) Name of Procuring Entity: **State Department for Lands and Physical Planning**

(2) Physical address : **Ardhi House, 12th Floor, 1st Ngong Avenue, off Ngong Road, Nairobi.**

(3) Postal Address: **Principal Secretary,**

State Department for Lands and Physical Planning,

**P.O. BOX 30450 – 00100,**
**NAIROBI.**

(4) Insert name, telephone number and e-mail address of the officer to be contacted.

Name: Head of Supply Chain Management Services,
Telephone: 022718050
Email: procurement@ardhi.go.ke, info@ardhi.go.ke,

**B.** *Address for Opening of Tenders.*

(1) Name of Procuring Entity: **State Department for Lands and Physical planning**

(2) Physical address for the location: **Ardhi House, 12th Floor Boardroom, 1st Ngong Avenue, off Ngong Road, Nairobi.**

Name : HON. GENERALI NIXON KORIR

Designation : PRINCIPAL SECRETARY

Signature : Date:19.10.2026

# PART1: TENDERING PROCEDURES

*1.1.2.1.1.1 SECTION I - INSTRUCTIONS TO*

*TENDERERS A* *GENERAL PROVISIONS*

## *1.0 Scope of tender*

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

**1.2** Throughout this tendering document:

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

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

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

## *2.0 Fraud and corruption*

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

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

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

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

## 3.0 *Eligible tenderers*

**3.1** A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.8, or an individual or any combination of such entities in the form of a joint venture (JV) under an existing agree mentor with the intent to enter in to such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the tendering process and, in the event the JV is awarded the Contract, during contract execution. Members of a joint venture may not also make an individual tender, be a subcontractor in a separate tender or be part of another joint venture for the purposes of the same Tender. The maximum number of JV members shall be specified in the **TDS.**

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

1.2.1.2

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

a) Directly or indirectly controls, is controlled by or is under common control with another tenderer;
b) Receives or has received any director indirect subsidy from another tenderer;
c) Has the same legal representative as another tenderer;
d) Has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process;
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) By an act of compliance with 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.

**3.14** 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*

*1.1.2.1.2.1*

**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 toTenderers

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

*1.1.2.1.2.2 PART 3: Conditions of Contract and Contract Forms*
*1.1.2.1.2.3 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*

*1.1.2.1.2.4*

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

### *8.0 Amendment of Tender Documents*

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

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

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

## C. *PREPARATION OF TENDERS*

### 9. Cost of Tendering

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

### *1.1.2.1.2.5 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 tenderliable for disqualification.

## *12.0 Form of Tender and Schedules*

12.1 The Form of Tender and Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed 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.

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

## *13. Alternative Tenders*

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

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

13.3 Except as provided under ITT 13.4 below, Tenderers wishing to offer technical alternatives to the requirements of the Tender Documents must first price the Procuring Entity's design as described in the Tender Documents and shall further provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Winning Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

13.4 When specified in the **TDS**, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the **TDS**, as will the method for their evaluating, and described in Section VII, Works' Requirements.

## *14.0 Tender Prices and Discounts*

**14.1** The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender and in the 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 sametime.

**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 break down of the foreign currency requirements shall be provided by Tenderers.

### *1.1.2.1.2.6 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, iftheProcuring 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.

### *1.1.2.1.2.7 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 todebars 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 landthe 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.

## *1.1.2.1.2.8 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 a nenvelope 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.

### *1.1.2.1.2.9 23.0 Late Tenders*

The Procuring Entity shall not consider any Tender that arrives after the deadline for submissionof 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 Tenderafterith as 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 Entitys 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.

### *1.1.2.1.2.10 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 aresponse. Any clarification submitted by a tenderer that is not in response to a request by the Procuring Entity shallnot 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 withoutmaterial deviation, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:

a) Affec tin 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 responsivetenders.

**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 bidpriceshallbe 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.

## *1.1.2.1.2.11 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 asspecified 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 ProcuringEntity 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 Subcontractorsproposed by the Tenderer may be added to the qualifications of the Tenderer.

## 35. *Evaluation of Tenders*

35.1 TheProcuring 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 theLowest Evaluated Tender in accordance with ITT 40.

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

a) priceadjustment 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) pricea djustment due to quantifiable non materialnon-conformities in accordance with ITT 30.3; and

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

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

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

### *1.1.2.1.2.12 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*

### *1.1.2.1.2.13 Abnormally LowTenders*

**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 Tenderersis 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 otherrequirements 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.

### *1.1.2.1.2.14 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 theTender;

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 ProcuringEntityshallproceedto 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) Mostresponsive to the Tender document; and
b) the lowest evaluated price.

### *1.1.2.1.2.15 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.

### *1.1.2.1.2.16 F. AWARD OF CONTRACT*

### *1.1.2.1.2.17 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*

Uponaward 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.

### *1.1.2.1.2.18 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 returnittotheProcuringEntity.

**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 otherdocuments 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 inthe Regulations.

### *49.0 Publication of Procurement Contract*

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

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

### *50.0 Procurement related Complaints and Administrative Review*

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

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

## Section II - Tender Data Sheet (TDS)

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

| Reference to ITC Clause | PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS |
|---|---|
| **A. General** | |
| **ITT 1.1** | The name of the contract is **PROPOSED CONSTRUCTION OF ARDHI HOUSE AT DELMONTE/MAKENJI, MURANGA COUNTY. (PHASE 1)**<br><br>The reference number of the Contract is **W.P ITEM NO.D1112/CE/MUR/2601 JOB NO. 11716A.**<br><br>**EGP TENDER REF. NO:** SDLPP/783/0001/2026-27<br><br>The number and identification of lots (contracts) comprising this Tender are<br>1. Builders Works.<br>2. Electrical works<br>3. Mechanical works |
| **ITT 2.4** | The Information made available on competing firms is as follows:<br>1. Instructions to tenderes<br>2. Bills of quantities<br>3. Conditions of contract<br>4. Drawings |

| Reference to ITC Clause | PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS |
|---|---|
| **ITT 2.4** | The firms that provided consulting services for the contract being tendered for are:<br>**STATE DEPARTMENT FOR PUBLIC WORKS**<br>**P. O. BOX 30743-00100, NAIROBI**<br><br>The firm consist of the following consultants:<br>**Project Manager:** Works Secretary.<br><br>**Project Architect:** Chief architect.<br>.<br>**Project Quantity Surveyor:** Chief Quantity Surveyor.<br><br>**Project Mechanical Engineer:** Chief Engineer Mechanical, (BS).<br><br>**Project Electrical Engineer:** Chief Engineer Electrical, (BS).<br><br>**Project Structural/Civil engineer:** Chief Engineer Structural/civil.<br><br>**Project Interior Designer:** Chief Designer. |
| **ITT 3.1** | Maximum number of members in the Joint Venture (JV) shall be: ***FIVE.*** |
| **ITT 3.12** | Valid NCA Registration Certificate and Practicing License in the required category; shall be provided as detailed in the Evaluation/Qualification Criteria SECTION IV |
| **B. Contents of Tender Document** | |
| **ITT 7.1** | (i) The Tenderer will submit any request for clarifications in writing at the Address<br>Principal Secretary<br>State Department for Lands and Physical Planning,<br>P. O. Box 30450-00100<br>Nairobi**.**<br>to reach the Procuring Entity not later than **7 days to the deadline of bid submission**<br><br>(ii) The Procuring Entity shall publish its response at the website http://www.ardhi.go.ke/ |
| **ITT 7.2** | (A) A pre-arranged pretender site visit *shall take* place at the following date, time and place:<br>Date: **23rd October,2026.** |

| Reference to ITC Clause | PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS |
|---|---|
| | Time: **1000hrs.**<br><br>Place: The Site is situated in in Delmonte/Makenji Muranga County, *Latitude: S 0°58'19.62084" and Longitude: E 37°6'18.00072"coordinates, near to Kenol town and its size is 2 Acres.* It is approximately 60 Kilometers from Nairobi. Access to the site shall be through Thika - Kenol Super highway.<br><br>(B) Pre-Tender meeting **"shall not"** take place at the following date, time and place:<br><br>Date: ***NA.***<br><br>Time: ***NA.***<br><br>Place: ***NA*** |
| **ITT 7.3** | The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than 7 days to closing date of tendring period as. before the meeting. |
| **ITT 7.5** | The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender will be published is http://www.ardhi.go.ke/ |
| **ITT 9.1** | For Clarification of Tender purposes, for obtaining further information, the Procuring Entity's address is:<br><br>(1) Name of Procuring Entity is: **State Department for Lands and Physical Planning**<br>(2) Physical address: **Ardhi House, 12th Floor, 1st Ngong Avenue, Nairobi**<br>(3) Postal Address : **P.O. Box 30450-00100, Nairobi**<br>(4) **Name, telephone number and e-mail address of the officer to be contacted**, **Name**: Head of Supply Chain Management Services,<br><br>**Telephone**: 022718050<br><br>**Email**: procurement@ardhi.go.ke |
| **C. Preparation of Tenders** | |
| ITT 11.1 (h) | The Tenderer shall submit the following additional documents in its Tender:<br><br>1. Valid Copy of certificate of incorporation/ Registration certified by the issuing authority or an Advocate of the High Court.<br>2. Contractor's National Construction Authority Current Annual Practicing license.<br>3. National Construction Authority registration cerificate (NCA 4 and above).<br>4. Valid Current Tax Compliance Certificate issued by Kenya Revenue Authority.<br>5. Dully filled and signed Confidential business questionnaire.<br>6. Valid Copy of Current Single Business permit.<br>7. Submission of valid CR12 form showing the list of directors /shareholding (issued within the last 3 months) or National Identity Card (s) for Sole Proprietorship/ Partnership.<br>8. Submission of original tender document (filled sections required in egp including supportive document) properly paginated in the correct sequence and all pages must be Initialed or signed or stamped.<br>9. Letter of authority to seek references from the Tenderer's bankers.<br>10. Provide proof of Power of attorney where applicable. |

| Reference to ITC Clause | PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS |
|---|---|
| | 11. Submit certified copies of Audited accounts (Signed by Auditors and directors) for the last three (3) years (2023,2024 and 2025). (Certified by an advocate) |
| **ITT 13.1** | Alternative Tenders shall not be considered. |
| ITT 13.2 | Alternative times for completion shall **not be permitted**. |
| ITT 13.4 | Alternative technical solutions shall **not be permitted** |
| **ITT 14.5** | The prices quoted by the Tenderer shall be: **fixed.** |
| **ITT 15.2 (a)** | Foreign currency requirements **not applicable.** |
| **ITT 18.1** | The Tender validity period shall be **154 Days** |
| **ITT 18.3** | (a) The Number of days beyond the expiry of the initial tender validity period will be 30 days.<br>(b) The Tender price shall be adjusted by the following percentages of the tender price:<br>(i) By 0% of the local currency portion of the Contract price adjusted to reflect local inflation during the period of extension,<br>and<br>(ii) By 0% the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension. |
| **ITT 19.1** | Tender shall provide a Tender Security of **Kshs. 5,000,000.00**. The type of Tender security shall be either a guarantee from a reputable local bank or insurance company approved by PPRA |
| **ITT 20.1** | In addition to the original of the Tender, the number of copies is: NA |
| **ITT 20.3** | The written confirmation of authorization to sign on behalf of the Tenderer shall consist of **a written power of attorney** |
| **D. Submission and Opening of Tenders** | |
| **ITT 22.1** | (A) For Tender submission purposes only, the Procuring Entity's address is:<br>(1) **Name of Procuring Entity**- State Department for Land and Physical Planning<br>(2) **Postal Address**<br>Principal Secretary.<br>P.O. Box 30450-00100**,**<br>Nairobi.<br>(3) Name of Procuring Entity: **State Department for Lands and Physical planning**<br>Physical address for the location: **Ardhi House, 12th Floor, 1st Ngong Avenue, Nairobi**<br>(4) Date and time for submission of Tenders **3rd November, 2026 at 1100hrs.**<br>(5) Tenderers **shall submit** tenders electronically through egp system. |

| Reference to ITC Clause | PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS |
|---|---|
| **ITT 25.1** | The Tender opening shall take place at the time and the address for Opening of Tenders provided below:<br><br>(1) Name of Procuring Entity: **State Department for Lands and Physical planning**<br><br>(2) Physical address for the location: **Ardhi House, 12th Floor, 1st Ngong Avenue, Nairobi.**<br><br>(3) State date and time of tender opening: **3rd November, 2026 at 1100hrs** |
| **ITT 25.1** | If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures **through egp system.** |
| **ITT 25.6** | The number of representatives appointed to the Tender Opening Committee Members of the Procuring Entity to sign is ***at least three.***<br><br>The Committee shall initial through the egp system in the space provided**.** |
| **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. |
| **ITT 31.2** | An error if determined a major deviation shall lead to disqualification. |
| **TT 32.1** | The currency that shall be used for Tender evaluation and comparison purposes only to convert at the selling exchange rate all Tender prices expressed in various currencies into a single currency is: Kenya shillings.<br><br>The source of exchange rate shall be: **Central Bank of Kenya**<br><br>The date for the exchange rate shall be*:* **19th October, 2026.** |
| **ITT 33.2** | A margin of preference **shall not** apply. |
| **ITT 33.4** | The invitation to tender is extended to the following group that qualify for Reservations: **N/A** |
| **ITT 34.1** | At this time, the Procuring Entity **does not intend** to execute certain specific parts of the Works by subcontractors selected in advance, namely: **NA** |
| **ITT 34.2** | Contractor's may propose subcontracting: Maximum percentage of subcontracting permitted is: *10%* of the total contract amount. Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience. |

| Reference to ITC Clause | PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS |
|---|---|
| **ITT 34.3** | The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: **N/A**<br><br>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 to the performance security are<br>1. Program of Works / Progress Chart<br>2. Insurance. |
| **ITT 50.1** | The procedures for making a Procurement-related Complaint are detailed in the "Notice of Intention to Award the Contract" herein and are also available from the PPRA Website www.ppra.go.ke or email complaints@ppra.go.ke.<br><br>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:<br><br>For the attention: **The Principal Secretary.**<br><br>Title/position: **Accounting Officer.**<br><br>Procuring Entity: **State Department for Lands and Physical Planning**<br><br>Email address: info@ardhi.go.ke, cc, procurement@ardhi.go.ke<br><br>In summary, a Procurement-related Complaint may challenge any of the following (among others):<br><br>(i) the terms of the Tender Documents; and<br><br>(ii) the Procuring Entity's decision to award the contract. |

### *1.1.2.1.2.19 SECTION III - EVALUATION AND QUALIFICATION CRITERIA*

**10 GENERAL PROVISIONS**

**11** 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.

**12** 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.

### *13 EVALUATION AND CONTRACT AWARD CRITERIA*

The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. The tender that(i) meets the qualification criteria, (ii) has been determined to be substantially responsive to the Tender Documents, and (iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

### *1.1.2.1.2.20 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.

### *30 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.

*1.1.2.1.2.21* *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 meetstheaggregate 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.

*1.1.2.1.2.22* *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)**

*Analternative 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.

## *6.0 MARGIN OF PREFERENCE*

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

**6.2** Contractors shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractors qualifies for a margin of preference.

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

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

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

**6.4** All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tender in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A is the lowest, it shall be selected for the award of contract. If a tender from Group B is

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

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 Seventy million (ksh 70,000,000)

ii) Minimum average annual construction turnover of Kenya Shillings Six hundred and Sixty million *[*660,000,000.00*]* equivalent calculated as total certified payments received for contracts in progress and/or completed within the last Five years (5) years.

iii) At least five (*5)* of contract(s) of a similar nature executed within Kenya, or the East African Community or abroad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings Two Hundred and Ten million (210,000,000.00) equivalent.

iv) Contractor's Representative and Key Personnel, which are specified as: Site agent, electrical and mechanical engineer.

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

| **Main Scopeof Works ofthis Tender** | **Main Equipment** | **Quantity(No) (Minimum)** | **Owned** | **Hired/ leased** |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| **Total** | | | | |

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 Ten (10) 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 Ten (10) 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 unde rits 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.

**EVALUATION /QUALIFICATION CRITERIA**

To be qualified for award of Contract, the tenderer shall provide evidence satisfactory to the Employer of their eligibility and of their capability and adequacy of resources to effectively carry out the subject Contract. To this end, the tenderer shall be required to provide latest information set out below:

**A. PRELIMINARY EXAMINATION**

The Tenderer shall submit the following **MANDATORY** additional documents in their Tender:

| S/No | PRELIMINARY EVALUATION CRITERIA/MANDATORY REQUIREMENTS FOR MAIN CONTRACTOR | MUST MET |
|---|---|---|
| **MR1** | Dully filled and signed form of tender prepared in accordance with ITT 12 | |
| **MR2** | Provide proof of registration with the National Construction Authority (NCA) category 4 and above under builders works category with current annual contractors practicing license. | |
| **MR3** | Must submit ORIGINAL Tender Document (filled sections required in egp including supportive document) and paginated in the correct sequence and all pages must be Initialed or signed or stamped (each page must have a number in chronological order, Arabic Numerals 1,2,3,4,5,6,7,8,9,10…n). | |
| **MR4** | Tender shall provide a Tender Security of **Kshs. 5,000,000.00**. The type of Tender security shall be either a guarantee from a reputable local bank or insurance company approved by PPRA | |
| **MR5** | Provide proof of power of attoney (of tender signatory if not director of the company/partner, signed and stamped by Commissioner of Oaths) | |
| **MR6** | Valid copy of Certificate of Incorporation/Registration | |
| **MR7** | Valid Current tax Compliance Certificate | |
| **MR8** | Valid copy of current Single Business permit (for year 2026). | |

| | | |
|---|---|---|
| **MR9** | Submission of valid CR12 form showing the list of directors /shareholding (issued within the last 3 months) or National Identity Card(s) for Sole Proprietorship/Partnership. | |
| **MR10** | Dully filled, signed and stamped Confidential Business Questionnaire | |
| **MR11** | Submit certified copies of Audited accounts (Signed by Auditors and directors) for the last three (3) years (2023,2024 and 2025). (Certified by an advocate). | |
| **MR12** | Letter of authority to seek reference from the Tendere's bankers. | |
| **MR12** | Must duly fill the Certificate of Independent Tender Determination in the format provided | |
| **MR13** | Must duly fill the self-declaration form that the person/tenderer is not debarred in the matter of the Public Procurement and Asset Disposal Act 2015 in the formart provided – **Form SD1** | |
| **MR14** | Must duly fill self-declaration that the person/tenderer will not engage in any corrupt or fraudulent practices in the format provided – **Form SD2** | |
| **MR15** | Must fill and submit Declaration and Commitment to the Code of Ethics in format provided | |
| **MR16** | Domestic contractors' agreement – A duly signed and stamped Agreement dated within the period of tender for this works between the main contractor and the<br>a) Electrical installation works subcontractor<br>b) Mechanical installation works subcontractor<br>Stating that if the main contractor is awarded the contract, he shall work with the firms as their domestic subcontractors<br>The agreement must be witnessed by commissioner of oaths (Not necessary if the main contractor is registerd for specialist works)<br>NB: for specialist works criteria; refer to evaluation criteria provided. | |

## QUALIFICATION FORM*

| Item No. | Qualification Subject | Qualification Requirement | *Documents To be Completed/provided byTenderer* | *For Procuring Entity's Use (Qualification met or Not Met)* |
|---|---|---|---|---|
| **A. PRELIMINARY EVALUATION** | | | | |
| 1. | Nationality | Nationality in accordance with ITT 4.5 | Duly filled Forms ELI - 1.1 and 1.2 | |

| | | | | |
|---|---|---|---|---|
| 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. | Valid Tax Compliance Certificate or Tax Exemption Certificate | |
| 3. | Company Registration | Has produced Valid Copy of certificate of incorporation/ Registration from the registrar of companies | Certified copy of Certificate of Incorporation or Registration as the case may be | |
| 4. | Allowed to do business | Has produced a Copy of Current Single Business permit from the county government | Certified copy of Single Business Permit from the County Government | |
| 5. | Directors | Has produced a valid Copy of CR12 from the department of the registrar or National Identity Card(s) for Sole Proprietorship/Partnership. | Certified copy of CR12 or National Identity Card as the case may be | |
| 6. | NCA Registered | Has produced Valid NCA registration certificate and annual practicing licences as for NCA 4 and above category. | Copy of current NCA registration and practicing certificates | |
| 7. | Conflict of Interest | No conflicts of interest in accordance with ITT 3.3 | Duly filled disclosure of interest Form in the Confidential Business Questionnaire | |
| 8. | Public Procurement Regulatory Authority (PPRA) Eligibility | Not having been declared ineligible by the PPRA as described in ITT 3.7 | Duly filled and signed self declaration **Form SD1** | |
| 9. | State-Owned Enterprise | Meets conditions of ITT 3.8 | Attach copies of certified documents | |

| | | | | |
|---|---|---|---|---|
| | | | stated in Forms ELI - 1.1 and 1.2 | |
| 10. | History of Non-Performing Contracts, Pending Litigation and Litigation History | Meets Post qualification and Contract ward (ITT 39) conditions set out in the Evaluation and Qualification Criteria 7 (iv) (a-c) | Duly filled and signed self declaration Form CON-2 | |
| 11. | Tender Security | Tender Security in the prescribe Form and Format. | Tender Security in the prescribe form and amount. | |
| 12. | Submitted Tender Document | ✓ Fill all rates, and amounts,<br>✓ NO Alterations of the Quantities<br>✓ All bidders own Corrections must be Countersigned<br>✓ Sequentially serialized<br>✓ All pages with tenderers entries either typed or hand-written intialised and corrections countersigned | Tender Document in the Prescribed Format | |
| ***Note: Only tenderers who fully meet the preliminary evaluation stage requirements shall proceed to technical evaluation. The rest shall stand disqualified.*** | | | | |
| **B. TECHNICAL EVALUATION** | | | | |
| 1. | 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 **70,000,000.00** equivalent for the subject contract(s) net of the | 1. Dully filled Form FIN – 3.1 with proof of sources of finances which shall be in any of the following forms:<br>a. Credit line letter from reputable bank or financial institution; | |

| | | | | |
|---|---|---|---|---|
| | | Tenderer's other commitments.<br><br>(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.<br><br>(iii) The tenderer shall provide certified copies of Audited accounts (Signed by Auditors and directors) for the last three (3) years (2023,2024 and 2025). (Certified by an advocate). | b. Overdraft facility from a reputable bank or financial institution;<br>c. Credit facility from material suppliers or manufuctur es<br>2. Duly signed and certified Audited Accoounts for the last three year | |
| 2. | Average Annual Construction Turnover | Minimum average annual construction turnover of Kenya Shillings 660,000,000.00 equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 5 years, divided by *5* years | Duly filled and signed Form FIN – 3.2 | |
| 3. | 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 10 years, starting 1st January 2016. | Duly filled and signed Form EXP – 4.1 | |
| 4. | Specific Construction & Contract Management Experience | A minimum number of *five* 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 2016 and tender submission deadline | Duly filled and signed Form EXP 4.2(a) complete with award letters and completion ceritificates. | |

| | | | | |
|---|---|---|---|---|
| | | i.e., Five (5) contracts, each of minimum value Kenya shillings 210,000,000.00 equivalent.<br><br>[*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]*<br><br>The similarity of the contracts shall be based on the following: (*Refurbishments and partitioning works with electrical and mechanical works)* | | |
| 5. | Directors' qualifications | At list one of the directors to have a certificate in Building Construction or equivalent from a recognized institution of learning. | Academic certificates and curriculum vitaes | |
| 6. | Contractor's Representative and Key Personnel | Curriculum Vitae (CVs) of the Proposed Key Staff must be presented in the provided format and duly signed by the proposed individual together with their Academic Certificates. | Duly filled and signed Forms PER. 1and PER. 2 | |
| | | The site staff shall possess minimum levels set below; | | |
| | | Project manager | Qualifaction: At least a diploma in Building and Construction or equivalent from a recognized instutitution with general experience of atlease 8 years and specific experience of atleast 4 years. | |

| | | | | |
|---|---|---|---|---|
| | | Site Agent | Qualifaction: At least a certificate in Building and Construction or equivalent from a recognized instutitution with general experience of atlease 8 years and specific experience of atleast 4 years. | |
| 7. | Contractors key tools and equipment | i. Bidders shall decl possession/Ownership of various equipment as proposed to be used inthe Project by providing Logbooks that demonstrate proof of ownership | Equipment/Transport:<br>1. Atleast 1No. 1-ton pick-up;<br>2. Atleast 1No. 7-ton lorry;<br>3. Atleast 1No. concrete mixer; and<br>4. Atleast 1No. concrete vibrator. | |
| | | ii. For Bidders planning to hire, they shall provide an Active Lease Agreement in Place that can be used | Tools:<br>1. Atleast 1No. tile cutter | |
| 8. | Proposed methodology | • Adequacy and quality of the proposed methodology | **Technical approach and methodology**<br>Provided a detailed Work Methodology | |
| | | | Provided a Methodology on safety during the construction period | |
| | *Responsivenes* | | | |

***Note: Only tenderers who fully meet the technical evaluation stage requirements shall proceed to financial evaluation. The rest shall stand disqualified.***

**C) FINANCIAL EVALUATION**:

Financial Evaluation shall involve checking of the consistency of tender rates and any arithmetic errors in the submitted tender. Any tender which in the opinion of the procuring entity is seriously front-loaded shall be disqualified. Similarly, arithmetic errors if determined a major deviation that affects the substance

| |
|---|
| of the tender shall also lead to disqualification of the tender. Recommendation for award of Contract shall done to the **Lowest Evaluated Tender**, subject to Post Qualification Evaluation |
| **D) POST QUALIFICATION EVALUATION:**<br><br>The procuring entity **shall conduct due dillgence** for the purpose of satisfying itself that the information provided in the lowest evaluated tender is accurate.<br><br>The lowest evaluated tender shall be rejected if misrepsentation of information or facts is detected during post qualification evaluation. |

SECTION IV - TENDERING FORMS

### *1.1.2.1.2.23 QUALIFICATION FORMS*

**1. FOREIGN TENDERERS 40%RULE**

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

| ITEM | Description of Work Item | Describe location of Source | COST in K. shillings | Comments, if any |
|---|---|---|---|---|
| A | Local Labor | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| B | Sub contracts from Local sources | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| C | Local materials | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| D | Use of Local Plant and Equipment | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

| ITEM | Description of Work Item | Describe location of Source | COST in<br><br>K. shillings | Comments, if any |
|---|---|---|---|---|
| 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 fo ralternative 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<br>☐ 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***

#### *1.1.2.1.2.24 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.

#### *1.1.2.1.2.25 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]* |
| | | | |
| | | | |
| | | | |

#### *1.1.2.1.2.26 Declaration*

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

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

| **Commitment** | **Details** |
|---|---|

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

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

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

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

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date: (day month year): _____

## 5. TENDERERS QUALIFICATION WITHOUT PREQUALIFICATION

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

### *5.1 FORM ELI -1.1*

*Tenderer InformationForm*

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:<br>*[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<br>Name: _____<br>Address: _____<br>Telephone/Fax numbers: _____<br>E-mail address: _____ |
| 1. Attached are copies of original documents of<br>☐ 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<br>☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 3.5<br>☐In case of state-owned enterprise or institution, in accordance with ITT 3.8, documents establishing:<br>• Legal and financial autonomy<br>• Operation under commercial law<br>1. Establishing that the Tenderer is not under the supervision of the Procuring Entity<br>2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. |

## 52 FORM ELI -1.2

### 1.1.2.1.2.27 Tenderer's JV Information Form

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

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<br><br>Name: _____<br><br>Address: _____<br><br>Telephone/Fax numbers: _____<br><br>E-mail address: _____ |
| 1. Attached are copies of original documents of<br><br>☐ 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.<br><br>☐ 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.<br><br>2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. |

## 5.3 FORM CON –2

**Historical Contract Non-Performance, Pending Litigation and Litigation History**

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

| Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria | | | |
|---|---|---|---|
| ☐ Contract non-performance did not occur since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1.<br><br>☐ Contract(s) not performed since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, requirement 2.1<br><br>☐ 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]*<br><br>Name of Procuring Entity: *[insert full name]*<br><br>Address of Procuring Entity: *[insert street/city/country]*<br><br>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.<br><br>☐ 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: _____<br>Name of Procuring Entity: _____<br>Address of Procuring Entity: _____<br>Matter in dispute: _____<br>Party who initiated the dispute: ____<br>Status of dispute: _____ | |
| | | Contract Identification:<br>Name of Procuring Entity:<br>Address of Procuring Entity:<br>Matter in dispute:<br>Party who initiated the dispute:<br>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.<br>☐ Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below. | | | |
| *[insert year]* | *[insert percentage]* | Contract Identification: [indicate complete contract name, number, and any other identification]<br>Name of Procuring Entity: *[insert full name]*<br>Address of Procuring Entity: *[insert street/city/country]*<br>Matter in dispute: *[indicate main issues in dispute]*<br>Party who initiated the dispute: *[indicate "Procuring Entity" or "Contractor"]*<br>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.

## 5.4 FORM FIN – 3.1:

**Financial Situation and Performance**

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

### 5.4.1. Financial Data

| **Type of Financial information in_____ (currency)** | **Historic information for previous _____** *years,* _____ **(amount in currency, currency, exchange rate*, USD equivalent)** | | | | |
|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| Statement of Financial Position (Information from Balance Sheet) | | | | | |
| Total Assets (TA) | | | | | |
| Total Liabilities (TL) | | | | | |
| Total Equity/Net Worth (NW) | | | | | |
| Current Assets (CA) | | | | | |
| Current Liabilities (CL) | | | | | |
| Working Capital (WC) | | | | | |
| Information from Income Statement | | | | | |
| Total Revenue (TR) | | | | | |
| Profits Before Taxes (PBT) | | | | | |
| Cash Flow Information | | | | | |
| Cash Flow from Operating Activities | | | | | |

*Refer to ITT 15 for the exchange rate

### 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.

## 5.5 FORM FIN – 3.2:

**Average Annual Construction Turnover**

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

| | **Annual turnover data (construction only)** | | |
|---|---|---|---|
| **Year** | **Amount**<br><br>**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.

## 5.6 FORM FIN – 3.3:

**Financial Resources**

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

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

## 5.7 FORM FIN – 3.4:

**Current Contract Commitments / Works in Progress**

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

| Current Contract Commitments | | | | | |
|---|---|---|---|---|---|
| **No.** | **1.1.4 Name of Contract** | **1.1.5 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 | | | | | |
| | | | | | |

## 5.8 FORM EXP - 4.1

**General Construction Experience**

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

Page _____of _____pages

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

## 5.9 FORM EXP - 4.2(a)

**Specific Construction and Contract Management Experience**

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

| **Similar Contract No.** | **Information** | | | |
|---|---|---|---|---|
| Contract Identification | | | | |
| Award date | | | | |
| Completion date | | | | |
| Role in Contract | Prime Contractor ☐ | Member in JV ☐ | Management Contractor ☐ | Sub-contractor ☐ |
| Total Contract Amount | | | **Kenya Shilling** | |
| If member in a JV or sub-contractor, specify participation in total Contract amount | | | | |
| Procuring Entity's Name: | | | | |
| Address:<br>Telephone/fax number<br>E-mail: | | | | |

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

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

| **Similar Contract No.** | **Information** |
|---|---|
| Contract Identification | |
| Award date | |

| | | | | |
|---|---|---|---|---|
| Completion date | | | | |
| Role in Contract | Prime Contractor ☐ | Member in JV ☐ | Management Contractor ☐ | Sub-contractor ☐ |
| Total Contract Amount | | | **Kenya Shilling** | |
| If member in a JV or sub-contractor, specify participation in total Contract amount | | | | |
| Procuring Entity's Name: | | | | |
| Address:<br>Telephone/fax number<br>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: _____
Tenderer's JV Member Name: _____
Sub-contractor's Name[2] (as per ITT 34): _____
ITT No. and title: _____

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

1. Key Activity No One: _

_____

| | **Information** | | | |
|---|---|---|---|---|
| Contract Identification | | | | |
| Award date | | | | |
| Completion date | | | | |
| Role in Contract | Prime Contractor ☐ | Member in JV ☐ | Management Contractor ☐ | Sub-contractor ☐ |
| Total Contract Amount | | | **Kenya Shilling** | |
| Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year | Total quantity in the contract (i) | Percentage participation (ii) | | Actual Quantity Performed (i) x (ii) |
| Year 1 | | | | |
| Year 2 | | | | |
| Year 3 | | | | |
| Year 4 | | | | |
| Procuring Entity's Name: | | | | |

[2] If applicable

| | **Information** |
|---|---|
| Address:<br><br>Telephone/fax number<br><br>E-mail: | |

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

2. Activity No. Two

3. ……

### *1.1.5.1 OTHER FORMS*

## 6. FORM OF TENDER

*INSTRUCTIONS TO TENDERERS*

*i) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address.*
*ii) Allitalicized text is to help Tenderer in preparing this form.*
*iii) Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION OF THE TENDERER attached to this Form of Tender.*

*iv) The Form of Tender shall include the following Forms duly completed and signed by the Tenderer.*
- *Tenderer's Eligibility- Confidential Business Questionnaire*
- *Certificate of Independent Tender Determination*
- *Self-Declaration of the Tenderer*

**Date of 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]* _____

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

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

2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Architect notice to commence, and to complete the whole of the Works comprised in the Contract within 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:
   i) No reservations: We have examined and have no reservations to the tender document, including Addenda issuedinaccordance with ITT 28;
   ii) Eligibility: We meet the eligibility requirements and have no conflict of interest in accordance with ITT 3 and 4;
   iii) Tender - Securing Declaration: We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender-Securing or Proposal-Securing Declaration in the Procuring Entity's Country in accordance with ITT 19.8;

   *iv)* Conformity: We offer to execute in conformity with the tendering documents and in accordance with the implementation and completion specified in the construction schedule, the following Works: *[insert a brief description of the Works];*
   *v)* Tender Price: The total price of our Tender, excluding any discounts offered in item 1 above is: *[Insert one of the options below as appropriate]*

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

   Option2, in case of multiple lots:

   (a) Total price of each lot [*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies*]; and
   (b) Total price of all lots (sum of all lots) [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];
   vii) Discounts: The discounts offered and the methodology for their application are:
   viii) The discounts offered are: [*Specify in detail each discount offered.*]
   ix) The exact method of calculations to determine the net price after application of discounts is shown below: [*Specify in detail the method that shall be used to apply the discounts*];
   x) Tender Validity Period: Our Tender shall be valid for the period specified in TDS 18.1 (as amended, if applicable) from the date fixed for the Tender submission deadline specified in TDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
   xi) Performance Security: If our Tender is accepted, we commit to 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

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

any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Public Procurement Regulatory Authority or any other entity of the Government of Kenya, or any international organization.

xiv) State-owned enterprise or institution: [*select the appropriate option and delete the other*] [*We are not a state- owned enterprise or institution*]/[*We are a state-owned enterprise or institution but meet the requirements of ITT3.8*];

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

| Name of Recipient | Address | Reason | Amount |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

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

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

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

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

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

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

xxi) We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:

a) Tenderer's Eligibility; Confidential Business Questionnaire - to establish we are 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-Declarationo f 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*]

Datesigned_____dayof_____,_____

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.*

### *1.1.5.1.1.1* **(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 isfurtherreminded that it is an offence to give false information on this Form.

***(a)*** *Tenderer'sdetails*

| | **ITEM** | **DESCRIPTION** |
|---|---|---|
| 1 | Name of the Procuring Entity | |
| 2 | Reference Number of the Tender | |
| 3 | Date and Time of Tender Opening | |
| 4 | Name of the Tenderer | |
| 5 | Full Address and Contact Details of the Tenderer. | 1. Country<br>2. City<br>3. Location<br>4. Building<br>5. Floor<br>6. Postal Address<br>7. Name and email of contact person. |
| 6 | Current Trade License Registration Number and Expiring date | |
| 7 | Name, country and full address (*postal and physical addresses, email, and telephone number*) of Registering Body/Agency | |
| 8 | Description of Nature of Business | |
| 9 | Maximum value of business which the Tenderer handles. | |
| 10 | State if Tenders Company is listed in stock exchange, give name and full address (*postal and physical addresses, email, and telephone number*) of<br>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<br><br>YES OR NO | If YES provide details of the relationship with Tenderer |
|---|---|---|---|
| 1 | Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer. | | |
| 2 | Tenderer receives or has received any direct or indirect subsidy from another tenderer. | | |
| 3 | Tenderer has the same legal representative as another tenderer | | |
| 4 | Tender has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process. | | |
| 5 | Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender. | | |
| 6 | Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document. | | |
| 7 | Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract. | | |
| 8 | Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract. | | |
| 9 | Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a | | |

| | Type of Conflict | Disclosure<br><br>YES OR NO | If YES provide details of the relationship with Tenderer |
|---|---|---|---|
| | 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_____

Titleor 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:

Icertify, on behalf of_____*[NameofTenderer]*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. Iamthe 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. TheTenderer 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) theTenderer 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. Inparticular, 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 intentiono r 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 pursuan tto 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 toparagraph(5)(b) above;
8. Thetermsofthe 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, whichevercomesfirst, unless otherwise required byl aw 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**

***1.1.5.2***

***1.1.5.3 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 theafore said Bidder, its servants and/oragents/subcontractorswillnotengageinanycorruptorfraudulent 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

### *1.1.5.4 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 Procurementand 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…….....

*1.1.5.4.1.1 (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 whohas 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 conflictofinteresttotheprocuringentity;
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 setf orth 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 processorthe 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 includee, 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 hard copyor*

*electronic format) deemed relevant for th einvestigation/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.*

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

***1.1.5.5.1.1*** *B*

*eneficiary:*_____

*Request forTenders No:*

_____

*Date:*_____

*TENDER GUARANTEE No.:*_____

**Guarantor:** _____

1. We have been informed that_____(here inafter called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here inafter 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 onor before that date.

_____

*[signature(s)]*

1.1.5.6 **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.: ____**

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

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

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

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

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

   b) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers ("ITT") of the Procuring Entity's Tendering document.

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

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

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

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

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

### *1.1.5.7.1.1 FORM OF TENDER - SECURING DECLARATION*

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

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

Tender No.: ..... *[insert number of tendering process]*

To: ..... *[insert complete name of Purchaser]* I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.
2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of 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

### *1.1.5.8 Appendix toTender*

#### *1.1.5.8.1.1 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*] |

# 2 PART II - WORKS REQUIREMENTS

## 2.1.1.1 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 thef ollowing sections:
   a) Preambles
   b) Preliminary items
   c) 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. Arateorprice 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 ratesand 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 agains teach 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 itemor 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. Quantitiesshouldberoundedupwhereappropriate.

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 agains teach 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.

## 2.1.1.2 BILLS OF QUANTITIES

### 2.1.1.2.1.1 (a) Preambles

1. The method of measurement of completed work for payment shall be in accordance Standard Method of Measurements revised

2. The Site is situated in in Delmonte/Makenji Muranga County*, Latitude: S 0°58'19.62084" and Longitude: E 37°6'18.00072"coordinates, Near to Kenol town and its size is 2 Acres.* It is approximately 60 Kilometers from Nairobi. Access to the site shall be through Thika - Kenol Super highway.
   Which is an existing public road. Any damage caused to the surfaces of this road shall be made good at the Contractor's expense. 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 Entityor 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. Noclaimfor extension of time due to the normal in clement 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 there of. 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 giveh is whole time to the superintendence of the works. (Including works of sub – contractors). Such Agent or Representative shall receive on behalf of the Contractordirections 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 workyards, 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 contractorshallsourcethenatowncost.
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 existingand 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 meshrooms, 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 temporaryf encing, 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 in clement weather, all finished work and unfixed materials, including that of Sub-Contractors, etc., to the satisfaction of the Architect until the completion ofthe 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 toleavecleanallfloors and windows and tore move all paint and cement all rubbis 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 hall 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 proceduref or 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 in terim 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 over see 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 else where.
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. 2: WORK ITEMS**

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

**Bill No 2 -** *(Name of Section e.g. Foundations).*

| ***Item no.*** | ***Description*** | ***Unit*** | ***Quantity*** | ***Rate*** | ***Amount*** |
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| Total for Bill No. 2 (carried forward to Summary, p. _____) | | | | | _____ |

### 2.1.1.3 *Bill No. 3: Schedule of Daywork Rates - Labor*

| Item no. | Description | Unit | Nominal quantity | Rate | Amount |
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| | Subtotal | | | | |
| | Allow _____ percent[a] of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above. | | | | |
| | Total for Daywork (carried forward to Daywork Summary, p. ___) | | | | |

a. To be entered by the Tenderer.

### 2.1.1.4 *Bill No. 4: Schedule of Daywork Rates - Materials*

| Item no. | Description | Unit | Nominal quantity | Rate | Extended amount |
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| | Subtotal | | | | |
| | Allow _____ percent a. of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 4 (b) above. | | | | |
| | Total for Daywork: Materials (carried forward to Daywork Summary, p. _) | | | | |

a. To be entered by theTenderer.

### 2.1.1.5 *Bill No. 5: Schedule of Daywork Rates - Contractor's Equipment*

| *Item no.* | *Description* | *Nominal quantity (hours)* | *Basic hourly rental rate* | *Extended amount* |
|---|---|---|---|---|
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| | Allow __ percent [a] of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 5 above. | | | |
| Total for Daywork: Contractor's Equipment (carried forward to Daywork Summary, p. __ ) | | | | |

a. To be entered by theTenderer.

### 2.1.1.6 *Bill No. 6: Daywork Summary*

| | *Amount*[a] | *% Foreign* | *Currency* |
|---|---|---|---|
| 1. Total for Daywork: Labor | | | |
| 2. Total for Daywork: Materials | | | |
| 3. Total for Daywork: Contractor's Equipment | | | |
| Total for Daywork (Provisional Sum) (carried forward to Summary of Bills of Quantities, p. _____) | | | |

**Bill No. 7: Provisional Sums**

| *Bill no.* | *Item no.* | *Description* | *Amount* |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |

| | | | |
|---|---|---|---|
| 4 | | | |
| etc. | | | |
| Total for Specified Provisional Sums (carried forward to Grand Summary | | | |

**GRAND SUMMARY**

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

(i) If a percentage used, it should be indicated on which Bill No. items but on Bill No.4 – Provisional Sums.

### *2.1.1.7 SECTION VI - SPECIFICATIONS*

Notes for preparing Specifications

1. Specifications must be drafted to present a clear and precise statement of the required standards of materials, and workmanshipfor tenderers to respond realistically and competitively to the requirements of the Procuring Entity and ensure responsiveness of tenders. The Specifications should require that all materials, plant, and other supplies to be permanently incorporated in the Works be new, unused, of the most recent or current models, and incorporating all recent improvements in design and materials unless provided otherwise in the Contract. Where the Contractor is responsible for the design of any part of the permanent Works, the extent of his obligations must be stated.
2. Specifications from previous similar projects are useful and may not be necessary to re-write specifications for every Works Contract.
3. There are considerable advantages in standardizing **General Specifications** for repetitive Works in recognized public sectors, such as high ways, urban housing, irrigation and water supply. The General Specifications should cover all classes of workmanship, materials and equipment commonly involved in constructions, although not necessarily to be used in a particular works contract. Deletions or addenda should then adapt the General Specifications to the particular Works.
4. Caremust be taken in drafting Specifications to ensure they are not restrictive. In the Specifications of standards for materials, plant and workmanship, existing Kenya Standards should be used as much as possible, otherwise recognized international standards may also be used.
5. The Procuring Entity should decide whether technical solutions to specified parts of the Works are to be permitted. Alternatives are appropriate in cases where obvious (and potentially less costly) alternatives are possibleto the technical solutions indicated in tender documents for certain elements of the Works, taking into consideration the comparative specialized advantage of potential tenderers.
6. The Procuring Entity should provide a description of the selected parts of the Works with appropriate reference to Drawings, Specifications, Bills of Quantities, and Design or Performance criteria, stating that the alternative solutions shall be at least structurally and functionally equivalent to the basic design parameters and Specifications.
7. Such alternative solutions shall be accompanied by all information necessary for a complete evaluation by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, proposed construction methodology, and other relevant details. Technical alternatives permitted in this manner shall be considered by the Procuring Entity each on its own merits and independently of whether the tenderer has priced the item as described in the Procuring Entity's design included with the tender documents.

### *2.1.1.8 SECTION VII - DRAWINGS*

**Note** A list of drawings should be inserted here. The actual drawings including Site plans should be annexed in a separate booklet.

# 3 PART III - THE CONDITIONS OF CONTRACT AND CONTRACT

Name of Procuring Entity: **State Department for Lands and Physical Planning**

Name of Contract: **Proposed Construction of Ardhi House at Delmonte/Makenji, Muranga County**

Architect Name: **Chief Architect, State Department for Public Works**

Address: **P.O. Box 30743-00100, Nairobi**

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 oraSection(asthecasemaybe) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], whichextendsoverthedaysstated intheSpecialConditionsofContract.

**“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.**

#### 3.1.1.1.1.1

### 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*

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

### *3.5 Determinations*

3.5.1 Whenever these Conditions provide that the Architect shall proceed in accordance with this Sub-Clause3.5 to 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.

4.7.3 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 his obligations and liabilities under the Contract;
   ii) indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Subcontractor to perform these obligations or to fulfil these liabilities, and
   iii) be paid only if and when the Contractor has received from the Procuring Entity payments for sums due under the Subcontract referred to under Sub-Clause 5.3 [Payment to nominated Subcontractors].

### *5.3 Payments to nominated Subcontractors*

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

### *5.4 Evidence of Payments*

5.4.1 Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Architect may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:
(a) Submits this reasonable evidence to the Engineer, or
(b) i) Satisfies the Architect in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and

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

## 6 *STAFF AND LABOR*

### 6.1 Engagement of Staff and Labor

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

### *6.2 Rates of Wages and Conditions of Labor*

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

## 8.3 *Programme*

8.3.1 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

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:

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

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

### *14.11 Application for Final Payment Certificate*

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

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

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

14.11.3 However, if, following discussions between the Architect and the Contractor and any changes to the draft final statement which are agreed, it 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.

**18.1 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 Party of such event or circumstance:

a) The Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and

b) The sum payable by the Procuring Entity to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.

## 20. *SETTLEMENT OF CLAIMS AND DISPUTES*

### 20.1 Contractor's Claims

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

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

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

20.1.4 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 Failure to Comply with Arbitrator's Decision*

20.9.1 The award of such Arbitrator shall be final and binding up on the parties.

20.9.2 In the 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.

### *3.1.1.2 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 | **State Department for Lands and Physical Planning.**<br>**P.O. BOX 30450 – 00100,**<br>**NAIROBI.** |
| Name and Reference No. of the Contract | Heading and 1.1 | **Proposed Construction of Ardhi House at Delmonte/Makenji, Muranga County. (Phase 1)**<br>**The reference number of the contract is:** W.P Item No. D1112/CE/MUR/2601 JOB NO. 11716A.<br>**eGP Ref. Tender No** : SDLPP/783/0001/2026-27 |
| Engineers Name and address | Heading and 3.1.1 | STATE DEPARTMENT FOR PUBLIC WORKS<br>P. O. BOX 30743-00100, NAIROBI<br>The firm shall provide the following consultants:<br>**Project Manager:** Works Secretary.<br>**Project Architect:** Chief architect.<br>**Project Quantity Surveyor:** Chief Quantity Surveyor.<br>**Project Mechanical Engineer:** Chief Engineer Mechanical, (BS).<br>**Project Electrical Engineer:** Chief Engineer Electrical, (BS).<br>**Project Structural/Civil engineer:** Chief Engineer Structural/civil.<br>**Project Interior Designer:** Chief Designer. |
| Contractor's Representative's name | 4.3.1 | |
| Key Personnel names | 16.9.1 | |
| Time for Completion | 1.1. | 130 Weeks Multi-year Project/contract. (2026/2027,2027/2028 and 2028/2029. |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Defects Notification Period | 1.1 | Immediately and not later than 6 Months after practical completion. |
| Sections | 1.1 | *N/A* |
| Electronic transmission systems | 1.3 | eGP |
| Time for the Parties entering into a Contract Agreement | 1.6 | Within 14 days |
| Commencement Date | 8.1.1 | To be Agreed with the Project Manager |
| Time for access to the Site | 2.1.1 | No later than the Commencement Date, and not later than 14 days after Commencement Date |
| Architect Duties and Authority | 3.1.6 (b) (ii) | Variations resulting in an increase above the Contract Amount shall require approval of the Procuring Entity. |
| Performance Security | 4.2.1 | The performance security will be in the form of a performance bond in the amount(s) of *5* percent of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract Amount. |
| Normal working hours | 6.5 | 0800-1700 HRS |
| Delay damages for the Works | 8.7 & 14.15(b) | 0.003 % of the Contract Price per day. |
| Maximum amount of delay damages | 8.7.1 | 5% of the final Contract Price. |
| Provisional Sums | 13.6. (b)(ii) | Subject to remeasurements |
| Adjustments for Changes in Cost | 13.9 | Use indices published by the Kenya National Bereau of Statistics |
| Total advance payment | 14.2.1 | Not more than 20% of the contract Sum |
| Repayment amortization rate of advance payment | 14.2.5 (b) | Between 20% to 80% |
| Percentage of Retention | 14.3.2 (c) | 10_% |
| Limit of Retention Money | 14.3.2 (c) | 5% of the Accepted Contract Amount |
| Plant and Materials | | If Sub-Clause 14.5 applies: |
| | 14.5.3(b)(i) | Plant and Materials for payment Free on Board |
| | 14.5.3(c)(i) | Plant and Materials for payment when delivered to the Site _ Plant And Materials to be Incorporated into Permanent WorK. |
| Minimum Amount of Interim Payment Certificates | 14.6.2 | N/A |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Publishing source of commercial interest rates for financial charges in case of delayed payment | 14.8 | The rate per month of delayed payment.<br>3 percentage points above the Central Bank of Kenya's average rate for base lending prevailing as of the first day the payment becomes overdue. |
| Maximum total liability of the Contractor to the Procuring Entity | 17.6.2 | The product of zero point one (0.10) times the Accepted Contract Amount. |
| Periods for submission of insurance:<br>a. evidence of insurance.<br>b. relevant policies | 18.1.6 | <br><br>14 days<br>14 days |
| Maximum amount of deductibles for insurance of the Procuring Entity's risks | 18.2.4 (d) | As per the applicable laws |
| Minimum amount of third-party insurance | 18.3.2 | As per Kenyan laws |
| The place of arbitration | 20.7.2 | Nairobi |

### *3.1.1.3 SECTION X - CONTRACT FORMS*

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

FORM NO. 2 – REQUEST FOR REVIEW

FORM No. 3-LETTER OF 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

### 3.1.1.4 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.

#### 3.1.1.4.1.1 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:**_____

_____**T**

**elephone:**

### *3.1.1.4.1.2 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……

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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:* .....

### *3.1.1.5 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).

### *3.1.1.6 FORM NO. 5 - PERFORMANCE SECURITY*

#### *3.1.1.6.1.1 [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.*

[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.*

### 3.1.1.7 ***FORM No. 6- PERFORMANCE SECURITY***

#### *3.1.1.7.1.1 [Option 2– Performance Bond]*

*[**Note:** Procuring Entities a readvised to use Performance Security – Unconditional Demand 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 BOND No.:**

**Guarantor:** *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond_____ as Principal (hereinafter called "the Contractor") and _____] as Surety (hereinafter called "the Surety"),are held and firmly bound unto] as 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_____

### *3.1.1.8 FORM NO. 7 - ADVANCE PAYMENT SECURITY*

#### *3.1.1.8.1.1 [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.*

[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.*

### 3.1.1.9 FORM NO. 8 – RETENTION MONEY SECURITY

#### 3.1.1.9.1.1 [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 actual completion date of the contract. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

## 3.2 FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM

***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. 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 Tenderer by meeting one or more of the following conditions:*

- *Directly or indirectly holding 25% or more of the shares.*
- *Directly or in directly holding 25% or more of the voting rights.*
- *Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.*

Tender Reference No.:_____[*insert identification no*]

Name of the Assignment:_____*[insert name of the assignment]* to:

_____*[insert complete name of Procuring Entity]*

In response to your notification of award dated_____*[insert date of notification of award]* to furnish additional information on beneficial ownership:_____*[select one option as applicable and delete the options that are not applicable]*

I) We here by provide the following beneficial ownership information.

### *1.1.1.1 Details of beneficial ownership*

| **Identity of Beneficial Owner** | **Directly or indirectly holding 25% or more of the shares**<br><br>**(Yes / No)** | **Directly or indirectly holding 25 % or more of the Voting Rights**<br><br>**(Yes / No)** | **Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer**<br><br>**(Yes / No)** |
|---|---|---|---|

| | | | |
|---|---|---|---|
| | | | |
| *[include full name (last, middle, first), nationality, country of residence]* | | | |

*OR*

ii) *We declare that there is no Beneficial Owner meeting one or more of the following conditions: directly or indirectly holding 25% or more of the shares. Directly or indirectly holding 25% or more of the voting rights. Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.*

*OR*

*We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Tenderer shall provide explanation on why it is unable to identify any Beneficial Owner]*

*Directly or indirectly holding 25% or more of the shares. Directly or indirectly holding25% or more of the voting rights.*

*Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer]"*

*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]*

*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*

# PREAMBLES AND PRICING NOTES

## 1. Generally

All work to be carried out in accordance with the Ministry of Roads, Public Works and Housing General Specifications for Building Works issued in 1976 or as qualified or amended.

## 2. Manufacturers' Names

Where manufacturers' names and catalogue references are given for guidance to quality and standard only, alternative manufacturer of equal quality will be accepted at the discretion of the Project Manager.

## 3. Walling

All precast concrete blocks shall be manufactured by the methods and to the sizes specified in the Ministry of Roads, Public Works and Housing "Specification for Metric Sized Concrete Blocks for Building (1972)"

Walling of 100 mm thickness or under shall be reinforced with hoop iron every alternate course.

Prices for walling must allow for all costs in preparing, packing and sending sample blocks for testing as and when required by the Project Manager.

## 4. Carpentry

The grading rules for cypress shall be the same as for podocarpus and all timber used for structural work shall be select (second grade).

All structural timber must conform to the minimum requirements for moisture content and preservative treatment and timber prices must allow for preparing, packing and sending samples for testing when required.

Prices must also include for all nails and fasteners.

## 5. Joinery

Cypress for joinery shall be second grade in accordance with the latest grading rules of the Kenya Government.

Where Mahogany is specified, this refers to prime grade only. The Contractor may with the approval of the Project Manager, use either Msharagi or Mvuli in lieu of Mahogany but such approval will be given only in the case of shortages of the hardwoods specified.

Plugging shall be carried out by drilling walling or concrete with masonry drill and filling with propriety plugs of the correct sizes. Cutting with hammer and chisel will not be allowed.

Prices for joinery must include for pencil rounded arises, protection against damage, nails, screws, framing and bedding in cement mortar as required.

Sizes given for joinery items are nominal sizes and exact dimensions of doors, etc, must be ascertained on site.

## 6. Ironmongery

Ironmongery shall be as specified in the Bills of Quantities or equal and approved.

Prices must include for removing and re-fixing during and after painting, labeling all keys, and for fixing to hardwood, softwood, concrete or blockwork.

Catalogue references given for ironmongery are for purposes of indicating quality and size of item(s). Should the Contractor wish to substitute the specified item(s) with others of equal quality, he must inform the Project Manager and obtain approval in writing.

## 7. Structural Steelwork

All structural steelwork shall comply with the Ministry of Public Works “Structural Steelwork Specification (1973) and shall be executed by an approved Sub-contractor.

## 8. Plasterwork and Other Finishes

All finishings shall be as described in the general specifications and in these Bills of Quantities.

Prices for pavings are to include for brushing concrete clean, wetting and coating with cement and sand grout 1:1.

Rates for glazed wall tiling are to include for a 12 mm cement and sand (1:4) backing screed unless otherwise specified in these Bills of Quantities.

## 9. Glazing

Where polished plate glass is specified, this refers to general glazing quality.

Prices for glazing shall include for priming of rebates before placing putty.

The Contractor will be responsible for replacing any broken or scratched glass and handing over in perfect condition.

**10. Painting**

All paint shall be 1st quality "Crown" or other equal and approved

Painting shall be applied in accordance with the manufacturers' instructions.

Prices for painting are to include for scaffolding, preparatory work, priming coats, protection of other works and for cleaning up on completion. Prices for painting on galvanized metal are to include for mordant solution as necessary.

## SPECIAL NOTES

## INSTRUCTIONS TO TENDERERS AND CONDITIONS OF TENDERING

1. The contractor is required to check the numbers of the pages of these Bills of Quantities against the contents stated on page summary and should he find any missing, in duplicate or indistinct, he must inform the Quantity Surveyor at once and have the same rectified.

2. Should the contractor be in doubt about the precise meaning of any item or figure, for any reason whatsoever, he must inform the Quantity Surveyor in order that the correct meaning may be decided before the date for submission of tenders.

3. No liability will be admitted or claim allowed in respect of errors in the contractor's tender due to mistakes in the Bills of Quantities, which should have been rectified in the manner described above.

4. The 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. Alterations or qualifications may also render the tender to be disqualified.

5. The Contractor shall be deemed to have made allowance in his prices for builders work generally to cover items of preliminaries or additions to provisional sum or other items, if these have not been priced against the respective items.

6. 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. Lump sums to cover items of Preliminaries and Item (or) group of items for builder's work shall likewise be broken down against specific items before acceptance of Tender. All pricing should be distinct, legible and in ink.

7. In no case will any expenses incurred by contractors in preparation and submission of this tender be reimbursed.

8. Rates for keeping all excavations free from general water or spring water shall be included in the general item as described in the measured section of these Bills. No separate item for any pumping or other mechanized form of clearing water from the excavations shall be described in these Bills.

9. No payment for insecticide treatment shall be paid until the contractor has produced a written guarantee as described in trade preambles.

10. If in the opinion of the Quantity Surveyor any rate is considered unreasonable or inconsistent it shall be adjusted and adjustment agreed upon before acceptance of the tender. Any such adjustment will be treated as an error.

11. Any pricing or arithmetical errors will be totalled after corrections, and their percentage to the builder's work calculated. The error will be treated as percentage of the builder's work and spread over all the rates in all sections of the work but not the specific portion where they occur in such a way as to leave the tender sum unaltered. The adjusted rates will apply to interim valuations, valuations of variations and the final account. Discounts given in any section of these Bills shall be treated in the same manner as arithmetical errors.

12. It is a condition of this tender that for tender value amounting to KShs.0 to 10 million with an arithmetical error in excess of 7% and those tenders amounting to more than KShs.10 million with an error in excess of 5% will automatically be rejected. Discounts will be treated in exactly the same manner as arithmetical errors.

13. The Bills of Quantities shall be read in conjunction with Ministry of Works General Specification (1976 Edition), and the Drawings and if any discrepancy between the General Specification, the drawings and the Bills of Quantities occurs, then the Contractor shall seek direction from the Architect on the course of action to follow. The same procedure is to apply should there be discrepancies between Architectural and Engineering drawings.

14. **PAYMENT OF PRELIMINARIES**

No payment shall be made separately for preliminary items on signing of the Contract. The total amount for preliminaries should not exceed 10% of the Contract Sum and should be fairly distributed among the preliminary items.

The Quantity Surveyor may re-distribute the lump sum amount of preliminaries, which is within the 10% limit among the relevant items, and call upon the Contractor to sign such corrections before acceptance of the Tender.

Preliminary items shall be paid for on the basis of a proportionate scale to correspond to each item relative to either time or progress of work as relevant.

15. **PRICING OF PRELIMINARIES**

Preliminaries should not exceed 10% of the Tender Value (or) Contract sum. Preliminaries shall cover the cost of all items that are essential. The Contractor shall provide essential preliminary items. If the contractor does not provide these items, the Employer shall at his discretion, provide them at the Contractor's expense and deduct the full cost incurred for the items from any monies due or to become due and recover the costs as a debt from the Contractor.

**NOTE**:

The essential preliminary items are Site Office for Consultants or their representatives, telephone for their use, Insurance, Bond, Transport, Access to the Site, Programme Chart, Re-instating or Establishing Survey Beacons by a Licensed Land Surveyor at the Commencement and completion of works, water and electricity supply for the works, sanitation for works, storage of materials on the site, sample of materials or workmanship and any other items that may be directed by the Architect. The value of the essential preliminary items that do not have pricing columns shall be deemed to be included in the rates for the Builder's work items in the measured work sections of the Bills of Quantities.

16. **ADVANCE PAYMENTS**:

No advance or mobilization payments shall be made either for constructional plant, tools and materials or any other purpose in this contract.

17. **WORKS PROGRAMME**:

The Contractor shall draw up a works programme schedule within four (4) weeks and which schedule shall be approved by the Architect not later than six (6) weeks from the date of commencement for the works.

18. **FLUCTUATIONS**:

This is a fixed price contract and compensation shall not be allowed to the contractor for charges arising from revised duties, tariffs and taxes imposed by Statutory or other approved

authorities on any goods, materials and labour to be used in the works. The said changes shall be restricted to those materials and labour contained in the J.B.C monthly circulars.

The provisions of Clause 35.3 to 35.8 of the Conditions of Contract will be therefore not applicable

## 21. OPTIONAL WORKS

The employer reserves the right to either omit to carry out the works denoted herein as "Optional in whole or in part". The tenderer must make all necessary allowance and provision in his tender in connection therewith and no claim will be entertained should the Employer exercise this option. This option may be exercised either before or after award of tender and the tender sum or contract sum adjusted accordingly without reference to the tenderer. In the event that all or any part of the optional works are carried out, the works shall be measured and priced at the contract rates as priced at tender. The decision regarding these optional works will be communicated to the contractor as soon as practicable either before or after signing the contract. An appropriate extension of time will however be granted by the Architect if the decision is unduly delayed and in his opinion it will adversely affect the contractor's programme.

The pricing of the preliminaries and general conditions will be deemed to have taken into account and to include any preliminary item costs related to the optional works and any other preliminary item that the contractor wishes and of which no mention has been made herein as no additional preliminaries cost will be paid consequent to any adjustment made in respect of the optional works.

# BILL NO.1 -

# PRELIMINARIES

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| | **PARTICULAR PRELIMINARIES** | |
| | **NOTES ON PRICING OF ITEMS OF PRELIMINARIES** | |
| | Items described in this section cover the minimum requirements and conditions necessary for the full and proper execution of the contract. The tenderer is required to read and fully understand his obligations under each item and thus asses his costs for complying with the same for the duration of the contract. Should no price be inserted against any item, it shall be assumed that the tenderer has covered any costs associated with that item elsewhere in the Bills of quantities and shall nevertheless be required to comply with such and all items of preliminaries. | |
| A | **Definition of Terms** | |
| | (i) Project Managers: The term 'Project Manager' wherever used hereinafter and in all contract documents shall mean Works Secretary, State Department of Public Works, Ministry of Lands, Public Works, Housing & Urban Development, P.O. Box 30743-00100 Nairobi. | |
| | (ii) Architect The term 'Architect' whenever used hereinafter and in all contract documents shall mean 'Chief Architect', State Department of Public Works, Ministry of Lands, Public Works, Housing & Urban Development, P.O. Box 30743-00100 Nairobi. | |
| | (iii) Quantity Surveyor: The term 'Quantity Surveyor' wherever used hereinafter and in all contract documents shall mean Chief Quantity Surveyor,State Department of Public Works, Ministry of Lands, Public Works, Housing & Urban Development, P.O. Box 30743-00100 Nairobi. | |
| | (iv) Engineer (Structural): The term 'Engineer (Structural)' wherever used hereinafter and in all contract documents shall mean Chief Engineer (Structural), State Department of Public Works, Ministry of Lands, Public Works, Housing & Urban Development, P.O. Box 30743-00100 Nairobi. | |
| | (v) Electrical Engineer - The term 'Electrical Egineer wherever used hereinafter and in all contract documents shall mean Chief Engineer (Electrical)-BS, State Department of Public Works, Ministry of Lands, Public Works, Housing & Urban Development, P.O. Box 30743-00100 Nairobi. | |
| | (vi) Mechanical Engineer - The term 'Mechanical Engineer wherever used hereinafter and in all contract documents shall mean Chief Engineer Mechanical-BS, State Department of Public Works, Ministry of Lands, Public Works, Housing & Urban Development, P.O. Box 30743-00100 Nairobi. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| | **Definition of terms (ctd)**<br><br>(vii) Employer - The term 'Employer' wherever used hereinafter and in all Contract Documents shall mean the Principal Secretary, State Department for Lands and Physical Planning, P.O. Box 30450-00100 Nairobi.<br><br>(viii) Contractor - Means the person or firm named in the articles of agreement with whom the Employer has entered into contract and includes the legal successors in title and permitted assigns<br><br>(ix) Works - Means the permanent works designed for the Employer by the Architect or other agents for execution by the Contractor and as described in the contract documents. It shall include work of all sub-contractors and suppliers as well as materials and goods supplied for incorporation in the Works<br><br>(x) Contract. The term "Contract" wherever used hereinafter and in all contract documents shall mean the letter of award of Contract, Agreement and Conditions of Contract for Building Works, Drawings, priced and signed Bills of Quantities, the schedules and other documents forming part of the contract<br><br>(xi) Contract Drawings. The term "Contract Drawings" wherever used hereinafter and in all contract documents shall be deemed to imply the drawing referred to in these Bills of Quantities<br><br>(xii) Site Means the place or places where the permanent Works are to be carried out and to which materials and goods are to be delivered and includes workshops or other places where materials, goods or work are being prepared for incorporation in the Works either by the Contractor, sub-contractors or by others.<br><br>(xiii) Approved, Directed and Selected. The terms "Approved", "Directed" and "Selected" wherever used hereinafter and in all contract documents shall mean the approval, direction and selection of or by the Architect.<br><br>(xiv) Singular and Plural. Words importing the singular only wherever used hereinafter and in all contract documents shall also include the plural and vice versa where the context requires. Persons shall include bodies corporate. | |
| A | **Value Added Tax (Vat)**<br>Rates quoted shall be VAT inclusive | |
| B | **Scope of Contract**<br><br>The Work to be carried out under this contract consist of Construction of the Ardhi House at Delmonte/Makenji - Muranga County, Gate House, Boundary Wall, Genarator House, Underground Water Tank, Landscaping Works, Civil Works, associated Electrical and Mechanical Works as per Drawings and Bills of Quantities. | |
| C | **Bid Security**<br>The bid security will be as per tender invitation notice. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Firm Price contract**<br>Unless otherwise specifically stated, this is a firm price contract and the Contractor must allow in his tender rates for any increase in the cost of labour and/or materials during the currency of the contract. | |
| B | **Site visit**<br><br>The contractor is advised to visit the site and acquaint himself with the conditions and if unable to do so apply to the Project Manager for directions to enable him to do so.<br><br>No claim will be allowed for travelling or other expenses which may be incurred by the contractor in visiting the site preparing for the tender for the works. | |
| C | **Measurements**<br><br>In the event of any discrepancies between the Bills of Quantities are the actual works, the site measurements shall generally take precedence. However, such discrepancies between any contract document shall immediately be referred to the Project Manager. | |
| D | **Claims**<br><br>It shall be a condition of this Contract that upon it becoming reasonably apparent by the Contractor that he has incurred losses and/or expenses due to any of the Contract Conditions, or by any other reason whatsoever, he shall present such claim or intent notice to the PROJECT MANAGER within the Contract Period. No claims shall be entertained upon the expiry of the said contract period | |
| E | **Materials from demolition**<br><br>Any materials arising from demolition shall become property of the Contractor. The Contractor shall therefore allow for credit in his tender in this respect. | |
| F | **Contract completion period**<br><br>The contract completion period in accordance with condition 8.2 of the the conditions of contract must be strictly adhered to. The "PROJECT ARCHITECT" shall strictly monitor the Contractor's progress in relation to the progress chart and should it be found necessary, the "PROJECT ARCHITECT" shall inform the Contractor in writing that his actual performance on site is not satisfactory.<br><br>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. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Labour camps**<br><br>The Contractor shall not erect camps on site. | |
| B | **Office for the "Project Manager"**<br><br>The site office mentioned in item 'B' page GP/4 of the general preliminaries shall be type B as shown on the State Department of Public Works standard details. The same shall be erected and maintained for the duration of the contract. | |
| C | **Tender documents**<br>Tender documents are as listed in Clause 11.0 of the Instruction to Tenderer's. | |
| D | **Signboard**<br>Provide and erect where directed and maintain during the whole period of building operations and remove at completion an approved temporary 1 No. signboards at site to the Architect's standard design and giving the title of the Works and showing the names of the Employer, Architect, Quantity Surveyor, Engineers and the Contractor with sufficient space to add the names of the Nominated Sub-Contractors and suppliers. The lettering concerning the Architect, Quantity Surveyor and the Engineer is not to be more than 50 mm high. | |
| E | **Hoarding**<br>The contractor shall be required to erect and maintain hoarding around the site for the duration of the contract. Thereafter he shall be required to demolish and clear away arisings and make good any disturbances. | |
| F | **Programme progress charts**<br>The Contractor shall upon possession of the site and in agreement with the "PROJECT ARCHITEC" prepare a progress chart for the whole of the works. One copy shall be forwarded to the "PROJECT ARCHITECT" and another copy shall be retained on site on which progress shall be recorded bythe Contractor. Should any circumstance arise affecting the programme or progress ,the chart shall be modified as necessary in consultation with the "PROJECT ARCHITECT". | |
| G | **Perfromance security (bond)**<br>The Contractor should note that the Performance Security to be provided shall be 5% of the Contract Sum in inform of guarantee from a reputable local bank or insurance company approved by PPRA. | |
| H | **Appendices**<br>The Appendices to the Bills of Quantities shall be regarded for contract purporses as part of the Bill and shall be read and construed with the appropriate sections of the Bills if contained therein. | |
| J | **Sufficiency of tender**<br>The main 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 Bills of Quantities which rates and prices shall cover all his obligations under the contract and all matters and things necessary for the proper completion of the works. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **General specifications**<br>For the full description of materials ,workmanship and method of execution of the works, the Contractor is referred to the Ministry of Works General specifications for building works dated 1976 or any subsequent revision thereof which is issued as a separate document and which shall be followed in all respects unless it conflicts with the General and Particular Preliminaries, Trade Preambles or other items in these Bills of Quantities.<br>In the event of such conflict , then the provisions of the General and Particular Preliminaries, Trade Preambles and these Bills of Quantities take precedence. | |
| B | **Training levy**<br><br>The Contractor's attention is drawn to Legal Notice No. 237 of October 1971 which requires payment by the Contractor of a Training levy at the rate of 1/4 % of the Contract Sum on all Contracts of more than Kshs. 50,000.00 in value. | |
| C | **Government Permits and Licences**<br>The Contractor shall comply with National Environment Management Authority, National Construction Authority and Muranga County Government laws and regulations | |
| D | **Construction materials**<br><br>All materials for incorporation in the works must be stored on or adjacent to the site of the works before payment is effected by the "PROJECT ARCHITECT" is to include materials of the Main Contractor, Sub - contractors and Nominated Suppliers. | |
| E | **Advance payment**<br>Pursuant to the relevant clause of the Conditions of Contract, the tenderer will be granted ADVANCE PAYMENT (See Appendix to Conditions of Contract)<br>Advance payments on specialists works shall be paid to the respective nominated Subcontractors directly, but on similar terms. | |
| F | **Nuisance**<br>The Contractor shall not directly or indirectly or otherwise by himself or through his agents cause nuisance to the activities taking place inside. Should he do so he shall be directly responsible for such acts. | |
| | **Total carried forward to collection** | - |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| | **PROJECT MANAGEMENT EXPENSES**<br>**Disclaimer: the following items are to be expended at the discretion of the Project Manager** | |
| A | **Subsistence allowance** | |
| | Provide a sum of Kenya Shillings Six Million (Kshs. 6,000,000.00) only for Project Management Team subsistence allowance to be spent in accordance with Government of Kenya subsistence allowance rates | 6,000,000.00 |
| B | Allow for Contractor's administrative costs and profits for the above……..(….%) | |
| C | **Clerk of works** | |
| | Provide a sum of Kenya Shilling Six Hundred Thousand (Kshs 600,000.00) only for the Clerk of Works expenses. | 600,000.00 |
| D | Allow for Contractor's administrative costs and profits for the above……..(….%) | |
| E | **Laptops** | |
| | *Provide and supply (4 No. ) ASUS ROG Zephyrus G14 GA403UM Gaming Laptop, 14" 3K OLED 120Hz Display, AMD Ryzen 9 270, 16GB RAM, 1TB SSD, GeForce RTX 5060 8GB GPU, English KB, Win 11,*<br>*Technical Specifications*<br>*Processor: AMD Ryzen 9 270 (8 Cores / 16 Threads, Base 4.0 GHz, up to 5.2 GHz Max Turbo).*<br>*Graphics: NVIDIA GeForce RTX 5060 Laptop GPU (8GB GDDR7 dedicated VRAM).*<br>*Memory: 16GB LPDDR5X 7500 MHz (Onboard, non-upgradable dual-channel).*<br>*Storage: 1TB PCIe 4.0 NVMe M.2 SSD. Display: 14" WQXGA / 3K (2880 x 1800) ROG Nebula OLED panel, 16:10 aspect ratio, 120Hz refresh rate, 0.2ms response time, 500 nits brightness, 100% DCI-P3 color gamut, G-SYNC support. Operating System: Windows 11 Home.* | |
| F | Allow for Contractor's administrative costs and profits for the above……..(….%) | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Particulars of insertions to be made in the appendix to contract agreement** | |
| | The following are insertions to be made in the appendix to the Contract Agreement. | |
| | i) Period of Final Measurement | 3 Months from practical completion date |
| | ii) Defects Liability Period | 6 Months from practical completion date |
| | iii) Date for possession of site | To be agreed with the Project Architect |
| | iv) Date for completion | As per the Special Conditions of Contract |
| | v) Liquidated & Ascertained damages | As per the Special Conditions of Contract |
| | vi) Period of Interim Certificates | Monthly |
| | vii) Period of honouring certificates | Within 60 days from date of receipt of payment request |
| | viii) Percentage of certified value retained | **10%** |
| | ix) Limit of retention fund | 5% of Contract Sum |
| | x) Bond | As per tender notice and Contract Conditions |
| | xi) Fluctuation | As per tender notice and Contract Conditions |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| | <u>Collection</u><br><br>Total from page PP/1<br><br>Total from page PP/2<br><br>Total from page PP/3<br><br>Total from page PP/4<br><br>Total from page PP/5<br><br>Total from page PP/6<br><br>Total from page PP/7 | |
| | **Total for Particular Preliminaries carried to Collection Summary** | |

# GENERAL PRELIMINARIES

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| | **GENERAL PRELIMINARIES** | |
| A. | **Pricing of items of preliminaries and preambles**<br>Prices will be inserted against items of Preliminaries in the Contractor's priced Bills of Quantities and Specification.<br><br>The Contractor shall be deemed to have included in his prices or rates for the various items in the Bills of Quantities or Specification for all costs involved in complying with all the requirements for the proper execution of the whole of the works in the Contract. | |
| B. | **Plant, tools and vehicles**<br>Allow for providing all scaffolding, plant, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for the use of nominated Sub-Contractors as described herein. No timber used for scaffolding, formwork or temporary works of any kind shall be used afterwards in the permanent work. | |
| C. | **Transport**<br>Allow for transport of workmen, materials, etc., to and from the site at such hours and by such routes as may be permitted by the competent authorities. | |
| D. | **Mateials and workmanship**<br>All materials and workmanship used in the execution of the work shall be of the best quality and description unless otherwise stated. The Contractor shall order all materialsto be obtained from overseas immediately after the Contract is signed and shall also order materials to be obtained from local sources as early as necessary to ensure that they are onsite when required for use in the works. The Bills of Quantities shall not be used for the purpose of ordering materials. | |
| E. | **Sign for materials supplied**<br>The Contractor will be required to sign a receipt for all articles and materials supplied by the PROJECT ARCHITECT at the time of taking deliver thereof, as having received them in good order and condition, and will thereafter be responsible for any loss or damage and for replacements of any such loss or damage with articles and/or materials which will be supplied by the PROJECT ARCHITECT at the current market prices including Customs Duty and V.A.T., all at the Contractor's own cost and expense, to the satisfaction of the PROJECT ARCHITECT. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Storage of materials**<br>The Contractor shall make at his own risk and cost arrangement for storage of materials for incoperation into the works. Nominated Sub-contractors are to be made liable for the cost of any storage accommodation provided specifically for their use. | |
| B | **Samples**<br>The Contractor shall furnish at his own cost any samples of materials or workmanship including concrete test cubes required for the works that may be called for by the PROJECT ARCHITECT for his approval until such samples are approved by the PROJECT ARCHITECT and the PROJECT ARCHITECT, may reject any materials or workmanship not in his opinion to be up to approved samples. The PROJECT ARCHITECT shall arrange for the testing of such materials as he may at his discretion deem desirable, but the testing shall be made at the expense of the Contractor and not at the expense of the PROJECT ARCHITECT. The Contractor shall pay for the testing in accordance with the current scale of testing charges laid down by the Directorate of Public Works.<br>The procedure for submitting samples of materials for testing and the method of marking for identification shall be as laid down by the PROJECT ARCHITECT The Contractor shall allow in his tender for such samples and tests except those in connection with nominated sub-contractors' work. | |
| C | **Governments Acts regarding work people, etc.**<br>Allow for complying with all Government Acts, Orders and Regulations in connection with the employment of Labour and other matters related to the execution of the works. In particular the Contractor's attention is drawn to the provisions of the Factory Act 1950 and his tender must include for all costs arising or resulting from compliance with any Act, Order or Regulation relating to Insurances, pensions and holidays for workpeople or so the safety, health and welfare of the workpeople. The Contractor must make himself fully acquainted with current Acts and Regulations,including Police Regulations regarding the movement, housing, security and control of labour, labour camps , passes for transport, etc. It is most important that the Contractor, before tendering, shall obtain from the relevant Authority the fullest information regarding all such regulations and/or restrictions which may affect the information regarding all such regulations and/or restrictions which may affect the organisation of the works, supply and control of labour, etc., and allow accordingly in his tender.<br><br>No claim in respect of want of knowledge in this connection will be entertained. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Security of works, etc.**<br>The Contractor shall be entirely responsible for the security of all the works stores,materials, plant, personnel, etc., both his own and sub-contractors' and must provide all necessary watching, lighting and other precautions as necessary to ensure security against theft, loss or damage and the protection of the public. | |
| B | **Public and private roads**<br>Maintain as required throughout the execution of the works and make good any damage to public or private roads arising from or consequent upon the execution of the works to the satisfaction of the local and other competent authority and the PROJECT ARCHITECT. | |
| C | **Existing property**<br>The Contractor shall take every precaution to avoid damage to all existing property including roads, cables, drains and other services and he will be held responsible for and shall make good all such damage arising from the execution of this contract at his own expense to the satisfaction of the PROJECT ARCHITECT. | |
| D | **Visit the site and examine drawings**<br>The Contractor is recommended to examine the drawings and visit the site the location of which is described in the Particular Preliminaries hereof. He shall be deemed to have acquainted himself therewith as to its nature, position, means of access or any other matter which, may affect his tender. No claim arising from his failure to comply with this recommendation will be considered. | |
| E | **Access to site and temporary roads**<br>Means of access to the Site shall be agreed with the PROJECT ARCHITECT prior to commencement of the work and Contractor must allow for building any necessary temporary access roads for the transport of the materials, plant and workmen as may be required for the complete execution of the works including the provision of temporary culverts, crossings, bridges, or any other means of gaining access to the Site. Upon completion of the works, the Contractor shall remove such temporary access roads; temporary culverts, bridges, etc., and make good and reinstate all works and surfaces disturbed to the satisfaction of the PROJECT ARCHITECT. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Area to be occupied by the Contractor**<br>The area of the site which may be occupied by the Contractor for use of storage and for the purpose of erecting workshops, etc., shall be defined on site by the PROJECT ARCHITECT. | |
| B | **Office, etc, for the Project Architect**<br>The Contractor shall construct a temporary site office of type described and to the satisfaction of the Project Manager. He shall also provide a strong metal trunk complete with strong hasp and staple fastening and two keys. He shall maintain a lock-up type water or bucket closet for the sole use of the PROJECT ARCHITECT and shall provide services of cleaner and pay all conservancy charges and keep both office and closet in a clean and sanitary condition from commencement to the completion of the works and dismantle and make good disturbed surfaces. The Contractor shall make available on the Site as and when required by the "PROJECT ARCHITECT" a modern and accurate level together with levelling staff, ranging rods and 50 metre metallic or linen tape. | |
| C | **Water and electricity supply for the works**<br>The Contractor shall make arrangements to provide all necessary water, electric light and power required for use in the works. No guarantee is given or implied that sufficient water will be available from mains and the Contractor must make his own arrangements for augmenting this supply at his own cost. Nominated Sub--contractors are to be made liable for the cost of any water or electric current used and for any installation provided especially for their own use. | |
| D | **Sanitation of the works**<br>The Sanitation of the works shall be arranged and maintained by the Contractor to the satisfaction of the Government and/or Local Authorities, Labour Department and the PROJECT ARCHITECT. | |
| E | **Supervision and working hours**<br>The works shall be executed under the direction and to the entire satisfaction in all respects of the PROJECT ARCHITECT who shall at all times during normal working hours have access to the works and to the yards and workshops of the Contractor and sub-Contractors or other places where work is being prepared for the contract. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Provisional sums**<br>The term "Provisional Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7(i) of the Standard Method of Measurement.Such sums are net and no addition shall be made to them for profit. | |
| B | **Prime Cost (or P.C) Sums**<br>The term "Prime Cost Sum" or "P.C. Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7 (ii) of the Standard Method of Measurement . Persons or firms nominated by the PROJECT ARCHITECTto execute work or to provide and fix materials or goods are described herein as Nominated Sub-Contractors.Persons or firms so nominated to supply goods or materials are described herein as Nominated Suppliers. | |
| C | **Progress chart**<br>The Contractor shall provide within two weeks of Possession of Site and in agreement with the PROJECT ARCHITECT a Progress Chart for the whole of the works including the works of Nominated Sub-Contractors ; one copy to be handed to the PROJECT ARCHITECT and a further copy to be retained on Site. Progress to be recorded and chart to be amended as necessary as the work proceeds. | |
| C. | **Adjustment of P.C sums**<br>In the final account all P.C. Sums shall be deducted and the amount properly expended upon the PROJECT ARCHITECT'S order in respect of each of them added to the Contract sum. The Contractor shall produce to the PROJECT ARCHITECT such quotations, invoices or bills, properly receipted, as may be necessary to show the actual details of the sums paid by the Contractor. Items of profit upon P.C. Sums shall be adjusted in the final account pro-rata to the amount paid. Items of "attendance" (as previously described) following P.C. Sums shall be adjusted pro-rata to the physical extent of the work executed (not pro-rata to the amount paid) and this shall apply even though the Contractor's priced Bill shows a percentage in the rate column in respect of them. Should the Contractor be permitted to tender and his tender be accepted of any work for which a P.C. Sum is included in these Bill of Quantities profit and attendance will be allowed at the same rate as it would be if the work were executed by a Nominated Sub-Contractor. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Adjustment of provisional sums**<br>In the final account all Provisional Sums shall be deducted and the value of the work properly executed in respect of them upon the PROJECT ARCHITECT'S order added to the Contract Sum. Such work shall be valued , but should any part of the work be executed by a Nominated Sub-Contractor, the value of such work or articles for the work to be supplied by a Nominated Supplier, the value of such work or articles shall be treated as a P.C. Sum and profit and attendance comparable to that contained in the priced Bills of Quantities for similar items added. | |
| B | **Nominated subcontractors**<br>When any work is ordered by the PROJECT ARCHITECT to be executed by nominated sub-contractors, the Contractor shall enter into sub-contracts and shall thereafter be responsible for such sub-contractors in every respect. Unless otherwise described the Contractor is to provide for such Sub-Contractors any or all of the facilities described in these Preliminaries. The Contractor should price for these with the nominated Sub-contract Contractor's work concerned in the P.C. Sums under the description "add for Attendance". | |
| C | **Direct Contracts**<br>Notwithstanding the foregoing conditions, the Government reserves the right to place a "Direct Contract" for any goods or services required in the works which are covered by a P.C. Sum in the Bills of Quantities and to pay for the same direct. In any such instances, profit relative to the P.C. Sum in the priced Bills of Quantities will be adjusted as described for P.C. Sums is allowed. | |
| D | **Attendance upon other tradesmen, etc.**<br>The Contractor shall allow for the attendance of trade upon trade and shall afford any tradesmen or other persons employed for the execution of any work not included in this Contract every facility for carrying out their work and also for use of his ordinary scaffolding. The Contractor, however, shall not be required to erect any special scaffolding for them. The Contractor shall perform such cutting away for and making good after the work of such tradesmen or persons as may be ordered by the PROJECT ARCHITECT and the work will be measured and paid for to the extent executed at rates provided in these Bills. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Insurance**<br>The Contractor shall insure as required in Conditions No. 30 of the Conditions of Contract. No payment on account of the work executed will be made to the Contractor until he has satisfied the PROJECT ARCHITECT either by production of an Insurance Policy or and Insurance Certificate that the provision of the foregoing Insurance Clauses have been complied with in all respects. Thereafter the PROJECT ARCHITECT shall from time to time ascertain that premiums are duly paid up by the Contractor who shall if called upon to do so, produce the receipted premium renewals for the PROJECT ARCHITECT'S inspection. | |
| B | **Provisional work**<br>All work described as "Provisional" in these Bills of Quantities is subject to remeasurement in order to ascertain the actual quantity executed for which payment will be made. All "Provisional" and other work liable to adjustment under this Contract shall left uncovered for a reasonable time to allow all measurements needed for such adjustment to be taken by the PROJECT ARCHITECT. Immediately the work is ready for measuring, the Contractor shall give notice to the PROJECT ARCHITECT. If the Contractor makes default in these respects he shall if the PROJECT ARCHITECT so directs uncover the work to enable all measurements to be taken and afterwards reinstate at his own expense. | |
| C | **Alteration to bills of quantities, pricing, etc.**<br>Any unauthorised alteration or qualification made to the text of the Bills of Quantities may cause the Tender to be disqualified and will in any case be ignored. The Contractor shall be deemed to have made allowance in his prices generally to cover any items against which no price has been inserted in the priced Bills of Quantities.All items of measured work shall be priced in detail and the Tenders containing Lump Sums to cover trades or groups of work must be broken down to show the price of each item before they will be accepted. | |
| D | **Blasting operations**<br>Blasting will only be allowed with the express permission of the PROJECT 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 PROJECT ARCHITECT governing the use and storage of explosives. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **Materials arising from excavations**<br>Materials of any kind obtained from the excavations shall be the property of the Government. Unless the PROJECT ARCHITECT directs otherwise such materials shall be dealt with as provided in the Contract. Such materials shall only be used in the works, in substitution of materials which the Contractor would otherwise have had to supply with the written permission of the PROJECT ARCHITECT. Should such permission be given, the Contractor shall make due allowance for the value of the materials so used at a price to be agreed. | |
| B | **Protection of the works**<br>Provide protection of the whole of the works contained in the Bills of Quantities,including casing , casing up, covering or such other means as may be necessary to avoid damage to the satisfaction of the PROJECT ARCHITECT and remove such protection when no longer required and make good any damage which may nevertheless have been done at completion free of cost to the Government. | |
| C | **Removal of rubish, etc.**<br>Remove rubbish and debris from the Buildings and site as it accumulates and at the completion of the works and remove all plant, scaffolding and unused materials at completion. | |
| D | **Works to be delivered up clean**<br>Clean and flush all gutters, rainwater and waste pipes, manholes and drains, wash (except where such treatment might cause damage) and clean all floors, sanitary fittings,glass inside and outside and any other parts of the works and remove all marks,blemishes, stains and defects from joinery, fittings and decorated surfaces generally,polish door furniture and bright parts of metalwork and leave the whole of the buildings watertight, clean, perfect and fit for occupation to the approval of the PROJECT ARCHITECT. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| A | **General specifications**<br>For the full description of materials and workmanship, method of execution of the work and notes for pricing, the Contractor is referred to the Ministry of Roads and Public Works and Housing General Specification dated 1976 or any subsequent revision thereof which is issued as a separate document, and which shall be allowed in all respects unless it conflicts with the General Preliminaries, Trade Preambles or other items in these Bills of Quantities. | |
| B | **Materials on site**<br>All materials for incorporation in the works will be stored on site before payment is effected unless specifically exempted by the PROJECT ARCHITECT. The Main Contractor shall make arrangements to secure the place for the safety of the Materials. This includes the materials of the Main Contractor, Nominated Sub-Contractors and Nominated Suppliers. | |
| C | **Contractor's Superinteendence/Site Agent**<br>The Contractor shall constantly keep on the works a literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the Project Manager and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract. | |
| G | **Capacity Building Levy**<br><br>The Contractor's attention is drawn to the Legal Notice no.206, section no.3(1) of 6th November 2023, which requires payment by the Contractors/Suppliers a Capacity Building Levy on all procurement contracts at the rate of zero point zero three per centum (0.03%) of the value of the signed contract, exclusive of applicable taxes. | |
| | **Total carried forward to collection** | |

| ITEM | DESCRIPTION | AMOUNT (Kshs) |
|---|---|---|
| | COLLECTION | |
| | Total from page GP/1 | |
| | Total from page GP/2 | |
| | Total from page GP/3 | |
| | Total from page GP/4 | |
| | Total from page GP/5 | |
| | Total from page GP/6 | |
| | Total from page GP/7 | |
| | Total from pageGP/8 | |
| | Total from page GP/9 | |
| | **Total for General Preliminaries carried to Collection Summary** | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **BILL NO. 1: PRELIMINARIES SUMMARY COLLECTION** | | | | |
| | | PAGE | | | |
| 1 | PARTICULAR PRELIMINARIES | PP/9 | | | |
| 2 | GENERAL PRELIMINARIES | GP/10 | | | |
| | TOTAL CARRIED FOR PRELIMINARIES FORWARD TO GRAND SUMMARY | | | | |

# BILL NO.2 - BUILDERS WORKS

# SUBSTRUCTURE WORKS

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **SUBSTRUCTURE WORKS**<br>(All provisional)<br>**Excavations**<br>**Notes**<br>**This element includes all structural works up to and including ground floor slab**<br>**Tenderer to allow for working space in his rates.**<br>**Reinforcement to BS 4449 / 4461:1997 , Grade 460B high strength type 2 ribbed bars with proof stress of 460 N/mm2.**<br>**All cement to be "Bamburi Tembo 32.5", or equal and approved to SE approval.**<br>**Excavations including trimming sides and bottoms of excavations; spoil heaping on site; double handling of excavated materials; maintaining and supporting sides; and keeping free from water, mud and fallen material; with and including destruction of termites nests within site of works,take out and destroy queens, impregnate holes and tunnels with insecticide and fill voids with approved material.**<br>**All excavations shall be measured net and no allowance shall be made for working space as per SMM D5(g).** | | | | |
| A | Clear site of lowlying bushes,shrubs and small trees including grubbing up their roots and burn the arising | 1,089 | SM | | |
| B | Cut down trees, 600-900mm girth from existing ground level including grubbing up itd roots and take them away | 5 | NO | | |
| C | Excavate top vegetable soil average depth 150mm to be deposited 80m away from site in spoil heaps to be used for landscaping | 1,089 | SM | | |
| D | Excavate to reduce levels not exceeding 1.50 meters deep commencing from stripped level | 1,634 | CM | | |
| E | Ditto exceeding 1.50 meters deep but not exceeding 3.0meters commencing from reduced level | 359 | CM | | |
| F | Excavate trenches for trenches not exceeding 1.5metres commencing from reduced level | 388 | CM | | |
| G | Excavate trenches for trenches exceeding 1.5metres but n.e 3.0metres from reduced level | 388 | CM | | |
| H | Excavate pits for column bases, retaining wall and lift shaft base not exceeding 1.5metres commencing from reduced level | 427 | CM | | |
| J | Ditto exceeding 1.5metres but n.e 3.0metres | 212 | CM | | |
| | **Total Carried Collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Substructure Cont'd** | | | | |
| A | Keep excavation free from water | | ITEM | | |
| B | Planking and strutting to uphold sides of excavation | | ITEM | | |
| | Filling and Disposal | | | | |
| C | Load and cart away excavated materials from site | 2,483 | CM | | |
| D | Return, fill and ram with selected and approved excavated material around excavations | 566 | CM | | |
| E | Approved imported fill to make up levels: spread levelled, watered, well rammed and compacted in layers not exceeding 150mm thick : to the satisfaction of the Structural Engineer | 2,940 | CM | | |
| | Hardcore | | | | |
| F | 300mm thick selected and handpicked harcore filing , depositing and compacting in layers of 150mm maximum thickness | 1,089 | SM | | |
| G | 50mm thick murram blinding to surfaces of fill | 1,089 | SM | | |
| | Anti termite | | | | |
| H | Chemical anti-termite treatment, executed complete by an approved specialist under a ten-year guarantee,to surfaces of hardcore and vertical sides of excavated surfaces | 1,089 | SM | | |
| | Damp-proof membrane | | | | |
| J | 1000 gauge polythene or other equal and approved damp-proof membrane, laid over blinded hardcore (measured separately) with 300mm side and end laps (measured nett-allow for laps) | 1,089 | SM | | |
| | Plain concrete (1:4:8) in | | | | |
| K | 50mm thick blinding to column bases | 326 | SM | | |
| L | 50mm thick blinding to Lift Base | 28 | SM | | |
| M | 50mm thick blinding to strip foundation | 406 | SM | | |
| | **Total Carried to Collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Substructure Cont'd** | | | | |
| | Vibrated reinforced concrete class 25 (1:1.5:3) in: | | | | |
| A | Column Bases | 84 | CM | | |
| B | Lift Base | 31 | CM | | |
| C | Strip footing foundation | 218 | CM | | |
| D | Columns | 24 | CM | | |
| E | Steps & Ramps to Entry Porch | 30 | CM | | |
| F | 200mm thick Lift Shaft | 35 | SM | | |
| G | 200mm thick strong room Walls | 71 | SM | | |
| H | 150mm Thick ground bed | 1,089 | SM | | |
| | Steel reinforcement deformed bar including cutting to length, bending and fixing including all necessary tying wires, hooks and spacing blocks to KS 573:2014; | | | | |
| J | 8 mm diameter bars | 12,633 | KG | | |
| K | 10 mm diameter bars | 10,527 | KG | | |
| L | 12 mm diameter bars | 6,843 | KG | | |
| M | 16 mm diameter bars | 11,580 | KG | | |
| N | 20 mm diameter bars | 11,054 | KG | | |
| | Steel fabric mesh reinforcement to B.S. 4483 | | | | |
| O | No. A142 fabric mesh weighing 2.22Kg/sm fixed in bed (measured net - no allowance made for laps) including bends, tying wire and distance blocks | 1,089 | SM | | |
| | Sawn Cypress timber formwork to: | | | | |
| P | Vertical sides of Column Bases and shaft base | 155 | SM | | |
| Q | Vertical sides of Lift Shaft and strong room Walls | 160 | SM | | |
| R | Vertical sides of strip foundation footing | 322 | SM | | |
| S | Vertical sides of Columns | 201 | SM | | |
| T | Sides of sloping Steps | 20 | SM | | |
| U | Edges of floor bed 75 - 150mm high | 147 | LM | | |
| | **Total Carried to Collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Substructure Cont'd** | | | | |
| | **WaterProofing** | | | | |
| | Waterproofing (internally) with "Sika® 1 Seal Waterproofing Slurry" or equal and approved material; in accordance with the manufacturer's specifications and SE'S approval | | | | |
| A | To vertical walls of Lift and strong room in two coats each 2 mm thick at the rate of 1.6Kg per square metre | 80 | SM | | |
| | **Skin Walling** | | | | |
| B | 100 mm Thick approved machine cut stones in lift skin walling; bedding and jointing in cement sand (1:4) mortar | 80 | SM | | |
| | **Foundation Walling** | | | | |
| | Natural hard approved quarry stone walling with a crushing strength of 8.0 N/mm²; walling bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25mm wide x 20 gauge hoop iron at every alternate course as described in: | | | | |
| C | 200mm Thick Foundation Walling | 851 | SM | | |
| | **Expansion joint** | | | | |
| D | 25mm thick "Styrofoam" filler between walls, columns etc | 74 | SM | | |
| E | 20 x 10mm Deep Hot applied sealant "Bitubond" | 30 | LM | | |
| F | 25mm Thick jumbolene sealant cord | 30 | LM | | |
| | **Plinths** | | | | |
| G | 15mm (min) thick cement and sand (1:4) render to plinths | 89 | SM | | |
| H | Prepare and apply three coats bituminous paint to rendered plinths | 89 | SM | | |
| | **PAVING SLABS AROUND THE BUILDINGS** | | | | |
| J | Provide, lay & compact approved fill material in layers not exceeding 300mm well watered & rolled to Engineer's satisfaction | 177 | SM | | |
| K | Treat surface of the formation with approved persistent herbicide | 177 | SM | | |
| L | Provide, lay and joint 600x600x50mm precast concrete paving slabs including 50mm thick sand bed to Engineer's satisfaction | 177 | SM | | |
| M | Provide, lay and joint 125x100mm precast concrete channel including 100mm thick concrete bed and haunch, mix 1:3:6, any necessary excavation, formwork and disposal of surplus material. | 147 | LM | | |
| | **Total Carried to Collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **COLLECTION:** | | | | |
| | Brought forward from page SUB/1 | | | | |
| | Brought forward from page SUB/2 | | | | |
| | Brought forward from page SUB/3 | | | | |
| | Brought forward from page above | | | | |
| | TOTAL FOR LOWER GROUND AND SUBSTRUCTURE WORKS<br>CARRIED TO COLLECTION SUMMARY | | | KSHS. | |

# LOWER GROUND

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | LOWER GROUND<br>ELEMENT NO. 1<br><br>REINFORCED CONCRETE SUPERSTRUCTURE | | | | |
| | Vibrated reinforced concrete class 25/20 (1:1.5:3) in:- | | | | |
| A | Columns. | 16 | CM | | |
| B | Beams | 41 | CM | | |
| C | 200mm thick Lift Shaft | 35 | SM | | |
| D | 150mm Thick suspended slabs. | 570 | SM | | |
| E | 150 mm Thick staircase landing. | 6 | SM | | |
| F | Ditto but to staircases steps and risers. | 3 | CM | | |
| | Reinforcement<br>High yield ribbed bar reinforcement to KS : ISO 6935-2(assorted sizes) to: | | | | |
| G | 8 mm Diameter bars. | 6,552 | Kgs | | |
| H | 10 mm Ditto. | 5,460 | Kgs | | |
| J | 12 mm Ditto. | 3,549 | Kgs | | |
| K | 16 mm Ditto. | 6,006 | Kgs | | |
| L | 20 mm Ditto. | 5,733 | Kg | | |
| | Sawn cypress formwork to:- | | | | |
| M | Vertical sides of Lift Shaft Walls | 35 | SM | | |
| N | Vertical columns. | 282 | SM | | |
| O | Slopping soffits of staircase. | 6 | SM | | |
| P | Soffits of landing. | 6 | SM | | |
| Q | Soffits of suspended slab. | 570 | SM | | |
| R | Edges of risers 75-150mm high. | 28 | LM | | |
| S | Slopping edges of staircase, 75-150mm high. | 5 | LM | | |
| T | Edges of landing 150mm high. | 7 | LM | | |
| U | Edges of suspended floor slab 75-150mm high. | 597 | LM | | |
| | TOTAL FOR REINFORCED CONCRETE SUPERSTRUCTURE CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 2<br>WALLING | | | | |
| | EXTERNAL WALLING | | | | |
| | Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 25x3 mm thick hoop iron | | | | |
| A | 200 mm Thick walling. | 240 | SM | | |
| | INTERNAL WALLING | | | | |
| | Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 20 swq x 25 mm wide hoop iron | | | | |
| B | 200 mm Thick walling. | 247 | SM | | |
| C | 150 mm Ditto. | 23 | SM | | |
| | Damp proof course | | | | |
| D | 200 mm Wide bituminous felt hessian base dam-proof course to B.S 743 laid; horizontally with 150mm minimum laps and beddedon cement and sand (1:3) mortar. | 77 | LM | | |
| E | 150 mm Ditto. | 10 | LM | | |
| | Expansion joint | | | | |
| F | 25mm thick "Styrofoam" filler between walls, columns etc | 103 | SM | | |
| G | 20 x 10mm Deep Hot applied sealant "Bitubond" | 30 | LM | | |
| H | 25mm Thick jumbolene sealant cord | 30 | LM | | |
| | SUNSHADE | | | | |
| | *Providing, constructing and fixing sunshade (WALL) to external elevations, with and including 75 x 75 x 8 mm RHS steel section and 220 x 110 x 75 mm bricks laid in approved patterned bonded using cast cement adhesive / cement mortar, complete with setting out, formwork, reinforcement, concrete works, or steel framing as applicable, including brackets/anchors, waterproofing,anti-rust primer, drainage falls, finishes, and all necessary materials, labour, tools and equipment, executed to the approval of the Architect.* | | | | |
| J | Sunshade elements | 240 | SM | | |
| | TOTAL FOR WALLING CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 3**<br>**DOORS** | | | | |
| | **Steel Casement Doors** | | | | |
| | Standard steel casement door comprising 40 x 25 x 3 mm stiles, bottom & top rail, & 4No intermediate rails all primed with red oxide complete with hinges, stays, fasteners, permanent vent with mosquito gauze and sheet metal hood etc assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) (Grille and Glazing excluded ) | | | | |
| A | Door overall size;1500 x 2800 mm high | 4 | NO. | | |
| | Purpose made Mild Steel Louvred Door: comprising of 100 x 50 x 3mm top, bottom and vertical framings/rails; 1.5mm thick mild steel louvre plate; one coat red oxide primer; as per Architect's drawing and details; | | | | |
| B | Door size 1200 x 2550 mm high. | 1 | NO | | |
| | **4mm Thick clear glass in:** | | | | |
| C | Panes 0.1 - 0.5 square metres in metal putty. | 7 | SM | | |
| | **Painting and decoration** | | | | |
| | Prime back of wood before fixing | | | | |
| D | General surfaces of steel door | 54 | SM | | |
| | **TOTAL FOR DOORS CARRIED TO SUMMARY** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.4 | | | | |
| | WINDOWS | | | | |
| | General Notes: | | | | |
| 1 | All Steel sections to be standard steel manufacturing sections only | | | | |
| 2 | Colour to be decided later | | | | |
| 3 | All accessories to be primed to match frame and **samples of all to be approved in the first instance.** | | | | |
| 4 | All flush bolts to be minimum 200mm long, chrome plated of approved quality. | | | | |
| 5 | All corner glazing to be butt jointed with silicon sealant | | | | |
| 6 | All bathroom windows to be glazed in opaque laminated glass. Where possible, the BQ has shown these as washroom windows; but it will be the tenderer's responsibility to crosscheck with the Architect's drawings as to the accuracy of this. | | | | |
| | Contractor to note that the artisan employed to execute the aluminium works MUST be an approved specialist to the satification Project Manager | | | | |
| | Heavy duty powder coated aluminium windows to B.S. 4813 | | | | |
| | The following in heavy duty powder coated aluminium windows from approved manufacturer(s) complete with frames mullions trasomes railing and necessary intermidiate reinforcement elements including all weather strips, rubber glazing strips,couplings, ironmonger icluding hinges, fasteners and stays, sliding rails( where necessary) bars; panes left open for glazing to Architects detail | | | | |
| A | 3000 x 1800 mm High W01 | 4 | SM | | |
| | Supply, assemble and fix the following approved Standard windows casements complete with brass (hinges, stays, fasteners), permanent vent with mosquito gauze and sheet metal hood etc assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) (Grille and Glazing excluded) all to Architects details and approval | | | | |
| B | Size 1800 x 1800 mm W02. | 3 | NO | | |
| C | Ditto but 2000 x 1800 mm W03. | 3 | NO | | |
| D | Ditto but 1800 x 2400 mm W05. | 1 | NO. | | |
| | Glazing | | | | |
| E | 4 mm Thick clear sheet glass and glazing with putty in panes not exceeding 0.10 - 0.50 square metre. | 56 | SM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.4 CONT'D** | | | | |
| | **Window Grilles** | | | | |
| A | Patterned mild steel window grille comprising of 25 x 25 x 2mm RHS horizontal members at 200mm centres and 25 x 25 x 2mm RHS vertical members at 100mm centres as per the Architect's drawings. | 56 | SM | | |
| | **Window Cill** | | | | |
| B | 275x75mm thick concrete cill weathered,throated and painted to approval. | 24 | LM | | |
| | **Window Board** | | | | |
| C | 150 x 25 mm wrot mahogany window board plugged to masonry wall. | 24 | LM | | |
| | **Window Blinds** | | | | |
| D | Supply and fix Venetian Window Blinds to general casement window surfaces to specifications | 24 | LM | | |
| | **Painting and Decorating** | | | | |
| E | Prepare surfaces and apply one undercoat and two finishing coats first quality gloss oil to general windows internally. | 56 | SM | | |
| F | Ditto externally. | 56 | SM | | |
| | **Total caried to collection below** | | | | |
| | **COLLECTION** | | | | |
| | Brought forward from page LG/4 | | | | |
| | Brought forward from page LG/5 | | | | |
| | **TOTAL FOR WINDOWS CARRIED TO SUMMARY** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 5 | | | | |
| | FINISHES | | | | |
| | Wall Finishes | | | | |
| | Internal walls | | | | |
| | Plaster; 15 mm thick first coat of cement, lime and sand (1:2:9); 3 mm second coat of cement, lime putty and sand (1:1:6); steel trowelled smooth. | | | | |
| A | Walls internally. | 780 | SM | | |
| B | Ditto reveals 100-200 mm wide. | 106 | LM | | |
| C | Ditto jambs ditto. | 106 | LM | | |
| | PAINTING & DECORATING | | | | |
| | Skimming | | | | |
| D | Carefully prepare the plastered surface by sanding and skimming with gysum powder to achieve the smooth surface. | 1,562 | SM | | |
| | Apply three coats of premium quality silk vinyl paint as or equal and approved to:- | | | | |
| E | Plastered surfaces internally. | 780 | SM | | |
| F | Plastered reveals (100 -200mm). | 106 | LM | | |
| G | Ditto jambs ditto. | 106 | LM | | |
| | External Wall Finishes | | | | |
| H | 15 mm Thick cement sand (1:4) render. | 240 | SM | | |
| | Painting | | | | |
| | Prepare and apply one undercoat and two finishing coats of vynil matt emulsion paint; colour to match Clients corporate colours to :- | | | | |
| J | Rendered surfaces. | 240 | SM | | |
| | Floor Finishes | | | | |
| | Floor screed; cement and sand (1:4) wood floated:- | | | | |
| K | 30 mm thick to receive ceramic tiles (m.s). | 732 | SM | | |
| L | 20 mm thick to receive terrazzo floor finishes (m.s). | 357 | SM | | |
| | Ceramic tiles | | | | |
| | 600 x 600 mm ceramic floor tiles bedded and jointed in cement sand (1:4) mortar and finished with matching colour waterproof cement | | | | |
| M | 10 mm Thick tiles. | 732 | SM | | |
| N | 100 mm High skirting. | 396 | LM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.5 CONT'D | | | | |
| | Polished terrazzo consisting of cement and sand (1:4) screed(m.s) or backing finished with a layer of white cement with approved colour additive, sand and approved marble/granite chipping (1:4:2), 20mm thick horizontally and minimum 10mm thick vertically, trowelled to a smooth and even finish and machine polished and waxed to approval | | | | |
| A | 20 mm Thick terrazzo paving to passage areas. | 357 | SM | | |
| | STAIRCASE FINISHES | | | | |
| B | 40 mm Thick terrazzo paving to landing. | 6 | SM | | |
| C | Ditto to risers 150 mm high. | 28 | LM | | |
| D | Ditto treads 300 mm wide. | 5 | LM | | |
| E | 20 x 100 mm Wide sloping skirting. | 5 | LM | | |
| F | 150 mm Staircase strings, | 5 | LM | | |
| G | 12 mm Thick gauged cement lime and sand (1:2:9) plaster to sloping soffites of staircase and landings. | 12 | SM | | |
| H | Staircase balustrading<br>950mm high balustrading comprising 40 x 40 x 1.5mm SHS balusters spaced at 100mm centres fish-tailed and built in to floor at 600mm centres; 40 x 40 x 1.5mm SHS hand rail and 40 x 40 x 1.5mm SHS bottom rail welded to balusters including all necessary grouting and making good. | 17 | SM | | |
| | Painting and decorations | | | | |
| J | Prepare and apply one undercoat and two finishing coats of first quality silk vynil emulsion paint to plastered soffites of staircase and landings. | 12 | SM | | |
| K | Ditto first quality gloss oil paint on general metal surfaces. | 17 | SM | | |
| | CEILING FINISHES | | | | |
| L | Gauged plaster (1:2:9) with trowel finish in 12 mm thick to concrete surfaces to project mangers approval. | 570 | SM | | |
| | Painting | | | | |
| M | Prepare and apply one undercoat and two finishing coats of first quality silk vynil emulsion paint on plastered soffits of suspended slab and beams. | 570 | SM | | |
| | Total to collection | | | | |
| | COLLECTION<br>Brought forward from page LG/6<br>Brought down from page Above | | | | |
| | TOTAL FOR FINISHES CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 6 | | | | |
| | BALUSTRADING & RAILINGS | | | | |
| | Wrot mahogany | | | | |
| A | Hand rails to detail, size 100x100mm grooved to receive 50x50mm SHS toprail (measured separately) | 37 | LM | | |
| | Mild Steel Staircase Balustrading | | | | |
| B | Composite staircase ready primed mild steel balustrading comprising 50 x 50 x 3 mm Thick SHS top and bottom rails,25 x25 x 2 mm thick balustades at 125 mm Centres to detail including all welding, finishing and fixing to and including concrete plinth and ends to walling, overall height 900 mm | 37 | SM | | |
| C | Ditto but to courtyard | 45 | SM | | |
| | PAINTING & DECORATING | | | | |
| | Touch up primer and apply one undercoat and two finishing coats of 1st quality supergloss paint to:- | | | | |
| D | General surfaces of staircase balustrading (b.s.m) | 74 | SM | | |
| | Prepare and apply two undercoats stainer and two finishing coats of vanish to:- | | | | |
| E | Surfaces of wooden handrail exceeding 200 but not exceeding 300 mm Girth | 37 | LM | | |
| F | Ditto;surfaces not exceeding 100 mm Girth | 37 | LM | | |
| | TOTAL FOR BALUSTRATING AND RAILLING CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 7** | | | | |
| | **BUILDER'S WORK IN CONNECTION TO SERVICES** | | | | |
| | The contractor shall here allow all builder's work in connection with Electrical and Mechanical Engineering Installation | | | | |
| | The builders work shall include but not limited to:- | | | | |
| | a) Chases in wall, concrete work, and make good | | | | |
| | b) Forming, making or leaving holes, etc in masonry concrete or wood work | | | | |
| | c) Making good all disturbed area | | | | |
| | d) Excavations refill and disposal to spoil | | | | |
| | Electrical Installation Works | | | | |
| A | Allow for all builder's work in connection with associated Electrical Works outlined | | Item | | |
| | Mechanical Engineering | | | | |
| B | Allow for all builder's work in connection with associated Mechanical Works | | Item | | |
| | TOTAL FOR BUILDER'S WORK IN CONNECTION WITH SERVICES CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **SUMMARY** | | | | |
| 1 | REINFORCED CONCRETE SUPERSTRUCTURE | | | | |
| 2 | WALLING | | | | |
| 3 | DOORS | | | | |
| 4 | WINDOWS | | | | |
| 5 | FINISHES | | | | |
| 6 | BALUSTRADING & RAILINGS | | | | |
| 7 | BUILDERS WORKS IN CONNECTION WITH SERVICES | | | | |
| | TOTAL FOR LOWER GROUND CARRIED TO COLLECTION SUMMARY | | | | |

# GROUND FLOOR

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | GROUND FLOOR<br>ELEMENT NO. 1<br><br>REINFORCED CONCRETE SUPERSTRUCTURE | | | | |
| | Vibrated reinforced concrete class 25/20 (1:1.5:3) in:- | | | | |
| A | Columns. | 16 | CM | | |
| B | Beams | 37 | CM | | |
| C | Ramp beams | 8 | CM | | |
| D | 200mm thick Lift Shaft ana strong room Walls | 137 | SM | | |
| E | 175mm Thick suspended slabs. | 929 | SM | | |
| F | 150 mm Thick staircase landing. | 14 | SM | | |
| G | Ditto but to steps | 3 | CM | | |
| H | Ditto but to staircases | 3 | CM | | |
| I | 150 mm Thick ramp. | 62 | SM | | |
| J | Lintels<br>Precast Lintel size 200mm by 225 mm high , reinforced with 12mm diameter deformed bar top and bottom | 153 | LM | | |
| | Reinforcement | | | | |
| | High yield ribbed bar reinforcement to KS : ISO 6935-2(assorted sizes) to: | | | | |
| K | 8 mm Diameter bars. | 10,295 | Kgs | | |
| L | 10 mm Ditto. | 8,579 | Kgs | | |
| M | 12 mm Ditto. | 5,577 | Kgs | | |
| N | 16 mm Ditto. | 9,437 | Kgs | | |
| O | 20 mm Ditto. | 9,008 | Kg | | |
| | Sawn cypress formwork to:- | | | | |
| P | Vertical sides of Lift Shaft and strong room Walls | 114 | SM | | |
| Q | Vertical columns. | 282 | SM | | |
| R | Slopping soffits of staircase. | 12 | SM | | |
| S | Soffits of landing. | 14 | SM | | |
| T | Soffits of suspended slab. | 929 | SM | | |
| U | Edges of risers 75-150mm high. | 61 | LM | | |
| V | Edges of steps 75-150mm high. | 58 | LM | | |
| W | Slopping edges of staircase, 75-150mm high. | 11 | LM | | |
| X | Edges of landing 150mm high. | 13 | LM | | |
| Y | Edges of suspended floor slab 75-150mm high. | 184 | LM | | |
| Z | Edge of ramp 75-150 mm high. | 65 | LM | | |
| | TOTAL FOR REINFORCED CONCRETE SUPERSTRUCTURE CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 2<br>WALLING | | | | |
| | EXTERNAL WALLING | | | | |
| | Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 25x3 mm thick hoop iron | | | | |
| A | 200 mm Thick walling. | 474 | SM | | |
| | INTERNAL WALLING | | | | |
| | Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 20 swq x 25 mm wide hoop iron | | | | |
| B | 200 mm Thick walling. | 197 | SM | | |
| C | 150 mm Ditto. | 16 | SM | | |
| | Damp proof course | | | | |
| D | 200 mm Wide bituminous felt hessian base dam-proof course to B.S 743 laid; horizontally with 150mm minimum laps and beddedon cement and sand (1:3) mortar. | 264 | LM | | |
| E | 150 mm Ditto. | 10 | LM | | |
| | Aluminum and MDF/Gypsum Drywall Partitions | | | | |
| F | Aluminium and MDF/Gypsum composite framework comprising of heavy duty; grey powder coated ; comprising 100x50x3mm top rail thick sections with one channel, 100x50mm top rail with one, 100x50mm middle horizontal rail with two channels, 100x50mm bottom rail with one channel, 100x50mm middle horizontal rail with two channels,100x50mm vertical rail with two channels, 25x25mm anodized aluminium glazing beading,20mm black rubber glazing strips. | 104 | SM | | |
| | Expansion joint | | | | |
| G | 25mm thick "Styrofoam" filler between walls, columns etc | 103 | SM | | |
| H | 20 x 10mm Deep Hot applied sealant "Bitubond" | 30 | LM | | |
| J | 25mm Thick jumbolene sealant cord | 30 | LM | | |
| | SUNSHADE | | | | |
| | *Providing, constructing and fixing sunshade (WALL) to external elevations, with and including 75 x 75 x 8 mm RHS steel section and 220 x 110 x 75 mm bricks laid in approved patterned bonded using cast cement adhesive / cement mortar, complete with setting out, formwork, reinforcement, concrete works, or steel framing as applicable, including brackets/anchors, waterproofing,anti-rust primer, drainage falls, finishes, and all necessary materials, labour, tools and equipment, executed to the approval of the Architect.* | | | | |
| K | Sunshade elements | 350 | SM | | |
| | TOTAL FOR WALLING CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 3<br>DOORS<br>Aluminium Sliding Door Panel | | | | |
| | Double door overal size 3000 x2900mm high; comprising of 2850 x 2400mm high openeable leaf and 500mm high top permanent vent with 6mm glazing both sides and comprising 75 x 50 x 3 mm aluminium frames powder coated to clients approval, assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) asper the Architec's Schedule | | | | |
| A | Door overall size;3000 x 2900 mm high D01 | 1 | NO. | | |
| B | Door overall size;1000 x 2400 mm high D05 | 4 | NO. | | |
| | Purpose made Mild Steel Louvred Door: comprising of 100 x 50 x 3mm top, bottom and vertical framings/rails; 1.5mm thick mild steel louvre plate; one coat red oxide primer; as per Architect's drawing and details; | | | | |
| C | Door size 900 x 2400 mm high D04. | 2 | NO | | |
| | Panel doors<br>50 mm Thick wrot mahogany panelled doors comprising of 200 x 50 mm thick stiles and top rail; 150 x 50 mm thick middle and bottom rail | | | | |
| D | Double leaf door size 1100 x 2900 mm high D02. | 8 | NO | | |
| E | Ditto size 1500 x 2900 mm high D03. | 4 | NO | | |
| | Solid core Flush Doors<br>50mm thck solid core flush core comprising of 150 x 5o mm top rail and stiles, 200x 50mm bottom rail resulting panel infilled with blockboard faced with interior quality mahogany veneer both sides. | | | | |
| F | Door size 800 x 2100 mm high D04. | 3 | NO | | |
| | Hardwood door frames and finishes | | | | |
| G | 200 x 50 mm Frame with three labours: moulded screwed and pelleted | 111 | LM | | |
| H | Ditto 150 x 50 mm frame | 41 | LM | | |
| J | 200 x 50mm Transome with four labours :moulded | 11 | LM | | |
| K | Ditto 150 x 50 mm | 6 | LM | | |
| L | 25 mm Quadrant beading. | 169 | LM | | |
| M | 40 x 20 mm Moulded architrave. | 169 | LM | | |
| N | 20 x 25 mm Glazing beading | 73 | LM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.3 CONT'D | | | | |
| | Ironmongery as per 'union' catalogue or other equal and approved | | | | |
| A | 100 mm Pressed steel brass hinges. | 20 | PRS | | |
| B | 180 Degrees hinges (for disabled toilet doors) | 2 | PRS | | |
| C | 3 Lever mortice lock complete with aluminium handles. | 12 | NO | | |
| D | 2 Lever mortice lock complete with brass handles. | 3 | NO | | |
| E | 38 mm Diameter rubber door stop with rawl bolt fixed to wall. | 15 | NO | | |
| F | Indicator bolts to architects approval. | 3 | NO | | |
| G | Automatic Door closer as Union ref 8583 or 8824. | 12 | NO | | |
| H | 150mm long tower bolt | 12 | NO. | | |
| J | Brass pull handle, 300 x 25mm: | 3 | NO. | | |
| K | Stainless steel disabled signage plate: | 8 | NO. | | |
| L | 100 x 50mm door signage in printed vinyls | 15 | NO. | | |
| | Metal fixing cramps | | | | |
| M | 250 x 25 x 2 mm. L- shaped mild steel door fixing cramps one end split and fanged and built into natural stone wall other end drilled and screwed to frame. | 45 | NO | | |
| | 4mm Thick clear glass in: | | | | |
| N | Panes 0.1 - 0.5 square metres in metal putty. | 22 | SM | | |
| | Painting and decoration | | | | |
| | Prime back of wood before fixing | | | | |
| O | General surfaces of steel door | 36 | SM | | |
| | Prepare surfaces and apply and apply one undercoat and two finishing coats of first quality gloss oil paint to: | | | | |
| P | General surfaces of wood. | 96 | SM | | |
| | Preapare surfaces and apply one undercoat and two finishing coats of polyrethane clear varnish to:- | | | | |
| Q | General surfaces wood surfaces over 300 mm girth. | 86 | SM | | |
| R | Surfaces 200-300 mm girth. | 111 | LM | | |
| S | Surfaces not exceeding 100 mm girth. | 222 | LM | | |
| | Total caried to collection below | | | | |
| | COLLECTION | | | | |
| | Brought forward from page GF/3 | | | | |
| | Brought forward from page GF/4 | | | | |
| | TOTAL FOR DOORS CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.4 | | | | |
| | WINDOWS | | | | |
| | General Notes: | | | | |
| 1 | All Steel sections to be standard steel manufacturing sections only | | | | |
| 2 | Colour to be decided later | | | | |
| 3 | All accessories to be primed to match frame and **samples of all to be approved in the first instance.** | | | | |
| 4 | All flush bolts to be minimum 200mm long, chrome plated of approved quality. | | | | |
| 5 | All corner glazing to be butt jointed with silicon sealant | | | | |
| 6 | All bathroom windows to be glazed in opaque laminated glass. Where possible, the BQ has shown these as washroom windows; but it will be the tenderer's responsibility to crosscheck with the Architect's drawings as to the accuracy of this. | | | | |
| | Contractor to note that the artisan employed to execute the aluminium works MUST be an approved specialist to the satification Project Manager | | | | |
| | Heavy duty powder coated aluminium windows to B.S. 4813 | | | | |
| | The following in heavy duty powder coated aluminium windows from approved manufacturer(s) complete with frames mullions trasomes railing and necessary intermidiate reinforcement elements including all weather strips, rubber glazing strips,couplings, ironmonger icluding hinges, fasteners and stays, sliding rails( where necessary) bars; panes left open for glazing to Architects detail | | | | |
| A | 3000 x 1800 mm High W01 | 8 | SM | | |
| | Supply, assemble and fix the following approved Standard windows casements complete with brass (hinges, stays, fasteners), permanent vent with mosquito gauze and sheet metal hood etc assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) (Grille and Glazing excluded) all to Architects details and approval | | | | |
| B | Size 1750 x 1800 mm W02. | 8 | NO | | |
| C | Ditto but 900 x 1800 mm W03. | 7 | NO | | |
| D | Ditto but 600 x 1200 mm W04. | 6 | NO | | |
| E | Ditto but 1800 x 11000 mm W05. | 2 | NO. | | |
| F | Ditto but 2100 x 900 mm W06. | 3 | NO. | | |
| | Glazing | | | | |
| G | 4 mm Thick clear sheet glass and glazing with putty in panes not exceeding 0.10 - 0.50 square metre. | 126 | SM | | |
| H | Ditto but to obscured glass. | 5 | SM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.4 CONT'D** | | | | |
| | **Window Grilles** | | | | |
| A | Patterned mild steel window grille comprising of 25 x 25 x 2mm RHS horizontal members at 200mm centres and 25 x 25 x 2mm RHS vertical members at 100mm centres as per the Architect's drawings. | 131 | SM | | |
| | **Window Cill** | | | | |
| B | 275x75mm thick concrete cill weathered,throated and painted to approval. | 63 | LM | | |
| | **Window Board** | | | | |
| C | 150 x 25 mm wrot mahogany window board plugged to masonry wall. | 63 | LM | | |
| | **Window Blinds** | | | | |
| D | Supply and fix Venetian Window Blinds to general casement window surfaces to specifications | 63 | LM | | |
| | **Painting and Decorating** | | | | |
| E | Prepare surfaces and apply one undercoat and two finishing coats first quality gloss oil to general windows internally. | 131 | SM | | |
| F | Ditto externally. | 131 | SM | | |
| | **Total caried to collection below** | | | | |
| | **COLLECTION** | | | | |
| | Brought forward from page GF/5 | | | | |
| | Brought forward from page GF/6 | | | | |
| | **TOTAL FOR WINDOWS CARRIED TO SUMMARY** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 5 | | | | |
| | FINISHES | | | | |
| | Wall Finishes<br>Internal walls | | | | |
| | Plaster; 15 mm thick first coat of cement, lime and sand (1:2:9); 3 mm second coat of cement, lime putty and sand (1:1:6); steel trowelled smooth. | | | | |
| A | Walls internally. | 841 | SM | | |
| B | Ditto reveals 100-200 mm wide. | 484 | LM | | |
| C | Ditto jambs ditto. | 484 | LM | | |
| D | Backing screed; cement and sand 1:4 wood floated.<br>12 mm Thick cement and sand (1:4) backing to receive ceramic tiles (m/s). | 59 | SM | | |
| | Approved coloured ceramic tiles; glazed; to regular pattern; bedding, jointing and pointing in cement mortar (1:4); grouting joints with matching cement | | | | |
| E | 250 x 400 x 6mm Thick coloured glazed wall tiles fixed with approved adhesive. | 59 | SM | | |
| F | 100 mm Wide decorated boarder tile | 48 | LM | | |
| | PAINTING & DECORATING<br>Skimming | | | | |
| G | Carefully prepare the plastered surface by sanding and skimming with gysum powder to achieve the smooth surface. | 1,360 | SM | | |
| | Apply three coats of premium quality silk vinyl paint as or equal and approved to:- | | | | |
| H | Plastered surfaces internally. | 841 | SM | | |
| J | Plastered reveals (100 -200mm). | 484 | LM | | |
| K | Ditto jambs ditto. | 484 | LM | | |
| | External Wall Finishes | | | | |
| L | 15 mm Thick cement sand (1:4) render. | 474 | SM | | |
| M | 300 x 300 mm Square section concrete molding encased halfway down to Architecs details. | 50 | SM | | |
| | Painting<br>Prepare and apply one undercoat and two finishing coats of vynil matt emulsion paint; colour to match Clients corporate colours to :- | | | | |
| N | Rendered surfaces. | 474 | SM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.5 CONT'D | | | | |
| | Floor Finishes | | | | |
| | Floor screed; cement and sand (1:4) wood floated:- | | | | |
| A | 30 mm thick to receive ceramic tiles (m.s). | 980 | SM | | |
| B | 20 mm thick to receive terrazzo floor finishes (m.s). | 109 | SM | | |
| | Ceramic tiles | | | | |
| | Approved Ceramic floor tiles; to regular pattern; bedding, jointing and pointing in cement mortar to match | | | | |
| C | 600 x 600 x 10 mm Thick; butt joints both ways; to cement sand backing screed (m/s). | 928 | SM | | |
| D | Ditto but non-slip in wet areas. | 52 | SM | | |
| E | 100 mm High skirting. | 406 | LM | | |
| | Polished terrazzo consisting of cement and sand (1:4) screed(m.s) or backing finished with a layer of white cement with approved colour additive, sand and approved marble/granite chipping (1:4:2), 20mm thick horizontally and minimum 10mm thick vertically, trowelled to a smooth and even finish and machine polished and waxed to approval | | | | |
| F | 20 mm Thick terrazzo paving to passage areas. | 109 | SM | | |
| G | 100 mm High Ditto but skirting. | 40 | LM | | |
| | STAIRCASE FINISHES | | | | |
| H | 40 mm Thick terrazzo paving to landing. | 14 | SM | | |
| J | Ditto to risers 150 mm high. | 61 | LM | | |
| K | Ditto treads 300 mm wide. | 10 | LM | | |
| L | 20 x 100 mm Wide sloping skirting. | 11 | LM | | |
| M | 150 mm Staircase strings, | 11 | LM | | |
| N | 12 mm Thick gauged cement lime and sand (1:2:9) plaster to sloping soffites of staircase and landings. | 26 | SM | | |
| | Staircase balustrading | | | | |
| O | 950mm high balustrading comprising 40 x 40 x 1.5mm SHS balusters spaced at 100mm centres fish-tailed and built in to floor at 600mm centres; 40 x 40 x 1.5mm SHS hand rail and 40 x 40 x 1.5mm SHS bottom rail welded to balusters including all necessary grouting and making good. | 25 | SM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.5 CONT'D | | | | |
| | Painting and decorations | | | | |
| A | Prepare and apply one undercoat and two finishing coats of first quality silk vynil emulsion paint to plastered soffites of staircase and landings. | 26 | SM | | |
| B | Ditto first quality gloss oil paint on general metal surfaces. | 25 | SM | | |
| | RAMP FINISHES | | | | |
| C | 40 mm Thick terrazzo paving to ramp. | 62 | SM | | |
| D | 20 x 100 mm Wide sloping skirting. | 65 | LM | | |
| E | 12 mm Thick gauged cement lime and sand (1:2:9) plaster to sloping sides of the ramp. | 78 | SM | | |
| | Balustrading | | | | |
| F | 950mm high balustrading comprising 40 x 40 x 1.5mm SHS balusters spaced at 100mm centres fish-tailed and built in to floor at 600mm centres; 40 x 40 x 1.5mm SHS hand rail and 40 x 40 x 1.5mm SHS bottom rail welded to balusters including all necessary grouting and making good. | 65 | SM | | |
| | Painting and decorations | | | | |
| G | Prepare and apply one undercoat and two finishing coats of first quality silk vynil emulsion paint to plastered soffites of staircase and landings. | 65 | SM | | |
| H | Ditto first quality gloss oil paint on general metal surfaces. | 65 | SM | | |
| | CEILING FINISHES | | | | |
| J | Gauged plaster (1:2:9) with trowel finish in 12 mm thick to concrete surfaces to project mangers approval. | 519 | SM | | |
| | U Baffle Aluminium panel | | | | |
| K | Provide and fix U Baffle Aluminium panel ceiling (M/s Hunter Douglas or Equivalent) consisting of Wood finish panel size 50 mm width X 100mm deep using 0.6mm thick, panel length up to 4 mtr, Coil Coated on a Continuous Paint Line, Double baked and roll formed from enamelled corrosion resistance Aluminium alloy AA 3005 (Al. Mg) for higher strength and good roll forming characteristics. Panels shall be clipped to a baked enamelled Aluminium carrier of 30 mm wide x 47 mm high x 0.5 mm thick, Black Colour coated, one leg of the carriers with cut outs to hold the panels in a module of 200 mm. Panel carrier shall be suspended by means of threaded rod at a distance of 1.8 mtr c/c. Aluminium panels shall be chromatised for maximum bond between metal and paint enamelled twice under high temperature, Exposed side with a full primer and finish coat on a Continuous Paint Line. Ceiling area above U Baffle to be painted in black colour before fixing this system (Measured separately). | 125 | SM | | |
| | Total to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.5 CONT'D** | | | | |
| | **Gypsum ceiling** | | | | |
| A | Supply and fix 12 mm suspended drywall ceiling as Gypsum ceiling affixed to and including 53 x 32 mm U-section galvanised steel studs and channels with rounded, smooth compound sanded edges, edge trims, skimmed and finished in whitewater based SILK VINYL paint finish(ms) to approval | 130 | SM | | |
| B | Ditto but waterproof gypsum board on toilets | 52 | SM | | |
| | **Suspended acoustic ceiling** | | | | |
| C | Accoustic Suspended Ceiling tiles as Armstrong or equal and approved; on and including proprietary pressed metal brandering system; measured over light fittings; including all cutting and trimming to light fittings; columns curved surfaces; finish to horizontal ceilings;edge trims and shadow gaps as necessary; suspended 450 mm below slabs | 155 | SM | | |
| | **Painting** | | | | |
| D | Prepare and apply one undercoat and two finishing coats of first quality silk vynil emulsion paint on plastered soffits of suspended slab and beams. | 519 | SM | | |
| E | Ditto but white emulsion paint on general chipboard ceiling surfaces. | 182 | SM | | |
| F | Ceiling area above U Baffle to be painted in black colour before fixing this system | 125 | SM | | |
| | Total to collection | | | | |
| | **COLLECTION** | | | | |
| | Brought forward from page GF/7 | | | | |
| | Brought forward from page GF/8 | | | | |
| | Brought forward from page GF/9 | | | | |
| | Brought down from page Above | | | | |
| | TOTAL FOR FINISHES CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 6 | | | | |
| | BALUSTRADING & RAILINGS | | | | |
| | Wrot mahogany | | | | |
| A | Hand rails to detail, size 100x100mm grooved to receive 50x50mm SHS toprail (measured separately) | 84 | LM | | |
| | Mild Steel Staircase Balustrading | | | | |
| B | Composite staircase ready primed mild steel balustrading comprising 50 x 50 x 3 mm Thick SHS top and bottom rails,25 x25 x 2 mm thick balustades at 125 mm Centres to detail including all welding, finishing and fixing to and including concrete plinth and ends to walling, overall height 900 mm | 48 | SM | | |
| C | Ditto but to bulcony | 36 | SM | | |
| | PAINTING & DECORATING | | | | |
| | Touch up primer and apply one undercoat and two finishing coats of 1st quality supergloss paint to:- | | | | |
| D | General surfaces of staircase balustrading (b.s.m) | 96 | SM | | |
| | Prepare and apply two undercoats stainer and two finishing coats of vanish to:- | | | | |
| E | Surfaces of wooden handrail exceeding 200 but not exceeding 300 mm Girth | 84 | LM | | |
| F | Ditto;surfaces not exceeding 100 mm Girth | 84 | LM | | |
| | TOTAL FOR BALUSTRATING AND RAILLING CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 7** | | | | |
| | **JOINERY & FITTINGS** | | | | |
| | **Reception counters** | | | | |
| A | Composite aluminium partitions in 85x40x2mm heavy duty frames, 1500mm high comprising powder coated aluminium frames and beading to BS 10 B15 spaced vertically at 900mm centres; horizontally divided into two parts; 900mm high bottom panel infilled in 20mm thick laminated MDF board, 600mm high top panel glazed with & including 4mm thick clear sheet, all to Architect's details. | SM | 27 | | |
| | Glazing | | | | |
| B | 4mm Thick clear sheet glass in panes 0.5 - 1.0 square meters; fixing with aluminium beadings | SM | 8 | | |
| C | 25mm thick plain blockboard counter base supported on MDF/aluminium partion. | SM | 11 | | |
| D | 20mm thick granite counter top on blockboard base (m/s). | SM | 11 | | |
| | Plinths<br>*The following in 100mm thick benching concrete class 15 with 12mm cement sand plaster to top and edges; including all necessary formwork and BRC A142 mesh reinforcement weighing 2.22 kg per square metre* | | | | |
| E | 100mm Thick benching | SM | 45 | | |
| | Shelving<br>*The following in blockboard shelf, sides dividers, back etc stained moulded oak veneered blockboard drawers and doors, complete with malpha hinges viro make cylinder lock, handles and eggshell paint* | | | | |
| F | Low level drawers size 5600 x 600 x 900mm high; Complete with 20mm thick granite worktop | NO | 5 | | |
| G | Full height Storage Cabinets size 6000 x 450 x 2400mm high | NO | 3 | | |
| | Mirror | | | | |
| H | 6mm Thick polished plate glass silver backed mirror with bevelled edges, overall size 450 x 700mm, Plugged and screwed to wall with 4No. chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam. | NO | 6 | | |
| | TOTAL FOR JOINERY & FITTINGS CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 8** | | | | |
| | **BUILDER'S WORK IN CONNECTION TO SERVICES** | | | | |
| | The contractor shall here allow all builder's work in connection with Electrical and Mechanical Engineering Installation | | | | |
| | The builders work shall include but not limited to:- | | | | |
| | a) Chases in wall, concrete work, and make good | | | | |
| | b) Forming, making or leaving holes, etc in masonry concrete or wood work | | | | |
| | c) Making good all disturbed area | | | | |
| | d) Excavations refill and disposal to spoil | | | | |
| | Electrical Installation Works | | | | |
| A | Allow for all builder's work in connection with associated Electrical Works outlined | | Item | | |
| | Mechanical Engineering | | | | |
| B | Allow for all builder's work in connection with associated Mechanical Works | | Item | | |
| | TOTAL FOR BUILDER'S WORK IN CONNECTION WITH SERVICES CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **SUMMARY** | | | | |
| 1 | REINFORCED CONCRETE SUPERSTRUCTURE | | | | |
| 2 | WALLING | | | | |
| 3 | DOORS | | | | |
| 4 | WINDOWS | | | | |
| 5 | FINISHES | | | | |
| 6 | BALUSTRADING & RAILINGS | | | | |
| 7 | JOINERY & FITTINGS | | | | |
| 8 | BUILDERS WORKS IN CONNECTION WITH SERVICES | | | | |
| | TOTAL FOR GROUND FLOOR CARRIED TO COLLECTION SUMMARY | | | | |

# FIRST FLOOR

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | FIRST FLOOR | | | | |
| | ELEMENT NO. 1<br>REINFORCED CONCRETE SUPERSTRUCTURE | | | | |
| | Vibrated reinforced concrete class 25/20 (1:1.5:3) in:- | | | | |
| A | Columns. | 16 | CM | | |
| B | Beams | 63 | CM | | |
| C | 150 mm Thick suspended slabs. | 897 | SM | | |
| D | 150 mm Thick staircase landing. | 11 | SM | | |
| E | Ditto but to staircases steps and risers. | 12 | CM | | |
| F | Lintels<br>Precast Lintel size 200mm by 225 mm high , reinforced with 12mm diameter deformed bar top and bottom | 153 | LM | | |
| | Reinforcement<br>High yield ribbed bar reinforcement to KS : ISO 6935-2(assorted sizes) to: | | | | |
| G | 8 mm Diameter bars. | 9,816 | Kgs | | |
| H | 10 mm Ditto. | 8,180 | Kgs | | |
| I | 12 mm Ditto. | 5,317 | Kgs | | |
| J | 16 mm Ditto. | 8,998 | Kgs | | |
| K | 20 mm Ditto. | 8,589 | Kg | | |
| | Sawn cypress formwork to:- | | | | |
| L | Sides and soffits of beams | 662 | SM | | |
| M | Vertical columns. | 282 | SM | | |
| N | Edges of roof slab 75-150mm high. | 184 | LM | | |
| O | Soffits of suspended slab. | 897 | SM | | |
| | TOTAL FOR REINFORCED CONCRETE SUPERSTRUCTURE CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 2<br>WALLING | | | | |
| | EXTERNAL WALLING | | | | |
| | Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 25x3 mm thick hoop iron | | | | |
| A | 200 mm Thick walling. | 483 | SM | | |
| | INTERNAL WALLING<br>Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 20 swg x 25 mm wide hoop iron | | | | |
| B | 200 mm Thick walling. | 287 | SM | | |
| C | 150 mm Ditto. | 41 | SM | | |
| | Damp proof course | | | | |
| D | 200 mm Wide bituminous felt hessian base dam-proof course to B.S 743 laid; horizontally with 150mm minimum laps and beddedon cement and sand (1:3) mortar. | 281 | LM | | |
| E | 150 mm Ditto. | 14 | LM | | |
| | Alluminium Partitions | | | | |
| F | Aluminium and MDF/Gypsum composite framework comprising of heavy duty; grey powder coated ; comprising 100x50x3mm top rail thick sections with one channel, 100x50mm top rail with one, 100x50mm middle horizontal rail with two channels, 100x50mm bottom rail with one channel, 100x50mm middle horizontal rail with two channels,100x50mm vertical rail with two channels, 25x25mm anodized aluminium glazing beading,20mm black rubber glazing strips. | 116 | SM | | |
| | Expansion joint | | | | |
| G | 25mm thick "Styrofoam" filler between walls, columns etc | 105 | LM | | |
| H | 20 x 10mm Deep Hot applied sealant "Bitubond" | 30 | LM | | |
| J | 25mm Thick jumbolene sealant cord | 30 | LM | | |
| | SUNSHADE | | | | |
| | *Providing, constructing and fixing sunshade (WALL) to external elevations, with and including 75 x 75 x 8 mm RHS steel section and 220 x 110 x 75 mm bricks laid in approved patterned bonded using cast cement adhesive / cement mortar, complete with setting out, formwork, reinforcement, concrete works, or steel framing as applicable, including brackets/anchors, waterproofing,anti-rust primer, drainage falls, finishes, and all necessary materials, labour, tools and equipment, executed to the approval of the Architect.* | | | | |
| K | Sunshade elements | 350 | SM | | |
| | TOTAL FOR WALLING CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 3<br>DOORS | | | | |
| | Aluminium Sliding Door Panel | | | | |
| | Double door overal size 3000 x2900mm high; comprising of 2850 x 2400mm high openeable leaf and 500mm high top permanent vent with 6mm glazing both sides and comprising 75 x 50 x 3 mm aluminium frames powder coated to clients approval, assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) asper the Architec's Schedule | | | | |
| A | Door overall size;1000 x 2400 mm high D05 | 4 | NO. | | |
| | Purpose made Mild Steel Louvred Door: comprising of 100 x 50 x 3mm top, bottom and vertical framings/rails; 1.5mm thick mild steel louvre plate; one coat red oxide primer; as per Architect's drawing and details; | | | | |
| B | Door size 900 x 2400 mm high D04. | 2 | NO | | |
| | Panel doors | | | | |
| | 50 mm Thick wrot mahogany panelled doors comprising of 200 x 50 mm thick stiles and top rail; 150 x 50 mm thick middle and bottom rail | | | | |
| C | Ditto size 1100 x 2400 mm high D02A. | 9 | NO | | |
| D | Ditto size 1500 x 2400 mm high D03A. | 5 | NO | | |
| | Solid core Flush Doors | | | | |
| | 50mm thck solid core flush core comprising of 150 x 5o mm top rail and stiles, 200x 50mm bottom rail resulting panel infilled with blockboard faced with interior quality mahogany veneer both sides. | | | | |
| E | Door size 800 x 2100 mm high D04. | 3 | NO | | |
| | Wrot mahogany as described in: | | | | |
| F | 200 x 50 mm Frame with three labours: moulded screwed and pelleted | 105 | LM | | |
| B | Ditto 150 x 50 mm frame | 47 | LM | | |
| C | 200 x 50mm Transome with four labours :moulded | 13 | LM | | |
| D | Ditto 150 x 50 mm | 6 | LM | | |
| G | 25 mm Quadrant beading. | 171 | LM | | |
| H | 75 x 25 mm Moulded architrave. | 171 | LM | | |
| G | 20 x 25 mm Glazing beading | 85 | LM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.3 CONT'D | | | | |
| | Ironmongery as per 'union' catalogue or other equal and approved | | | | |
| A | 100 mm Pressed steel brass hinges. | 26 | PRS | | |
| B | 180 Degrees hinges (for disabled toilet doors) | 2 | PRS | | |
| C | 3 Lever mortice lock complete with aluminium handles. | 16 | NO | | |
| D | 2 Lever mortice lock complete with brass handles. | 3 | NO | | |
| E | 38 mm Diameter rubber door stop with rawl bolt fixed to wall. | 19 | NO | | |
| F | Indicator bolts to architects approval. | 3 | NO | | |
| G | Automatic Door closer as Union ref 8583 or 8824. | 16 | NO | | |
| H | 150mm long tower bolt | 12 | NO. | | |
| J | Brass pull handle, 300 x 25mm: | 3 | NO. | | |
| K | Stainless steel disabled signage plate: | 3 | NO. | | |
| L | 100 x 50mm door signage in printed vinyls | 19 | NO. | | |
| | Metal fixing cramps | | | | |
| M | 250 x 25 x 2 mm. L- shaped mild steel door fixing cramps one end split and fanged and built into natural stone wall other end drilled and screwed to frame. | 57 | NO | | |
| | 4mm Thick clear glass in: | | | | |
| N | Panes 0.1 - 0.5 square metres in metal putty. | 14 | SM | | |
| | Painting and decoration | | | | |
| | Prime back of wood before fixing | | | | |
| O | Sufaces 100-200 mm girth. | 171 | LM | | |
| P | Ditto not exceeding 100 mm girth. | 171 | LM | | |
| | Prepare surfaces and apply and apply one undercoat and two finishing coats of first quality gloss oil paint to: | | | | |
| Q | General surfaces of steel door | 12 | SM | | |
| | Prepare surfaces and apply and apply one undercoat and two finishing coats of first quality gloss oil paint to: | | | | |
| R | General surfaces of wood. | 112 | SM | | |
| S | Wood surfaces 100-200 mm girth. | 171 | LM | | |
| T | Ditto not exceeding 100 mm girth. | 171 | LM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.3 CONT'D** | | | | |
| | Apply alluminium primer or other equal and approved wood primer befor fixing to:- | | | | |
| A | Backs of frame 100-200 mm girth. | 342 | LM | | |
| | Preapare surfaces and apply one undercoat and two finishing coats of polyrethane clear varnish to:- | | | | |
| B | General surfaces wood surfaces over 300 mm girth. | 112 | SM | | |
| C | Surfaces 200-300 mm girth. | 103 | LM | | |
| D | Surfaces not exceeding 100 mm girth. | 206 | LM | | |
| | Total caried to collection below | | | | |
| | **COLLECTION** | | | | |
| | Brought forward from page FF/3 | | | | |
| | Brought forward from page FF/4 | | | | |
| | Brought forward from page above | | | | |
| | TOTAL FOR DOORS CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.4<br>WINDOWS | | | | |
| | General Notes: | | | | |
| 1 | All Steel sections to be standard steel manufacturing sections only | | | | |
| 2 | Colour to be decided later | | | | |
| 3 | All accessories to be primed to match frame and **samples of all to be approved in the first instance.** | | | | |
| 4 | All flush bolts to be minimum 200mm long, chrome plated of approved quality. | | | | |
| 5 | All corner glazing to be butt jointed with silicon sealant | | | | |
| 6 | All bathroom windows to be glazed in opaque laminated glass. Where possible, the BQ has shown these as washroom windows; but it will be the tenderer's responsibility to crosscheck with the Architect's drawings as to the accuracy of this. | | | | |
| | Contractor to note that the artisan employed to execute the aluminium works MUST be an approved specialist to the satification Project Manager | | | | |
| | Heavy duty powder coated aluminium windows to B.S. 4813 | | | | |
| | The following in heavy duty powder coated aluminium windows from approved manufacturer(s) complete with frames mullions trasomes railing and necessary intermidiate reinforcement elements including all weather strips, rubber glazing strips,couplings, ironmonger icluding hinges, fasteners and stays, sliding rails( where necessary) bars; panes left open for glazing to Architects detail | | | | |
| A | 3000 x 1800 mm High W01 | 8 | SM | | |
| | Supply, assemble and fix the following approved Standard windows casements complete with brass (hinges, stays, fasteners), permanent vent with mosquito gauze and sheet metal hood etc assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) (Grille and Glazing excluded) all to Architects details and approval | | | | |
| B | Size 1750 x 1800 mm W02. | 7 | NO | | |
| C | Ditto but 900 x 1800 mm W03. | 9 | NO | | |
| D | Ditto but 600 x 1200 mm W04. | 6 | NO | | |
| E | Ditto but 2100 x 900 mm W06. | 3 | NO. | | |
| F | Ditto but 3400 x 1800 mm W07. | 1 | NO. | | |
| | Glazing | | | | |
| G | 4 mm Thick clear sheet glass and glazing with putty in panes not exceeding 0.10 - 0.50 square metre. | 76 | SM | | |
| H | Ditto but to obscured glass. | 5 | SM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.4 CONT'D** | | | | |
| A | **Window Grilles**<br>Patterned mild steel window grille comprising of 25 x 25 x 2mm RHS horizontal members at 200mm centres and 25 x 25 x 2mm RHS vertical members at 100mm centres as per the Architect's drawings. | 81 | SM | | |
| B | **Window Cill**<br>275x75mm thick concrete cill weathered,throated and painted to approval. | 53 | LM | | |
| C | **Window Board**<br>150 x 25 mm wrot mahogany window board plugged to masonry wall. | 53 | LM | | |
| D | **Window Blinds**<br>Supply and fix Venetian Window Blinds to general casement window surfaces to specifications | 53 | LM | | |
| E | **Painting and Decorating**<br>Prepare surfaces and applu one undercoat and two finishing coats first quality gloss oil to general windows internally. | 81 | SM | | |
| F | Ditto externally. | 81 | SM | | |
| | Total caried to collection below | | | | |
| | **COLLECTION**<br><br>Brought forward from page FF/6<br><br>Brought forward from page FF/7 | | | | |
| | TOTAL FOR WINDOWS CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 5<br>FINISHES | | | | |
| | Wall Finishes<br>Internal walls | | | | |
| | Plaster; 15 mm thick first coat of cement, lime and sand (1:2:9); 3 mm second coat of cement, lime putty and sand (1:1:6); steel trowelled smooth. | | | | |
| A | Walls internally. | 986 | SM | | |
| B | Ditto reveals 100-200 mm wide. | 770 | LM | | |
| C | Ditto jambs ditto. | 770 | LM | | |
| | Backing screed; cement and sand 1:4 wood floated. | | | | |
| D | 12 mm Thick cement and sand (1:4) backing to receive ceramic tiles (m/s). | 153 | SM | | |
| | Approved coloured ceramic tiles; glazed; to regular pattern; bedding, jointing and pointing in cement mortar (1:4); grouting joints with matching cement | | | | |
| E | 250 x 300 x 6 mm Thick; butt joints both ways; to cement sand backing screed (m/s). | 153 | SM | | |
| F | 100 mm Wide decorated boarder tile | 48 | LM | | |
| | PAINTING & DECORATING<br>Skimming | | | | |
| G | Carefully prepare the plastered surface by sanding and skimming with gysum powder to achieve the smooth surface. | 1,883 | SM | | |
| | Apply three coats of premium quality silk vinyl paint as or equal and approved to:- | | | | |
| H | Plastered surfaces internally. | 986 | SM | | |
| J | Plastered reveals (100 -200mm). | 770 | LM | | |
| K | Ditto jambs ditto. | 770 | LM | | |
| | External Wall Finishes | | | | |
| L | Horizontal and vertical key pointing in cement and sand (1:3) mortar. | 290 | SM | | |
| M | 15 mm Thick cement sand (1:4) render. | 483 | SM | | |
| N | 300 x 300 mm Square section concrete molding encased halfway down to Architects details. | 1 | SM | | |
| | Painting | | | | |
| | Prepare and apply one undercoat and two finishing coats of vynil matt emulsion paint; colour to match Clients corporate colours to :- | | | | |
| O | Rendered surfaces. | 483 | SM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.5 CONT'D | | | | |
| | Floor Finishes | | | | |
| | Floor screed; cement and sand (1:4) wood floated:- | | | | |
| A | 30 mm thick to receive ceramic tiles (m.s). | 929 | SM | | |
| B | 20 mm thick to receive terrazzo floor finishes (m.s). | 59 | SM | | |
| | Ceramic tiles | | | | |
| | Approved Ceramic floor tiles; to regular pattern; bedding, jointing and pointing in cement mortar to match | | | | |
| C | 600 x 600 x 10 mm Thick; butt joints both ways; to cement sand backing screed (m/s). | 893 | SM | | |
| D | Ditto but non-slip in wet areas. | 36 | SM | | |
| E | 100 mm High skirting. | 500 | LM | | |
| | Polished terrazzo consisting of cement and sand (1:4) screed(m.s) or backing finished with a layer of white cement with approved colour additive, sand and approved marble/granite chipping (1:4:2), 20mm thick horizontally and minimum 10mm thick vertically, trowelled to a smooth and even finish and machine polished and waxed to approval | | | | |
| F | 20 mm Thick terrazzo paving to passage areas. | 59 | SM | | |
| G | 100 mm High Ditto but skirting. | 40 | LM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.5 CONT'D | | | | |
| | CEILING FINISHES | | | | |
| A | Gauged plaster (1:2:9) with trowel finish in 12 mm thick to concrete surfaces to project mangers approval. | 897 | SM | | |
| | U Baffle Aluminium panel | | | | |
| B | Provide and fix U Baffle Aluminium panel ceiling (M/s Hunter Douglas or Equivalent) consisting of Wood finish panel size 50 mm width X 100mm deep using 0.6mm thick, panel length up to 4 mtr, Coil Coated on a Continuous Paint Line, Double baked and roll formed from enamelled corrosion resistance Aluminium alloy AA 3005 (Al. Mg) for higher strength and good roll forming characteristics. Panels shall be clipped to a baked enamelled Aluminium carrier of 30 mm wide x 47 mm high x 0.5 mm thick, Black Colour coated, one leg of the carriers with cut outs to hold the panels in a module of 200 mm. Panel carrier shall be suspended by means of threaded rod at a distance of 1.8 mtr c/c. Aluminium panels shall be chromatised for maximum bond between metal and paint enamelled twice under high temperature, Exposed side with a full primer and finish coat on a Continuous Paint Line. Ceiling area above U Baffle to be painted in black colour before fixing this system (Measured separately). | 125 | SM | | |
| C | Supply and fix 12 mm suspended drywall ceiling as Gypsum ceiling affixed to and including 53 x 32 mm U-section galvanised steel studs and channels with rounded, smooth compound sanded edges, edge trims, skimmed and finished in whitewater based SILK VINYL paint finish(ms) to approval | 136 | SM | | |
| D | Ditto but waterproof gypsum board on toilets | 56 | SM | | |
| | Suspended acoustic ceiling | | | | |
| E | Accoustic Suspended Ceiling tiles as Armstrong or equal and approved; on and including proprietary pressed metal brandering system; measured over light fittings; including all cutting and trimming to light fittings; columns curved surfaces; finish to horizontal ceilings;edge trims and shadow gaps as necessary; suspended 450 mm below slabs | 370 | SM | | |
| | Painting | | | | |
| F | Prepare and apply one undercoat and two finishing coats of first quality silk vynil emulsion paint on plastered soffits of suspended slab and beams. | 897 | SM | | |
| G | Ditto but white emulsion paint on general chipboard ceiling surfaces. | 192 | SM | | |
| H | Ceiling area above U Baffle to be painted in black colour before fixing this system | 125 | SM | | |
| | Total to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | COLLECTION | | | | |
| | Brought forward from page FF/8 | | | | |
| | Brought forward from page FF/9 | | | | |
| | Brought down from page FF/10 | | | | |
| | TOTAL FOR FINISHES CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 6 | | | | |
| | BALUSTRADING & RAILINGS | | | | |
| | Wrot mahogany | | | | |
| A | Hand rails to detail, size 100x100mm grooved to receive 50x50mm SHS toprail (measured separately) | 84 | LM | | |
| | Mild Steel Staircase Balustrading | | | | |
| B | Composite staircase ready primed mild steel balustrading comprising 50 x 50 x 3 mm Thick SHS top and bottom rails,25 x25 x 2 mm thick balustades at 125 mm Centres to detail including all welding, finishing and fixing to and including concrete plinth and ends to walling, overall height 900 mm | 48 | SM | | |
| C | Ditto but to bulcony | 36 | SM | | |
| | PAINTING & DECORATING | | | | |
| | Touch up primer and apply one undercoat and two finishing coats of 1st quality supergloss paint to:- | | | | |
| D | General surfaces of staircase balustrading (b.s.m) | 96 | SM | | |
| | Prepare and apply two undercoats stainer and two finishing coats of vanish to:- | | | | |
| E | Surfaces of wooden handrail exceeding 200 but not exceeding 300 mm Girth | 84 | LM | | |
| F | Ditto;surfaces not exceeding 100 mm Girth | 84 | LM | | |
| | TOTAL FOR BALUSTRATING AND RAILLING CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 7** | | | | |
| | **JOINERY & FITTINGS** | | | | |
| | **Reception counters** | | | | |
| A | Composite aluminium partitions in 85x40x2mm heavy duty frames, 1500mm high comprising powder coated aluminium frames and beading to BS 10 B15 spaced vertically at 900mm centres; horizontally divided into two parts; 900mm high bottom panel infilled in 20mm thick laminated MDF board, 600mm high top panel glazed with & including 4mm thick clear sheet, all to Architect's details. | SM | 27 | | |
| | Glazing | | | | |
| B | 4mm Thick clear sheet glass in panes 0.5 - 1.0 square meters; fixing with aluminium beadings | SM | 8 | | |
| C | 25mm thick plain blockboard counter base supported on MDF/aluminium partion. | SM | 11 | | |
| D | 20mm thick granite counter top on blockboard base (m/s). | SM | 11 | | |
| | Plinths<br>*The following in 100mm thick benching concrete class 15 with 12mm cement sand plaster to top and edges; including all necessary formwork and BRC A142 mesh reinforcement weighing 2.22 kg per square metre* | | | | |
| E | 100mm Thick benching | SM | 45 | | |
| | Shelving<br>*The following in blockboard shelf, sides dividers, back etc stained moulded oak veneered blockboard drawers and doors, complete with malpha hinges viro make cylinder lock, handles and eggshell paint* | | | | |
| F | Low level drawers size 5600 x 600 x 900mm high; Complete with 20mm thick granite worktop | NO | 5 | | |
| G | Full height Storage Cabinets size 6000 x 450 x 2400mm high | NO | 3 | | |
| | Mirror | | | | |
| H | 6mm Thick polished plate glass silver backed mirror with bevelled edges, overall size 450 x 700mm, Plugged and screwed to wall with 4No. chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam. | NO | 6 | | |
| | **TOTAL FOR JOINERY & FITTINGS CARRIED TO SUMMARY** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 8**<br><br>**BUILDER'S WORK IN CONNECTION TO SERVICES**<br><br>The contractor shall here allow all builder's work in connection with Electrical and Mechanical Engineering Installation<br><br>The builders work shall include but not limited to:-<br><br>a) Chases in wall, concrete work, and make good<br><br>b) Forming, making or leaving holes, etc in masonry concrete or wood work<br><br>c) Making good all disturbed area<br><br>d) Excavations refill and disposal to spoil<br><br>Electrical Installation Works | | | | |
| A | Allow for all builder's work in connection with associated Electrical Works outlined | | Item | | |
| | Mechanical Engineering | | | | |
| B | Allow for all builder's work in connection with associated Mechanical Works | | Item | | |
| | **TOTAL FOR BUILDER'S WORK IN CONNECTION WITH SERVICES CARRIED TO SUMMARY** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **SUMMARY** | | | | |
| 1 | REINFORCED CONCRETE SUPERSTRUCTURE | | | | |
| 2 | WALLING | | | | |
| 3 | DOORS | | | | |
| 4 | WINDOWS | | | | |
| 5 | FINISHES | | | | |
| 6 | BALUSTRADING & RAILINGS | | | | |
| 7 | JOINERY & FITTINGS | | | | |
| 8 | BUILDERS WORKS IN CONNECTION WITH SERVICES | | | | |
| | TOTAL FOR FIRST FLOOR CARRIED TO COLLECTION SUMMARY | | | | |

# SECOND FLOOR

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | SECOND FLOOR | | | | |
| | ELEMENT NO. 1<br>REINFORCED CONCRETE SUPERSTRUCTURE | | | | |
| | Vibrated reinforced concrete class 25/20 (1:1.5:3) in:- | | | | |
| A | Columns. | 19 | CM | | |
| B | Beams | 63 | CM | | |
| C | 150 mm Thick suspended slabs. | 49 | SM | | |
| D | Gutter. | 57 | CM | | |
| | Lintels | | | | |
| E | Precast Lintel size 200mm by 225 mm high , reinforced with 12mm diameter deformed bar top and bottom | 153 | LM | | |
| | Reinforcement<br>High yield ribbed bar reinforcement to KS : ISO 6935-2(assorted sizes) to: | | | | |
| F | 8 mm Diameter bars. | 6,323 | Kgs | | |
| G | 10 mm Ditto. | 5,269 | Kgs | | |
| H | 12 mm Ditto. | 3,425 | Kgs | | |
| J | 16 mm Ditto. | 5,796 | Kgs | | |
| K | 20 mm Ditto. | 5,533 | Kg | | |
| | Sawn cypress formwork to:- | | | | |
| L | Sides and soffits of beams | 482 | SM | | |
| M | Vertical columns. | 228 | SM | | |
| N | Slopping soffits of roof slab | 5 | SM | | |
| O | Edges of roof slab 75-150mm high. | 13 | LM | | |
| P | Soffits of suspended slab. | 49 | SM | | |
| Q | Sides and soffits of gutter. | 365 | SM | | |
| | TOTAL FOR REINFORCED CONCRETE SUPERSTRUCTURE CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 2**<br>**WALLING** | | | | |
| | **EXTERNAL WALLING** | | | | |
| | Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 25x3 mm thick hoop iron | | | | |
| A | 200 mm Thick walling. | 473 | SM | | |
| | **Parapet Wall** | | | | |
| B | 200 mm Thick walling as before described. | 166 | SM | | |
| C | 200 x 75 mm Thick weathered and throated precast concrete coping fixed in accordance with the Architect's details. | 184 | LM | | |
| | **Sundries** | | | | |
| D | Fair raking cutting to top of 200 mm thick natural stone wall. | 184 | LM | | |
| E | Labour and materials in eaves filling with 100 mm thick natural stone bedded and jointed in cement and sand mortar (1:4) to eaves 150 mm high. | 184 | LM | | |
| | **INTERNAL WALLING**<br>Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 20 swg x 25 mm wide hoop iron | | | | |
| F | 200 mm Thick walling. | 292 | SM | | |
| G | 150 mm Ditto. | 41 | SM | | |
| | **Damp proof course** | | | | |
| H | 200 mm Wide bituminous felt hessian base dam-proof course to B.S 743 laid; horizontally with 150mm minimum laps and beddedon cement and sand (1:3) mortar. | 221 | LM | | |
| J | 150 mm Ditto. | 14 | LM | | |
| | **Alluminium Partitions** | | | | |
| K | Aluminium and MDF/Gypsum composite framework comprising of heavy duty; grey powder coated ; comprising 100x50x3mm top rail thick sections with one channel, 100x50mm top rail with one, 100x50mm middle horizontal rail with two channels, 100x50mm bottom rail with one channel, 100x50mm middle horizontal rail with two channels,100x50mm vertical rail with two channels, 25x25mm anodized aluminium glazing beading,20mm black rubber glazing strips. | 76 | SM | | |
| | **Expansion joint** | | | | |
| L | 25mm thick "Styrofoam" filler between walls, columns etc | 105 | LM | | |
| M | 20 x 10mm Deep Hot applied sealant "Bitubond" | 30 | LM | | |
| N | 25mm Thick jumbolene sealant cord | 30 | LM | | |
| | **Carried to collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.2 CONT'D**<br>**SUNSHADE**<br><br>*Providing, constructing and fixing sunshade (WALL) to external elevations, with and including 75 x 75 x 8 mm RHS steel section and 220 x 110 x 75 mm bricks laid in approved patterned bonded using cast cement adhesive / cement mortar, complete with setting out, formwork, reinforcement, concrete works, or steel framing as applicable, including brackets/anchors, waterproofing,anti-rust primer, drainage falls, finishes, and all necessary materials, labour, tools and equipment, executed to the approval of the Architect.* | | | | |
| A | Sunshade elements | 350 | SM | | |
| | **Carried to collection** | | | | |
| | **Collection**<br>Brought forward from page SF/2<br><br>Brought forward from page SF/3 | | | | |
| | **TOTAL FOR WALLING CARRIED TO SUMMARY** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 3**<br>**ROOF CONSTRUCTION, COVERING AND RAINWATER DISPOSAL** | | | | |
| | **ROOF CONSTRUCTION AND COVERING**<br>***Roof Structure (All Provisional)***<br><br>*Structural steel sections drilled, welded and bolted as necessary complete with plates, bolts, cleats etc with and including one coat zinc chromate primer, two undercoats and one coat oil paint full gloss; including all necessary cutting; to Structural Engineer's satisfaction and approval*<br><br>**STEEL TRUSSES**<br>**Pitched Roof (All Provisional)**<br><br>*Structural steel sections drilled, welded and bolted as necessary complete with plates, bolts, cleats etc with and including one coat zinc chromate primer, two undercoats and one coat oil paint full gloss; including all necessary cutting; to Structural Engineer's satisfaction and approval*<br><br>*The following in 12No. Trusses (T1) with and including bolted connections including hoisting and fixing in position at a height not exceeding 11.0 metres above ground floor level* | | | | |
| A | Rectangular Hollow Section members, size 75 x 50 x 4mm (9.36 Kg/lm) - External Members (ceiling joist, kingpost & main rafter) | 281 | LM | | |
| B | Ditto, size 50 x 50 x 4mm (5.78 Kg/lm) - Internal Members (struts & ties)<br><br>*Ditto above in 4No. Trusses (T1b-T1c )* | 210 | LM | | |
| C | Rectangular Hollow Sections members, size 75 x 50 x 4mm (9.36 Kg/lm) - External Members (ceiling joist, kingpost & main rafter) | 84 | LM | | |
| D | Ditto, size 50 x 50 x 4mm (5.78 Kg/lm) - Internal Members (strut&ties)<br><br>*Ditto above in 1No. Trusses (T1a)* | 75 | LM | | |
| E | Rectangular Hollow Section members, size 75 x 50 x 4mm (9.36 Kg/lm - External Members (ceiling joist, kingpost & main rafter) | 21 | LM | | |
| F | Ditto size 50 x 50 x 4mm (5.78 Kg/lm) - Internal Members (strut & ties)<br><br>*Ditto above in 2No. Trusses (T2)* | 19 | LM | | |
| G | Rectangular Hollow Section members, size 75 x 50 x 4mm (9.36 Kg/lm - External Members (ceiling joist, kingpost & main rafter) | 29 | LM | | |
| H | Ditto size 50 x 50 x 4mm (5.78 Kg/lm) - Internal Members (strut & ties) | 17 | LM | | |
| | **Carried to collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.3 CONT'D** | | | | |
| | *The following in 3 No. Roof Trusses (T2a-T2b) ;* | | | | |
| A | Rectangular Hollow Section members, size 75 x 50 x 4mm (9.36 Kg/lm - External Members (ceiling joist, kingpost & main rafter) | 42 | LM | | |
| B | Ditto size 50 x 50 x 4mm (5.78 Kg/lm) - Internal Members (strut & ties) | 32 | LM | | |
| | *Ditto above in 2 No. Roof Trusses as* ***T2c*** *;* | | | | |
| C | Rectangular Hollow Section members, size 75 x 50 x 4mm (9.36 Kg/lm - External Members (ceiling joist, kingpost & main rafter) | 28 | LM | | |
| D | Ditto size 50 x 50 x 4mm (5.78 Kg/lm) - Internal Members (strut & ties) | 27 | LM | | |
| | *Ditto above in 2No. Trusses (T3)* | | | | |
| E | Rectangular Hollow Section members, size 75 x 50 x 4mm (9.36 Kg/lm - External Members (ceiling joist, kingpost & main rafter) | 31 | LM | | |
| F | Ditto size 50 x 50 x 4mm (5.78 Kg/lm) - Internal Members (strut & ties) | 26 | LM | | |
| | *Ditto above in 4No. Trusses (T4-T4a)* | | | | |
| G | Rectangular Hollow Section members, size 75 x 50 x 4mm (9.36 Kg/lm - External Members (ceiling joist, kingpost & main rafter) | 75 | LM | | |
| H | Ditto size 50 x 50 x 4mm (5.78 Kg/lm) - Internal Members (strut & ties) | 119 | LM | | |
| J | Zed Purlins as "Brollo" or equal and approved, size - 127 x 50.8 x 2mm (4.05 Kg/lm) | 520 | LM | | |
| K | 16mm Diameter CFL Anti - sagrods in purlins | 347 | LM | | |
| L | Making holes in purlins for anti- sagrods | 221 | NO | | |
| M | Rectangular Hollow Sections members, size 75 x 50 x 4mm (9.36 Kg/lm) - Valley rafter | 25 | LM | | |
| N | Ditto, size 75 x 50 x 4mm, (9.36 Kg/lm) - Hipped rafter | 53 | LM | | |
| O | 75 x 50 x 4mm Thick plate for blocking ends - external members (ceiling joists, kingposts, rafters, valley rafters& hipped rafters) | 130 | NO | | |
| P | 50 x 50 x 3mm Thick plate for blocking ends - external members (struts, ties & bracings) | 350 | NO | | |
| | **Carried to collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.3 CONT'D** | | | | |
| | *Truss connection accessories* | | | | |
| A | 250 x 200 x 8 mm mild steeel plate | 135 | NO | | |
| B | 6mm thick steel gusset plate | 70 | NO | | |
| C | 16mm diameter, 300mm long hold down bolts | 150 | NO | | |
| D | Ditto; 20mm diameter | 90 | NO | | |
| E | Making holes 16mm & 20mm diameter holes in plates | 240 | NO | | |
| | *Purlin connection accessories* | | | | |
| F | 16mm diameter grade 4.6 bolts | 220 | NO | | |
| G | Making holes for 16mm diameter bolts in purlin | 220 | NO | | |
| H | 75 x 50 x 4mm thickplate for blocking ends - external members (ceiling joist, kingposts, rafters, valley rafters& hipped rafters) | 160 | NO | | |
| J | 50 x 50 x 3mm thickplate for blocking ends - external members (struts&ties and bracing) | 650 | NO | | |
| | **Roof Covering** | | | | |
| | *Insulation underlay and flashings* | | | | |
| K | Supply and fix 5mm thick Jumbolene® Heavy Duty Roof Insulation sheeting underlay with 100mm overlaps to steel purlins | 481 | SM | | |
| L | Ditto to ridge cap | 40 | LM | | |
| M | Ditto to valleys; 900mm girth twice bent to profile | 19 | LM | | |
| | *Gauge 28 Versatile roofing sheets or equal and approed sheets; prepainted;-* | | | | |
| N | Roof covering at a pitch of 25 degrees from the horizontal; 150mm laps on ends and sides; fixed to angle section purlins with and including hook bolts and neoprene washers and nuts; include all the necessary fixing accessories | 481 | SM | | |
| O | Hip/ridge capping 450mm wide | 40 | LM | | |
| P | Valley piece; twice bent to profile of valley; 570mm girth (average) to match | 19 | LM | | |
| Q | Sirrah P GR 5kg/sm APP bituminous membrane gutter lining applied against concrete gutter surface by torch application as per the manufacturers instruction including making grooves in concrete, tacking membrane and making good after installation. | 365 | SM | | |
| R | Extra over for gutter lining for dressing membrane over water outlet. | 10 | NO | | |
| | **Carried to collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.3 CONT'D** | | | | |
| A | Heavy gauge uPVC 100 mm diameter down pipe fixed to wall with and including approved wall brackets at 1000 mm centres. | 110 | LM | | |
| B | Extra for swanneck offset in pipe diameter 1200mm long. | 10 | NO | | |
| C | Ditto. for shoe in pipe diameter 500 mm long. | 10 | NO | | |
| D | Ditto 90° bend. | 10 | NO | | |
| | Total carried to collection | | | | |
| | Collection<br>Brought forward from page SF/4<br><br>Brought forward from page SF/5<br><br>Brought forward from page SF/6<br><br>Brought down from page above | | | | |
| | TOTAL FOR ROOF CONSTRUCTION, COVERING AND RAINWATER DISPOSAL CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 4**<br>**DOORS** | | | | |
| | **Aluminium Sliding Door Panel** | | | | |
| | Double door overal size 3000 x2900mm high; comprising of 2850 x 2400mm high openeable leaf and 500mm high top permanent vent with 6mm glazing both sides and comprising 75 x 50 x 3 mm aluminium frames powder coated to clients approval, assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) asper the Architec's Schedule | | | | |
| A | Door overall size;1000 x 2400 mm high D05 | 4 | NO | | |
| | Purpose made Mild Steel Louvred Door: comprising of 100 x 50 x 3mm top, bottom and vertical framings/rails; 1.5mm thick mild steel louvre plate; one coat red oxide primer; as per Architect's drawing and details; | | | | |
| B | Door size 900 x 2400 mm high D04. | 2 | NO | | |
| | **Panel doors** | | | | |
| | **50 mm Thick wrot mahogany panelled doors comprising of 200 x 50 mm thick stiles and top rail; 150 x 50 mm thick middle and bottom rail** | | | | |
| C | Door size 1100 x 2400 mm high D02. | 11 | NO | | |
| D | Ditto size 1500 x 2400 mm high D03. | 5 | NO | | |
| | **Solid core Flush Doors** | | | | |
| | 50mm thck solid core flush core comprising of 150 x 5o mm top rail and stiles, 200x 50mm bottom rail resulting panel infilled with blockboard faced with interior quality mahogany veneer both sides. | | | | |
| E | Door size 800 x 2100 mm high D04. | 3 | NO | | |
| | Hardwood door frames and finishes | | | | |
| F | 200 x 50 mm Frame with three labours: moulded screwed and pelleted | 119 | LM | | |
| G | Ditto 150 x 50 mm frame | 47 | LM | | |
| H | 200 x 50mm Transome with four labours :moulded | 15 | LM | | |
| J | Ditto 150 x 50 mm | 6 | LM | | |
| K | 25 mm Quadrant beading. | 187 | LM | | |
| L | 40 x 20 mm Moulded architrave. | 187 | LM | | |
| M | 20 x 25 mm Glazing beading | 97 | LM | | |
| | **Total carried to collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.4 CONT'D | | | | |
| | Ironmongery as per 'union' catalogue or other equal and approved | | | | |
| A | 100 mm Pressed steel brass hinges. | 29 | PRS | | |
| B | 180 Degrees hinges (for disabled toilet doors) | 2 | PRS | | |
| C | 3 Lever mortice lock complete with aluminium handles. | 18 | NO | | |
| D | 2 Lever mortice lock complete with brass handles. | 3 | NO | | |
| E | 38 mm Diameter rubber door stop with rawl bolt fixed to wall. | 21 | NO | | |
| F | Indicator bolts to architects approval. | 3 | NO | | |
| G | Automatic Door closer as Union ref 8583 or 8824. | 18 | NO | | |
| H | 150mm long tower bolt | 12 | NO. | | |
| J | Brass pull handle, 300 x 25mm: | 3 | NO. | | |
| K | Stainless steel disabled signage plate: | 3 | NO. | | |
| L | 100 x 50mm door signage in printed vinyls | 21 | NO. | | |
| | Metal fixing cramps | | | | |
| M | 250 x 25 x 2 mm. L- shaped mild steel door fixing cramps one end split and fanged and built into natural stone wall other end drilled and screwed to frame. | 63 | NO | | |
| | 4mm Thick clear glass in: | | | | |
| N | Panes 0.1 - 0.5 square metres in metal putty. | 13 | SM | | |
| | Painting and decoration | | | | |
| | Prime back of wood before fixing | | | | |
| O | Sufaces 100-200 mm girth. | 119 | LM | | |
| P | Ditto not exceeding 100 mm girth. | 119 | LM | | |
| | Prepare surfaces and apply and apply one undercoat and two finishing coats of first quality gloss oil paint to: | | | | |
| Q | General surfaces of steel door | 12 | SM | | |
| | Prepare surfaces and apply and apply one undercoat and two finishing coats of first quality gloss oil paint to: | | | | |
| R | General surfaces of wood. | 122 | SM | | |
| S | Wood surfaces 100-200 mm girth. | 119 | LM | | |
| T | Ditto not exceeding 100 mm girth. | 119 | LM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.4 CONT'D** | | | | |
| | Apply alluminium primer or other equal and approved wood primer befor fixing to:- | | | | |
| A | Backs of frame 100-200 mm girth. | 238 | LM | | |
| | Preapare surfaces and apply one undercoat and two finishing coats of polyrethane clear varnish to:- | | | | |
| B | General surfaces wood surfaces over 300 mm girth. | 104 | SM | | |
| C | Surfaces 200-300 mm girth. | 72 | LM | | |
| D | Surfaces not exceeding 100 mm girth. | 144 | LM | | |
| | Total caried to collection below | | | | |
| | **COLLECTION** | | | | |
| | Brought forward from page SF/8 | | | | |
| | Brought forward from page SF/9 | | | | |
| | Brought forward from page above | | | | |
| | TOTAL FOR DOORS CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.5<br>WINDOWS | | | | |
| | General Notes: | | | | |
| 1 | All Steel sections to be standard steel manufacturing sections only | | | | |
| 2 | Colour to be decided later | | | | |
| 3 | All accessories to be primed to match frame and **samples of all to be approved in the first instance.** | | | | |
| 4 | All flush bolts to be minimum 200mm long, chrome plated of approved quality. | | | | |
| 5 | All corner glazing to be butt jointed with silicon sealant | | | | |
| 6 | All bathroom windows to be glazed in opaque laminated glass. Where possible, the BQ has shown these as washroom windows; but it will be the tenderer's responsibility to crosscheck with the Architect's drawings as to the accuracy of this. | | | | |
| | Contractor to note that the artisan employed to execute the aluminium works MUST be an approved specialist to the satification Project Manager | | | | |
| | Heavy duty powder coated aluminium windows to B.S. 4813 | | | | |
| | The following in heavy duty powder coated aluminium windows from approved manufacturer(s) complete with frames mullions trasomes railing and necessary intermidiate reinforcement elements including all weather strips, rubber glazing strips,couplings, ironmonger icluding hinges, fasteners and stays, sliding rails( where necessary) bars; panes left open for glazing to Architects detail | | | | |
| A | 3000 x 1800 mm High W01 | 8 | SM | | |
| | Supply, assemble and fix the following approved Standard windows casements complete with brass (hinges, stays, fasteners), permanent vent with mosquito gauze and sheet metal hood etc assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) (Grille and Glazing excluded) all to Architects details and approval | | | | |
| B | Size 1750 x 1800 mm W02. | 7 | NO | | |
| C | Ditto but 900 x 1800 mm W03. | 8 | NO | | |
| D | Ditto but 600 x 1200 mm W04. | 6 | NO | | |
| E | Ditto but 2100 x 900 mm W06. | 3 | NO. | | |
| F | Ditto but 3400 x 1800 mm W07. | 1 | NO. | | |
| | Glazing | | | | |
| G | 4 mm Thick clear sheet glass and glazing with putty in panes not exceeding 0.10 - 0.50 square metre. | 72 | SM | | |
| H | Ditto but to obscured glass. | 5 | SM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.5 CONT'D** | | | | |
| A | **Window Grilles**<br>Patterned mild steel window grille comprising of 25 x 25 x 2mm RHS horizontal members at 200mm centres and 25 x 25 x 2mm RHS vertical members at 100mm centres as per the Architect's drawings. | 77 | SM | | |
| B | **Window Cill**<br>275x75mm thick concrete cill weathered,throated and painted to approval. | 50 | LM | | |
| C | **Window Board**<br>150 x 25 mm wrot mahogany window board plugged to masonry wall. | 50 | LM | | |
| D | **Window Blinds**<br>Supply and fix Venetian Window Blinds to general casement window surfaces to specifications | 50 | LM | | |
| E | **Painting and Decorating**<br>Prepare surfaces and applu one undercoat and two finishing coats first quality gloss oil to general windows internally. | 77 | SM | | |
| F | Ditto externally. | 77 | SM | | |
| | **Total caried to collection below** | | | | |
| | **COLLECTION**<br><br>Brought forward from page SF/11<br><br>Brought forward from page SF/12 | | | | |
| | **TOTAL FOR WINDOWS CARRIED TO SUMMARY** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 6 | | | | |
| | FINISHES | | | | |
| | Wall Finishes | | | | |
| | Internal walls<br>Plaster; 15 mm thick first coat of cement, lime and sand (1:2:9); 3 mm second coat of cement, lime putty and sand (1:1:6); steel trowelled smooth. | | | | |
| A | Walls internally. | 594 | SM | | |
| B | Ditto reveals 100-200 mm wide. | 592 | LM | | |
| C | Ditto jambs ditto. | 592 | LM | | |
| | Ceramic wall tiles | | | | |
| D | 12 mm Thick cement and sand (1:4) backing to receive ceramic tiles (m/s). | 545 | SM | | |
| | Approved coloured ceramic tiles; glazed; to regular pattern; bedding, jointing and pointing in cement mortar (1:4); grouting joints with matching cement | | | | |
| E | 250 x 400 mm Thick coloured glazed wall tiles fixed with approved adhesive. | 545 | SM | | |
| F | 100 mm Wide decorated boarder tile | 48 | LM | | |
| | PAINTING & DECORATING<br>Skimming | | | | |
| G | Carefully prepare the plastered surface by sanding and skimming with gysum powder to achieve the smooth surface. | 643 | SM | | |
| | Apply three coats of premium quality silk vinyl paint as or equal and approved to:- | | | | |
| H | Plastered surfaces internally. | 594 | SM | | |
| J | Plastered reveals (100 -200mm). | 592 | LM | | |
| K | Ditto jambs ditto. | 592 | LM | | |
| | External Wall Finishes | | | | |
| L | Horizontal and vertical key pointing in cement and sand (1:3) mortar. | 284 | SM | | |
| M | 15 mm Thick cement sand (1:4) render. | 473 | SM | | |
| N | 300 x 300 mm Square section concrete molding encased halfway down to Architects details. | 1 | SM | | |
| | Painting | | | | |
| | Prepare and apply one undercoat and two finishing coats of vynil matt emulsion paint; colour to match Clients corporate colours to :- | | | | |
| O | Rendered surfaces. | 473 | SM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.6 CONT'D | | | | |
| | Floor Finishes | | | | |
| | Floor screed; cement and sand (1:4) wood floated:- | | | | |
| A | 30 mm thick to receive ceramic tiles (m.s). | 929 | SM | | |
| B | 20 mm thick to receive terrazzo floor finishes (m.s). | 92 | SM | | |
| | Ceramic tiles | | | | |
| | Approved Ceramic floor tiles; to regular pattern; bedding, jointing and pointing in cement mortar to match | | | | |
| C | 600 x 600 x 10 mm Thick; butt joints both ways; to cement sand backing screed (m/s). | 845 | SM | | |
| D | Ditto but non-slip in wet areas. | 36 | SM | | |
| E | 100 mm High skirting. | 500 | LM | | |
| | Polished terrazzo consisting of cement and sand (1:4) screed(m.s) or backing finished with a layer of white cement with approved colour additive, sand and approved marble/granite chipping (1:4:2), 20mm thick horizontally and minimum 10mm thick vertically, trowelled to a smooth and even finish and machine polished and waxed to approval | | | | |
| F | 20 mm Thick terrazzo paving to passage areas. | 92 | SM | | |
| | Porcelain tiles | | | | |
| | 400 x 400 mm porcelain floor tiles bedded and jointed in cement sand (1:4) mortar and finished with matching colour waterproof cement | | | | |
| G | 10mm Thick to boardrooms | 48 | SM | | |
| | Total carried to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.6 CONT'D** | | | | |
| | **CEILING FINISHES** | | | | |
| A | Gauged plaster (1:2:9) with trowel finish in 12 mm thick to concrete surfaces to project mangers approval. | 49 | SM | | |
| | **U Baffle Aluminium panel** | | | | |
| B | Provide and fix U Baffle Aluminium panel ceiling (M/s Hunter Douglas or Equivalent) consisting of Wood finish panel size 50 mm width X 100mm deep using 0.6mm thick, panel length up to 4 mtr, Coil Coated on a Continuous Paint Line, Double baked and roll formed from enamelled corrosion resistance Aluminium alloy AA 3005 (Al. Mg) for higher strength and good roll forming characteristics. Panels shall be clipped to a baked enamelled Aluminium carrier of 30 mm wide x 47 mm high x 0.5 mm thick, Black Colour coated, one leg of the carriers with cut outs to hold the panels in a module of 200 mm. Panel carrier shall be suspended by means of threaded rod at a distance of 1.8 mtr c/c. Aluminium panels shall be chromatised for maximum bond between metal and paint enamelled twice under high temperature, Exposed side with a full primer and finish coat on a Continuous Paint Line. Ceiling area above U Baffle to be painted in black colour before fixing this system (Measured separately). | 125 | SM | | |
| C | Supply and fix 12 mm suspended drywall ceiling as Gypsum ceiling affixed to and including 53 x 32 mm U-section galvanised steel studs and channels with rounded, smooth compound sanded edges, edge trims, skimmed and finished in whitewater based SILK VINYL paint finish(ms) to approval | 136 | SM | | |
| D | Ditto but waterproof gypsum board on toilets | 56 | SM | | |
| | **Suspended acoustic ceiling** | | | | |
| E | Accoustic Suspended Ceiling tiles as Armstrong or equal and approved; on and including proprietary pressed metal brandering system; measured over light fittings; including all cutting and trimming to light fittings; columns curved surfaces; finish to horizontal ceilings;edge trims and shadow gaps as necessary; suspended 450 mm below slabs | 370 | SM | | |
| | **Painting** | | | | |
| F | Prepare and apply one undercoat and two finishing coats of first quality silk vynil emulsion paint on plastered soffits of suspended slab and beams. | 49 | SM | | |
| G | Ditto but white emulsion paint on general chipboard ceiling surfaces. | 192 | SM | | |
| H | Ceiling area above U Baffle to be painted in black colour before fixing this system | 125 | SM | | |
| | **Total to collection** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **COLLECTION** | | | | |
| | Brought forward from page SF/13 | | | | |
| | Brought forward from page SF/14 | | | | |
| | Brought down from page SF/15 | | | | |
| | TOTAL FOR FINISHES CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 7 | | | | |
| | BALUSTRADING & RAILINGS | | | | |
| | Wrot mahogany | | | | |
| A | Hand rails to detail, size 100x100mm grooved to receive 50x50mm SHS toprail (measured separately) | 84 | LM | | |
| | Mild Steel Staircase Balustrading | | | | |
| B | Composite staircase ready primed mild steel balustrading comprising 50 x 50 x 3 mm Thick SHS top and bottom rails,25 x25 x 2 mm thick balustades at 125 mm Centres to detail including all welding, finishing and fixing to and including concrete plinth and ends to walling, overall height 900 mm | 48 | SM | | |
| C | Ditto but to bulcony | 36 | SM | | |
| | PAINTING & DECORATING | | | | |
| | Touch up primer and apply one undercoat and two finishing coats of 1st quality supergloss paint to:- | | | | |
| D | General surfaces of staircase balustrading (b.s.m) | 96 | SM | | |
| | Prepare and apply two undercoats stainer and two finishing coats of vanish to:- | | | | |
| E | Surfaces of wooden handrail exceeding 200 but not exceeding 300 mm Girth | 84 | LM | | |
| F | Ditto;surfaces not exceeding 100 mm Girth | 84 | LM | | |
| | TOTAL FOR BALUSTRATING AND RAILLING CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 8** | | | | |
| | **JOINERY & FITTINGS** | | | | |
| | **Reception counters** | | | | |
| A | Composite aluminium partitions in 85x40x2mm heavy duty frames, 1500mm high comprising powder coated aluminium frames and beading to BS 10 B15 spaced vertically at 900mm centres; horizontally divided into two parts; 900mm high bottom panel infilled in 20mm thick laminated MDF board, 600mm high top panel glazed with & including 4mm thick clear sheet, all to Architect's details. | SM | 27 | | |
| | Glazing | | | | |
| B | 4mm Thick clear sheet glass in panes 0.5 - 1.0 square meters; fixing with aluminium beadings | SM | 8 | | |
| C | 25mm thick plain blockboard counter base supported on MDF/aluminium partion. | SM | 11 | | |
| D | 20mm thick granite counter top on blockboard base (m/s). | SM | 11 | | |
| | Plinths<br>*The following in 100mm thick benching concrete class 15 with 12mm cement sand plaster to top and edges; including all necessary formwork and BRC A142 mesh reinforcement weighing 2.22 kg per square metre* | | | | |
| E | 100mm Thick benching | SM | 45 | | |
| | Shelving<br>*The following in blockboard shelf, sides dividers, back etc stained moulded oak veneered blockboard drawers and doors, complete with malpha hinges viro make cylinder lock, handles and eggshell paint* | | | | |
| F | Low level drawers size 5600 x 600 x 900mm high; Complete with 20mm thick granite worktop | NO | 5 | | |
| G | Full height Storage Cabinets size 6000 x 450 x 2400mm high | NO | 3 | | |
| | Mirror | | | | |
| H | 6mm Thick polished plate glass silver backed mirror with bevelled edges, overall size 450 x 700mm, Plugged and screwed to wall with 4No. chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam. | NO | 6 | | |
| | **TOTAL FOR JOINERY & FITTINGS CARRIED TO SUMMARY** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 10**<br><br>**BUILDER'S WORK IN CONNECTION TO SERVICES**<br><br>The contractor shall here allow all builder's work in connection with Electrical and Mechanical Engineering Installation<br><br>The builders work shall include but not limited to:-<br><br>a) Chases in wall, concrete work, and make good<br><br>b) Forming, making or leaving holes, etc in masonry concrete or wood work<br><br>c) Making good all disturbed area<br><br>d) Excavations refill and disposal to spoil<br><br>Electrical Installation Works | | | | |
| A | Allow for all builder's work in connection with associated Electrical Works outlined | | Item | | |
| | Mechanical Engineering | | | | |
| B | Allow for all builder's work in connection with associated Mechanical Works | | Item | | |
| | TOTAL FOR BUILDER'S WORK IN CONNECTION WITH SERVICES CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **SUMMARY** | | | | |
| 1 | REINFORCED CONCRETE SUPERSTRUCTURE | | | | |
| 2 | WALLING | | | | |
| 3 | ROOF CONSTRUCTION | | | | |
| 4 | DOORS | | | | |
| 5 | WINDOWS | | | | |
| 6 | FINISHES | | | | |
| 7 | BALUSTRADING & RAILINGS | | | | |
| 8 | JOINERY & FITTINGS | | | | |
| 9 | BUILDERS WORKS IN CONNECTION WITH SERVICES | | | | |
| | TOTAL FOR FIRST FLOOR CARRIED TO COLLECTION SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | OFFICE BLOCK COLLECTION SUMMARY | | | | |
| | | PAGE | | | |
| 1 | SUBSTRUCTURE WORKS | SUB/5 | | | |
| 2 | LOWER GROUND | LG/ 10 | | | |
| 3 | GROUND FLOOR | GF/ 14 | | | |
| 4 | FIRST FLOOR | FF/15 | | | |
| 5 | SECOND FLOOR | SF/20 | | | |
| | TOTAL FOR OFFICE BLOCK CARRIED FORWARD TO COLLECTION SUMMARY | | | | |

# GATE HOUSE

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | GATE HOUSE<br>ELEMENT NO. 1<br><br>SUBSTRUCTURES<br><br>(ALL PROVISIONAL) | | | | |
| A | Clear site of grass, bush and small trees; grub up roots and cart away. | 26 | SM | | |
| B | Excavate top vegetable soil average depth 150mm to be deposited 80m away from site in spoil heaps to be used for landscaping | 26 | SM | | |
| C | Excavate to reduce levels not exceeding 1.50 meters deep commencing from stripped level | 26 | SM | | |
| D | Excavate for trenches commencing from stripped level but not exceeding 1.50 metres deep. | 26 | CM | | |
| E | Extra over for excavating in rock (all classes) | 8 | CM | | |
| F | Allow for keeping excavation free from any surface water by pumping or any other approved method | | ITEM | | |
| G | Allow for maintaining and upholding sides of excavation clear of all falling materials by planking and strutting | | ITEM | | |
| | Backfilling | | | | |
| H | Return,fill and ram selected excavated materials around foundations | 19 | CM | | |
| | Disposal | | | | |
| J | Cart away to Local Authority approved dumping site excess excavated materials | 34 | CM | | |
| | Filling to make up levels | | | | |
| K | 300 mm Thick natural stone hardcore compacted in layers not exceeding 100 mm thick. | 26 | SM | | |
| L | 50 mm Thick stone dust blinding to hardcore surfaces, well rolled and levelled to receive concrete. | 26 | SM | | |
| | Anti-termite treatment | | | | |
| M | TERMIDOR' or other equal and approved insecticide with ten years quarantee | 26 | SM | | |
| | Concrete | | | | |
| N | 50 mm Thick concrete Class Q (1:4:8) Blinding under strip foundations, | 24 | SM | | |
| | Vibrated reinforced concrete class 20/20 (1:2:4) in:- | | | | |
| O | Foundation strip | 6 | CM | | |
| P | Beds, thickness 150mm | 26 | SM | | |
| | Total carried forward to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.1 CONT'D | | | | |
| | Reinforcement (all provisional) | | | | |
| | High yield deformed steel bar reinforcement to BS 4461 (assorted sizes) to: | | | | |
| A | 8 mm to 16mm Diameter bars. | 600 | KGS | | |
| | Steel mesh fabric reinforcement to BS 4483 | | | | |
| B | BRC wire mesh ref: A142 including head and side laps, binding wire and spacer blocks | 26 | SM | | |
| | Damp proof membrane | | | | |
| C | 1000 gauge polythene damp-proof membrane or other equal and approved | 26 | SM | | |
| | Sawn cypress formwork to:- | | | | |
| D | Sides of foundation strip | 16 | SM | | |
| E | Edges of beds, 75-150 mm high | 29 | LM | | |
| | Approved load bearing natural stone rough dressed walling in cement and sand (1:3)mortar | | | | |
| F | 200 mm Thick natural stone walling bedded and jointed in cement and sand (1:3) mortar and reinforced with 25x3mm thick hoop iron in every alternate course | 36 | SM | | |
| | Bituminous felt damp proof course | | | | |
| G | 200 mm Wide hessian base dam-proof course to B.S 743 laid horizontally with 150mm minimum laps and beddedon cement and sand (1:3) mortar. | 40 | LM | | |
| | Plinth finishes | | | | |
| H | 12 mm Thick cement and sand (1:3) render; wood floated. | 17 | SM | | |
| | Prepare and apply three coats black bituminous paint on:- | | | | |
| J | Rendered plinth. | 17 | SM | | |
| | Total to collection | | | | |
| | COLLECTION | | | | |
| | Brought forward from page GH/1 | | | | |
| | Brought forward from page GH/2 | | | | |
| | TOTAL FOR SUBSTRUCTURES CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 2 | | | | |
| | REINFORCED CONCRETE SUPERSTRUCTURE | | | | |
| | Vibrated reinforced concrete class 25/20 | | | | |
| A | Ring beams | 2 | CM | | |
| B | Gutter. | 5 | CM | | |
| | Reinforcement | | | | |
| | High yield deformed steel bar reinforcement to BS 4461 (assorted sizes) to: | | | | |
| C | 8-16 mm Diameter bars. | 1,140 | Kg | | |
| | Sawn cypress formwork to:- | | | | |
| D | Sides and soffits of ring beams | 25 | SM | | |
| E | Sides and soffits of gutter. | 40 | SM | | |
| | TOTAL FOR REINFORCED CONCRETE SUPERSTRUCTURE CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 3** | | | | |
| | **SUPERSTRUCTURE WALLING** | | | | |
| | **EXTERNAL WALLING** | | | | |
| | Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 25x3 mm thick hoop iron | | | | |
| A | 200 mm Thick walling. | 94 | SM | | |
| | **VENT BLOCKS** | | | | |
| B | 300 x 150 mm Thick precast concrete vent blocks as approved by the Architect. | 3 | SM | | |
| | TOTAL FOR WALLING CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 4 | | | | |
| | ROOF CONSTRUCTION, COVERING AND RAINWATER DISPOSAL | | | | |
| | ROOF CONSTRUCTION | | | | |
| | Sawn cypress timber roof structure to Structural Engineer's drawings and details | | | | |
| A | 150 x 50 mm Rafters | 50 | LM | | |
| B | 150 x 50 mm Ties and struts | 18 | LM | | |
| C | 150 x 50 mm Tie beam | 36 | LM | | |
| D | 150 x 50 mm King post | 21 | LM | | |
| E | Purlins, size 75 x 50 mm | 112 | LM | | |
| F | Wall plates bolted (bolts and holes included) size 100 x 50 mm | 28 | LM | | |
| | ROOF COVERING | | | | |
| G | IT5 gauge 28 roofing sheets at 5 degrees mono pitch on timber truss to site Enginners details | 68 | SM | | |
| | Rainwater Goods<br>Rain water Disposals to Site Engineers Details<br>Gutter treatment | | | | |
| H | Sirrah P GR 5kg/sm APP bituminous membrane gutter lining applied against concrete gutter surface by torch application as per the manufacturers instruction including making grooves in concrete, tacking membrane and making good after installation. | 40 | SM | | |
| J | Extra over for gutter lining for dressing membrane over water outlet. | 2 | NO | | |
| K | Heavy gauge uPVC 75 mm diameter down pipe fixed to wall with and including approved wall brackets at 1000 mm centres. | 4 | LM | | |
| L | Extra for swanneck offset in pipe diameter 1200mm long. | 2 | NO | | |
| M | Ditto. for shoe in pipe diameter 500 mm long. | 2 | NO | | |
| N | Ditto 90° bend. | 2 | NO | | |
| | TOTAL FOR ROOF CONSTRUCTION, COVERING AND RAINWATER DISPOSAL CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO. 5** | | | | |
| | **DOORS** | | | | |
| | **Steel door** | | | | |
| A | 1200 x 2400 mm high mild steel Single leaf door comprising 50 x 50 x 2 mm RHS stile,top middle, bottom rail, heavy duty pin hinges infilled with mild, steel diamond shaped panel, 25 x 50 x 3 mm frame fixed into wall with hasps, with 300mm wide mild steel louvres and apply red oxide primer before fixing | 2 | NO | | |
| B | 1500 x 2400 mm high mild steel gate comprising 50 x 50 x 2 mm RHS stiles,top middle, bottom rail infilled with wire mesh | 1 | NO | | |
| C | Ditto size 900 x 2400 mm high | 1 | NO | | |
| | **Prepare and apply one coat red oxide primer and three coats gloss oil paint to metal** | | | | |
| D | General surface of steel casement door | 19 | SM | | |
| | TOTAL FOR DOORS CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **ELEMENT NO.6**<br>**WINDOWS** | | | | |
| | Supply, assemble and fix the following approved Standard windows casements complete with brass (hinges, stays, fasteners), permanent vent with mosquito gauze and sheet metal hood etc assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) (Grille and Glazing excluded) all to Architects details and approval | | | | |
| A | Size 2500 x 1000 mm. | 1 | NO | | |
| B | Ditto but 1000 x 1000 mm. | 1 | NO. | | |
| | **ELEMENT NO.6 CONT'D**<br>**Glazing** | | | | |
| C | 4 mm Thick clear sheet glass and glazing with putty in panes not exceeding 0.10 - 0.50 square metre. | 4 | SM | | |
| D | **Window Grilles**<br>Patterned mild steel window grille comprising of 25 x 25 x 2mm RHS horizontal members at 200mm centres and 25 x 25 x 2mm RHS vertical members at 100mm centres as per the Architect's drawings. | 4 | SM | | |
| E | **Window Cill**<br>275x75mm thick concrete cill weathered,throated and painted to approval. | 5 | LM | | |
| F | **Window Board**<br>150 x 25 mm wrot mahogany window board plugged to masonry wall. | 5 | LM | | |
| G | **Window Blinds**<br>Supply and fix Venetian Window Blinds to general casement window surfaces to specifications | 5 | LM | | |
| H | **Painting and Decorating**<br>Prepare surfaces and applu one undercoat and two finishing coats first quality gloss oil to general windows internally. | 4 | SM | | |
| J | Ditto externally. | 4 | SM | | |
| | **TOTAL FOR WINDOWS CARRIED TO SUMMARY** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO. 7 | | | | |
| | FINISHES | | | | |
| | External Finishes | | | | |
| A | 12 mm Thick cement and sand (1:4) backing to receive ceramic tiles (m/s). | 94 | SM | | |
| B | Ditto to concrete and masonry works | 42 | SM | | |
| C | Rendered surfaces. | 42 | SM | | |
| | Prepare surfaces and apply one undercoat and two finishing coats of silk vynil emulsion paint to: | | | | |
| D | Plastered surfaces internally. | 94 | SM | | |
| E | Plastered reveals (100 -200mm). | 42 | LM | | |
| F | Ditto jambs ditto. | 60 | LM | | |
| | Prepare and apply one undercoat and two finishing coats of black bituminous paint to | | | | |
| G | Plinth | 42 | SM | | |
| | Prepare and apply one undercoat and two finishing coats of vynil matt emulsion paint; colour to match Clients corporate colours to :- | | | | |
| | Internal Finishes | | | | |
| | FLOOR FINISHES<br>Floor screed; cement and sand (1:4) wood floated:- | | | | |
| H | 30 mm thick to receive ceramic tiles (m.s). | 26 | SM | | |
| | Approved Ceramic floor tiles; to regular pattern; bedding, jointing and pointing in cement mortar to match | | | | |
| J | 600 x 600 x 10 mm Thick; butt joints both ways; to cement sand backing screed (m/s). | 26 | SM | | |
| K | 100 mm High skiting | 62 | LM | | |
| | WALL FINISHES | | | | |
| | Cement and sand plaster | | | | |
| L | 12mm thick cement sand and lime (1:2:6) plaster internally to Architectural details | 157 | SM | | |
| | Total to collection | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | ELEMENT NO.7 CONT'D | | | | |
| | CEILING FINISHES | | | | |
| A | 12 mm Thick chipboards ceiling secret-nailed to timber brandering (m/s). | 26 | SM | | |
| B | 50 x 50 mm Sawn cypress brandering nailed to ceiling joists at 600 mm centre to centre both ways. | 162 | LM | | |
| C | 100 x 20 mm Wrot cypress moulded cornice plugged to wall. | 60 | LM | | |
| | Painting | | | | |
| D | Ditto but white emulsion paint on general chipboard ceiling surfaces. | 26 | SM | | |
| | Prepare prime and apply one undercoat and two finishing coats of 1st quality supergloss paint to:- | | | | |
| E | Ditto on surfaces 100-200 girth. | 60 | LM | | |
| | Total to collection | | | | |
| | COLLECTION | | | | |
| | Brought forward from page GGH/8 | | | | |
| | Brought forward from page above | | | | |
| | TOTAL FOR PAINTING AND DECORATING CARRIED TO SUMMARY | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | SUMMARY | | | | |
| 1 | SUBSTRUCTURE | GH/2 | | | |
| 2 | REINFORCED CONCRETE SUPERSTRUCTURE | GH /3 | | | |
| 3 | WALLING | GH /4 | | | |
| 4 | ROOF CONSTRUCTION | GH /5 | | | |
| 5 | DOORS | GH /6 | | | |
| 6 | WIDOWRS | GH /7 | | | |
| 7 | FINISHES | GH /9 | | | |
| | TOTAL FOR GATE HOUSE CARRIED TO COLLECTION SUMMARY | | | | |

# ABLUTION BLOCK

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **ABLUTION BLOCK** | | | | |
| | **Element No.1 - Substructure Works**<br>(All provisional) | | | | |
| A | Clear site of all grass and small trees not exceeding 600 mm girth and cart away or burn all arisings | 43 | SM | | |
| B | Excavate top vegetable soil average 250 mm deep and spread as directed on site | 43 | SM | | |
| C | Excavate to reduce levels not exceeding 1.50 meters deep commencing from stripped level | 65 | CM | | |
| D | Excavate for foundation strip footing in normal soil not exceeding 1.5 m deep | 50 | CM | | |
| E | Extra over all kinds of excavation for excavating rock irrespective of class | 35 | CM | | |
| F | Allow for keeping excavations free from all water by pumping or otherwise | | ITEM | | |
| G | Ditto; for plunking and strutting to sides of excavations | | ITEM | | |
| | Disposals | | | | |
| H | Return fill and ram selected excavated material around foundations | 39 | CM | | |
| J | Remove surplus spoil from site and deposit in spoil heaps and later spreadon site as directed including filling up of existing pits and compacting to approval | 150 | CM | | |
| | Imported Filling | | | | |
| K | Approved murram filling including levelling and consolidating in 150 mm layers | 35 | CM | | |
| L | 300 mm Thick (average) approved broken quarry stone hardcore filling in two equal layers well compacted | 43 | SM | | |
| M | 50 mm thick stone dust blnding to surfaces of hardcore | 43 | SM | | |
| | 50mm Thick plain concrete (1:4:8 - class 15/20mm) blinding to: | | | | |
| N | Strip footing | 33 | SM | | |
| | Vibrated reinforced concrete class 25 in: | | | | |
| P | Strip footing | 9 | CM | | |
| Q | 150 mm Thick ground floor slab | 43 | SM | | |
| | **Total Carried to Collection** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | Reinforcement (All Provisional)<br>*Steel reinforcement deformed bar including cutting to length, bending and fixing including all necessary tying wires, hooks and spacing blocks to KS 573:2014* | | | | |
| A | 8 mm Diameter bars | 585 | KG | | |
| B | 12 mm Ditto | 733 | KG | | |
| | Steel mesh fabric reinforcement to BS 4483 | | | | |
| C | Steel fabric mesh reinforcement type A142 weighing 2.22Kg/$M^2$ and to BS 4483 and with 150 mm side laps (measured net - no allowance for laps) | 43 | SM | | |
| | Damp proof membrane | | | | |
| D | 1000 gauge polythene sheeting laid under concrete floor bed | 43 | SM | | |
| | Anti-termite treatment | | | | |
| E | "Dragnet" or other equal and approved antitermite insectside treatment to blinded hardcore surfaces applied in accordance with manufacturer's instructions | 43 | SM | | |
| | Sawn formwork to; | | | | |
| F | Sides of strip footing | 68 | SM | | |
| G | Edges of ground floor bed exceeding 75mm but not exceeding 150mm girth | 36 | LM | | |
| | Load bearing natural stone rough dressed walling in cement and sand mortar | | | | |
| H | 200 mm thick natural walling | 139 | SM | | |
| | Cement and sand (1:4) rendering | | | | |
| J | 12mm Thick cement sand render (mix 1:4) to plinth surfaces | 22 | SM | | |
| K | Prepare and apply three coats of bituminous paint to rendered surfaces. | 22 | SM | | |
| | Paving slabs | | | | |
| L | Excavate and lay 600 x 600mm precast concrete paving slabs on murram bed including jointing and pointing in cement sand mortar mix (1:4) | 54 | SM | | |
| | **Total Carried to Collection** | | | | |
| | COLLECTION<br><br>Brought forward from page AB/1<br><br>Brought forward from above | | | | |
| | **Total Element No.1 - Substructures Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Element No.2 - Reinforced Concrete Superstructure** | | | | |
| | Vibrated reinforced concrete Class 25/20mm in : | | | | |
| A | Ring Beams and lintels | 15 | CM | | |
| B | Concrete gutter | 10 | CM | | |
| | Reinforcement | | | | |
| | Steel reinforcement deformed bar including cutting to length, bending and fixing including all necessary tying wires , hooks and spacing blocks to KS 573:2014 | | | | |
| C | 8 mm Diameter bars | 880 | KG | | |
| D | 10 mm Ditto | 260 | KG | | |
| E | 12 mm Ditto | 860 | KG | | |
| | Sawn formwork to : | | | | |
| F | Vertical sides and soffits of Ring Beam and Lintels | 72 | SM | | |
| G | Vertical sides and soffits of Gutter | 59 | SM | | |
| | **Total Element No.2 - Superstructure Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Element No.3 - Walling** | | | | |
| | Machine dressed stone walling, in equal course sizes and approved pattern and shape bedded and jointed in cement and sand mortar mix 1:3 reinforced with 25x2mm hoop iron at every alternate course | | | | |
| A | 200 mm Thick walling | 68 | SM | | |
| B | Ditto 150 mm Thick walling | 41 | SM | | |
| | 3-Ply Bituminous Damp Proof Course bedded and jointed in cement sand mortar 1:3. | | | | |
| C | 200 mm wide. | 27 | LM | | |
| D | Ditto 150 mm wide. | 17 | LM | | |
| | **VENT BLOCKS** | | | | |
| E | 300 x 150 mm Thick precast concrete vent blocks as approved by the Architect. | 23 | SM | | |
| | **Total Element No.3 - Walling Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Element No.4 - Roofing and Rain Water Disposals** | | | | |
| | Trusses<br>*The following in single pitch timber trusses (treated sawn cypress) with bolted connections rising approximately 3.0m above ground level* | | | | |
| A | 150 x 50 mm Rafters | 106 | LM | | |
| B | 100 x 50 mm Ties and struts | 74 | LM | | |
| C | 150 x 50 mm Thick king post | 12 | LM | | |
| D | 150 x 50 mm Joists | 43 | LM | | |
| E | 150 x 50 mm Wall plate | 33 | LM | | |
| F | 100 X 50 mm Purlins | 113 | LM | | |
| G | 100 x 50 mm Ridge board | 29 | LM | | |
| | Roof covering<br>*Gauge 28 Versatile roofing sheets or equal and approed sheets; prepainted;-* | | | | |
| H | Roof covering at a pitch of 26 degrees from the horizontal; 150mm laps on ends and sides; fixed to angle section purlins with and including hook bolts and neoprene washers and nuts; include all the necessary fixing accessories | 72 | SM | | |
| J | Hip/ridge capping 450mm wide | 29 | LM | | |
| K | Valley piece; twice bent to profile of valley; 570mm girth (average) to match | 18 | LM | | |
| L | 200 x 25 mm Wrot cypress fascia board | 39 | LM | | |
| | **Carried to collection** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | Testing | | | | |
| A | Allow for testing the whole of the rainwater disposal installation to the satisfaction of the Architect and for replacing any defective work free of charge | | ITEM | | |
| | Rain Water Goods | | | | |
| B | Extra Over for making 75mm diameter holes for downpipes in gutter | 6 | NO | | |
| D | 150 x 150mm Pressed steel box rainwater downpipe fixed with and including mild steel brackets at 900mm centres, plugged and screwed to wall | 18 | LM | | |
| E | Ditto, 800mm Long shoe | 6 | NO | | |
| F | Ditto, swan neck | 6 | NO | | |
| G | 100mm diameter fullbora Outlet with Grating | 6 | NO | | |
| | Prepare, prime and apply one undercoats and two gloss finishing coat enamel paint on the following metal surfaces | | | | |
| H | General surfaces of downpipes over 300mm girth | 11 | SM | | |
| J | Ditto, 500mm Long shoe | 6 | NO | | |
| K | Ditto, 800mm swan neck | 6 | NO | | |
| | **Carried to collection below** | | | | |
| | COLLECTION | | | | |
| | Brought forward from AB/5 | | | | |
| | Brought forward from AB/6 | | | | |
| | **Total Element No.4 - Roofing**<br>**Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Element No.5 - Doors** | | | | |
| | Flush Doors | | | | |
| A | 1200 x 2400 mm High semi-solid cored flush doors lined with mahogany veenered both sides hardwood lipped all round | 1 | NO | | |
| B | Ditto; size 900 x 2400 mm high (D3) | 2 | NO | | |
| C | Ditto; size 800 x 2100 mm high ditto | 5 | NO | | |
| | The following in wrot mahogany. | | | | |
| D | 200mm x 50mm Frame with two labours | 43 | LM | | |
| E | Ditto; door transome ditto | 7 | LM | | |
| F | 75 x 25 mm architrave with two labours | 36 | LM | | |
| G | 25mm diameter quadrant beading | 36 | LM | | |
| | **Ironmongery as per 'UNION' catalogue or other equal and approved** | | | | |
| | Supply and fix the following to wood with matching screws | | | | |
| H | 2 Lever mortice lock complete with accessories | 6 | NO | | |
| J | 38 mm rubber door stop fixed with rawl bolt | 6 | NO | | |
| K | 100 mm pressed steel butt hinges | 9 | PRS | | |
| | Fanlight | | | | |
| L | 4mm thick clear sheet glass and glazing with beading in panes n.e 0.1-0.5 square metre | 3 | SM | | |
| | Prepare and apply one coat of aluminium wood primer to:- | | | | |
| M | Back of wood before fixing not exceeding 100 mm girth | 36 | LM | | |
| N | Prepare and apply one undercoat coat and two finishing coats of polyurethane clear varnish to timber general surfaces | 16 | SM | | |
| P | Ditto; 100-200mm girth | 36 | LM | | |
| | **Total Element No.5 - Doors**<br>**Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Element No.6 - Windows** | | | | |
| | Steel Casement Windows | | | | |
| | *Supply and Fix the following purpose-made Mild Steel casement windows in standard sections frame including mullion, transomes,mosquito proof gauze permanent vents with high quality inbuilt heavy duty polished brass to (m/s kenmetal ltd) or other equal and approved ,fasteners, window stays,fixing lags,16mm diameter burglar proofing in approved pattern and applying primer before fixing* | | | | |
| A | 2100 x 700 mm high window (W3) | 6 | NO | | |
| B | 1600 x 700 mm high window (W4) | 2 | NO | | |
| C | 1200 x 700 mm high window (W6) | 1 | NO | | |
| D | 800 x 700 mm high window (W5) | 2 | NO | | |
| | Glazing | | | | |
| E | 4 mm Thick clear sheet glass and glazing in panes 0.1 - 1.0 SM with approved metal putty | 14 | SM | | |
| | Window Sill | | | | |
| F | 276 x 75 mm Weathered and throated precast concrete window sill bedded with (1:4) cement sand mortar on masonry blockwork | 22 | LM | | |
| | **Painting and Decorating** | | | | |
| E | Prepare surfaces and apply one undercoat and two finishing coats first quality gloss oil to general windows internally. | 14 | SM | | |
| F | Ditto externally. | 14 | SM | | |
| | **Total Element No.6 - Windows Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Element No.7 - Finishes**<br>**External Finishes.** | | | | |
| | Wall Finishes | | | | |
| A | Horizontal keying and pointing in cement and sand (1:4) mortar to natural stone wall external surfaces | 68 | SM | | |
| | 15 mm Thick Cement and sand (1:4) external render to: | | | | |
| B | Stone/concrete work | 150 | SM | | |
| | Prepare and apply one undercoat and two finishing coats of first quality silk vinyl paint to:- | | | | |
| C | Rendered surfaces | 150 | SM | | |
| | Concrete Gutter<br>*38 mm cement and sand (1:4) backing screed steel trowelled smooth to receive APP membrane (m.s) and precast concrete tiles (m.s) to :-* | | | | |
| D | Ditto, to concrete gutter | 72 | SM | | |
| E | Skirting 100mm high dressed over angle fillet | 64 | LM | | |
| | *5mm Thick modified APP membrane as (Sirrah P GR 5Kg/SM) or equivalent with mineral finish: laid strictly in accordance with manufacturers printed instructions: on screed (measured separately)* | | | | |
| F | Ditto, to concrete gutter | 72 | SM | | |
| G | Skirting 100mm high dressed over angle fillet | 64 | LM | | |
| | Copping | | | | |
| H | 300 x 75 mm thick PCC coping twice throated and weathered laid in Cement/Sand mix (1:3) mortar over parapet walling | 36 | LM | | |
| | **Internal Finishes** | | | | |
| | **Floor finishes**<br>**Floor screed; cement and sand (1:4) wood floated:-** | | | | |
| J | 30 mm thick to receive ceramic tiles (m.s). | 43 | SM | | |
| | Approved Ceramic floor tiles; to regular pattern; bedding, jointing and pointing in cement mortar to match | | | | |
| K | 600 x 600 x 10 mm Thick; butt joints both ways; to cement sand backing screed (m/s). | 43 | SM | | |
| L | Ditto but to 100 mm high skirting | 54 | LM | | |
| | **Wall finishes**<br>Gauged cement, lime and sand (1:2:9) in two coats plaster steel smooth trowelled to finish | | | | |
| M | To walls all backing to receive white glazed ceramic tiles | 98 | SM | | |
| | **Carried to collection** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | *Wall finishes cnt'd* | | | | |
| A | Ditto to door reveals 100-200 mm wide | 43 | LM | | |
| B | Ditto to window jambs ditto | 41 | LM | | |
| | Glazed wall tiles as 'Saj Ceramics' or other equal and approved, jointed and pointed with matching cement sand (1:4) mortar (m.s), and matching waterproof grouting (m.s): all to the Project Manager's approval: | | | | |
| D | 250 x 400mm glazed wall tiles | 98 | SM | | |
| | Prepare and apply 3 coats gloss oil paint to: | | | | |
| F | Door reveals (100 -200mm) | 43 | LM | | |
| G | Ditto and ditto to window jambs ditto | 41 | LM | | |
| | **Ceiling Finishes** | | | | |
| H | 50 x 50mm Sawn cypress brandering fixed and nailed to ceiling joists at 600mm c/c both ways | 193 | LM | | |
| J | 12mm Thick celotex ceiling boards fixed onto 50 x 50mm thick brandering (m/s) | 43 | SM | | |
| K | 100 x 20mm Wrot cypress coved cornice plugged to wall | 54 | LM | | |
| | Painting | | | | |
| L | Prepare surface and apply 3 coats of emulsion paint to celotex ceiling surfaces | 43 | SM | | |
| M | Prepare surfaces and apply one undercoat and two finishing coats of first quality clear varnish on wood surfaces internally (100-200mm) | 54 | LM | | |
| | **Carried to collection** | | | | |
| | COLLECTION | | | | |
| | Brought forward from AB/9 | | | | |
| | Brought forward from above | | | | |
| | **Total Element No.7 - Finishes**<br>**Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | <u>SECTION NO.2 SUMMARY</u> | | | | |
| | Element No.1 - Substructure Works | | | | |
| | Element No.2 - Reinforced Concrete Superstructure | | | | |
| | Element No.3 - Walling | | | | |
| | Element No.4 - Roofing and Rain Water Disposals | | | | |
| | Element No.5 - Doors | | | | |
| | Element No.6 - Windows | | | | |
| | Element No.7 - Finishes | | | | |
| | TOTAL FOR ABLUTION BLOCK CARRIED TO SUMMARY | | | KShs. | |

# GENERATOR HOUSE

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | GENARATOR HOUSE | | | | |
| | Element No.1 - Substructure Works<br>(All provisional) | | | | |
| A | Clear site of all grass and small trees not exceeding 600 mm girth and cart away or burn all arisings | 42 | SM | | |
| B | Excavate top vegetable soil average 250 mm deep and spread as directed on site | 42 | SM | | |
| C | Excavate to reduce levels not exceeding 1.50 meters deep commencing from stripped level | 21 | CM | | |
| D | Excavate for foundation strip footing in normal soil not exceeding 1.5 m deep | 23 | CM | | |
| E | Extra over all kinds of excavation for excavating rock irrespective of class | 7 | CM | | |
| F | Allow for keeping excavations free from all water by pumping or otherwise | | ITEM | | |
| G | Ditto; for plunking and strutting to sides of excavations | | ITEM | | |
| | Disposals | | | | |
| H | Return fill and ram selected excavated material around foundations | 12 | CM | | |
| J | Remove surplus spoil from site and deposit in spoil heaps and later spreadon site as directed including filling up of existing pits and compacting to approval | 51 | CM | | |
| | Imported Filling | | | | |
| K | Approved murram filling including levelling and consolidating in 150 mm layers | 21 | CM | | |
| L | 300 mm Thick (average) approved broken quarry stone hardcore filling in two equal layers well compacted | 42 | SM | | |
| M | 50 mm thick stone dust blnding to surfaces of hardcore | 42 | SM | | |
| | 50mm Thick plain concrete (1:4:8 - class 15/20mm) blinding to: | | | | |
| N | Strip footing | 16 | SM | | |
| | Vibrated reinforced concrete class 25 in: | | | | |
| P | Strip footing | 4 | CM | | |
| Q | 150 mm Thick ground floor slab | 42 | SM | | |
| H | 150 mm Thick ramp. | 6 | SM | | |
| Q | 450 mm Thick generator platform | 19 | CM | | |
| | Total Carried to Collection | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT KShs.) |
|---|---|---|---|---|---|
| | **Element No.1 Continues** | | | | |
| | Reinforcement (All Provisional) | | | | |
| | *Steel reinforcement deformed bar including cutting to length, bending and fixing including all necessary tying wires, hooks and spacing blocks to KS 573:2014* | | | | |
| A | 8 mm Diameter bars | 570 | KG | | |
| B | 12 mm Ditto | 480 | KG | | |
| | Steel mesh fabric reinforcement to BS 4483 | | | | |
| C | Steel fabric mesh reinforcement type A142 weighing 2.22Kg/$M^2$ and to BS 4483 and with 150 mm side laps (double layers, measured net - no allowance for laps) | 48 | SM | | |
| | Damp proof membrane | | | | |
| D | 1000 gauge polythene sheeting laid under concrete floor bed | 48 | SM | | |
| | Anti-termite treatment | | | | |
| E | "Dragnet" or other equal and approved antitermite insectside treatment to blinded hardcore surfaces applied in accordance with manufacturer's instructions | 48 | SM | | |
| | Sawn formwork to; | | | | |
| F | Sides of strip footing | 14 | SM | | |
| G | Edges of ground floor bed exceeding 75mm but not exceeding 150mm girth | 22 | LM | | |
| G | Edges of platform exceeding 375mm but not exceeding 450mm girth | 22 | LM | | |
| G | Slopping sides of ramp | 2 | SM | | |
| | Load bearing natural stone rough dressed walling in cement and sand mortar | | | | |
| H | 200 mm thick natural walling | 32 | SM | | |
| | Cement and sand (1:4) rendering | | | | |
| J | 12mm Thick cement sand render (mix 1:4) to plinth surfaces | 14 | SM | | |
| K | Prepare and apply three coats of bituminous paint to rendered surfaces. | 14 | SM | | |
| | Paving slabs | | | | |
| L | Excavate and lay 600 x 600mm precast concrete paving slabs on murram bed including jointing and pointing in cement sand mortar mix (1:4) | 33 | SM | | |
| | **Total Carried to Collection** | | | | |
| | COLLECTION | | | | |
| | Brought forward from page GB/1 | | | | |
| | Brought forward from above | | | | |
| | **Total Element No.1 - Substructures Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Element No.2 - Reinforced Concrete Superstructure** | | | | |
| | Vibrated reinforced concrete Class 25/20mm in : | | | | |
| A | Ring Beams and lintels | 4 | CM | | |
| | Reinforcement | | | | |
| | Steel reinforcement deformed bar including cutting to length, bending and fixing including all necessary tying wires , hooks and spacing blocks to KS 573:2014 | | | | |
| C | 8 mm Diameter bars | 176 | KG | | |
| D | 10 mm Ditto | 52 | KG | | |
| E | 12 mm Ditto | 172 | KG | | |
| | Sawn formwork to : | | | | |
| F | Vertical sides and soffits of Ring Beam and Lintels | 40 | SM | | |
| G | Vertical and soffites sides of gutter | 40 | SM | | |
| | **Total Element No.2 - Superstructure Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Element No.3 - Walling** | | | | |
| | Machine dressed stone walling, in equal course sizes and approved pattern and shape bedded and jointed in cement and sand mortar mix 1:3 reinforced with 25x2mm hoop iron at every alternate course | | | | |
| A | 200 mm Thick walling | 64 | SM | | |
| B | Ditto 150 mm Thick walling | 13 | SM | | |
| | 3-Ply Bituminous Damp Proof Course bedded and jointed in cement sand mortar 1:3. | | | | |
| C | 200 mm wide. | 22 | LM | | |
| D | Ditto 150 mm wide. | 5 | LM | | |
| | **VENT BLOCKS** | | | | |
| E | 300 x 150 mm Thick precast concrete vent blocks as approved by the Architect. | 26 | SM | | |
| | **Total Element No.3 - Walling Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | Element No.4 - Roofing and Rain Water Disposals | | | | |
| | ROOF CONSTRUCTION AND COVERING<br>*Roof Structure (All Provisional)* | | | | |
| | *Structural steel sections drilled, welded and bolted as necessary complete with plates, bolts, cleats etc with and including one coat zinc chromate primer, two undercoats and one coat oil paint full gloss; including all necessary cutting; to Structural Engineer's satisfaction and approval* | | | | |
| | STEEL TRUSSES<br>Pitched Roof (All Provisional) | | | | |
| | *Structural steel sections drilled, welded and bolted as necessary complete with plates, bolts, cleats etc with and including one coat zinc chromate primer, two undercoats and one coat oil paint full gloss; including all necessary cutting; to Structural Engineer's satisfaction and approval* | | | | |
| | *The following in 12No. Trusses (T1) with and including bolted connections including hoisting and fixing in position at a height not exceeding 11.0 metres above ground floor level* | | | | |
| A | Rectangular Hollow Section members, size 75 x 50 x 4mm (9.36 Kg/lm) - External Members (ceiling joist, kingpost & main rafter) | 10 | LM | | |
| B | Ditto, size 50 x 50 x 4mm (5.78 Kg/lm) - Internal Members (struts & ties) | 5 | LM | | |
| | Roof covering<br>*Gauge 28 Versatile roofing sheets or equal and approed sheets; prepainted;-* | | | | |
| H | Roof covering at a pitch of 26 degrees from the horizontal; 150mm laps on ends and sides; fixed to angle section purlins with and including hook bolts and neoprene washers and nuts; include all the necessary fixing accessories | 72 | SM | | |
| J | Hip/ridge capping 450mm wide | 29 | LM | | |
| K | Valley piece; twice bent to profile of valley; 570mm girth (average) to match | 18 | LM | | |
| L | 200 x 25 mm Wrot cypress fascia board | 39 | LM | | |
| | Testing | | | | |
| A | Allow for testing the whole of the rainwater disposal installation to the satisfaction of the Architect and for replacing any defective work free of charge | | ITEM | | |
| | Carried to collection below | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | Element No.4 - continues' | | | | |
| | Rain Water Goods | | | | |
| B | Extra Over for making 75mm diameter holes for downpipes in gutter | 2 | NO | | |
| D | 150 x 150mm Pressed steel box rainwater downpipe fixed with and including mild steel brackets at 900mm centres, plugged and screwed to wall | 6 | LM | | |
| E | Ditto, 800mm Long shoe | 2 | NO | | |
| F | Ditto, swan neck | 2 | NO | | |
| G | 100mm diameter fullbora Outlet with Grating | 2 | NO | | |
| | Prepare, prime and apply one undercoats and two gloss finishing coat enamel paint on the following metal surfaces | | | | |
| H | General surfaces of downpipes over 300mm girth | 11 | SM | | |
| J | Ditto, 500mm Long shoe | 2 | NO | | |
| K | Ditto, 800mm swan neck | 2 | NO | | |
| | Carried to collection below | | | | |
| | COLLECTION | | | | |
| | Brought forward from GB/5 | | | | |
| | Brought forward from GB/6 | | | | |
| | Total Element No.4 - Roofing<br>Carried to Summary | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | <u>Element No.5 - Doors</u> | | | | |
| A | **Supply, fabricate and install approved heavy-duty double-leaf louvered mild steel door**, overall size **3600 × 2500 mm high**, comprising two equal leaves fabricated from **2.0 mm thick pressed mild steel** with welded internal steel reinforcement and stiffeners to prevent distortion, hung on a **1.6–2.0 mm thick heavy-duty pressed mild steel frame** complete with fixing lugs, anchor bolts and all necessary fixing accessories. Door leaves to incorporate **fixed pressed steel ventilation louvers** over the full height to provide adequate natural ventilation to the generator room, complete with **galvanized insect-proof wire mesh** securely fixed to the inner face of the louvers. The active leaf shall be fitted with a **heavy-duty mortice deadlock**, lever handles on both sides, and a heavy-duty door closer where specified. The inactive leaf shall be fitted with **heavy-duty flush bolts** at the head and sill. Each leaf shall be hung on **three heavy-duty stainless steel ball-bearing butt hinges**. Complete with rubber weather seals, door stops, kick plates where required, and all necessary ironmongery. All steelwork shall be treated with **one coat of zinc-rich anti-corrosion primer before fixing** complete in accordance with the Architect's instructions. | 1 | NO | | |
| | <u>Painting and Decorating</u> | | | | |
| B | Prepare surfaces and apply one undercoat and two finishing coats of approved exterior gloss paint internally. | 9 | SM | | |
| C | Ditto externally. | 9 | SM | | |
| | Total Element No.5 - Doors<br>Carried to Summary | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | **Element No.6 - Finishes**<br>**External Finishes.** | | | | |
| | Wall Finishes | | | | |
| A | Horizontal keying and pointing in cement and sand (1:4) mortar to natural stone wall external surfaces | 64 | SM | | |
| | 15 mm Thick Cement and sand (1:4) external render to: | | | | |
| B | Stone/concrete work | 20 | SM | | |
| | Prepare and apply one undercoat and two finishing coats of first quality silk vinyl paint to:- | | | | |
| C | Rendered surfaces | 20 | SM | | |
| | Copping | | | | |
| H | 300 x 75 mm thick PCC coping twice throated and weathered laid in Cement/Sand mix (1:3) mortar over parapet walling | 22 | LM | | |
| | **Wall finishes**<br>Gauged cement, lime and sand (1:2:9) in two coats plaster steel smooth trowelled to finish | | | | |
| M | 12 mm Thick to walls and concrete surfaces internally | 90 | SM | | |
| A | Ditto to door reveals 100-200 mm wide | 43 | LM | | |
| | Prepare and apply 3 coats gloss oil paint to: | | | | |
| E | Plastered surfaces internally | 90 | SM | | |
| F | Ditto to door reveals (100 -200mm) | 43 | LM | | |
| | **Total Element No.6 - Finishes**<br>**Carried to Summary** | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (KShs.) |
|---|---|---|---|---|---|
| | <u>SECTION NO.2 SUMMARY</u><br><br>Element No.1 - Substructure Works<br><br>Element No.2 - Reinforced Concrete Superstructure<br><br>Element No.3 - Walling<br><br>Element No.4 - Roofing and Rain Water Disposals<br><br>Element No.5 - Doors<br><br>Element No.7 - Finishes | | | | |
| | TOTAL FOR GENERATOR HOUSE<br>CARRIED TO SUMMARY | | | KShs. | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **BILL NO. 2 BUILDER'S WORK COLLECTION SUMMARY** | | | | |
| | | PAGE | | | |
| 1 | OFFICE BLOCK | OB/1 | | | |
| 2 | GATE HOUSE | GH /10 | | | |
| 3 | ABLUTION BLOCK | AB/ 11 | | | |
| 4 | GENARATOR HOUSE | GB/ 11 | | | |
| | TOTAL FOR BUILDER'S WORK CARRIED FORWARD TO GRAND SUMMARY | | | | |

# BILL NO 3

# CIVIL WORKS

# BOUNDARY WALL

**PROPOSED CONSTRUCTION OFARDHI HOUSE AT DELMONTE/MAKENJI. MURANGA COUNTY**

**EXTERNAL WORKS (BOUNDARY WALL)**

**BILL OF QUANTITIES**

| ITEM | DESCRIPTION | UNIT | QTTY | RATE | KSH. |
|---|---|---|---|---|---|
| | **BILL NO 1. EXTERNAL BOUNDARY WALL** | | | | |
| | **ELEMENT NO. 1** | | | | |
| | **SUBSTRUCTURES** | | | | |
| | **(ALL PROVISIONAL)** | | | | |
| | **Site Clearance** | | | | |
| A | Clear site of grass, bush and small trees; grub up roots along the boundary alignmnent | SM | 650 | | |
| B | Cut tree stems, grab roots of trees with girth of between 600 – 1200mm and remove from site | NO | 10 | | |
| | **Disposal** | | | | |
| C | Cart away the arisings from tree felling,grass and bushes | ITEM | 1 | | |
| | **Excavations** | | | | |
| D | Excavate to remove vegetable soil average 200 mm deep commencing from existing ground level | CM | 130 | | |
| E | Excavate for trenches commencing from stripped level but not exceeding 1.50 metres deep. | CM | 330 | | |
| F | Ditto but for column bases. | | | | |
| G | Allow for keeping excavation free from any surface water by pumping or any other approved method | ITEM | 1 | | |
| H | Allow for maintaining and upholding sides of excavation clear of all falling materials by planking and strutting | ITEM | 1 | | |
| | **Backfilling** | | | | |
| J | Return,fill and ram selected excavated materials around foundations | CM | 185 | | |
| | **Disposal** | | | | |
| K | Cart away to Local Authority approved dumping site excess excavated materials | CM | 145 | | |
| | **CONCRETE** | | | | |
| L | 50 mm Thick concrete Class Q (1:3:6) Blinding under strip foundations, | SM | 222 | | |
| | **Vibrated reinforced concrete class 25/20 (1:1.5:3) in:-** | | | | |
| M | Foundation strip | CM | 53 | | |
| N | RC ground beam | CM | 40 | | |
| O | Column bases. | CM | 61 | | |
| P | RC columns. | CM | 51 | | |
| Q | Ring beam | CM | 38 | | |
| R | HP Omen 16-ap0060AX GAMING laptop 16'2k ips 60-144Hz display AMD RYZEN 9 AI PROCESSOR 32GB DDR5-5600 RAM 1TB PCLE GEN4 NVMe m.2 ssd 8gb GDDR7 Geforce RTX 5070 LAPTOP gpu hp true vision 1080p fhd webcam shadow black year dealership | No | 2 | | |
| | | | | | |

**PROPOSED CONSTRUCTION OFARDHI HOUSE AT DELMONTE/MAKENJI. MURANGA COUNTY**

**EXTERNAL WORKS (BOUNDARY WALL)**

**BILL OF QUANTITIES**

| ITEM | DESCRIPTION | UNIT | QTTY | RATE | KSH. |
|---|---|---|---|---|---|
| | **Reinforcement (all provisional)** | | | | |
| | High yield deformed steel bar reinforcement to BS 4461 (assorted sizes) to: | | | | |
| A | Foundation strip footing | KGS | 3,900 | | |
| B | RC ground beam | KGS | 4,700 | | |
| C | Column bases. | KGS | 4,800 | | |
| D | RC columns. | KGS | 8,200 | | |
| E | Ring beam | KGS | 4,700 | | |
| | **Sawn cypress formwork to:-** | | | | |
| F | Sides of concrete column , | SM | 455 | | |
| G | Sides of concrete ground beam , | SM | 195 | | |
| H | Sides of concrete Ring beam , | SM | 195 | | |
| | **Walling** | | | | |
| J | **Approved load bearing natural stone rough dressed walling in cement and sand (1:3)mortar** | | | | |
| K | 200 mm Thick natural stone walling bedded and jointed in cement and sand (1:3) mortar and reinforced with 25x3mm thick hoop iron in every alternate course | SM | 540 | | |
| L | **Bituminous felt damp proof course** | | | | |
| M | 200 mm Wide hessian base dam-proof course to B.S 743 laid horizontally with 150mm minimum laps and beddedon cement and sand (1:3) mortar. | LM | 318 | | |
| N | Machine-dressed stone walling; bedded and jointed in cement/ sand (1:3) mortar; reinforced in every alternate course with 25x3 mm thick hoop iron | | | | |
| O | 200 mm Thick walling. | SM | 1,200 | | |
| | **Expansion Joints** | | | | |
| P | 25mm thick x 300mm wide expansion joint filled in flexible board and pointed with mastic filler on both side | SM | 15 | | |
| | **Finishes** | | | | |
| Q | Recessed key pointing in stone walling in cement sand mortar 1:3 | SM | 1,260 | | |
| R | 12mm thick cementt and sand (1:4) wood floated plaster to concrete surfaces | SM | 1,260 | | |
| | **Carried forward to summary page** | | | | |

**PROPOSED CONSTRUCTION OFARDHI HOUSE AT DELMONTE/MAKENJI. MURANGA COUNTY**

**EXTERNAL WORKS (BOUNDARY WALL)**

**BILL OF QUANTITIES**

| ITEM | DESCRIPTION | UNIT | QTTY | RATE | KSH. |
|---|---|---|---|---|---|
| | **Precast Copings** | | | | |
| | **Precast concrete class 20/20 in:** | | | | |
| A | Provide and fix precast concrete coping to top of wall including bedding mortar, jointing and weathered finish. | LM | 360 | | |
| B | Ditto size 400 x 400 x 65mm thick ditto bedded on top of concrete pillars. | No | 144 | | |
| | **Painting** | | | | |
| C | Prepare surfaces and apply one undercoat and two coats approved exterior quality paint to rendered wall surfaces | SM | 520 | | |
| | ***Gates*** | | | | |
| | Mild Steel primed before fixing and painted afterwards with three coats of gloss oil paint as directed:- | | | | |
| D | Double leaf gate overall size 6000x2400mm high rising by 1.0m as they meet top spikes at 150mm centres in sliding gate , comprising 75x25x3mm R.H.S frame, two 75x25x3mm middle rails and 25x25x3mm R.H.S vertical members welded to rails and frame at 75mm centres and plugged top and bottom each leaf hanging on gate posts (m/s) on three purpose made heavy duty hinges with brush bush set in and provided with 2No. 750mm long drop barrel bolt and brass castor including 1200mm diameter 16gauge mild steel sheet . | No | 1 | | |
| E | Ditto Pedestrian gate size 900x2400mm high | No | 1 | | |
| F | lenovo legion pro 5i with intel core i7-14700HX NVIDIA RTX 4070 8gb,32Gb DDR5 RAM, 1TB SSD,16 inch 2560x1600 IPS display (240Hz) | No | 1 | | |
| G | Hp probook 460 g11 intel core ultra 5 125u 16gb ram 512 ssd 16' diagonal wuxga display intergrated intel graphics 1080p fhd camera 5mp ir webcam audio by poly studio finger print reader backlit keyboard | No | 4 | | |
| H | Samsung fold 7 256gb | No | 1 | | |
| J | Google pixel 10pro | No | 2 | | |
| | **Carried forward to summary page** | | | | |

**PROPOSED CONSTRUCTION OFARDHI HOUSE AT DELMONTE/MAKENJI. MURANGA COUNTY**

**EXTERNAL WORKS (BOUNDARY WALL)**

**BILL OF QUANTITIES**

| ITEM | DESCRIPTION | UNIT | QTTY | RATE | KSH. |
|---|---|---|---|---|---|
| | **SUMMARY PAGE** | | | | |
| | SITE CLEARANCE | | | | |
| | EXCAVATIONS | | | | |
| | WALL CONSTRUCTION | | | | |
| | COPING AND GATE | | | | |
| | **TOTAL FOR THE BOUNDARY WALL CARRIED TO COLLECTION SUMMARY** | | | | |

# COURT YARD

**PROPOSED CONSTRUCTION OFARDHI HOUSE AT DELMONTE/MAKENJI.**
**EXTERNAL WORKS (COURT YARD)**

CIVIL WORKS

BILL No.1

| ITEM NO. | DESCRIPTION | QTY | UNIT | RATE | AMOUNT |
|---|---|---|---|---|---|
| | STORM WATER DRAINAGE<br>Earthworks: | | | | |
| A | Excavate trench not exceeding 1.5 m deep including for levelling, ramming bottom, preparing bed, part return, fill in and well ram, all as described and load, wheel, deposit and spread and level surplus excavated material where directed on site including maintaining and supporting sides of excavations and keeping free from water and fallen material: | | | | |
| B | For 200 mm diameter drain pipe and 150mm bed and surround (all m.s) average 750 mm deep | 30 | CM | | |
| | Concrete (1:3:6) as described in: | | | | |
| C | 150mm thick bed and surround including all necessary formwork to 200 mm diameter PVC pipe (m.s) | 30 | CM | | |
| | Piping: | | | | |
| D | 200 mm diameter (internal) PVC pipe in drain pipe laid in trench to required falls and levels | 80 | LM | | |
| E | Provide, lay and joint 800x500x175mm precast concrete shallow Storm Water Channel including 50mm thick concrete bed, mix 1:3:6, any necessary excavation, formwork and disposal of surplus material to detail (50) 5330. | 60 | LM | | |
| | Disposal: | | | | |
| F | Load surplus excavated material and cart away | 36 | CM | | |
| | Backfilling: | | | | |
| G | Return, fill in and well ram selected excavated material around foundation Return, fill in and well ram selected | 35 | CM | | |
| | TOTAL CARRIED TO COLLECTION PAGE CY 2 | | | | |

| ITEM NO. | DESCRIPTION | QTY | UNIT | RATE | AMOUNT |
|---|---|---|---|---|---|
| | <u>MANHOLES</u> | | | | |
| A | Excavate pit for standard manhole depth not exceeding 1.5m av. Depth 1.5m | 15 | CM | | |
| B | Ditto av. Depth 2.0m | 20 | CM | | |
| C | Ditto av. Depth 2.5m | 25 | CM | | |
| D | Ditto av. Depth 3.0m | 30 | CM | | |
| E | Allow fo plunking and strutting to all excavations during construction | ITEM | | | |
| F | Allow for keeping all excavations free from general waters | ITEM | | | |
| G | Provide material and construct manhole type B to detail (50)5301 | 2 | NO | | |
| | Sub-total | | | | |
| | total brought forward from page CY 1 | | | | |
| | Total Court Yard carried to Collection summary | | | | |

# EXTERNAL CIVIL WORKS (SEWERLINE)

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | SECTION 3 - SEWERAGE WORKS | | | | |
| | SEWER LINE | | | | |
| | EXCAVATIONS | | | | |
| A | Excavate trench for diameter 160mm dia sewer pipe starting from ground level not exceeding 1.5m deep backfill after laying pipe and dispose excess materials as directed by the Engineer average depth 1.25m | 36 | CM | | |
| B | Ditto but average depth 1.5m | 68 | CM | | |
| C | Ditto but average depth 1.75m | 79 | CM | | |
| D | Excavate trench for diameter 200mm dia sewer pipe starting from stripped level not exceeding 1.5m deep backfill after laying pipe and dispose excess materials as directed by the Engineer average depth 1.50m | 39 | CM | | |
| E | Ditto but average depth 1.75m | 137 | CM | | |
| F | Ditto but average depth 2.0m | 156 | CM | | |
| | Extra over excavation for excavation in Rock Class I | 8 | CM | | |
| G | Ditto but average depth 2.5m | 8 | CM | | |
| H | Ditto but average depth 3.0m | 7 | CM | | |
| | Extra over excavation for excavation in Rock Class I | 8 | CM | | |
| J | Allow fo plunking and strutting to all excavations during construction | ITEM | | | |
| K | Allow for keeping all excavations free from general waters | ITEM | | | |
| L | Backfill and compact selected material in layers of 150mm thick | 348 | CM | | |
| M | Load and cart away all surplus excavated material as instructed by the Engineer/Project Manager | 363 | CM | | |
| N | Schmidt Hammer | 3 | NO | | |
| O | Wokin Digital Caliper 150mm range precise measurements | 5 | NO | | |
| | TOTAL CARRIED TO COLLECTION PAGE CIV 7 | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | SECTION 3 CONT' | | | | |
| | PIPE LAYING | | | | |
| A | Provide lay and joint in trench dia 160mm Upvc golden brown class 41Upvc pipe in flexible rubber ring joints | 25 | LM | | |
| B | Provide lay and joint in trench dia 200mm Upvc golden brown class 41Upvc pipe in flexible rubber ring joints | 28 | LM | | |
| C | Provide lay and joint in trench dia 200mm Upvc golden brown class 41Upvc pipe in flexible rubber ring joints | 102 | LM | | |
| D | Provide lay & compact 100mm thick approved compacted murram bed to sewer line | 78 | SM | | |
| E | Provide lay and joint in trench dia 200mm Upvc golden brown class 41Upvc pipe in flexible rubber ring joints as drop in manhole to detail (50)53 | 3 | NO | | |
| G | Provide lay and compact conc. (1:2:4) haunching to pipe include all necessary formwork | 15 | CM | | |
| | MANHOLES | | | | |
| H | Excavate pit for standard manhole depth not exceeding 1.5m av. Depth 1.5m | 20 | CM | | |
| J | Ditto av. Depth 2.0m | 27 | CM | | |
| K | Ditto av. Depth 2.5m | 33 | CM | | |
| L | Ditto av. Depth 3.0m | 40 | CM | | |
| M | Allow fo plunking and strutting to all excavations during construction | ITEM | | | |
| N | Allow for keeping all excavations free from general waters | ITEM | | | |
| P | Provide material and construct manhole type B to detail (50)5301 | 8 | NO | | |
| | MANHOLES CONSTRUCTION | | | | |
| | Concrete class 15, mix 1:3:6 | | | | |
| Q | Provide all materials, mix and place 50mm thick as concrete blinding for manholes | 17 | SM | | |
| | Vibrated Concrete class 20, mix 1:2:4 | | | | |
| R | Provide all materials, mix and place 150mm thick to base slab of manholes. | 3 | CM | | |
| S | Ditto for 200mm thick | 6 | CM | | |
| T | Ditto but 100mm thick to suspended cover slab of manholes and benching for 150mm UPVC pipes. | 5 | CM | | |
| U | Ditto for 150mm thick. | 2 | CM | | |
| | TOTAL CARRIED TO COLLECTION PAGE CIV 7 | | | | - |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | SECTION 3 CONT' | | | | |
| | MANHOLES CONT'D | | | | |
| | Form Work | | | | |
| A | Provide and fix sawn timber form work to the soffit of the suspended cover slab. | 10 | SM | | |
| B | Provide and fix sawn timber form work to edges of suspended cover slab and boxing for manhole covers not more than 150mm girth width. | 4 | LM | | |
| | Walling | | | | |
| C | Provide, lay and joint 150mm thick approved natural dressed stone or concrete block as walling to manholes type A and B to details (50)5300 and (50)5301. | 14 | SM | | |
| D | Ditto but 200mm thick for manholes type C and D details (50)5302 and (50)5303. | 3 | SM | | |
| | Rendering | | | | |
| E | Provide 12mm thick water proof cement and sand mix 1:3, steel float finished to walls and suspended cover slab. | 17 | SM | | |
| F | Provide 12mm thick water proof cement and sand mix 1:1, rendering trowelled smooth to surface of benching. | 17 | SM | | |
| | C.I Manhole Cover and Frame to B.S 497 & B.S 556. | | | | |
| G | Provide and fix 600 X 450mm medium duty double seal C.I manhole cover and frame and grease to detail (50)5313. | 8 | NO | | |
| | Step Iron. | | | | |
| H | Provide and fix bitumen coated step irons in manholes at 300mm c/c. All to detail 50(5309) | 80 | NO | | |
| J | Allow for testing the whole of the foul drainage system in the presence of the Engineer/Project Manager and make good any defects, re-test as necessary and leave the whole system perfect to the satisfaction | ITEM | 1 | | |
| | 90,000L CAPACITY SEPTIC TANK | | | | |
| | SITE CLEARANCE (PROVISIONAL) | | | | |
| K | Clear site of grass, heaped materials, bushes and remove from site | 128 | SM | | |
| | Earth works | | | | |
| L | Excavate for pit commencing from arising ground level not exceeding 1.5m deep. | 192 | CM | | |
| M | Ditto 1.50 to 3.00m ditto. | 191 | CM | | |
| N | Ditto 3.00 to 4.50m ditto. | 86 | CM | | |
| | TOTAL CARRIED TO COLLECTION PAGE CIV 7 | | | | - |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | SECTION 3 CONT' | | | | |
| A | Return fill and ram selected excavated materials. | 258 | CM | | |
| B | Load and Cart away surplus excavated materials from site. | 130 | CM | | |
| C | Allow for keeping excavations free from general | 1 | ITEM | | |
| D | Allow for planking & strutting to sides of excavations | 1 | ITEM | | |
| E | Provide, lay and compact imported aproved material to improve the base to a depth of 300mm. | 15 | CM | | |
| F | Plain concrete (1:3:6) in:-<br>50mm blinding under base slab. | 73 | SM | | |
| G | Vibrated reinforced concrete (1:1.5:3) class 25/20 in:-<br>200mm Thick foundation slab. | 39 | SM | | |
| H | 175mm Thick suspended slab. | 39 | SM | | |
| J | Vibrated reinforced concrete (1:1.5:3) class 25/20 in:-<br>200mm Thick scum buffer beams. | 4 | CM | | |
| K | R.C 200mm thick dividing wall. | 4 | CM | | |
| L | 250mm Thick walls. | 25 | CM | | |
| M | 200mm Thick ditto. | 10.9 | CM | | |
| N | Allow Kshs 300,000 for training and continuous proffesional programe for State Department for Public Works | 1 | Item | | |
| O | letter Head quality paper as CONGURER or equal and approved cream80g/m3 | 2 | No | | |
| P | Hp laser jet pro printer m420-m403 series | 1 | No | | |
| | TOTAL CARRIED TO COLLECTION PAGE CIV 7 | | | | - |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | SECTION 3 CONT' | | | | |
| | Reinforcement | | | | |
| A | 12mm Diameter mild steel bars reinforcement to B.S. 4449. | 250 | KG | | |
| B | 10mm Diameter high tensile square twisted reinforcement bars to B.S. 4461. | 2500 | KG | | |
| C | 12mm ditto. | 2000 | KG | | |
| D | Sawn form work to:- | | | | |
| E | Vertical sides of walls. | 252 | SM | | |
| F | Soffites of suspended slab. | 65 | SM | | |
| G | Edge of ground slab 150-225mm high. | 35 | LM | | |
| H | Ditto suspended slab 150-225mm ditto. | 36 | SM | | |
| J | Soffites of baffle walls 75-150mm girth. | 15 | LM | | |
| K | Boxing size 600x450mm to form opening for manhole cover. | 4 | NO. | | |
| L | 12mm Thick sulphate-resisting water proof render to concrete work. | 280 | SM | | |
| | Sundries | | | | |
| M | Form or leave slot size 300x200mm in 200mm thick concrete wall. | 8 | NO. | | |
| N | Ditto in 250mm thick concrete wall for large pipe. | 2 | NO. | | |
| P | Ditto in 200mm thick wall. | 2 | NO. | | |
| Q | Supply and fix 200mm diameter UPVC sleeve in 250mm thick concrete wall. | 2 | NO. | | |
| R | Ditto in 200mm thick concrete wall. | 2 | NO. | | |
| S | Medium duty cast iron manhole cover size 600x450mm complete with frame including bedding frame in cement sand (1:4) mortar and cover in grease. | 4 | NO | | |
| T | Provide and fix bitumen coated step irons in manholes at 300mm c/c. All to detail 50(5309) | 44 | NO | | |
| | DISTRIBUTION MANHOLES | | | | |
| U | Excavate pit for standard manhole depth not exceeding 1.5m av. Depth 1.5m | 74 | CM | | |
| | TOTAL CARRIED TO COLLECTION PAGE CIV 7 | | | | - |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | SECTION 3 CONT' | | | | |
| A | Extra over excavation in rock class 1 | 3 | CM | | |
| B | Return fill & ram | 52 | CM | | |
| C | Cart away surplus material | 22 | CM | | |
| D | Provide material and construct distribution MH to detail (50)5351 | 7 | NO | | |
| | SOAK PIT (50)5345 | | | | |
| E | Excavation pit for sak pit n.e. 1.5m deep | 80 | CM | | |
| F | Ditto between 1.5m and 3.0m deep | 8 | CM | | |
| G | Ditto between 3.0m and 4.5m deep | 14 | CM | | |
| H | Ditto between 4.5m and 6.m deep | 14 | CM | | |
| J | Return fill and rum | 39 | CM | | |
| K | Cart away away surplus material | 68 | CM | | |
| L | Provide materials & erect 150mm thick circular masonary wall in cement motar 1:4 | 42 | SM | | |
| M | Provide lay & vibrate conc. 1:3:6 to 150mm thick base | 6 | CM | | |
| N | Provide lay & vibrate conc. 1:2:4 to cover slab 150mm thick | 9 | CM | | |
| P | Provide & fix 600x450mm MD MH cover & frame | 8 | NO | | |
| Q | Provide formwork to soffit of slab | 6 | SM | | |
| R | Ditto to curved edge 150-225mm high | 15 | LM | | |
| S | Provide cut bend & fix in wall dia. 8mm HT reinforcing bar | 500 | KG | | |
| T | Provide approved hardcore fill to soak pit | 90 | CM | | |
| U | Make or leave rebated opening 600x450mm | 14 | NO | | |
| V | Keep excavations free from general waters | ITEM | | | |
| W | Hp Elite X2 1012 G2 intel core i5 7th gen 16/ 256 Ssd tablet | 3 | NO | | |
| X | Ecotank L6570 WIFI duplex multi-function printerADF ink tank office printer print scan copy and fax wi-fi printing | 3 | NO | | |
| | sandisk 1TB(1000GB) Portable SSD | 3 | NO | | |
| Y | Supply White A4 Photocopying Paper (80 gsm) reams | 10 | NO | | |
| Z | Supply White A3 Photocopying Paper REAMS | 10 | NO | | |
| | FRENCH DRAINS (50)5344 | | | | |
| Z' | Excavate trench for french drain starting from ground level not exceeding 1.5m deep, trim & shape as in detail (50)5344 av. depth 1.25m | 30 | CM | | |
| | TOTAL CARRIED TO COLLECTION PAGE CIV 7 | | | | - |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | SECTION 3 CONT' | | | | |
| A | Ditto to invert n.e 1.5m | 170 | CM | | |
| B | Ditto, depth not less than 1.5m but n.e 2.0m | 70 | CM | | |
| C | Ditto, depth not less than 2.0m but n.e 2.5m | 70 | CM | | |
| D | Provide & lay in trench dia. 160mm agricultural pipe as in detail (50)5344 | 250 | LM | | |
| E | Provide & lay in trench crushed stone 20 -60mm thick as in detail (50)5344 | 250 | LM | | |
| F | Provide lay & compact in trench 200mm thick approved murram | 160 | LM | | |
| G | Return fill & ram | 50 | CM | | |
| H | Cart away surplus material as directed by the Engineer | 90 | CM | | |
| | SOAKAGE AREA | | | | |
| J | Prepare ground by digging to loosen the ground ave. depth 200mm and remove all unwanted materials and cart away as directed by the Engineer | 700 | SM | | |
| K | Provide manure and mix with red soil 150mm deep all around soakage area | 700 | SM | | |
| L | Provide & plant approved grass runners 300mm centres both ways & maintain until well established | 700 | SM | | |
| | TOTAL CARRIED TO COLLECTION BELOW | | | | |
| | COLLECTION | | | | |
| | TOTAL BROUGHT FORWARD FROM PAGE CIV 1 | | | | |
| | TOTAL BROUGHT FORWARD FROM PAGE CIV 2 | | | | |
| | TOTAL BROUGHT FORWARD FROM PAGE CIV 3 | | | | |
| | TOTAL BROUGHT FORWARD FROM PAGE CIV 4 | | | | |
| | TOTAL BROUGHT FORWARD FROM PAGE CIV 6 | | | | |
| | TOTAL BROUGHT DOWN FROM ABOVE | | | | |
| | TOTAL CARRIED TO SUMMARY PAGE | | | | |
| | SECTION 4 CONT' | | | | |
| | SUMMARY | | | | |
| | SEWERAGE WORKS | | | | |
| | TOTAL | | | | |
| | TOTAL FOR CIVIL WORKS CARRIED TO GRAND SUMMARY | | | | |

# BILL NO.4 - ELECTRICAL WORKS

# REPUBLIC OF KENYA

## *PROPOSED CONSTRUCTION WORKS FOR DELMONTE LAND REGISTRY IN MURANGA COUNTY*

## W.P ITEM NO. D1112/EN/EMB/2501. JOB NO. 11569A

# *TENDER SPECIFICATIONS AND BILL OF QUANTITIES*

# *FOR*

# *ELECTRICAL INSTALLATION WORKS*

**CLIENT**

**STATE DEPARTMENT FOR LANDS AND PHYSICAL PLANNING**
P.O. BOX 30450-00100,
**NAIROBI**

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*HOUSING & URBAN DEVELOPMENT,*
*STATE DEPARTMENT FOR PUBLIC WORKS,*
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***ARCHITECT***
***CHIEF ARCHITECT***
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***CHIEF QUANTITY SURVEYOR***
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***STRUCTURAL ENGINEER***
***CHIEF STRUCTURAL ENGINEER***
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***NAIROBI***

**JULY 2026**

# PART 1 - TENDERING PROCEDURES

NOTE

***The main contractor shall engage domestic subcontractors who are qualified and registered with the relevant regulatory bodies as detailed in the evaluation criteria mandatory requirements***

# 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 evaluating Tenders.

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.

(a) 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

The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. The tender that (i) meets the qualification criteria, (ii) has been determined to be substantially responsive to the Tender Documents, and (iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

## 2.0 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.

*[The Procuring Entity will provide the preliminary evaluation criteria. To facilitate, a template may be attached or clearly described all information and list of documentation to be submitted by Tenderers to enable preliminary evaluation of the Tender]*

## 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

**4.0** 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.

**OPTION 2**

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.

## 6.0 MARGIN OF PREFERENCE

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

**6.2** Contractors shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractors qualifies for a margin of preference.

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

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

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

**6.4** All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tender in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A is the lowest, it shall be selected for the award of contract. If a tender from Group B is the lowest, an amount equal to

the percentage indicated in Item 6.1 of the respective tender price, including unconditional discounts and excluding provisional sums and the cost of day works, if any, shall be added to the evaluated price offered in each tender from Group B. All tenders shall then be compared using new prices with added prices to Group B and the lowest evaluated tender from Group A. If the tender from Group A is still the lowest tender, it shall be selected 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) In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.

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

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

iii) At least__(*insert number)* of contract(s) of a similar nature executed within Kenya, or the East African Community or a broad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings_____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 | Forms ELI - 1.1 and 1.2, with attachments | |
| 7 | History of Non-- Performing Contracts | Non-performance of a contract did not occur as a result of contractor default since 1st January 2020. | 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. | FormCON-2 | |
| 10 | Litigation History | No consistent history of court/arbitral award decisions against the tenderer since 1st January 2020 | 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 3,000,000. equivalent for the subject contract(s) net of the Tenderer's other commitments.<br><br>(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.<br><br>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 shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its | Form FIN - 3.1, with attachments | |

| | | | | |
|---|---|---|---|---|
| | | prospective long-term profitability. | | |
| 12 | Average Annual Construction Turnover | Minimum average annual construction turnover of Kenya Shillings 15,000,000.00, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last *3* years, divided by *3* 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 *3* years | **4.** Form EXP - 4.1<br>**Experience** | |
| 14 | Specific Construction & Contract Management Experience | A minimum number of similar contracts specified below that have been satisfactorily and substantially completed as a prime contractor, joint venture member, management contractor or sub-contractor for the last 3 years from tender submission deadline i.e.<br>3 contracts, each of minimum value Kenya shillings 8,000,000.00 equivalent.<br>*[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}*<br><br>The similarity of the contracts shall be based on the following: *[Based on Section VII, Scope of* | Form EXP 4.2(a) | |

| | | | | |
|---|---|---|---|---|
| | | *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}* | | |

# SECTION D

# TENDERING FORMS

## QUALIFICATION FORMS

### 1. FOREIGN TENDERERS 40% RULE

| Item | Description of Work Item | Describe Location of Source | Cost in K. Shillings | Comments if Any |
|---|---|---|---|---|
| **A** | **Local Labour** | | | |
| 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** | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| **E** | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | TOTAL COST OF LOCAL CONTENT | | | |
| | PERCENTAGE OF CONTRACT PRICE | | | |

## 2. FORM: 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 |
| Current | Capacity | Year of Manufacture |
| | Current Location | |
| | Indicate source of the equipment<br><br>☐ 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

**Contractors 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

| **1.** | **Title of Position** | |
|---|---|---|
| | **Name of Candidate** | |
| | **Duration of Appointment** | |
| | **Time Commitment for This Position** | |

| | | |
|---|---|---|
| | **Expected Time Schedule for This Position** | |
| **2.** | **Title of Position** | |
| | **Name of Candidate** | |
| | **Duration of Appointment** | |
| | **Time Commitment for This Position** | |
| | **Expected Time Schedule for This Position** | |
| **3.** | **Title of Position** | |
| | **Name of Candidate** | |
| | **Duration of Appointment** | |
| | **Time Commitment for This Position** | |
| | **Expected Time Schedule for This Position** | |
| **4.** | **Title of Position** | |
| | **Name of Candidate** | |
| | **Duration of Appointment** | |
| | **Time Commitment for This Position** | |
| | **Expected Time Schedule for This Position** | |

## 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]** | | |
| Personell Information | Name: | Date of Birth: |
| | Address: | E-Mail: |
| | Professional Qualifications: | |
| | Academic Qualifications: | |

| | | |
|---|---|---|
| | Language Proficiency: [*language and levels of speaking, reading and writing skills*] | |
| | 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 Personnell is available to work in this contract*] |
| Time commitment | [*insert period (start and end dates) for which this Contractor's Representative or Key Personnell is available to work in this contract*] |

**I understand that any misrepresentation or omission in this form may:**

a) be taken into consideration during Tender evaluation;

b) result in my disqualification from participating in the tender;

c) result in my dismissal from the contract.

Name of Contractor's Representative or Key Personnel:

Signature:

Date: (day month year):

Counter signature of authorized representative of the Tenderer:

Signature:

Date: (day month year):

## 5. TENDERERS QUALIFICATION WITHOUT PREQUALIFICATION

### 5.1. FORM ELI – 1.1

**Tenderer Information Form**

**Date: _____**

**ITT No. and Title: _____**

| |
|---|
| Tenderer's Name |
| In case of Joint Venture (JV), Name of Each Member |
| Tenderer's Actual or Intended Year of Incorporation |
| Tenderer's Legal Address [in country of registration] |
| Tenderer's Authorised Representative Information<br>Name:<br>Address:<br>Telephone/Fax Numbers:<br>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<br>• In case of JV, letter of intent to form JV or JV agreement in accordance with ITT 3.5<br>• In case of state-owned enterprise or institution in accordance with ITT 3.8 documents establishing:<br>a. Legal and financial autonomy<br>b. Operation under commercial law<br>c. Establishing that the tenderer is not under the supervision of the Procuring Entity<br>2. Included are the organisational chart, a list of Board of Directors and the beneficial ownership |

### 5.2. FORM ELI - 1.2

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

**Date: _____**

**ITT No. and Title:_____**

| |
|---|
| Tenderer's JV Name |
| JV Member's Name |
| JV Member's Country of Registration |
| JV Member's Year of Constitution |
| JV Member's Legal Address in Country of Constitution |
| JV Member's Authorised Representative Information<br>Name:<br>Address:<br>Telephone/Fax Numbers:<br>E-mail Address: |
| 3. Attached are copies of original documents of:<br>• 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<br>• In case of state owned enterprise or institution in accordance with ITT 3.8 documents establishing: |

| |
|---|
| d. Legal and financial autonomy<br>e. Operation under commercial law<br>f. Establishing that the tenderer is not under the supervision of the Procuring Entity, in accordance with ITT 3.5<br>4. Included are the organisational chart, a list of Board of Directors and the beneficial ownership |

### 5.3. FORM CON – 2

**Historical Contract Non-Performance, Pending Litigation and Litigation History**

Tenderer's Name:_____Date:_____

JV Member's Name_____ ITT No. And Title_____

| Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria | | | |
|---|---|---|---|
| Contract non-performance did not occur since 1st January [ insert year] specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1<br>Contract(s) non-performance since 1st January [ insert year] specified in Section III, Evaluation and Qualification Criteria, Requirement 2.1<br>Contract(s) withdrawn did not occur 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*]<br>Name of Procuring Entity: [*insert full name*]<br>Address of Procuring Entity: [*insert street/city/country*]<br>Name of Procuring Entity: [*insert street/city/country*]<br>Reason(s) for non-performance: [*indicate main reasons*] | [*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<br><br>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)** |
| [*insert year*] | [*insert percentage*] | Contract Identification: _____<br>Name of Procuring Entity: _____<br>Address of Procuring Entity: _____<br>Matter in dispute: _____<br>Party who initiated the dispute: _____<br>Status of Dispute:_____ | [*insert amount*] |
| [*insert year*] | [*insert percentage*] | Contract Identification: _____<br>Name of Procuring Entity: _____<br>Address of Procuring Entity: _____<br>Matter in dispute: _____<br>Party who initiated the dispute: _____<br>Status of Dispute:_____ | [*insert amount*] |
| Litigation in accordance with Section III, Evaluation and Qualification Criteria | | | |
| No Litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub Factor 2.4<br><br>Pending Litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below. | | | |
| **Year of award** | **Outcome as percentage of Net Worth** | **Contract Identification** | **Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)** |
| [*insert year*] | [*insert percentage*] | Contract Identification: [*indicate complete contract name/number and any other identification*]<br>Name of Procuring Entity: [*insert full name*]<br>Address of Procuring Entity: [*insert street/city/country*]<br>Matter in dispute: [*indicate main issues in dispute*]<br>Party who initiated the dispute: [*indicate "Procuring Entity" or " Contractor"*]<br>Reason(s) for Litigation and Award Decision: [*indicate main reasons*] | [*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

**5.4. FORM FIN – 3.1**

**Tenderer's Name:** _____

**Date:** _____

**JV Member's Name:** _____

**ITT No. and Title:** _____

### 5.4.1. FINANCIAL DATA

| **Type of Financial Information in _____ (currency)** | **Historic Information for Previous Years (amount in currency, currency exchange rate*, USD equivalent)** | | | | |
|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| Statement of Financial Position (Information from Balance Sheet) | | | | | |
| Total Assets (TA) | | | | | |
| Total Liabilities (TL) | | | | | |
| 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 Opening 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 incase 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 for the _____ years required above and complying with the requirements.

**5.5. FORM FIN – 3.2**

**Average Annual Construction Turnover**

**Tenderer's Name:** _____

**Date:** _____

**JV Member's Name:** _____

**ITT No. and Title:** _____

| **Annual Turnover Data (Construction Only)** |
|---|

| Year | Amount Currency | Exchange Rate | Kenya Shilling Equivalent |
|---|---|---|---|
| [*Indicate year*] | [*Insert amount and indicate currency*] | | |
| | | | |
| | | | |
| | | | |
| Average Annual Construction Turnover * | | | |

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

**5.6. FORM FIN – 3.3**

**Financial Resources**

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

| No. | Source of Finance | Amount (Kenya Shilling Equivalent) |
|---|---|---|
| **1** | | |
| **2** | | |
| **3** | | |

**5.7. FORM FIN – 3.4**

**Current Contract Commitments / Works in Progress**

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

| 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** | | | | | |

**5.8. FORM EXP – 4.1**

**General Construction Experience**

Tenderer's Name: _____ Date: _____

JV Member's Name: _____ ITT No. and Title: _____

Page_____of_____pages

| **Starting Year** | **Ending Year** | **Contract Identification** | **Role of Tenderer** |
|---|---|---|---|
| | | Contract Name: _____<br>Brief Description of the Works Performed by the Tenderer_____<br>Amount of Contract_____<br>Name of Procuring Entity_____<br>Address_____ | |
| | | Contract Name: _____<br>Brief Description of the Works Performed by the Tenderer_____<br>Amount of Contract_____<br>Name of Procuring Entity_____<br>Address_____ | |
| | | Contract Name: _____<br>Brief Description of the Works Performed by the Tenderer_____<br>Amount of Contract_____<br>Name of Procuring Entity_____<br>Address_____ | |

**5.9. FORM EXP – 4.2(a)**

**Specific Construction and Contract Management Experience**

Tenderer's Name: _____ Date:_____

JV Member's Name: _____ ITT No. and Title: _____

| **Similar Contract No.** | **Information** |
|---|---|
| **Contract Identification** | |
| **Award Date** | |
| **Completion Date** | |

| Role in Contract | Prime Contractor ☐ | Member in JV ☐ | Management Contractor ☐ | Sub-Contractor ☐ |
|---|---|---|---|---|
| Total Contract Amount | | | **Kenya Shilling** | |
| If Member in a JV or Sub-Contractor, Specify Participation in Total Contract Amount | | | | |
| Procuring Entity's Name: | | | | |
| Address:<br>Telephone/Fax Number:<br>E-Mail: | | | | |
| Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III: | | | | |
| Amount | | | | |
| Physical Size of Required Works Items | | | | |
| Complexity | | | | |
| Methods/Technology | | | | |
| Construction Rate for Key Activities | | | | |
| Other Characteristics | | | | |

**5.10. FORM EXP – 4.2(b)**

**Specific Construction and Contract Management Experience**

Tenderer's Name: _____ Date: _____

JV Member's Name: _____ ITT No. and Title: _____

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.

| **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** | |

| Quantity (Volume, Number of 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:<br>Telephone/Fax Number:<br>E-Mail: | | | |
| Description of the similarity in accordance with Sub-Factor 4.2(b) of Section III: | | | |
| | | | |
| | | | |
| | | | |

## 6. FORM OF TENDER

INSTRUCTIONS TO TENDERERS

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

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

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

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

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

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

**To:** [insert complete name of Procuring Entity]

Dear Sirs,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above-named Works, we, the undersigned offer to construct and complete the Works and remedy any defects there in for the sum of Kenya Shillings [[*Amount in figures*] ……Kenya Shillings [*amount in words*] ……...
   The above amount includes foreign currency amount(s) of [*state figure or a percentage and currency*] [figures] ……[*words*]……

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

2. We under take, 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 adhere by this tender until……. [Insert date], and it shall remain binding upon us and may be accepted at any time before that date.
4. We understand that you are not bound to accept the lowest or any tender you may receive.
5. We, the under signed, further declare that:
   i. No reservations: We have examined and have no reservations to the tender document, including Addenda issued in accordance with ITT 28;
   ii. Eligibility: We meet the eligibility requirements and have no conflict of interest in accordance with ITT 3 and 4;
   iii. Tender - Securing Declaration: We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender-Securing or Proposal-Securing Declaration in the Procuring Entity's Country in accordance with ITT 19.8;
   iv. Conformity: We offer to execute in conformity with the tendering documents and in accordance with the implementation and completion specified in the construction schedule, the following Works: [insert a brief description of the Works];
   v. Tender Price: The total price of our Tender, excluding any discounts offered in item 1 above is: [Insert one of the options below as appropriate]
   vi. Option 1, in case of one lot: Total price is……. [*insert the total price of the Tender in words and figures, indicating the various amounts and the respective currencies*]; or
   Option2, in case of multiple lots:
   (a)Total price of each lot…… [*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies*]; and
   (b)Total price of all lots (sum of all lots) …… [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];
   vii. Discounts: The discounts offered and the methodology for their application are:
   viii. The discounts offered are: [*Specify in detail each discount offered.]*
   ix. The exact method of calculations to determine the net price after application of discounts is shown below: [*Specify in detail the method that shall be used to apply the discounts*];
   x. Tender Validity Period: Our Tender shall be valid for the period specified in TDS 18.1 (*as amended, if applicable*) from the date fixed for the Tender submission deadline specified in TDS 22.1 (*as amended, if applicabl*e), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
   xi. Performance Security: If our Tender is accepted, we commit to obtain a Performance Security in accordance with the Tendering document;

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

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

xiv. State-owned enterprise or institution: [*select the appropriate option and delete the other*] [We are not a state- owned enterprise or institution]/[We are a state-owned enterprise or institution but meet the requirements of ITT3.8];

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

| Name of Recipient | Address | Reason | Amount |
|---|---|---|---|
| | | | |
| | | | |

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

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

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

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

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

xxi. We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:

a) Tenderer's Eligibility; Confidential Business Questionnaire - to establish we are not in any conflict to interest.

(b) Certificate of Independent Tender Determination - to declare that we completed the tender without colluding with other tenderers.

(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.*

**TENDERER'S ELIGIBILITY - CONFIDENTIAL BUSINESS QUESTIONNAIRE**

**Instruction to Tenderer**

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

**a. Tenderer's Details**

| | ITEM | DESCRIPTION |
|---|---|---|
| 1 | Name of the Procuring Entity | |
| 2 | Reference Number of the Tender | |
| 3 | Date and Time of Tender Opening | |
| 4 | Name of the Tenderer | |
| 5 | Full Address and Contract Details of the Tenderer.<br>(Country, city, location, building, floor, postal address and 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 Registration 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. | |

b. **Sole Proprietor**, provide the following details

Name in full_____Age_____ Nationality_____

Country of Origin_____

Citizenship_____

c. **Partnership,** provide the following details

| | Names of Partners | Nationality | Citizenship | % Shares Owned |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

d. **Registered Company,** provide the following details

I. Private or public company_____

II. State the nominal and issued capital of the company_____

Nominal Kenya Shillings (Equivalent) _____

Issued Kenya Shillings (Equivalent) _____

III. Give Details of Directors as follows

| | Names of Director | Nationality | Citizenship | % Shares Owned |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

e. **DISCLOSURE OF INTEREST – Interest of the Firm in the Procuring Entity**

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

If Yes provide details as follows:

| | Names of Person | Designation in the Procuring Entity | Interest or Relationship with Tenderer |
|---|---|---|---|
| 1 | | | |

| | | | |
|---|---|---|---|
| 2 | | | |
| 3 | | | |

ii. Conflict of Interest Disclosure

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

| | | | |
|---|---|---|---|
| | throughout the tendering process and execution of the Contract. | | |

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)

**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, whichever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5)(b) above.

Name……. Title_____

Date _____

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

**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 therefore 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.....

Email…….....

Name of the Firm/Company…….....

Date…….....

**(Company Seal/ Rubber Stamp where applicable)**

Witness

Name…….....

Sign…….....

Date…….....

### *(c)* 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.

**FORM OF TENDER SECURITY-DEMAND BANK GUARANTEE**

**Beneficiary:**_____ **Request forTenders No:**_____**Date:** _____

**TENDER GUARANTEE No.:**_____

**Guarantor:** _____

1. We have been informed that_____(here inafter called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here inafter 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)]*

## 4. FORM OF TENDER SECURITY (TENDER BOND)

*[The Surety shall fill in this Tender Bond Form in accordance with the instructions*

*indicated.]* BOND NO._____

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

2. WHERE AS the Principal has submitted or will submit a written Tender to the Purchaser dated the_____day of _____, 23, for the supply of……. *[name of Contract]* (herein after called the "Tender").

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

   a) Has withdrawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender ("the Tender Validity Period"), or any extension there to provided by the Principal; or

   b) Having been notified of the acceptance of its Tender by the Purchaser during the Tender Validity Period or any extension there to 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 Purchaser's Tendering document.

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

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

IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this day of___20.

Principal:_____ Surety:_____

Corporate Seal (where appropriate)

Principal:_____ Surety:_____

(Signature) (Signature)

(Printed name and title) (Printed name and title

**FORM OF TENDER - SECURING DECLARATION**

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

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

Tender No.: ..... *[insert number of tendering process]*

To: ..... *[insert complete name of Purchaser]* I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.
2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of our obligation(s) under the bid conditions, because we–(a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the instructions to tenders.
3. I/We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer(s), upon the earlier of:
   a) Our receipt of a copy of your notification of the name of the successful Tenderer; or
   b) thirty days after the expiration of our Tender.
4. I/We understand that if I am /we are/ in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid, and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

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

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

**Appendix to Tender**

**Schedule of Currency Requirements**

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

| **Name of Currency** | **Amounts Payable** |
|---|---|
| Local Currency _____ | |
| Foreign Currency #1 _____ | |
| Foreign Currency #2 _____ | |
| Foreign Currency #3 _____ | |
| Provisional Sums expressed in local currency _____ | [To be entered by the Procuring Entity] |

**1. ADD TO CLAUSE 1.3 AND 2.0**

The evaluation criteria below shall form part of the evaluation.

a) **PRELIMINARY EVALUATION**

**Bidders must provide the following;**

| **S/No** | **MANDATORY REQUIREMENTS(MR)** |
|---|---|
| MR1 | Valid Copy of certificate of incorporation/ Registration. |
| MR2 | Valid Tax Compliance Certificate from Bidding Company |
| MR3 | Valid CR12 form showing the list of directors /shareholding or National Identity Card(s) for Sole Proprietorship / Partnership |
| MR4 | Valid copy of NCA registration certificate, category NCA 5 and above in the following works Electrical Installation works;<br>i Electrical installation works |
| MR5 | Valid annual NCA practicing license for works in MR4. |
| MR6 | (i)Current registration License with Energy and Petroleum Regulatory Authority (EPRA) in **class A1 in Electrical Installation Works** |
| MR7 | Dully filled, signed and stamped **form of tender** |
| MR8 | Dully filled, signed and stamped **Confidential business questionnaire** |

| | |
|---|---|
| MR9 | Dully filled, signed and stamped **Statement of Compliance** |
| MR10 | Valid Copy of Current Single Business permit |
| MR11 | Proof of payment for tender document if required |
| MR12 | Signed Pre-tender site visit form if pre-tender site visit is required |
| MR13 | Proof of authorization shall be furnished in the form of a written power of attorney which shall accompany the tender if the signatory is not a director of the company (provide name and attach proof of citizenship of the signatory to the Tender) and if Consortium, from each member of the consortium |
| MR14 | Dully filled, signed and stamped **Certificate of Independent Tender Determination** |
| MR15 | Duly filled **Technical Schedule** of items to be supplied |
| MR19 | All pages of the tender documents submitted chronologically serialized |
| MR20 | Submission of original tender document TAPE BOUND and sequentially serialised and all pages must be initialled or signed as stipulated in the tender advertisement/ invitation letter. **(NB: Use of Spring or Box Files will not be allowed and will result in automatic disqualification.)** |
| MR21 | Tenderers Information Form ELI -1.1 dully filled, signed and stamped |
| MR22 | Self-Declaration **Forms SD1** (Non Debarment ) to be completed and signed accordingly |
| MR23 | Self-Declaration **Forms, SD2** (Corruption or Fraudulent Practices) to be completed and signed accordingly |
| MR24 | Self-Declaration **Forms, SD3** (Code of Ethics) to be completed and signed accordingly |
| MR25 | Certified copies of Audited accounts (Signed by Auditors and directors for the last three (3) years (2023, 2024 & 2025). (Certified by an advocate). |

***N/B***

1. ***Full compliance by the tenderers shall be required to proceed to the next stage of evaluation. Failure to provide any of the listed requirements shall lead to disqualification.***
2. ***All Copies of original certificates submitted must be certified as a true copy of the original***

**The employer may seek further clarification/ confirmation if necessary; to confirm authenticity/ compliance to any condition of the tender.**

**b) EVALUATION OF TECHNICAL ASPECT OF THE TENDER**

At this stage technical evaluation shall be done by comparing each tender to the technical requirements in the tender document

| Item | Description | COMPLIANT YES/NO |
|---|---|---|
| 1. | **Compliance with Technical Specifications**<br>***1) Tender Evaluation Committee to evaluate compliance to all technical specifications as detailed in the Particular Specifications Section of this document***<br>***2) Bidders who do not highlight catalogue number and model of the proposed items shall be considered non-compliant.***<br>***3) Non-compliance to any of the specifications shall render the whole system non-compliant*** | |
| 2. | **Qualification and Experience of Key Personnel** | |
| | **Academic Qualification and Experience (Provide evidence)**<br>**a) Director of the firm**<br>• Holder of at least a degree/ diploma/certificate with 5 years' experience in Electrical/Telecommunication/ Information Technology or any other Relevant Engineering field | |
| | **b) Project Manager**<br>• Holder of at least a diploma/ degree in Electrical Engineering with 5 years' experience in Electrical Engineering field. | |

| Item | Description | COMPLIANT YES/NO |
|---|---|---|
| | **c) At least 2 No artisans**<br>• Holder of at least a certificate in Electrical Engineering with 5 years' experience in relevant Electrical Engineering field | |
| | The tenderer **MUST** fill the forms listed below in the format provided and attach the necessary qualification certificates:<br>1. Form PER - 1 Contractor's Representative and Key Personnel Schedule<br>2. Form PER - 2 Resume and Declaration - Contractor's Representative and Key Personnel. | |
| 3. | **Experience of the firm in similar services: Electrical systems installation works.**<br>a) Provide One (3No.) project of similar nature, complexity or magnitude) for the last 5yrs **(Provide evidence)**<br>The tenderer **MUST** fill the forms listed below in the format provided<br>1. Form EXP – 3.4 Current contract commitments/works in progress<br>2. Form EXP – 4.1 General Construction and contract Experience<br>3. Form EXP – 4.2.a Specific and Contract Management Experience<br>4. Form EXP – 4.2.b Construction Experience and Key Activities | |
| 4. | **Financial report**<br>a) Audited financial report (last three (3) years)<br>• Average Annual Turn-over of at least Kshs. 15,000,000.00<br>b) Evidence of Financial Resources (cash in hand, lines of credit, over draft facility etc.)<br>• Has financial resources to finance the projected Kshs. 3,000,000 .00 **monthly cash flow*** for three months<br>The tenderer **MUST** fill the forms listed below in the format provided.<br>1. Form FIN 3.2 Average Annual Construction Turnover<br>2. Form FIN 3.3 Financial resources | |
| 5. | **Adequacy of tools and equipment**<br>The tenderer ***must*** show proof of ownership or leasing of the following equipment: - | |

| Item | Description | COMPLIANT YES/NO |
|---|---|---|
| | a) **Relevant Transport**<br>• Pickup<br>b) **Relevant Equipment (at least 3No.)**<br>• Splicing tool<br>• Fluke tester<br>• Crimping tool<br>• Digital Earth Loop Tester<br>• Insulation Continuity Tester<br>• Digital Earth Resistance Tester<br>• Multimeter and Clamp Meter<br>• Electrician 's Tool Kit<br>The tenderer **MUST** fill the forms listed below in the format provided.<br>**1.** Form EQU: Equipment | |
| 6. | **Litigation History**<br>The tenderer **MUST** fill the forms listed below in the format provided.<br>1. Form Con-2: Historical contract Non-performance, pending litigation and Litigation history | |
| | **QUALIFIED YES / NO** | |

**N/B Full compliance by the tenderers shall be required. Failure to provide any of the listed requirements shall lead to disqualification. Hence the tenderer shall not proceed to financial evaluation.**

## c) FINANCIAL EVALUATION

Upon completion of the technical evaluation, a detailed financial evaluation shall follow consistent with and in addition to the criteria listed in **ITT 31.0, ITT 37.0, ITT 38.0** and its sub paragraphs. Bidders who qualify at the technical evaluation shall be evaluated this stage. The successful bidder shall be the tenderer with the lowest evaluated tender price subject to the procuring entity's right to exercise due diligence relating to confirmation of information submitted by the bidder before the award of the tender pursuant to Section 83 of the Public Procurement and Asset Disposal Act, 2015.

## RECOMMENDATIONS FOR AWARD

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

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

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

## STAGE 2: TECHNICAL EVALUATION

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

*In accordance with clause 2.2 of Instruction to Tenderers, the tenderers will be required to provide evidence for eligibility of the award of the tender by satisfying the employer of their eligibility under sub clause 2.1 of Instructions to Tenderers and their capability and adequacy of resources to effectively carry out the subject contract.*

*In order to comply with provisions of clause 2.2 of Instruction to Tenderers, the tenderers shall be required;*

a) *To fill the Standard Forms* provided in the bid document for the purposes of providing the required information. The tenderers may also attach the required information if they so desire;

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

(i) Standards of manufacture;
(ii) Performance ratings/characteristics;
(iii) Material of manufacture;
(iv) Electrical power ratings; and
(v) Any other necessary requirements so as to comply with the bid technical specifications.

The bid will then be analyzed, using the information in the technical brochures, to determine compliance with key technicalspecifications for the works/items as indicated in the tender document. Bidders not complying with **any** of the keyTechnicalSchedulespecifications shall be disqualified while those meeting all the key technical specifications shall be awarded proceed. **(evaluation committee may add more key requirements from the bid technical specifications.**

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

## Statement of Compliance

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

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

**Signed .....*for and on behalf of the Tenderer***

---

**Date: ……..**

**Official Rubber Stamp: ……**

# PART II - WORKS REQUIREMENTS

# SECTION I-SPECIFICATIONS

Notes for preparing Specifications

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

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

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

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

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

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

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

## PARTICULAR SPECIFICATIONS FOR ELECTRICAL WORKS

### 1.00 LOCATION OF SITE

The site for the proposed Contract Works is at **DELMONTE/MAKENJI - MURANGA COUNTY**

### 2.00 SCOPE OF WORKS

The works to be carried out under this sub-contract comprise supply, installation, testing and commissioning of the following: -

**(a) General Electrical Installation Works**
**(b) Fire Alarm Installation**
**(c) CCTV and Access control**
**(d) Standby Generator**
**(e) Passenger lift**
**(f) Solar for borehole pumping**

### 3.00 MATERIALS FOR THE WORKS

Materials shall be as specified in Section B and in the Bills of Quantities of this document which shall be read in conjunction with contract drawings. Alternative materials shall be accepted only after approval by the Project Manager.

### 4.00 BROCHURES FOR ELECTRICAL EQUIPMENT AND FITTINGS

For consideration and qualification tenderers shall, at their own cost, provide coloured manufacturer's brochures detailing technical literature and highlighting specifications where applicable.

### 5.00 MINIMUM TECHNICAL SPECIFICATION FOR ELECTRICAL FITTINGS

#### a) MINIMUM TECHNICAL SPECIFICATION FOR LED LIGHT FITTINGS

- Power factor ≥ 0.9
- Operating voltage range 130-300 V ac
- Operating frequency range 45-55 Hz
- Operating hours ≥25,000 hrs
- Colour Temperature ≥ 2700K
- THD<15%

Attach technical brochures to access compliance with specification.

#### b) POSITIONS OF ELECTRICAL PLANT AND APPARATUS

The routes of cables and approximate positions of switchboards etc, as shown on the drawings shall be assumed to be correct for purpose of Tendering, but exact positions of all electrical Equipment and routes of cables must be agreed on site with the Engineer before any work is carried out.

#### c) MCB DISTRIBUTION PANELS AND CONSUMER UNITS

All cases of MCB Panels and consumer units shall be constructed in heavy gauge sheet with hinged covers.

Removable undrilled gland plates shall be provided on the top and bottom of the cases. Miniature

circuit breakers shall be enclosed in moulded plastic with the tripping mechanism and arc chambers separated and sealed from the cable terminals.

The operating dolly shall be trip free with a positive movement in both make and break position. Clear indication of the position of the handle shall be incorporated.

The tripping mechanism shall be on inverse characteristic to prevent tripping in temporary overloads and shall not be affected by normal variation in ambient temperature.

A locking plate shall be provided for each size of breaker; A complete list of circuit details on typed cartridge paper glued to stiff cardboards and covered with a sheet of perspex, and held in position with four suitable fixings, shall be fitted to the inner face of the lids of each distribution panel. The appropriate MCB ratings shall be stated on the circuit chart against each circuit in use: Ivorine labels shall be secured to the insulation barriers in such a manner as to indicate the number of the circuits shown on the circuit chart.

Insulated barriers shall be fitted between phases, and neutrals in all boards, and to shroud live parts.

Neutral cables shall be connected to the neutral bar in the same sequence as the phase cables are connected to the MCB's. This shall also apply to earth bars when installed.

### d) FUSED SWITCHGEAR AND ISOLATORS

All fused switchgear and isolators whether mounted on machinery, walls or industrial panels shall conform to the requirements of KS 04 – 226 PART: 1: 1985.

All contacts are to be fully shrouded and are to have a breaking capacity on manual operations as required by KS 04 – 182: 1980.

Fuse links for fused switches are to be of high rupturing capacity cartridge type, conforming to KS 04 – 183: 1978.

Isolators shall be load breaking/fault making isolators.

Fused switches and isolators are to have separate metal enclosures. Mechanical interlocks are to be provided between the door and main switch operating mechanism so arranged that the door may not be opened with the switch in the 'ON' position. Similarly; it shall not be possible to close the switch with the door open except that provision to defeat the mechanical interlock and close the switch with the door in the open position for test purposes. The 'ON' and 'OFF' positions of all switches and isolators shall be clearly indicated by a mechanical flag indicator or similar device. In T.P & N fused switch units, bolted neutral links are to be fitted.

### e) CONDUITS AND CONDUIT RUNS

Conduit systems are to be installed so as to allow the loop-in system of wiring:

All conduits shall be black rigid super high impact heavy gauge class 'A' PVC in accordance with KS 04 – 179: 1988 and IEE Regulations. No conduit less than 20mm in diameter shall be used anywhere in this installation.

Conduit shall be installed buried in plaster work and floor screed except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm. Conduit run in chases shall be firmly held in position by means of substantial pipe hooks driven into wooden plugs.

The Sub-contractor's attention is drawn to the necessity of keeping all conduits entirely separate from other piping services such as water and no circuit connections will be permitted between conduits and such pipes.

All conduits systems shall be arranged wherever possible to be self-draining to switch boxes and conduit outlet points for fittings:

The systems, when installed and before wiring shall be kept plugged with well fitting plugs and when short conduit pieces are used as plugs, they shall be doubled over and tied firmly together with steel wire; before wiring all conduit systems shall be carried out until the particular section of the conduit installation is complete in every respect.

The sets and bends in conduit runs are to be formed on site using appropriate size bending springs and all radii of bends must not be less than 2.5 times the outside diameter of the conduit. No solid or inspection bends, tees or elbows will be used.

Conduit connections shall either be by a demountable (screwed up) assembly or adhesive fixed and water tight by solution. The tube and fittings must be clean and free of all grease before applying the adhesive. When connections are made between the conduit and switch boxes, circular or non-screwed boxes, care shall be taken that no rough edges of conduit stick out into the boxes.

Runs between draw in boxes are not to have more than two right angle bends or their equivalent. The sub-contractor may be required to demonstrate to the Engineers that wiring in any particular run is easily withdrawable and the sub-contractor may, at no extra cost to the contract; be required to install additional draw-in boxes required. If conduit is installed in straight runs in excess of 6000mm, expansion couplings as manufactured by Egatube shall be used at intervals of 6000mm.

Where conduit runs are to be concealed in pillars and beams, the approval of the Structural Engineer, shall be obtained. The sub-contractor shall be responsible for marking the accurate position of all holes chases etc., on site, or if the Engineer so directs, shall provide the Main Contractor with dimensional drawings to enable him to mark out and form all holes and chases. Should the sub- contractor fail to inform the main contractor of any inaccuracies in this respect they shall be rectified at the sub-contractor's expense.

It will be the Sub-contractors responsibility to ascertain from site, the details of reinforced concrete or structural steelwork and check from the builder's drawings the positions of walls, structural concrete and finishes. No reinforced concrete or steelwork may be drilled without first obtaining the written permission of the Structural Engineer.

The drawings provided with these specifications indicate the appropriate positions only of points and switches, and it shall be the Sub-Contractors responsibility to mark out and centre on site the accurate positions where necessary in consultation with the Architect and the Engineer. The sub-contractor alone shall be responsible for the accuracy of the final position.

### f) CONDUIT BOXES AND ACCESSORIES

All conduit outlets and junction boxes are to be either malleable iron and of standard circular pattern of the appropriate type to suit saddles being used or super high impact PVC manufactured to KS 04 – 179 : 1983.

Small circular pattern boxes are to be used with conduits up to and including 25mm outside diameter. Rectangular pattern adaptable boxes are to be used for conduits of 32mm outside diameter and larger. For drawing in of cables in exposed runs of conduit, standard pattern through boxes are to be used:

Boxes are to be not less than 50mm deep and of such dimensions as will enable the largest appropriate

number of cables for the conduit sizes to be drawn in without excessive bending.

Outlet boxes for lighting fittings are to be of the loop-in type where conduit installation is concealed and the sub-contractor shall allow one such box per fitting, except where fluorescent fittings are specified when two such boxes per fitting shall be fitted flush with ceiling and if necessary fitted with break joint rings. Pattresses shall be fitted where required to outlets on surface conduit runs.

Adaptable boxes are to of PVC or mild steel (of not less than 12swg) and black enamelled or galvanised finish according to location. They shall be of square or oblong shape location. They shall be of square or oblong shape complete with lids secured by four 2 BA brass roundhead screws; No adaptable box shall be less than 75mm x 75mm x 50mm or larger than 300mm x 300mm x 75mm and shall be adequate in depth in relation to the size of conduit entering it. Conduits shall only enter boxes by means of conduit bushes.

**g) LABELS**

Labels fitted to switches and fuse boards; -

(i) Shall be Ivorine engraved black on white.

(ii) Shall be secured by R.H brass screws of same manufacturing throughout.

(iii) Shall be indicated on switches: -

**a)** Reference number of switches
**b)** Special current rating
**c)** Item of equipment controlled

(iv) Shall indicate on MCB panels

**d)** Reference number
**e)** Type of board, i.e;, lighting, sockets, etc,.
**f)** Size of cable supplying panel
**g)** where to isolate feeder cable

(v) Shall be generally not less than 75mm x 50mm.

**h) EARTHING**

The earthing of the installation shall comply with the following requirements;-

(i) It shall be carried out in accordance with the appropriate sections of the current edition of the Regulations, for the Electrical Equipment of Buildings issued by Institute of Electrical Engineers of Great Britain.

(ii) At all main distribution panels and main service positions a 25mm x 3mm minimum cross-sectional area Copper tape shall be provided and all equipment including the lead sheath and armouring of cables, distribution boards and metal frames shall be bonded thereto.

(iii) The earth tape in Sub-clause (ii) shall be connected by means of a copper tape or cable of suitable cross-sectional area to an earth electrode which shall be a copper earth rod (see later sub-clause).

(iv) All tapes to be soft high conductivity copper, untinned except where otherwise specified and where run underground on or through walls, floors, etc., it shall be served with corrosion resisting tape or coated with corrosion compound and braided

(v) Where the earth electrode is located outside the building a removable test link shall be provided inside the building as near as possible to the point of entry to the tape, for isolating the earth electrode for testing purposes.

(vi) Earthing of sub-main equipment shall be deemed to be satisfactory where the sub-main cables are M.I.C.S. or conduit with separate earth wire, and installation is carried out in accordance with the figures stated in the current edition of the I.E.E Regulations.

(vii) Where an earth rod is specified (see Sub-clause (iii) it shall be proprietary manufacture, solid hand drawn copper of 15mm diameter driven into the ground to a minimum depth of 3.6M. It shall be made up to 1.2m sections with internal screw and socket joints and fitted with hardened steel tip and driving cap.

(viii) Earth plates will not be permitted

(ix) Where an earth rod is used the earth resistance shall be tested in the manner described in the current edition of the IEE Regulations, by the Sub-Contractor in the presence of the Engineer and the Sub-Contractor shall be responsible for the supply of all test equipment.

(x) Where copper tape is fixed to the building structure it shall be by means of purpose made non-ferrous saddles which space the conductor away from the structure a minimum distance of 20mm. Fixings, shall be made using purpose made plugs; No fixings requiring holes to be drilled through the tape will be accepted.

(xi) Joints in copper tape shall be tinned before assembly riveted with a minimum of two copper rivets and seated solid.

(xii) Where holes are drilled in the earth tape for connection to items of equipment the effective cross sectional area must not be less than required to comply with the IEE regulations.

(xiii) Bolts, nuts and washers for any fixing to the earth tape must be of non-ferrous material. Attention is drawn to the need for the earthing metal parts of lighting fittings and for bonding ball joint suspension in lighting fittings.

### i) CABLES AND FLEXIBLE CORDS

All cables used in this Sub-Contract shall be manufactured in accordance with the current appropriate Kenya standard Specification which are as follows: -

| | | |
|---|---|---|
| P.V.C. Insulated Cables and Flexible Cords | --- | Ks 04-192:1988 |
| P.V.C Insulated Armoured Cables | --- | Ks 04-194:1990 |
| Armouring of Electric cables | --- | Ks 04-290:1987 |

The successful Sub-Contractor will, at the Engineers discretion be required to submit samples of cables for the Engineers approval; the Engineer reserves the right to call for the cables of an alternative manufacture without any extra cost being incurred.

P.V.C. insulated cables shall be 500/1000 volt grade. No cables smaller than 1.5mm² shall be used unless otherwise specified. The installation and the finish of cables shall be as detailed in later clauses. The colour of cables shall conform to the details stated in the “Cable Braid and insulation Colours” Clause.

## j) ARMOURED P.V.C. INSULATED AND SHEATHED CABLES:

Shall be 600/1000-volt grade manufactured to Ks 04-194:1988 and Ks 04-187/188 with copper stranded conductors.

The wire armour of the cable shall be used wholly as an earth continuity conductor and the resistance of the wire armour shall have a resistance not more than twice of the largest current carrying conductor of the cable.

P.V.C./S.W.A./P.V.C. cables shall be terminated using "Telecom" "B" type or approved equal or approved equal glands and a P.V.C. tapered sleeve shall be provided to shroud each gland.

## k) CABLE SUPPORTS, MARKERS AND TILES

All PVC/SWA/PVC cables run inside the building shall be fixed in rising ducts or on ceilings by means of die cast cable hooks or clamps, of appropriate size to suit cables, fixed by studs and back nuts to their channel sections.

Alternatively, fixing shall be by BICC claw type cleating system with die-cast cleats and galvanized mild steel back straps or similar approved equal method. For one or two cables run together the cleats shall be fixed a special channel section supports or backstraps described above which shall in turn be secured to walls or ceilings of ducts by rawbolts.

In excessively damp or corrosive atmospheric conditions special finishes may be required and the Sub-contractor shall apply to the Engineer for further instructions before ordering cleats and channels for such areas.

The above type of hooks and clamps and channels or cleats and blackstraps shall also be used for securing cables in vertical ducts.

Cables supports shall be fixed at 600mm maximum intervals, the supports being supplied and erected under this Sub-contract. Saddles shall not be used for supporting cables nor any other type of fixing other than one of the two methods described above or other system which has received prior approval of the Engineer;

Cables are to be kept clear of all pipe work and the Sub-contractor shall work in close liaison with other services Sub-contractors.

The Sub-Contractor shall include for the provision of fixing of approved type coloured slip on cables end markers to indicate permanently the correct phase and neutral colours on all ends.

Provision shall be made for supplying and fixing approved non-corrosive metal cable markers to be attached to the outside of all PVC/SWA/PVC cables at 15mm intervals indicating cable size and distinction.

Where PVC/SWA/PVC cables are outside the building they shall be laid underground 750mm deep with protecting concrete interlocking cover tiles laid over which shall be provided and laid under this Sub-contract.

All necessary excavations and reinstatement of ground including sanding or trenches will be carried out by the Sub-Contractor, unless otherwise stated.

## l) PVC INSULATED CABLES

Shall be of non-braided type as CMA reference 6491 x 600/1000/1000 volt grade cables, or equal approved.

PVC cables shall conform to the details of the "Cables and Flexible cords" and "Cable Braid and Insulation Colours" clauses.

## m) HEAT RESISTING CABLES

Final connections to cookers, water heaters, etc., shall be made using butyl rubber insulated cable as CMA reference 610 butyl (Single core 600/1000 Volt).

This type of cable shall be used in all instances where a temperature exceeding 100°F, but not exceeding 150°F is likely to be experienced. Final connections to all lighting fittings (and other equipment where a temperature in excess of 150°c likely to be experienced) shall be made using silicon rubber insulated cable or equal and approved.

## n) FLEXIBLE CORDS

Shall be in accordance with the "Cable and Flexible Cords" clause. No cord shall be less than 24/0.2mm in size unless otherwise specified.

Circular white twin TRS flex shall be used for plain pendant fittings up to 100 watts. For all other types of lighting fittings the flexible cable shall be silicone rubber insulated.

No polythene insulated flexible cable shall be used in any lighting fitting or other appliance (see "Heat Resisting Cables" Clause 30).

## o) CABLE ENDS AND PHASE COLOURS

All cable ends connected up in switchgear, MCB panels etc;, shall have the insulation carefully cut back and the ends sealed with Hellerman rubber slip on cable end markers.

The markers shall be of appropriate phase colour for switch and all other live feeds to the details of the "Cable Insulation Colours" clause. Black cable with black end markers shall only be used for neutral cables.

## p) CABLE INSULATION COLOURS

Unless otherwise stated in later clauses the insulation colours shall be in accordance with the following table.

Where other systems are installed the cable colours shall be in accordance with the details stated in the appropriate clause.

| SYSTEM | INSULATION COLOUR | CABLE END MARKER |
|---|---|---|
| 1) **Main and Sub-Main** | | |
| a) Phase | Red | Red |
| b) Neutral | Black | Black |
| 2) **Sub-Circuits Single Phase** | | |
| a) Phase | Red | Red |
| b) Neutral | Black | Black |

**q) SUB-CIRCUIT WIRING**

For all lighting and sockets wiring shall be carried out in the "looping in" system and there shall be no joints whatsoever. No lighting circuits shall comprise more than 20 points when protected by 10A MCB. Cables with different cross-section area of copper shall not be used in combination.

Lighting circuits P.V.C. cable.

(i) 1.5mm² for all lighting circuits indicated on the

drawing. Power circuits P.V.C cable (minimum sizes).

(ii) 2.5mm² for one, two or three 5Amp sockets wired

in parallel.

(iii) 2.5mm² for one 15Amp socket.

(iv) 2.5mm² for maximum of ten switched 13 Amp sockets wired from 30 Amp MCB.

The wiring sizes for lighting circuits and sockets are shown on the drawings. In such cases, the sizes shown on the drawings shall prevail over the sizes specified.

Wiring sizes for other appliances shall be shown on the drawing or specified in later clauses of this specification.

### r) SPACE FACTOR

The maximum number of cables that may be accommodated in a given size of conduit or trunking or duct is not to exceed the number in Tables B.5 and B.6 or as stated in Regulation B.91, B.117 and B.118 of the I.E.E Regulations whichever is appropriate.

### s) INSULATION

The insulation resistance to earth and between poles of the whole wiring system, fittings and lumps, shall not be less than the requirements of the latest edition of the I.E.E Regulations. Complete tests shall be made on all circuits by the Sub-contractor before the installations are handed over.

A report of all tests shall be furnished by the Sub-Contractor to the Engineer. The Engineer will then check test with his own instruments if necessary.

### t) LIGHTING SWITCHES

These shall be mounted flush with the walls, shall be contained in steel or alloy boxes and shall be of the gangs' ratings and type shown in the drawings. They shall be as manufactured by M.K. Electrical Ltd., or other equal and approved to KS 04 – 247: 1988

### u) SOCKETS AND SWITCHED SOCKETS

These shall be flush pattern in steel/pvc box and shall be of the gangs and type specified in the drawings.

They shall be 13- Amp, 3-pin, shuttered, switched and as manufactured by "M.K. Electrical Co. Ltd.", or other approved equal to KS 04 – 246: 1987

### v) FUSED SPUR BOXES

These shall be flush, D.P switched as in steel/pvc box and of type and make specified in the drawings complete with pilot light and as manufactured by "M. K. Electrical Company Ltd", or other approved equal. KS 04 – 247: 1988

### w) COOKER OUTLETS

These shall be flush mounted with 13-A switched socket outlet and neon indicator Lamps.

The cooker control units shall be as manufactured by "M.K. Electrical Company Ltd", or other approved equal KS 04 – 247: 1988

### x) CONNECTORS

Shall be specified in the drawings and appropriate rating. These shall be fitted at all conduit box lighting point outlets for jointing of looped P.V.C cables with flexible cables of specified quality.

### y) LAMPHOLDERS

Shall be of extra heavy H.O skirted and shall be provided for every specified lighting fitting and shall be B.C;, E.S;, or G.E.S as required. All E.S. and G.E.S. holders shall be heavy brass type (except for plain pendants where the reinforced bakelite type shall be used). The screwed cap of the E.S and G.E.S. holders shall be connected to the neutral.

Where lampholders are supported by flexible cable, the holders shall have "cord grip" arrangements and in the case of metal shades earthing screws shall be provided on each of the holders.

The Sub-Contractor must order the appropriate type of holder when ordering lighting fittings, to ensure that the correct types of holders are provided irrespective of the type normally supplied by the manufacturers.

### z) LAMPS

All lamps shall be suitable for normal stated supply voltage and the number and sizes of lamps detailed on the drawings shall be supplied and fixed. The Sub-Contractor must verify the actual supply voltage with the supply authority before ordering the lamps.

Tungsten filament lamps shall be manufactured in accordance with KS 04 – 112:1978 for general service lamps and KS 04 – 307:1985 for lamps other than general services. Tubular fluorescent lamps shall comply with KS 04 – 464:1982

## aa) LIGHTING FITTINGS AND STREET LIGHTING LANTERNS

This Sub-Contract shall include for the provision, handling charges, taking the delivery, safe storage, wiring (including internal wiring) assembling and erecting of all lighting fittings shown on the drawings.

All fittings and pendants shall be fixed to the conduit boxes with brass R/H screws. These to be in line with metal finish of fittings. The lighting fittings are detailed for the purpose of establishing a high standard of finish and under no circumstances will substitute fittings be permitted.

In case of rectangular shaped ceiling fittings, the extreme ends of the fittings shall be secured to suitable support in addition to the central conduit box fittings. Supports shall be provided and fixed by the Sub-Contractor.

The whole of the metal work of each lighting fittings shall be effectively bonded to earth. In the case of ball and/or knuckle joints short lengths of flexible cable shall be provided, bonded to the metal work on either side of the joints. If the above provisions are not made by the manufacturers -, the Sub-contractor shall include cost of additional work necessary in his tender. See "Flexible Cords" clause for details of internal wiring of lighting fittings.

Minimum size of internal wiring shall be 20/0.20mm (23/0067). Each lighting fitting shall be provided with number type and size of lamps as detailed on the drawings. It is to be noted that some fittings are suspended as shown on the drawings.

Where two or more points are shown adjacent to each other on the drawings, e.g socket outlet and telephone outlet, they shall be lined up vertically or horizontally on the centre lines of the units concerned.

Normally, the units shall be lined up on vertical centre lines, but where it is necessary to mount units at low level they shall be lined up horizontally.

## bb) POSITIONS OF POINTS AND SWITCHES

Although the approximate positions of all points are shown on the drawings, enquiry shall be made as to the exact positions of all M.C.B panels, lighting points, socket outlets etc, before work is actually commenced. The Sub-contractor must approach the Architect with regard to the final layout of all lights on the ceiling and walls.

The Sub-contractor must consult with the Engineer in liaison with the Clerk of Works, or the General Foreman on site regarding the positions of all points before fixing any conduit etc. The Sub-Contractor shall be responsible for all alterations made necessary by the non-compliance with the clause.

## cc) CURRENT OPERATED EARTH LEAKAGE CIRCUIT BREAKER

Current operated earth leakage circuit breaker shall conform to B.S.S. 4293:68 rated at 240 volts D.P. 50 cycles A.C. Mains.

The breaker shall be provided with test switch and fitted in weather proof enclosure for surface mounting. The rated load current and earth fault operating current shall be as specified in the drawings. These shall be as manufactured by Crabtree, Siemens or other equal and approved.
When switches are arranged in their formation all necessary horizontal and vertical barriers shall be provided to ensure segregation from adjacent units. Means of locking the switch in the "OFF" position shall be provided.

The Sub-contractor must take full responsibility for the filling in of all covers, but the filling in material will be supplied and the filling carried out by the main building contractor.

Where buried in the ground outside the building the whole of the buried conduit is to be painted with two coats of approved bitumastic composition before covering up.

Where run on the surface, unpainted fittings and joints shall be painted with two coats of oil bound enamel applied to rust and grease free metalwork.

**dd) TESTING ON SITE**

The Sub-contractor shall conduct during and at the completion of the installation and, if required, again at the expiration of the maintenance period, tests in accordance with the relevant section of the current edition of the Regulations for the electrical equipment of buildings issued by the I.E.E of Great Britain, the Government Electrical Specification and the Electric Supply Company's By-Laws.

(a) Tests shall be carried out to prove that all single pole switches are installed in the 'live' conductor.

(b) Tests shall be carried out to prove that all socket outlets and switched socket outlets are connected to the 'live' conductor in the terminal marked as such, and that each earth pin is effectively bonded to the earth continuity system. Tests shall be carried out to verify the continuity of all conductors of each 'ring' circuit.

(c) Phase tests shall be carried out on completion of the installation to ensure that correct phase sequence is maintained throughout the installation. Triplicate copies of the results of the above tests shall be provided within 14 days of the witnessed tests and the Sub-contractor will be required to issue to the service engineer the requisite certificate upon completion as required by the regulations referred to above.

(d) Any faults, defects or omissions or faulty workmanship, incorrectly positioned or installed parts of the installation made apparently by such inspections or tests shall be rectified by the Sub- contractor at his own expense.

(e) The Sub-contractor shall provide accurate instruments and apparatus and all labour required to carry out the above tests. The instruments and apparatus shall be made available to the services engineer to enable him to carry out such tests as he may require.

(f) The Sub-contractor shall generally attend on other contractors employed on the project and carry out such electrical tests as may be necessary.

(g) The Sub-contractor shall test to the services engineer's approval and as specified elsewhere in this specification or in standards and regulations already referred to, all equipment, plant and apparatus forming part of the works and before connecting to any power or other supply and setting to work.

(h) Where such equipment, etc., forms part of or is connected to a system whether primarily or of an electrical nature or otherwise (e.g. air conditioning system) the Sub-contractor shall attend on and assist in balancing, regulating testing and commissioning, or if primarily an electrical or other system forming part of works, shall balance, regulate, test and commission the system to the service engineer's approval.

**APPENDIX TO ELECTRICAL SPECIFICATIONS OF MATERIALS AND WORKS**

The electrical sub-contractor shall comply with the following: -

1. Government Electrical Specifications No. 1 and No. 2.
2. All requirements of Kenya Power Company Limited, and Communications Authority of Kenya(CA)

**PART A:**

**ELECTRICAL INSTALLATION WORKS**

| **LED TUBES, PANELS & BULBS LIGHT FITTING**<br><br>**TECHNICAL SPECIFICATIONS**<br><br>IEC Compliant | | |
|---|---|---|
| **Item** | **Minimum Specifications** | **Proposed solution** |
| Brand | State the brand, model and attach Technical Brochure (Mandatory) | |
| Operating | ➢ Voltage range: 130-300 V ac<br>➢ Frequency range: 50/60Hz<br>➢ Power factor ≥ 0.9 lagging<br>➢ Total Harmonic Distortion (THD)<15%<br>➢ Ambient temperature range -10 to +35 °Operating<br>➢ Colour Consistency ≤ 5SDCM | |
| Performance | ➢ System efficacy ≥= 100lm/W<br>➢ Lamp colour temperature: 4000K - 6500K<br>➢ Colour Rendering Index >=80<br>➢ Median useful life >= 50,000 hours | |
| Standards Compliance | CB/EMC/CE | |
| General | ➢ Driver/power unit/transformer - PSU-E<br>➢ Optical cover/lens type - Polystyrene bowl/cover prismatic<br>➢ Protection class IEC - Safety class II (II) | |

**PART B:**

**FIRE ALARM PANEL INSTALLATION WORKS**

| TECHNICAL SPECIFICATIONS | | |
|---|---|---|
| **Item** | **Minimum Specifications** | **Proposed solution** |
| Brand | State the brand, model and attach Technical Brochure (Mandatory) | |
| Feature | ➢ 2 loop version<br>➢ Up to 200 addresses per loop<br>➢ Full network capability up to 126 panels<br>➢ Event History Buffer (9,999 events) with Date/Time stamp<br>➢ Soft addressing<br>➢ Multi-language selection capability<br>➢ Integral battery and power supply<br>➢ Flexible cause and effect programming<br>➢ Simple to operate end user touch-screen interface<br>➢ Flexible distributed network capability<br>➢ Full range of compatible accessories | |

**PART C**

**IP CCTV SURVEILLANCE SYSTEM:**

**(b) <u>GENERAL SPECIFICATIONS FOR THE CAMERAS</u>**

**The cameras are classified into two main types**

**a) Fixed cameras –**

These cameras have a fixed area of view depending on its angle of view and the focal length of the lens used.

They can be used in indoor and outdoor depending on the requirements. When used out door, the cameras are housed in a weather proof housing of IP66. Those used indoor come with different shapes of housings. The housings are used for cameras covering long distances like corridors and the dome housings are used for common areas like lobbies, security desks etc.

**b) Pan Tilt and Zoom Cameras**

These cameras are only used to support the static cameras. They are useful as they are able to pan 360 degrees, tilt over 90 degrees and zoom into an object for min 16 times and above.

The cameras shall be indoor type and outdoor type with PoE/ 240V main supply with the appropriate power adaptors, 50Hz field frequency and operating according to the CCIR standard with minimum resolution of 4 megapixels.

The camera shall be fixed on sliding rail track on the ceiling slab or walls as directed by the Electrical Engineer with an appropriate bracket.

It shall be possible to control the lens and the pan only head remotely via a remote-control box at the control room. The Camera must be able to be controlled by a CCTV keyboard

They shall be linked to the Television Monitors and the Control Equipment through CAT 6 A cables as appropriate and according to the project Engineers instructions.

The mounting height and position of cameras shall be such that the desired coverage shall be achieved as distinctly as possible.

The digital signal processing (DSP) camera shall be aesthetically styled. The DSP chip will enable advanced video processing and manipulation to be carried out in the camera head.

**(ii) MINIMUM REQUIREMENTS FOR THE PROPOSED CCTV SYSTEM**

**a) IP Dome camera (CCTV CAMERA)**

| Item | Minimum Specifications | Proposed Solution |
|---|---|---|
| Brand | State the brand, model and attach Technical Brochure (Mandatory) | |
| Product type | IP Camera | |
| | **Product Features**<br>• IP 6MP resolution Vandal Proof Dome camera<br>• 1/1.8" CMOS imaging sensor with 120db WDR.<br>• 4.4-9.3mm (2.1x) motorized varifocal<br>• IR Viewable Length 30m<br>• Coloured :0.03 lux (F1.3.1/30 sec.30IRE). BW-0lux (IR LED on)<br>• True day and night vision capability (ICR)<br>• IP network capable – IPv4/IPv6<br>• PoE capability<br>• Tampering detection, Loitering, Face Detection, Audio Detection, Motion detection, Sound Classification, Heat map, People Counting, Queue management, defocus detection, Bi-directional audio I/O communication, Network Disconnect, defog and event triggered alarm processing<br>• Masking<br>• Vandal proof IK-10 rating housing<br>• Weather proof IP66 rating<br>• ONVIF protocol Compliant | |
| Memory | • Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card | |
| Warranty | Comprehensive Manufacturer's Warranty (*Attach Manufacturer's Warranty Statement*) Minimum 3 Years | |

**b) IP Bullet camera (CCTV CAMERA)**

| Item | Minimum Specifications | Proposed Solution |
|---|---|---|
| Brand | State the brand, model and attach Technical Brochure (Mandatory) | |
| Product type | IP Camera | |
| | **Product Features**<br>• 6 Mega Pixel Full HD out door IP Bullet Camera with Infrared<br>• Built in Infrared 50 meters minimum<br>• imaging sensor with Wide Dynamic Range<br>• Minimum illumination 0.01lux (colour)<br>• IP network capable<br>• PoE capability<br>• H.265, H.264, MJPEG video compression<br>• Accessible edge storage with internal MicroSD card slot<br>• True day and night vision capability<br>• I/O - 1 Alarm in / 1 Alarm out<br>• 1 Way Audio<br>• Tampering detection, Face detection, Audio Detection, Motion detection & Privacy Masking and event triggered alarm processing<br>• Vandal proof IK-10 rating housing<br>• Weather proof IP66 rating<br>• ONVIF protocol Compliant | |
| Memory | • Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card | |
| Warranty | Comprehensive Manufacturer's Warranty (*Attach Manufacturer's Warranty Statement*) Minimum 3 Years | |

**(i) MOUNTING BRACKETS**

The Brackets shall:

Be suitable for wall or ceiling mounting of a single camera.

Be at least 5.5"length

Have an auto lock facility.

**(ii) CAMERA HOUSING**

The camera housing shall:

Be IP66 rated with integral cable management.

Be Weatherproof and constructed from aluminium with epoxy coating.

**(iii) CABLING**

| Item | Minimum Specifications | Proposed Solution |
|---|---|---|
| Brand | State the brand, model and attach Technical Brochure (Mandatory) | |
| Product type | Cables | |
| | **Product Features**<br>• Solid copper, 24 AWG, 100 Ω balanced twisted-pair (UTP).<br>• Category 6A cables with four individually twisted | |
| Installation | • Cables shall be kept at a minimum distance of 150mm from items liable to become hot or cold.<br>• Bending radii shall be not less than eight times the overall cable diameter.<br>• cables must pass through conduits or trunking<br>• All cables and connectors shall be labelled<br>• Cables shall have no joints | |
| Warranty | Comprehensive Manufacturer's Warranty (*Attach Manufacturer's Warranty Statement*) Minimum 3 Years | |

**(i) NETWORK VIDEO RECORDER**

**The network video recorder shall have the following minimum requirements:**

| Item | Minimum Specifications | Proposed Solution |
|---|---|---|
| Brand | State the brand, model and attach Technical Brochure (Mandatory) | |
| Product type | Network Video Recorder | |
| | **Product Features**<br>• 32 Channels<br>• Throughput of at least 200Mbps<br>• Gigabit Ethernet connection<br>• Multi-screen Display: Full/4/9/16 way or as appropriate.<br>• 10 Hot swap HDDs each of 4TB minimum capacity<br>• external storage support capability<br>• VGA/HDMI local monitor<br>• Redundant hot swap power supply<br>• Network management/viewer software<br>• In built intelligent video analysis<br>• H.265, MPEG, MJPEG Compression<br>• ONVIF compatibility<br>• Web viewer supported<br>• PoE enabled<br>• Smart Video Search Feature for streamlined Investigations<br>• Recording resolution of 5MP<br>• IP address filtering, user access log, authentication and encryption<br>• Auto Launch of Video on specified Alarms/Events<br>• LED status indicator<br>• CE, UL certification | |
| Warranty | Comprehensive Manufacturer's Warranty (*Attach Manufacturer's Warranty Statement*) Minimum 3 Years | |

## (ii) CCTV MANAGEMENT SOFTWARE

**CCTV management software with the following minimum specifications: -**

| Item | Minimum Specifications | Proposed Solution |
|---|---|---|
| Brand | State the brand, model and attach Technical Brochure (Mandatory) | |
| Product type | Network Video Recorder | |
| | **Product Features**<br>• Event Recording Scheme<br>• Operate Motion-Detector-Recording<br>• NTSC-PAL video recording.<br>• Be capable of recording real time images at full resolution and frames rate.<br>• Features for connection for alarm system Automatic Recycling<br>• Users' passwords.<br>• Input, Output, Audio Alert Facilities<br>• Remote Viewing Facilities, TCP/IP, INTERNET, ISDN, modem<br>• Capability of streaming into the client's existing LAN / WAN infrastructure<br>• Ability to quickly search through thousands of hours of recorded video information<br>• Event-triggered video recording to reduce storage requirements<br>• Masks out disturbing areas, or areas of no interest, within the specified region<br>• Identifies & immediately alerts user to potential security breaches<br>• Features should be able to be used at very low frame rates<br>• Easy calibration for specific applications<br>• Color-matching matches user-specified colour to the video image<br>• Functions in outside environments with changing light conditions:<br>• Auto-learning of background feature<br>• Object saliency and object Consistency mechanisms to filter out phantom objects | |
| Warranty | Comprehensive Manufacturer's Warranty (*Attach Manufacturer's Warranty Statement*) Minimum 3 Years | |

**(vi) RACKMOUNT UPS**

| Item | Minimum Specifications | Proposed solution |
|---|---|---|
| Brand | State the brand, model and attach Technical Brochure (Mandatory) | |
| Features | Rack Mounted<br>Output<br>❖ Max Configurable Power (3.0KVA)<br>❖ Nominal Output Voltage: 240V<br>❖ Output Voltage Distortion: Less than 5%<br>❖ Output Frequency (sync to mains): 50 Hz<br>❖ Line Interactive<br>❖ Waveform Type: Sine wave<br>❖ Input<br>❖ 320 C13 (Battery Backup)<br>❖ Nominal Input Voltage: 240V<br>❖ Input Frequency: 50/60 Hz +/- 3 Hz (auto sensing)<br>❖ Input Connections: IEC-320 C20<br>❖ Input voltage range for main operations 180 - 287 V | |
| | | |
| Brand | State the brand, model and attach Technical Brochure (Mandatory) | |
| | ❖ Batteries &amp: Runtime<br>❖ Battery Type: Maintenance-free sealed Lead-Acid battery with suspended electrolyte: leakproof<br>❖ Runtime > 5mins<br>❖ Typical recharge time: 3 hour(s)<br>❖ Replacement Battery: YES<br>❖ RBC Quantity: 1<br>❖ Surge Protection and Filtering<br>❖ Surge energy rating: 300 Joules<br>❖ Filtering: Full time multi-pole noise filtering: 0.3% IEEE surge let-through: zero clamping | |
| Support | Locally Available Technical Support Services (*Manufacturer's Letter of Authorization Mandatory)* | |
| Warranty | Manufacturer's Limited Lifetime Warranty<br>Minimum 2 years- repair or replace | |

**Manufacturer's Brochures MUST be provided for all the above Listed items.**

## 5. BROCHURES AND TECHNICAL LITERATURE

Tenderers **Must** enclose together with their submitted bids **Brochures** detailing Technical Literature and specifications of the active components of the structured cabling system. The brochures shall be used to evaluate the suitability of these components.

Any bid submitted without the brochures shall be considered technically non-responsive, and may subsequently be disqualified

## PART E
## ENERGY EFFICIENT SOLAR POWERED LED LIGHTING SPECIFICATIONS

The Contractor shall furnish and install the complete SOLAR LED lighting system as described in the Tender Specifications. The specific wattages of the LED luminaires, solar panels, battery subsystems etc. are to be indicated in individual luminaire specifications.

### SOLAR LED STREETLIGHT LUMINAIRE AND BULKHEAD

**1. Housing**

The luminaire shall have a full die cast housing to provide adequate rigidity and strength and also ensure proper heat dissipation. The luminaire housing shall have separate Driver and LED lamp cavity to ensure cooler operation of LED lamps and good electrical separation.
The optical LED compartment shall have a thermally hardened glass cover and high-quality silicon gasket system. The glass cover shall be tightly secured with the housing. The complete luminaire shall be rated for IP 66 (Ingress Protection).
The housing shall feature highly reflective components and films to increase light output.

**2. Optics**

The luminaire shall have flexible optical system to achieve lighting parameters, as stipulated by CUSTOMER NAME for various kinds of road from M1 to M6. The luminaire shall offer a composite system efficiency of at least 90 Lumen/Watt and a lumen package of up to 11,000 lumens. The luminaire shall use high efficiency LED and optics system to achieve max energy savings. Specially designed lens system with unique inner and outer profile for high efficiency LED to ensure maximum spacing between the poles and cover higher road widths. Multi-layer optics design to ensure adequate luminance and illuminance uniformity in the unlikely event of individual LED failure.

The luminaire should offer choice of narrow beam, medium beam and wide beam light distribution.
The optical lens system should ensure:

1) Long life with no discoloration (UV Protection)
2) White painted circuit board to have high reflectivity for maximum light output.

**3 Future Compatibility**

The luminaire shall be fully compatible with future LED upgrades when they become available. It shall have a modular design to upgrade / replace with new LED modules or LED drivers at site. All electronic components/drivers shall be mounted on a separate gear tray with tool-less access and replacement. The luminaire shall have space available inside for communications antenna or equipment to be integrated into the luminaire for future tele-management control system implementation. Evidence showing tele-management capability shall be provided.

**4 Surge Protection**

The proposed luminaire shall have an in-built surge protection system to protect the electronic driver and the LED module with a minimum surge protection rating of 2KV.

**5 Ingress Protection (IP) & Impact Resistance**

The luminaire shall have Full IP 66 protection to ensure long reliable performance and to minimize maintenance requirement and an Impact resistance of IK 08. No chemical glue is to be used as that may cause breakdown of water-proof and dust-proof seal.

**6 Maintenance**
Tool-less maintenance of the LED modules and gears shall be provided for easy upgrade of LED modules on the pole

**7 Mounting**
The mounting of the luminaire will be in axial orientation through Ø 48-60mm sidearm.

**8 Thermal Management**
Managing thermal properties in LED luminaires are most critical to ensure optimum performance of LEDs and reliability of the system. The housing shell under the circuit board should be specially designed to ensure perfect contact between the board and the luminaire housing for efficient heat dissipation. The housing over the Driver compartment cavity shall have adequate surface area to ensure fast heat dissipation.

**9 Color Rendering Index and Color Temperature**
The luminaire should have a minimum color rendering index (Ra) of 75+/- 5 and a color temperature of up to 6000K for maximum efficiency. The LED shall have a color consistency within 5 SDCM (standard deviation

of color matching) as defined by McAdam. The color temperature variation of the LEDS should be restricted as per ANSI C78.377A with CCT variation limiting within 500K for nominal CCT of 4000K.

**10 Useful Life Hours**
The LED luminaire shall be designed for lumen maintenance of L70 or 70% at the end of useful life at ambient temperature of 35 deg C. The complete luminaire shall have a useful life of 50,000 burning hours. The luminaire including the driver will include a warranty of 3 years against manufacturing defects and complete Solar Lighting System 2 years.

**11 Standards Conformity**
The luminaire should fully conform to following Specifications: -

1) IEC 62471:2006, IEC/TR 62471-2:2009, EN 62471:2008, Photo biological safety of lamps and lamp systems IEC 62471 – Photo-biological safety of lamps and lamp systems.

2) IEC 60598-1:2008, EN 60598-1:2008 + A11:2009, General requirements and tests for Luminaires

3) IEC 60598-2-3:2012, EN 60598-2-3:2003 + A1:2011, Luminaires, Part 2: Particular requirements: Section Three – Luminaires for road and street lighting

4) IEC 62493:2009, EN 62493:2010, Assessment of lighting equipment related to human exposure to electromagnetic fields

5) EN 55015: 2006/+A1:2007+A2:2009, Limits and methods of measurement of radio disturbance of electrical lighting and similar equipment.

6) EN 61547:2009, Equipment for general lighting purposes — EMC immunity requirements.

7) EN 61000-3-2:2006+A1:2009+A2:2009, Limits for harmonic currents emissions.

8) EN 61000-3-3:2008, Limitation of voltage fluctuations and flicker.

**12 LED Driver Specifications**
The solar LED luminaire's LED module and electrical components should be embedded in separated chamber. The solar LED luminaire input voltage / or system voltage should be 12V or 24V.

**13 LED Chip Specifications**
Solar LED luminaire should use 1st tier brand LED chips, and LED efficiency should be >= 125lm/W for NW/CW, >=105lm/W for WW; the 1st tier LED manufacturers should be Cree, LumiLEDs, Osram or Nichia.

**14 Ambient Temperature**
The luminaire shall be suitable for ambient temperature range of between -40 to 45 degrees Celsius.

**15 Controls**
Dimming function and customization should be available for example programmable multistep dimming profile

**16 Materials and Finishing**

- Housing: Die-cast aluminum;
- Gasket: Heat resistant silicone rubber
- Glass: Tempered Glass with higher transmittance
- Frame: Gray Paint RAL7040 or different on request
- Tool-less maintenance of the LED modules and gears shall be provided for easy upgrade of LED modules on the pole.

**17 Photo biological Safety**

Light without blue and no photo biological risk; have been tested according to the IEC 62471(first edition, 2006-07) and been classified as Exempt group**.**

**18 Wiring**

The connector and cable should be attached with luminaire, ensuring IP67 protection.

**20 PV Panels (Photovoltaic Solar Panels)**

**1. Power Output (Pmax)**

PV Panel sub-system should include panel and connectors. Solar Panel utilizes mono-crystalline silicon solar cells that combine high Wp (Watts Peak) output, affordability and efficiency. PV output peak wattage should be between 35Wp and 295Wp± 3% (depends on configuration). PV Panel subsystem should have IP65 protection junction box for wiring.

**2. Ambient temperature / operating temperature**

PV panel shall be able to work / operate at '-40 ºC to +85 ºC.

**3. Encapsulation Material**

Encapsulation Material Ethylene Vinyl Acetate (EVA)

**4. Lamination**

PV panel shall be laminate with tempered safety glass which provide safety and best possible transmittance.

**5. Wiring**

PV panel shall be equipped with plug-and-play connector allowing easy connection and maintenance.

**6. Lifetime**

The panel shall be with 25-year designed lifetime, with power decrease less than 20%.

**7. Standards Conformity**

Solar Panels shall meet the following standards:

1) EN 61730-1:2007, Photovoltaic (PV) module safety Qualification-Part 1 Requirements for construction.
2) EN 61730-2:2007, Photovoltaic (PV) module safety qualification - Part 2 Requirements for testing.
3) EN 61215:2005, IEC 61215:2005, crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval.

**Charge Controller**

1. The system should have protection against battery overcharge and deep discharge conditions.

2. Charge controller should be High-quality, 4-stage PWM-charging (4 Stage Battery Charging (Main, Float, Boost, Equalization),

3. Charge controller should provide:

- Automatic System Voltage Recognition (12 V/24 V)
- Reverse polarity protection
- Short circuit protection: for panel and load terminals
- Over discharging protection
- Over voltage disconnection
- Automatic electronic fuse protection

- Over current protection: for load terminal
- Reverse current protection: for panel terminal
- Over temperature protection: reduce the charging current by WM until switch off the load

**Battery Subsystem**
Battery sub system should be Valve Regulated Lithium (VRL) Battery integrates gel electrolyte technology with long service lifetime, high performance in deep discharging; it can be used in wide range of ambient temperature and keep good performance of constant power input.

The battery shall be equipped in dedicated designed box with following features:

- Water-proof — Battery box housing IP68, against from water or humidity underground; 0.6m water-resistant by 1 week underwater; housing of plastic ensures good performance of stability with non-chapping at -20°C.
- Conform to requirements of lithium utilization — pipeline from box and lighting pole antrum, to keep balance of air pressure inside box. The pipe is made of low temperature resistant nylon, stable quality without distortion at -40°C.
- The battery shall provide following features and functions, Gelatin electrolyte, 12 years lifespan in float service without acidification at 77°F (25°C) owes to a good recycle capability
- all plug and play connection
- Working Temperature Range

Charge (-22 ºC to 55 ºC)
Discharge (-10 ºC to 55 ºC)
Storage (-22 ºC to 55 ºC)

**Standards Conformity**
Battery shall meet the following standards:

1. EN 61427:2005, IEC 61427:2005, Secondary cells and batteries for renewable energy storage – General requirements and methods of test

Battery box shall meet the following standards:
2. IEC 60598-1:2008, General requirements and tests for Luminaires, IPX8 rating.

**QUALITY AND WARRANTY:**

i) All the components and parts used in the solar street lighting systems should conform to the latest BIS or IEC specifications, wherever such specifications are available and applicable.

ii) The street lighting system including the battery will be warranted for a period of five years from the date of supply.

iii) The PV module(s) will be warranted for a minimum period of 10 years from the date of supply. The PV modules must be warranted for their output peak watt capacity, which should not be less than 90% at the end of five (5) years and 80% at the end of Ten (10) years.

iv) The Warranty Card to be supplied with the system must contain the details of the system.

**OPERATION AND MAINTENANCE MANUAL:**
An Operation, Instruction and Maintenance Manual, in English and/or the National Language -Kiswahili, should be provided with the Solar Street Lighting System. The following minimum details must be provided in the Manual:

- Basic principles of Photovoltaic.
- A small write-up (with a block diagram) on Solar Street Lighting System - its components, PV module, battery, electronics and luminaire and expected performance.
- Type, Model number, Voltage & capacity of the battery, used in the system.
- The make and wattage of the CFL LED used in the lighting system.

- About Charging and Significance of indicators.
- Clear instructions about erection of pole and mounting of PV module (s) and lamp housing assembly on the pole or underground
- Clear instructions on regular maintenance and troubleshooting of the Solar Street Lighting System.
- Name and address of the contact person for repair and maintenance, in case of non-functionality of the solar street lighting system.

**SOLAR LIGHTING LED DETAIL PARAMETERS**

| Item No. | Parameters | Values | Comments |
|---|---|---|---|
| 1. | Input Voltage | 12V | |
| 2. | LED Efficiency (Lumens/watt) | 140 Lumens/Watt | Certificate from LED manufacturer needs to be provided with Datasheet of LED<br><br>LED used must be of make CREE/Nichia/Osram/ Lumileds |
| 3. | Life Expectancy | Above 50,000 Hours with 70 lumens | LED model should have LM80 certificate to prove the LED life is guaranteed for > 75,000. LED manufacturer should provide T21 –Life test report |
| 4. | Color Temperature | 5000-6000K | |
| 5. | Working Humidity | 10 to 90% RH6 | |
| 6. | Working Temperature | -20 to 60 degree | |
| 7. | Average Lighting Angle (Beam Angle) | 120 Degree | |
| 8. | Make of LED | PHILIPS/ CREE/LUMILEDS/ OSRAM/NICHIA | |
| 9. | Total System Power Consumption (includes LED & drive part) in watts. | Total wattage =80W | |
| 10. | Lamp Starting Time | Instantaneous, Less than 2 Seconds | |
| 11. | System Efficacy (%) | Greater than 90% | |
| 12. | Ingress Protection | IP66 | NABL accredited certificate must be provided for IP66 |

| Item No. | Parameters | Values | Comments |
|---|---|---|---|
| 13. | Light Output | Minimum 20 Lux when measured at the periphery of 4-meter diameter from a height of 4 meter. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye.<br>Higher Light Output will be preferred | |
| 14. | Power Factor | >0.95 | |
| 15. | Protection Function | Open and Short Circuits | |

**PARTICULAR SPECIFICATION FOR THE STANDBY GENERATING SYSTEM.**

## 1. Location of Site

The site for the proposed Contract Works is at **DELMONTE /MAKENJI- MURANGA COUNTY**

The generating set is required for **PRIME rated duty.**

## 2. Operating Conditions

The equipment and all components shall be suitable for the operation in ambient conditions of $5^0$C to $40^0$C and up to 100% relative humidity

i. in an unheated ventilated building
ii. in the open air as specified

Unless otherwise stated all ratings of equipment and components shall be interpreted as site rating and NOT sea level or other ratings

## 3. Functional Objectives

The set shall be capable of operating continuously and satisfactorily in a medium dust laden atmosphere as defined in BS 1701 and in accordance with BS 649.

The generating set is required for **PRIME** duty and will be connected to the switchboard through a circuit. It shall have an automatic mains failure control, appropriately interlocked with the other incoming supply. Provisions shall be made in the control circuit of the generator for automatic and remote push button control, including the terminals and cable glands for all external cables, which will be supplied by others, where specified. It shall also be possible to start, operate and stop the set manually, independent of any automatic features.

Within the operating conditions specified in part 3 above the set shall be capable of starting and accepting full load within the shortest possible time, and in any case, in not more than 10 seconds. Any special features included to achieve this shall be stated in Section F.

## 4. Scope of the contract

The work covered by this Specification includes the design, manufacture, supply, delivery, installation, commissioning and testing to the satisfaction of the Engineer and maintenance for a period of twelve months of 1No. New generating set complete with all necessary ancillary equipment.

The equipment to comprise 1No. **150KVA**, 415 volts/3 phase /50Hz prime rated diesel generator set with all integral accessories, and all necessary equipment for the safe and efficient working of the set.

Diesel generator set to include;

a) Push button starting, starting battery and mains power supply trickle charger to be included.
b) 72-hour operational running capacity auxiliary fuel oil storage tank, loose transfer pump and duplex oil strainer.
c) An integral belly/ base fuel tank for daily service with an operational running capacity of 8hours
d) All interconnecting pipe work, valves and fittings between the storage tank, base tank and the diesel engine.
e) An automatic generator control unit
f) A diesel generator control cubicle
g) Acoustic enclosure/ sound attenuated canopy
h) All local wiring
i) Maintenance tools and spare parts as specified.

## 5. Performance Objective

The output rating of the set in KVA, the voltage, the number of phases and the frequency shall be as specified in Bill No. 9 Schedule 1 of the Bills of Quantities.

Within the operating conditions specified the set, equipped with its standard air intake filters, shall be capable of delivering its rated output continuously at rated voltage and 0.8 lagging power factor and of delivering 10% in excess of the continuous maximum rating for a period of one hour in any 12 hour period.

The steady state voltage shall be maintained within 2 ½ % of the rated voltage under control of the voltage regulator between the cold start ambient conditions and the maximum working temperature, from no load to 10% overload and from unity to 0.8 lagging power factor. After any change of load, the voltage shall not vary by more than + 15% of the rated voltage and shall return to within +/- 3% within 3 seconds and to within 2 ½ % of rated voltage within 1 seconds. On starting the voltage overshoot shall not exceed 15% and shall return to within 3% in not more than 3 seconds.

The governing of the set shall be such that the steady load speed band shall not exceed 1% of rated speed. Sudden removal of the full load at rated frequency shall not cause the frequency to rise above 110% of the rated frequency and it shall return to within 105% of the rated frequency within 3 seconds. The resultant steady state frequency shall return to 104% within 15 seconds. If full load is then reimposed the frequency shall not fall below 94% of rated frequency and shall return to 99% within 3 seconds and to the rated frequency within 15 seconds. The cyclic irregularity of the set at full load shall not be worse than 1/150.

The deviated interference shall be suppressed to the limit specified in BS 800 and BS 833.

## 6. Generating Set Arrangement

Unless otherwise indicated the set and its auxiliaries shall be mounted on sufficiently substantial underbase. All items which must be held in correct relative alignment shall be located by means of dowels.

The set shall be designed and supplied for operation bolted to the floor on robust anti-vibration and shock absorbing devices. They shall have adjusting screws for optimum setting and levelling and be so designed and installed that no appreciable engine vibration shall be transmitted to the floor or to any surrounding.

Bearings shall be suitable for operation over long periods without the need for replacement of the lubricant. Oil lubricated bearings shall be fitted with a visible oil level gauge.

## 7. Diesel Engine

### 7.1 General

The engine shall comply in design and performance with BS.649 "Diesel Engines for General purposes" or its approved equivalent. The engine shall be designed for satisfactory operation on fuel oil and lubricating oils complying with BS. 2869.

The engine shall be totally enclosed, with forced lubrication from an integral pump having on the suction side a course strainer and on the delivery side a dual' full flow' fine filter with a changeover cock incorporating pressure by-pass, so that the oil flow to the engine is maintained if the filter should choke. Alternatively, a single filter of the self-cleaning type fitted with a by-pass relief valve and having the same filtration performance may be provided. Manual lubrication of any part of the engine will not be accepted. The capacity of the lubricating oil system shall be sufficient to enable the engine to run continuously for 12 hours at any load without replacement.

A filter with a by-pass relief valve shall be inserted in the fuel line immediately before the pump(s). The fuel filter element shall be incapable of passing particles larger than micrometers. The fuel system shall be so arranged that fuel resulting from filter, pump or pipe spillage shall be incapable of entering the engine sump.

Air filters complying with KS 06-294: 1986, Grade 'A' and Grade 'B' suitable for use in a dusty atmosphere shall be fitted on the engine air intake(s)

No significant critical speed of the complete shaft system, including the generator, shall be within 15% of the rated speed.

A manually reset overspeed trip shall be fitted to stop the engine if its speed exceeds the rated speed by 15%. A mechanical trip is preferred but an electrical overspeed trip may be offered. Both types shall be equipped with a pair of contacts which close on operation of the trip. If the device is belt driven, at least two belts shall be provided and the drive shall be capable of carrying full load with one belt removed.

The set shall be arranged such that on shut-down the cooling water temperature shall not rise with residual heat so that the high water temperature lock-out operates. The engine may be naturally aspirated as pressure charged, or as indicated.

The starting shall be by means of electricity supplied from a starter battery. The starter motor shall be of axial type, de-energizing by a device operated from the engine. A means of manual starting shall also be provided.

Suitable means shall be provided for running by hand the engine main shaft and the associated generator to facilitate inspection and overhaul.

If weekly test runs are insufficient to prevent the drying out of the bearings, means shall be provided to ensure that the bearing surfaces are adequately and automatically wetted with lubricating oil either periodically or immediately prior to every start.

The engine shall be capable of being started from any crank position.

A thermostatically controlled 240-volt immersion heater may be fitted in the engine lubricating oil sump to facilitate starting. The heating surface loading of any lubricating oil heater(s) shall not exceed 0.015 watt per square millimeter to avoid carbonization of oil.

An efficient exhaust silencer with adequate draining facilities shall be supplied, and shall either be mounted on the set or installed in a generator room constructed as shown on the drawing indicated. The exhaust silencer system shall be so arranged that it may be readily relocated if required. Where any additional piping bends and fittings are specified, the manufacturer shall advise on any problems involved.

## 7.2 Fuel Oil System

An auxiliary cylindrical configuration standard outdoor fuel storage tank whose minimum capacity shall be sufficient to run the engine continuously on full load for 72 hours shall be installed in the position indicated in the contract drawing. It shall be supplied complete with supports.

The tank shall be fitted with a hand operated fuel with a flexible suction hose to permit filling from a drum on the floor.

A three way cock shall be fitted in the line from tank to the engine to enable the fuel to be supplied from a source other than the storage tank.

The position of the cock shall be clearly marked ‘MANUAL, AUTOMATIC, OFF’ as applicable.

A duplex oil filter shall be supplied between the storage tank and the diesel engine. The duplex filter shall be capable of being cleaned without dismantling, or in interruption of the fuel flow, and shall be easily maintainable. The tank shall be

equipped with a graduated dipstick, a clearly visible contents' gauge (not of the site glass type) and with drain, vent, overflow and inlet and outlet connection.

The set shall also have an integral belly/base fuel tank for daily services with an operational running capacity of 8 hours.

### 7.3 Lubricating Oil System

An engine driven integral gear type lubricating oil pump shall be provided. The lubricating oil system shall include an oil cooler and fine mesh filters, together with devices to indicate lubricating oil pressure and to initiate a 240 volt A.C. Lubricating oil Low Pressure Alarm, Lubricating Oil High Temperature Alarm and Cooling Water High Temperature Alarm.

As separate 240 volt A.C. Motor driven automatic lubricating oil priming pump shall be provided for intermittent operation when the diesel is lying idle.

### 7.4 Starting of Engine

The diesel generator set shall have facilities for local and remote push button starting, with a Local/ Remote/ Automatic selector switch at the local panel.

On mains failure the engine shall be capable of being automatically started from battery located near the generator set.

The battery shall be complete with drip tray and trickle charger.

All necessary relays, contacts, switches and miscellaneous items for the starting sequence shall be supplied and installed in the local control panel.

The system shall be designed to give maximum reliability in starting.

The Contractor shall state in detail his proposals to ensure reliable starting and prevention of deterioration of the diesel engine, generator and exciter during idle periods.

All manually operated valves and controls on whose setting the correct operation of the automatic starting equipment depends shall be provided with locking devices.

### 7.5 Cooling System

The engine may be air or water cooled unless a preference is indicated.

### 7.5.1 Air Cooling of Engine

Cooling air for the engine and lubricating oil shall be provided by fan(s) mechanically driven from the engine. The cooling system shall be adequate for the total requirements of the engine when running on continuous full load and on 10% overload for one hour in accordance with BS 649 and under the conditions of Section 3.

The engine shall be so designed that the cooling air discharges into or is drawn through a reasonably airtight ducted assembly enclosing the lubricating oil cooler, the cylinder barrels and the cylinder heads of the engine.

This assembly shall terminate in a flanged outlet to which trunking may be readily attached when necessary, to enable hot air from the cooling system to be discharged outside the building.

Belt driven fans shall have at least two belts and the drive shall be capable of transmitting the full load with one belt removed. The cooling air temperature shall be controlled so as to maintain a safe working temperature of the cylinder hand(s) and the engine shall shut down if the maximum is exceeded.

### 7.5.2 Water Cooling of Engine

A radiator of the air blast type shall be provided. It shall either have separate sections for water and for lubricating oil or be arranged for jacket water cooling only.

The radiator shall be mounted on the set and the fan(s) shall be mechanically driven from the engine. Where indicated the radiators shall be suitable for remote wall or floor mounting, in which case the fan shall be electric motor driven from a supply similar in voltage, phase and frequency to the alternator output and shall be started on line.

Where remotely mounted, the fan shall only operate when generating set is running and shall be controlled by a thermostat mounted in the radiator such that the fan motor will start on rising temperature $50^0$C and stop on falling temperature.

Belt driven fans shall be provided with at least two belts and the drive shall be capable of transmitting the full load with one belt removed. Circulation of the jacket water and lubricating oil through the respective radiator sections and /or heat exchanger shall be by means of pumps mechanically driven by the engine. Belt driven pumps shall be provided with at least two belts and drive shall be capable of transmitting the full load with one belt removed.

Circulation by thermo-syphon will be accepted provided the engine will operate under the conditions of section 6 and in accordance with BS 649.

An easily visible flow indicator provided with contacts shall be fitted in the water outlet from the engine; the contacts shall close in the ‘no flow’ condition and shut down the set.

Alternatively, in thermosyphon systems and sealed or pressurized radiator systems the flow indicator may be dispensed with providing the engine shuts down by the operation of the high temperature or low oil pressure safety devices in accordance with section 8.3.

A thermostatically controlled diverter valve shall be inserted in the engine water discharge pipe with a return to the circulating pipe section, to maintain the circulating water at the optimum temperature irrespective of the load. Alternatively, a thermostatic bypass will be accepted.

A radiator make-up/expansion tank, fitted with float control inlet, shall be provided. If a sealed or pressurized unit is offered the tank may be dispensed with.

Where indicated provision shall be made on the radiator framework to permit the attachment of ducting for the discharge air.

A thermometer shall be mounted near the cylinder head(s) to indicate water temperature. Where a lubricating oil cooler is fitted, thermometers shall be mounted at the oil inlet too and outlet from the engine. Alternatively, thermocouple may be provided at all thermometer positions and taken to an instrument panel.

Adequate drains shall be provided at low points in the water and lubricating oil systems of the radiator and, where applicable, of the heat exchanger.

## 7.6 Governing System

Governing shall conform to B.S. 640 Class A. The governor shall control the frequency within the limits stated in Section 6 Part. Manual speed adjustment shall be provided over a range of +/-15% of the rated speed at any load. The governor system shall be of the mechanical or hydraulic type. In addition, the engine shall be fitted with an approved overspeed trip device which shall operate independently of the normal speed governor and shall act directly upon the fuel supply to the engine.

The overspeed shall act at a speed of 12% to 15% in excess of normal operating speed.

## 7.7 Exhaust System

The diesel engine shall be provided with a suitable exhaust system for horizontal discharge outside the diesel generator room.

The silencer shall be of spark arresting type and shall be equipped with cleaning and draining arrangements. If an exhaust driven turbo-charger is supplied it shall include air intake filters, mani-folds and outlet manifolds. All necessary ducting, piping, supports and lagging required for the system shall be included.

Weatherproof wall boxes permitting expansion shall be fitted where the exhaust piping passes through the building wall or roof. Pipe work shall be connected at site by butt weld connections or use of flanged joints. The use of screwed connectors shall be avoided.

Flanges shall conform to the appropriate Table of B.S.10: 1962. Welding of flanges at site shall be carried out in accordance with B.S.806. The faces of flanges shall be machined and the backs shall be machined or spot faced to receive the bolt heads.

Valves and fittings shall be of approved design and manufacture and shall be subject to the same tests as the highest pressure piping or vessel to which they are connected.

### 7.8 Engine Instruments

Unless otherwise indicated the following instruments shall be

provided: (a) a lubricating oil pressure gauge

(b) a running hours meter

(c) a tachometer

(d) a water thermometer

(e) an exhaust gas pyrometer or thermometer mounted near the mani-fold

(f) lubricating oil thermometers on the inlet to and outlet from the engine, when a lubricating oil cooler if fitted

(g) Exhaust turbo-blower pressure gauge(s) as applicable

### 7.9 Pipe work, Valves and Fittings

All piping shall comply with requirements of KS-259:11989 for mild steel pipes.

Provision shall be made for ready handing of all parts of the plant during assembly or disassembly of the unit.

Adequate provision shall be made for attaching lifting devices, slings and eyebolts.

## 8. The Generator (Alternator and Exciter)

### 8.1 General

The generator shall comply with B.S.2613:197, for service in tropical conditions, and shall withstand being idle for considerable periods without any harmful drop in the insulation resistance.

he generator shall have a prime rated net output of **200KVA** as specified in the schedules of the Bills of Quantities, at 0.8 lagging power factor, 415 volts, 3 phase, 4 wire, 50 Hertz with brushless rotating rectifier excitation system and voltage regulator. It shall be directly coupled to the engine and be sized such that it will accept the maximum output of the engine including overload. The output voltage shall be maintained within plus or minus 2 ½ % from no load to full load conditions. The alternator shall be capable of operating within the range of plus or minus 15% of the nominal voltage according to the automatic voltage regulator.

Three phase machines shall be star connected, and a diagram showing the terminal marking and phase rotation shall be provided in the terminal box. Cables connecting the machine winding and machine terminals shall not have a higher de-rating factor for temperature than the windings.

The insulation shall comply with BS 2757 excluding Classes Y and A. The insulation shall have an oil, moisture and fungus proof finish, with a surface which will not retain dust or condensation. It shall be possible to put the set in service after long periods in unheated storage without necessarily drying out the insulation.

The alternator shall be capable of withstanding a short circuit for three seconds when under the control of the automatic voltage regulator.

## 8.2 Excitation

Excitation shall be by means of brushless direct coupled exciter armature.

The alternators shall be designed for an excitation voltage at full load of not less than 50 Volts unless prior approval is given.

## 8.3 ELECTRICAL CONTROL PANEL

The Automatic Mains Failure control panel shall be provided and fitted with the following: -

a) Two four pole contactors and two TP & N incoming MCCB's each of suitable rating for controlling the supply from the mains transformer and standby generator.
b) An automatic voltage regulator for the set.
c) Control equipments as necessary including phase failure protection relay for both the mains supply and the generator supply (with both under and over voltage protection) and phase sequence protection relay for the mains supply all to fulfill the functional requirements and automatic changeover as detailed in Part 9.3.2
d) One ammeter and a selector switch to measure each phase current and neutral current e) One voltmeter and a selector switch to read line to line and line to neutral voltage
f) A frequency meter
The meters shall comply with BS 89, table 7.

### 8.3.1 General

The set is to be used for mains failure duty and an automatic starting panel shall be provided which shall contain all necessary equipment for controlling the automatic starting and stopping of the set, lubricating oil priming (if necessary), all auxiliaries, fault warnings and shut downs. All faults, warning and shut-downs shall be separately indicated. There shall be test facilities for indication lamps, etc., preferably by means of a single test button.

Means shall be provided for isolating all supplies to the starting panel either by an isolating switch or by withdrawable fuses.

When the set is stopped other than under lock-out conditions, it shall be self-resetting ready for the next start. The set shall be suitable for starting by manual means. e.g. by cranking or direct operation of the starter solenoid. All switches and push buttons shall be clearly marked to indicate their function.

It shall be possible to operate the 'Start' and 'Stop' buttons and to see the 'Set Failure' indications without opening the panel doors

### 8.3.2 Automatic Changeover Controls

The controls shall be installed and wired in the machine control panel.

The control shall be provided such that on failure of the normal electricity supply, it will automatically initiate the starting of and effect the transfer of load to the standby generator.

The schematic for the controls shall be approved by the Electrical Engineer before manufacture

commences. Where failure of the normal supply is referred to, it shall be defined as follows:

a) Complete loss of voltage in one line 0r in all the three lines

b) Falling of voltage below 85% of the normal voltage between two lines or line and

neutral c) Voltage overshoot to 110% of the normal voltage between two lines or line and

neutral

d) Incorrect phase sequence

On failure of the normal supply, the unit shall operate in the following manner:

(a) After a delay, adjustable from 0 to 15 seconds (to avoid operation by a transient dip in voltage) a signal shall be given to start the standby generating set.

(b) On receipt of a signal from the standby generating set that it is ready to take load, and providing that the failure of the normal supply still persists, the normal supply contactor in the control panel shall open and the standby contactor shall close. If the normal supply has been restored before the changeover has taken place, the contactor shall not operate and the starting relay contacts shall open to initiate the shutting down of the standby generating set.

When the standby supply is in operation and the normal supply is restored and remains within 10% of rated voltage on all phases for a pre-set time (adjustable up to 120 second) the standby contactor shall open and the normal supply contactor shall close; the starting relay contacts shall then open to shut down the generating set.

Provision shall be made so that automatic return to normal supply can be prevented if required.

Once a start signal has been sent to standby generating set, the engine starting sequence shall be allowed to continue until the set is ready to take the load before a stopping signal is sent.

A push button labelled 'Test' shall be provided to enable a failure of normal supply to be simulated. If the button is pressed and released the equipment shall complete the starting sequence, and when the set is ready to take load it shall be shut down. If the button is held depressed the equipment shall change over to the standby supply when the set is ready to take load.

Indicating lamps or illuminated panels shall be provided on the front of the panel. They shall be appropriately labelled, easily visible and shall give the following information:

'Main Supply Available'

'Generator Supply Available'

'Mains Supply on load'

'Generator Supply on load'

## 8.4 Lock out

### 8.4.1 General

The set shall stop and lock out to prevent further starting when:

a) It fails to start when the electric starter motor has been in operation for 20 seconds under automatic start condition.

b) The lubricating oil pressure falls to a value at which it would be unsafe to continue running the engine.

c) The cooling water does not flow, when the engine is fitted with a visible flow indicator on the cooling water system.

(i) In water cooled engines the cooling water temperature exceeds a predetermined limit.

(ii) In air cooled engines the cylinder head temperature exceeds a safe maximum.

d) The over speed trip has operated.

**8.4.2**

Failure of the circuits concerned in sub-section 8.4.1 (b) to 8.4.1(d) shall cause a set to shut down. Reset of lock out shall be by hand.

## 8.5 Fault indication

Each lock-out detailed in section 8.4.1 shall be indicated by a lamp on the panel together with an indication of the fault causing the shut-down. The fault warning lights shall be set to operate before the lock-out.

## 8.6 Starting Battery and Charger

The battery shall be 24 volts and capable of with-standing the loads imposed upon it by its specified duties. It may be of lead-acid or alkaline type and shall be of sufficient capacity for four starts in succession once in an eight- hour period. Auxiliary circuits connected to the battery shall be protected by fuses.

The battery shall be used to supply an automatic starting and control equipment, and relay operation shall not be impaired when the battery is supplying current to the starter motor.

A single phase supply for battery charging shall be available from the main M.V SWITCHBOARD.

A charger shall be provided which will recharge the battery after engine starting and maintain it in a charged condition when the set is standing or is in service. It may also supply the load of any automatic starting and control equipment, and an additional load up to 24 watts when the set is running and in service.

An alternative quick charge rate shall be provided. The charger shall be fitted with an ammeter to measure the charger and discharge current excluding the starter motor current.

**8.7 Wiring and Earthing**

Power cables and small wiring cables interconnecting major components shall be of the heat and oil resistant type and shall be metal sheathed or run in metal ducts or metal conduit, which shall be coded and terminated with lugs or eyes or to be soldered, the terminations shall be clearly marked with the numbers and letters of the terminals to which they are connected. Terminals shall be numbered or lettered, easily accessible and fitted with individual insulating barriers or adequately spaced. Barriers shall be fitted to separate control terminals from power wiring terminals.

All metal work housing electrical equipment shall be bonded to a brass earthing terminal and connected to station Earth and as detailed in the schedule.

**8.8 Contactors**

Contactors shall have magnetic circuits designed for a.c or d.c operation and shall be rated in accordance with KS 04-182: 1982.Four pole- contactors shall be fitted for three phase-equipment and two-pole contactors for single phase equipments. Main and auxiliary contacts shall be silver faced or better.

**8.9 Relays**

Relays shall preferably be of sealed type mounted in approved plug-in bias with spring loaded retainers but if this is not practicable they shall be mounted on individual sub-bases and wired so that easy access is obtained to soldered connections. Unsealed relays shall be enclosed in individual or common dust protecting cases.

Time delays, if of the pneumatic type, shall operate on filtered air. The thermal type of time delay relay will not be accepted.

**8.10 Fuses**

Fuses shall comply with KS-183:1978. A spare fuse cartridge for each pole shall be mounted inside each equipment.

**8.11 Rectifiers, Capacitors and solid State components**

Rectifiers, capacitors and solid state components shall be suitable for any transient voltage and high currents likely to be uncounted during the operation of the equipment and for the internal operating temperature of the enclosures at the specified maximum external ambient temperature.

### 8.12 Enclosures for Equipment

Enclosures for electrical and control equipment shall be drip proof and dust protecting, with adequate front and rear access as necessary for maintenance and repair. Special attention shall be given to the method of construction and to the mounting of the components to minimize the effect of vibration. Diagrams of connections in durable form shall be mounted inside the enclosures.

## 9 Lifting Gear and Handling.

Provision shall be made for ready handling of all parts of the plant during assembly or disassembly of the unit. Adequate provision shall be made for attaching lifting devices, slings and eyebolts.

## 10 Commissioning

The Contractor shall include for fully commissioning the set and its control equipment and for the purpose of the required tests, shall provide all necessary instrument s, tools, fuel and lubricating oil.

The following tests and checks as applicable shall be carried out by the contractor in the presence of the electrical engineer or his representative.

a) Check that the main frame is level in all directions, engine and generator shafts are in proper alignment and the vibration absorbing devices are properly installed and located.

b) Check water and sump oil levels and that the water jacket and radiation eaters (if fitted) are in working order.

c) Check the battery electrolyte levels and the specific gravity.

d) Examine the containers in which the fuel and lubricating oils were delivered and check that the type and grade of oils are as recommended for the unit.

e) Ensure that sufficient fuel oil is in the fuel tank for a two hours' test run.

f) Check that all radiator and engine block water drain points are free from sludge and other blockages.

g) Check engine bolts, main drive coupling, valve clearance, fuel pumps settings, governor settings, pipeline connections, water hose, exhaust couplings, flexible pipe work etc., and where a separate cooling water tank is fitted, that the water levels is satisfactory and the ball valve and overflow work.

h) Check all outgoing connections on the generator and the control panel. All lugs for principal connections shall have clean and bright contact surfaces. A suitable abrasive shall be used where necessary.

i) Check access panels and doors for proper opening and closing and for functioning of any interlocks fitted.

j) With the set isolated from the main supply and the selector switch in the 'manual' position, start the engine by means of the 'start' push button and allow it to run up to normal speed. Check that the main battery charger is automatically switched off to avoid its being overloaded by the reduction in voltage across the battery. Where a battery charging dynamo is fitted, check that the main battery charger is

disconnected by the operation of the auxiliary contact during the time the engine is running.

k) Check instruments and gauges for normal operation and response and that the generator voltage is being maintained within the prescribed limits, making due allowance for no-load conditions. Compare the reading of the frequency meter with that of engine tachometer, where both are fitted.

l) Stop engine by turning selector switch to off position and verify that the generator contactor opens at between 95% and 85% of normal voltage. Re-check water and oil levels.

m) Turn selector switch to 'Auto' position. Disconnect the sensing circuit supply and check that the set starts, the mains contactor opens, and the generator contactor closes in correct order. Reconnect the sensing circuit to verify that the engine stops on restoration of the mains supply and the contactors operate correctly. Check voltage sensing and time delays on each phase in turn and also the push buttons for mains failure simulation and engine stopping operate correctly.

**NOTE:** Running of the engine for any length of time under no load condition is undesirable and tests calling for such operation should be carried out in as short time as possible consistent with thoroughness.

n) Operate the necessary isolators and switches to put the set on standby for essential services network with the mains failure simulation push, verify that the set operates correctly with the appropriate time delay for taking up load and that the carrying of the load and its distribution over three phases are satisfactory.

o) Run the set at various loads for periods totaling at least 30 minutes. Check that the voltage and frequency are being maintained within the required limits with large alterations of load. Note the rate of charge on the dynamo ammeter with the engine running (if a dynamo is fitted), and the rate of charge on the battery charging ammeter with the engine stopped. Check against manufacturers recommendations and adjust charging rates if necessary.

p) Check that the various engine safeguards operate satisfactorily.

q) Check the vibration absorbing devices for proper operation and that performance of all flexible connections, both mechanical and electrical, is satisfactory.

r) When all tests are satisfactory and agreed with the Engineer or his representative, the lubricating oil and water levels shall be finally checked, the fuel oil tank replenished and set left in normal operating order.

s) An initial supply of all lubricating oils and greases shall be provided by the Contractor.

t) Additional lubricating oil shall be provided for recharging the engine sump once together with a supply of lubricating oils and greases to cover the normal use and serving of the set during the 12 months maintenance period referred to in Part 14 of Section D.

## 11. Standard Specification For Auxiliary Fuel Storage Tanks (UG/AG) Fabrication

The tank shall comply with **Kenya Bureau Standards, Specification for Storage Tanks for Petroleum Industry. Part 1: Carbon Steel Welded Horizontal Cylindrical Storage Tanks; 2002.**

The tanks shall comply to the following specifications: -

a) The thickness of the shell and end plates of the tank shall be 6mm;
b) The dished end of the tank to bend to 25 mm radius;
c) The Mild Steel plate joints welding shall be butt welded for circumferential joints and lap welding for longitudinal. Further no longitudinal joint shall be located at the bottom of the tank;
d) All joints on the tank plates, lap or butt type, shall be welded both sides to full penetration (AG/UG);
e) Accessories: -

i. 1 x 600 mm manholes with the following sockets and fittings 1 No x 100 mm filler pipe welded to 150 mm x 100 mm reducing bush;
ii. 3 No x 50 mm diameter suction pipes welded to 75 mm x 62 mm reducing bush;
iii. 1 No x 50 mm diameter vent pipe welded to 75 mm x 62 mm reducing bush; and
iv. 1 No x 25 mm diameter dip pipe with lockable cap, chain, etc. welded to 75 mm x 30 mm reducing bush.

**BROCHURES AND TECHNICAL LITERATURE**

Tenderers **Must** enclose together with their submitted bids **Brochures** detailing Technical Literature and specifications of all electrical components. The brochures shall be used to evaluate the suitability of these components.

**Any bid submitted without the brochures shall be considered technically non-responsive, and may subsequently be disqualified**

## (A) COMPLIANCE TO TECHNICAL SPECIFICATIONS FOR GENERATOR WORKS

***Bidders must provide Technical Brochures to assess their technical compliance with these specifications and Mark clearly the items they propose to supply from the attached Brochures.***

**PART A:**

*GENERATOR INSTALLATION WORKS*

| ITEM | Description | COMPLIANCE | |
|---|---|---|---|
| | | √ | × |
| 1 | **Generator Set**<br>i. Acoustic Canopy/ sound attenuated and weather protective enclosure<br>ii. 136 KVA (109KW) Prime rated (at least 150KVA (120KW) standby rating)<br>iii. Operating Frequency :50 Hz<br>iv. Starting voltage: 12 Vdc.<br>v. Operating Voltage Range: 380 – 415Vac.<br>vi. Voltage regulation (no load to full load) +/- 1%<br>vii. Microprocessor based generator control system.<br>viii. Belly tank capacity (to run for 12hrs at 75% prime rating).<br>ix. Configuration: 4cycle, inline 6-cylinder diesel<br>x. Rated speed :1500 rpm<br>xi. Aspiration: Turbo charged and charge air cooled.<br>xii. Governor type: electronic<br>xiii. Gross engine power output: standby 145KWm, prime 135KWm<br>***xiv. Manufacturer authorisation and local service and spares support through a dealer*** | | |
| | **RESPONSIVE/ NON-RESPONSIVE** | | |

## GENERAL SPECIFICATIONS FOR PASSENGER LIFT INSTALLATION WORKS

**1. REGULATIONS**

All Apparatus and materials supplied and work carried out shall comply with the provisions of the following documents: -

(a) The latest Edition of I.E.E Regulations
(b) The Electric Power Act and the Rules made there under.
(c) EN81-20:2022 and EN81-50:2014
(d) EN81-70 for disability requirement and EN 13501-1 for fire rating of materials.
(e) Kenya Bureau of Standards (KBS) lifts standard KS 2169 -1

**2. BUILDER'S WORK BY LIFT CONTRACTOR**

**A. Lift Shaft**

(i) The dimensions of the lifts shafts are 2150mm by 1750mm (Width X Depth) for the 2No. passenger lift. **It shall be the responsibility of the lifts Contractor to verify the dimensions of the lifts shaft before placing any orders for importation.** The Employer/employer's representative will bear neither responsibility nor liability for any approximate dimensions issued – as a guide to the Contractor.

(ii) **The lifts Contractor shall provide cut-outs for hall buttons, hall** position indicators, hall lanterns, shaft ventilations and fire man's switch.

It shall be the responsibility of the lifts Contractor to provide, properly position and fix the hall buttons, hall indicators, hall lanterns, fire man's switches, door frames, sills and architraves.

(iii) The lifts Contractor shall provide the necessary scaffolding for erection of equipment and hoarding to secure the work area from general public and maintain safety of the people and other installations in the building

(iv) The lifts Contractor shall provide temporary electricity supply for erection and shaft lighting, and thereafter a permanent supply from an appropriate isolator.

**B. Lifts Pit**

The depth of the lifts pits is 1800mm – Tenderers to confirm on site.

The lifts contractor shall provide and fix ladders where such facility are required as stipulated in EN81-20, including a control station near the pit's refuge space.

**C. Access, inspection, and rescue doors, and counterweight safety gear**

The lifts Contractor shall provide access in accordance with EN81-20 to address the safety of Engineers. The counterweight Should be fitted
with a safety gear in cases where there are accessible spaces
under the pit.

**D. Car roof and pit refuge spaces**

The refuge spaces should have adequate volume to meet the comfort and safety of engineers as follows

- Upright position: 0.4 x 0.5 m (horizontal dimensions),2 m (height)
- Crouching position: 0.5 x 0.7 m (horizontal dimensions), 1 m (height)
- Laying position: 0.7 x 1.0 m (horizontal dimensions), 0.5 m (height) for pit only

Car roof balustrades strength and height should be as defined by EN81-20 standards to prevent engineers from to the pit while working on the car roof.

**E. Access, inspection, and rescue doors, and counterweight safety gear**

The lifts Contractor shall provide access in accordance with EN81-20 to address the safety of Engineers. The counterweight Should be fitted with a safety gear in cases where there are accessible spaces under the pit.

**F. Car roof and pit refuge spaces**

The refuge spaces should have adequate volume to meet the comfort and safety of engineers as follows

- Upright position: 0.4 x 0.5 m (horizontal dimensions),2 m (height)
- Crouching position: 0.5 x 0.7 m (horizontal dimensions), 1 m (height)
- Laying position: 0.7 x 1.0 m (horizontal dimensions), 0.5 m (height) for pit only

Car roof balustrades strength and height should be as defined by EN81-20 standards to prevent engineers from to the pit while working on the car roof.

**G. <u>Builder's Work</u>**

The lifts Contractor shall provide for:

(i) All chasing, shaft ventilation and making good

(ii) All drilling and plugging of holes in floors, walls, ceiling and roofs for security services, and for equipment requiring screw or bolt fixing.

(iii) Any purpose made fixing brackets

## 3. FIREMAN'S SWITCH FOR THE LIFTS

A fireman's control switch shall be provided in the down terminal floor, main entrance lobby. The Fireman's switch shall be of the type approved by the Engineer.

Operation of the Fireman's switch shall stop the lift car on the next landing but without opening the car and landing doors and immediately return the lift to the ground floor irrespective of any other calls and park lift with doors open. The car will then become in-operative with the exception of the 'Fireman's Lift' which shall operate in answer to the car buttons until only the fireman s switch is reset.

## 4. EMERGENCY ALARM SYSTEM

An emergency alarm system and an intercom shall be installed between the car and the reception desk on the ground floor.

The alarm system shall be clearly labeled “Emergency Alarm”. On pushing an alarm button, the system should ring simultaneously in the car, and the reception desk.

The lifts Contractor shall carry out the wiring in the lift car and between machine and the reception desk. The power supply for the alarm system shall be derived from a self-recharging unit.

## 5. EMERGENCY DOOR KEYS

It shall be possible to open every lift-landing door by the use of a release key whether or not the lift car is in the landing zone. The key hole shall be unobtrusive and located at high level.

The landing door providing access to the pit must be openable from the shaft so that engineers can exit the lift shaft, even if the relevant landing door is closed.

## 6. CALL STATION AND OPERATING PANEL BUTTONS

The call station, distributed between the lifts on each landing, and operating panel buttons shall be micro-motion push button.

## 7. INTERFERENCE SUPPRESSION

The lift motor and auxiliary controls shall be suppressed so as not to interfere with local radio and television reception and closed-circuit television or Electro mechanical equipment within the building. The suppression shall be carried out in accordance with B.S. 800 and all suppression devices incorporated shall comply with B.S. 5655.

## 8. PROTECTION PADS

There will be no protection pads provided

## 9. CAR EMERGENCY LIGHTING

The lift cars shall be provided with an emergency light fitting operating from a
Self-recharging battery unit. The emergency light will be built in the car-operating panel and the lighting levels should be as guided by the EN81-20 standard

## 10. TEST

Both on completion of his work on the lifts and at the end of the guarantee period, the lifts Contractor shall carry out all the tests as required and in accordance with B.S 2655 part 7 in the presence of the Engineer and shall provide all the necessary instruments, labour and materials to do so at his cost.

Damage occurring, as a result of these tests will be made good by the Lifts Contractor to the Engineer’s satisfaction at his expense.

4No. (Four) copies of the test certificates for each lift should be forwarded to
the Engineer within 4 days of completion of the last test.

## 11. TRAINING

The tenderer shall provide in his tender for the training of 2No.technicians on site in the maintenance of the lifts during the assembling, installation, testing and commissioning period.

## 12.0 FACTORY INSPECTION

12.1 The employer shall be entitled to have the quantity and quality of the imported lifts materials inspected by two number (2No.) engineers appointed by the Project Manager, and one (1No.) representative for the employer.

12.2 The said inspection shall be carried out at the factory of manufacture of the lifts materials during normal working hours and the successful tenderer shall give written notice to the Project Manager at the latest thirty (30) calendar days in advance of the date that the lifts materials are ready for inspection.

12.3 Travel (including ground, air travel and airport passage taxes) and full board accommodation expenses in at least a three (3) star hotel incurred by the engineers appointed by the Project Manager, and the employer's representative shall (see clause 12.1) be borne by the contractor. The contractor shall also meet out of pocket expenses for the officers at Government of Kenya rates for the duration of the factory inspection. The costs incurred shall be re-imbursed to the contractor from the provisional sum allowed in page (G/3) of the Bills of Quantities.

12.4 The inspection period shall be five (5) working days excluding travelling time.

12.5 If as a result of the inspection any of the lift materials are found to be defective, the successful tenderer shall replace the defective materials and determine a new date as when a new inspection shall be performed at the expense of the contractor.

12.6 The successful tenderer shall only ship the lift materials after the said factory inspection.

## 13.0 PROTECTION AGAINST POWER/VOLTAGE FLUCTUATIONS, SURGES AND TRANSIENT CURRENTS

13.1 The lift equipment and all its controls shall be protected against power/ voltage fluctuations, surges and transient currents. The contractor shall provide for and install all the necessary equipment for this protection. The protective switchgear shall be verified by the Engineer during the overseas factory inspection.

## 14.0 INITIAL STATUTORY INSPECTION OF THE NEW LIFTS

14.1 The tenderer shall allow in his tender for the initial statutory inspection of the lift by an Approved Government Lift Inspector during the commissioning of the new lift, and thereafter for inspection at intervals of six (6) months periodic time during the 12 months' defects liability period. One of the inspections shall be done after the expiry of the defects liability period on confirming that all the defects (if any) have been corrected by the lift contractor.

14.2 The employer and the contractor shall, at each inspection, each retain a copy of the lift inspection certificates while the original will be submitted to the Ministry of Labour and Social Protection.

## 15.0 INITIAL MAINTENANCE OF THE NEW LIFTS

15.1 The tenderer shall allow in his tender for the initial routine service maintenance of the new lifts once a month during the 12 months defects liability period and shall carry out all necessary adjustments and repairs, cleaning, greasing and oiling of moving parts.

15.2 During the initial maintenance of the new lifts, the tenderer shall also allow in his tender for all tools, instruments, plant and scaffolding and the transportation thereof, as required for the correct and full execution of these obligations and the provision, use or installation of all materials or parts which are periodically renewed such as brake linings etc., or parts which are faulty for any reason whatsoever excepting always acts of God such as storm, tempest, flood, earthquake and civil revolt, acts of war and vandalism.

15.3 The contractor shall also provide a 24 -hour break-down service to attend to faults on or malfunctioning of the installation between the routine visits of the defects liability period.

15.4 A monthly report of any works done upon the installation shall be supplied to the Engineer.

## 16.0 REGISTRATION OF THE NEW LIFTS

16.1 The tenderer shall allow in his tender for the registration of the new lifts with the Ministry of Labour and Social Protection including payments of any fees that may be required. It is the responsibility of the Contractor to avail the registration certificate to the client once the registration has been done.

## 17.0 INTERIOR LIFT CAR FINISHES

17.1 The interior lift car finishes including ceiling, floor, cabin panels, car door, landing door and architraves shall be executive and to the Engineers approval in liaison with the Client. The approval will be within the range of the manufacturers' range of finishes in their brochures. The tenderer must therefore allow for this in their bid.

## PARTICULAR SPECIFICATIONS

### 1.0 LOCATION OF SITE

The site of the proposed works is at the DELMONTE/MAKENJI - MURANGA COUNTY

### 2.0 DESCRIPTION OF THE WORKS

The project comprises: -

(i) Supply, installation, testing and commissioning of 2No.machine room less, gearless, modern microprocessor control-based lifts and all the associated controls and monitoring equipment.
(ii) Associated builder's works.
(iii) Associated electrical works

### 3.0 CLIMATE CONDITIONS

The following climatic conditions apply at the site of the contract work and the equipment; materials and the installations shall be suitable for these conditions.

| | | |
|---|---|---|
| Maximum Temperature: | | 31.48.$^0$C |
| Minimum Temperature | : | 15.72$^0$C |
| Relative humidity range | : | 60% - 86% |
| Dust in Atmosphere: | | Relatively dusty conditions prevail |
| Altitude: | | 1,795m above sea level |

Extremely heavy rainfall is experienced at certain periods of the year and the contractor shall be deemed to have taken account of this factor both in his prices and his planning of the execution of the contract works.

### 4.0 GENERAL REQUIREMENTS

The lift Contractor shall supply, deliver unload, hoist, fix and erect, test and commission all the equipment, plant and materials in accordance with all specifications contained in this document including the building plans to provide a complete and operable installation.
The lifts Contractor shall become liable for defects and be responsible for the initial maintenance of the lifts installed all as specified here in.

### 5.0 PARTICULAR REQUIREMENTS

***The tenderer shall provide factory compliance certificate for EN 81 – 20:2022 and EN-81-50/2014 to prove compliance with this European code. Failure to provide this shall render the tender non –responsive and hence the bid will not be considered.***

### 6.0 TECHNICAL SPECIFICATION FOR THE PASSENGER LIFT

| | | |
|---|---|---|
| No. of Unit | : | One (1No.) |
| Load | : | 1000Kg (13 persons) |
| Speed | : | 1.0 -1.5m/s |
| Drive | : | Regenerative Closed loop digital VVVF |
| Control system | : | Electronic. Fully software based microprocessor controlled system. |

Machine : Gearless traction machine with permanent magnetic sychnous motor ( any other machinery to be located within the shaft ).

No.of stops: 3( G,1,2) for the standard lift and 4(LG,G,1,2) for the panoramic lift

Travelling cable : Travelling cable to serve interface for fire alarm system, C.C.T.V and Audio System to be installed.

Lift Pit : 1800mm. **To be confirmed on site by lift Contractor**

Head room : To be determined on site by lift Contractor

Shaft Dimensions : 2150x1750mm (length by depth). **To be confirmed on site by the lift contractor.**

Normal Operation Lift management system to allocate lifts according to destinations and traffic. The 2no lift to work in simplex configuration.

Power requirements : 415V ac, 3 phase, at 50Hz

**Other main facilities and functions to be included**:

**Car door operation** shall be fully automatic with (infra-red) electronic door sensors

: Car position indicator

: Door button – re-open

: Voice guidance system (voice synthesizer)

: Emergency power operation and system backing

: Intercom facility – 3 way

: Alarm power unit and bell complete with a maintained back-up power supply

: Rescue operation system- (if the lift stops between floors, lift confirms safety circuit and automatically moves slowly to the nearest landing and opens the door)

: Door opening failure operation function- (when lift arrives at a landing and doors cannot open doors due to problem of jamming the door sill, the lift proceeds to the next landing and opens the door)

: Auto Levelling function-(the leveling of the car is automatically adjusted at the accuracy of the leveling device)

: Door nudging function-(when the doors are open beyond a preset period of time, the doors to start slowly sounding warning buzzer)

: Automatic return to mail floor function- (the elevator to return to preset mail floor to standby)

: Unintended car movement protection(UCMP)

: Night time self check

: Anti nuisance function

: Attendant operation features

: BMS interface:

: Floor position indicator on every floor

: Independent service key operation

: Signal floor lantern with sounders or car arrival chimes on all floors

: All the lift call buttons and car operation pannels must have **buttons for the disabled** ( Braille for the blind and button for wheel chair users)

: Remote control car stop (emergency)

: Cabin ventilation shall be tropicalised high Capacity cylinder type operation.

: Car extract fan should be powerful, quiet, drought free and multi-directional complete with a maintained back-up power supply

: Shall incorporate an Audio Visual car overload device.

: Shall have forced ventilation key switch.

Code compliance: The lifts shall comply with BS 5655 or European Specification equivalent code ***EN 81-20:2022 and EN81- 50:2014*** or later.

Structural Openings : The lift Contractor shall set the landing doors at 10mm from the finished floor levels so as to get a fall away from the landing to prevent water from flowing down the lift shafts when washing up.

Entrances: The lifts car shall have automatic power operated 2 panel centre openings of 900mm wide by 2100mm high. **This to be confirmed on site before tendering as no changes in existing entrance positions and dimensions will be allowed whatsoever.**

Landing door : Etched Stainless steel to Engineer's approval to fit in the existing entrance.

Car door : Stainless steel to Engineer's approval.

Landing door architraves: granite architraves of their client colour repainted to approval if need be.

Wall switches : All operating switches in the lifts shaft shall be of the totally enclosed drip proof type.

Lighting : Indirect Lighting shall be fitted in the car to a level of 150 lux.

Cabin walls: Stainless steel hairline finish to Engineer's approval. *(to include etched, tinted or sandblasted patterns)*

Car interior fronts: Stainless steel hairline finish to Engineer's approval. (*to include etched, tinted or sandblasted patterns)*

Mirror : Three quarter full height at the rear car panel.

Door Operation : Heavy duty variable voltage variable frequency driven door operators on a frame above the lift car.

: Fully adjustable door open and close speeds - micro-processor controlled.

: Intelligent speed adjustments to cope with traffic requirements

: Full curtain multi beam electronic infrared 3 dimensional detectors.

: An electro- mechanical type tested interlock shall be provided, fitted on the landing door and operated by the door lock cam on the lift car to prevent movement of the lift car until the landing door is both mechanically and electronically locked.

Stainless steel Hand rails : quantity and location in accordance with **EN81-70** .

Emergency light : Emergency light in the lift car, 1m above car roof and 1m above pit floor shall be 50 lux for 1 hour complete with a maintained back-up power supply

Signal Hall Lanterns : LCD/LED displays and different tones for up and down motions.

Signal fixtures : Wide angle view car position indicator unit with high relieable LED technology.

Floor buttons : Micromotion with ring illumination

: Brushed stainless steel plate with Braille indication.

Floor : Granite tiles, not less than 6mm thick with 8.0 mm thick soft red spongy carpet overlay.

Car position indicators : Car position indicators shall be digital LCD/LED type.

Car direction indicators : Car direction indicators shall have polycarbonate covers and 160° angle view.

Manual operation : Provision shall be made for manual raising and lowering This facility should be availed at the control panel (for machineroomless option).

Painting : All parts of the control equipment, switchgear trunking bed plates and closed sections of metal parts which will not be accessible for painting after erection shall be given three coats of paint at the manufacture's works. All bright surfaces shall be coated with lacquer or other protective coating before leaving the manufacturer's works. Metal works in the lift shaft shall be painted on site with three coats of best quality oil paint. The lifts machine and other machinery located in the lifts motor room shall be painted with three coats of best quality oil paint one coat being applied after erection.
Lift shaft shall be well white washed

Guarantee of Spare parts : ***The tenderer must confrim in writing and provide written commitment from manufacturer, the availability of parts for the make of lift proposed for installation, for a continous period of at least 10 (ten) years***.

Construction : In general, the lift car shall be constructed from pressed steel.The method of construction and strenth of lift car doors ,landing doors,ceilings and wall panels shall be in accordance with European code EN 81-20 and must meet the fire classification requirements according to EN 13501-1

Base frame : The complete hoisting equipment shall be mounted on base frame of fablicated steel which when installed shall be insulataed from the building structure by means of rubber or other approved sound and viration isolated material provided and fixed in an approved manner between frame and the supporting beams.

Hoisting Ropes : The lifts shall be provided with suitable car and counter-weight hoisting ropes manufactured, tested and handed in accordance with EN 81-20 standards.

Power factor : The powerfactor for the drive shall not be less than 0.9 lagging.

Communication and remote monitoring : The lift shall fullyequiped with an industry standard interface (LON,BACnet, RS485 port etc) for Building management system **(BMS)** interconection for remote monitoring and control.The hardware should be able to monitor from the control panel:

1) Elevator travel direction, current landing,
2) Door status "open", "close",
3) Elevator status "normal", "inspection", "fire return" , "trip", "Attendant", "over load", "full load", "fire return", "service off", "door lock", "safe loop"
4) Fault code

It should also have an interface for integration with the facility's access control system.

## 7.0 INFROMATION TO BE SUPPLIED BY THE TENDERER

The tenderer shall fill in the following information pertaining to the VIP lift being offered at the time of tendering: -

(i) Standards of compliance.....

(ii) Type of Drive Motor …….

(iii) Size of the Drive Motor (KW)…….

(iv) Country of Manufacture …….

(v) Power Factor …….

(vi) Starting Current A ……

(vii) Running Current B. ……..

(viii) Duration of Starting Current …….

(ix) Lift Capacity ( Kg/Persons)……

(x) Lift Speed ……

(xi) Landing Doors Type ……..

(xii) Landing Doors Safety Features…….

(xiii) Dimensions of Lift Car …….

(xiv) Dimensions of Landing Doors ……

## SECTION II - SCHEDULE OF UNIT RATES

1. The tenderer shall insert unit rates against the items in the following schedules and may add such other items as he considers appropriate.

2. The unit rates shall include for supply, transport, insurance, delivery to site, storage as necessary, assembling, cleaning, installing, connecting, profit and maintenance in defects liability and any other obligation under this contract.

3. The unit rates will be used to assess the value of additions or omissions arising from authorised variations to the contract works.

4. Where trade names or manufacturer's catalogue numbers are mentioned in the specification, the reference is intended as a guide to the type of article or quality of material required. Alternative brands of **equal** and **approved** quality will be accepted.

5. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including **V.A.T, Withholding tax and all other taxes applicable at the time of tender**).

6. Any bid returned with unfilled Schedule of Unit Rates shall be considered technically non- responsive, and the bidder shall automatically be disqualified.

**SCHEDULE OF UNIT RATES FOR ELECTRICAL INSTALLATIONS WORKS**
**(To be completed by the Tenderer)**

| ITEM | DESCRIPTION | QTY/UNIT | RATE(KSHS) |
|---|---|---|---|
| 1. | 63A MCCB<br>50A MCCB<br>32A MCCB | 1No.<br>1No.<br>1No. | |
| 3. | LED Flood lights:<br>a) 50 Watts | 1No. | |
| 4. | PVC/SWA/PVC Copper cable:<br>a) 10.0mm sq. 4 core<br>b) 16.0 mm sq 4core | 1M<br>1M | |
| 5. | Distribution Boards/Consumer unit.<br>a) 8 Way TPN Distribution Board<br>b) 6 Way TPN Distribution Board<br>c) 4-way consumer unit | 1No.<br>1No.<br>1No. | |
| 7. | 32 CH NVR | 1No. | |
| 8. | a) 8MP Bullet type CCTV Camera<br>b) 8MP Dome type CCTV Camera | 1No.<br>1No. | |
| 9. | Network Switches Port Switch Rack Mountable with PoE and as described in the particular specifications | 1No. | |

| ITEM | DESCRIPTION | QTY/UNIT | RATE(KSHS) |
|---|---|---|---|
| | a) 12 Port Switch as Cisco Catalyst<br>b) a) 48 Port Switch as Cisco Catalyst 9300 Series | | |
| 10. | Cat 6A UTP 8-Pair indoor cable | 1No. | |
| 11. | Network Cabinets<br>a) 18U Data Cabinet<br>b) 12U Data Cabinet | 1No. | |
| | a) wireless gateway module completes with accessories & line<br>b) (ii)) Wireless module complete with accessories & line | 1No. | |

## SECTION III - TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

1. The technical schedule shall be submitted by tenderers to facilitate and enable the Project Manager to evaluate the tenders, especially where the tenderer intends to supply or has based his tender sum on equipment which differs in manufacture, type or performance from the specifications indicated by the Project Manager.

2. The filling of this schedule forms part of Technical Evaluation of the tenders, and bidders shall therefore be required to indicate the type/make and country of origin of all the materials and equipment they intend to offer to the employer in this schedule.

3. This schedule shall form part of the technical evaluation criterion, and tenderers are therefore advised to complete the schedule as they shall be considered responsive

## TECHNICAL SCHEDULE OF ITEMSTO BE SUPPLIED

(To be completed by the Tenderer)

**ELECTRICAL INSTALLATION WORKS**

| ITEM | DESCRIPTION (as described in particular specification) | Contractor Proposed ( Attach Brochures and catalogue) | | | Compliant/ Non-Compliant |
|---|---|---|---|---|---|
| | | TYPE/MAKE | MODEL NO. | COUNTRY OF ORIGIN | |
| 1.0 | i. 13W circular LED panel<br>ii. 1200mm, 2x25W standard IP66 rated Batten fitting<br>iii. 50W LED Flood light<br>iv. 600x600 Panel Lights<br>v. Exit signs | | | | |
| 2.0 | Switches/ Sockets | | | | |
| 3.0 | Power Cables | | | | |
| 4.0 | Metallic Trunking | | | | |
| 5.0 | Distribution Board | | | | |
| 6.0 | Fire Alarm Panel | | | | |
| 7.0 | Smoke Detector | | | | |
| 8.0 | Circult Breaker (MCBs/ MCCBs) | | | | |

| ITEM | DESCRIPTION | TYPE/MAKE | MODEL | COUNTRY OF ORIGIN | Compliant/ Non- Compliant |
|---|---|---|---|---|---|
| 9.0 | Fire Alarm Cable | | | | |
| 10.0 | UPS | | | | |
| 11.0 | Data Switches | | | | |
| 12.0 | CAT 6A Cables/ Patch cords | | | | |
| 13.0 | Wireless Access Point | | | | |
| 14.0 | Smart Interactive Screen | | | | |
| 15.0 | Faceplate | | | | |
| 16.0 | Fibre Optic Cable | | | | |
| 17.0 | CCTV Cameras | | | | |
| 18.0 | NVR | | | | |
| 19.0 | Access Control Module | | | | |
| 20.0 | Data Cabinets | | | | |

**TECHNICAL SCHEDULE FOR STANDBY GENERATOR SYSTEM**

## TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

(To be completed by the Tenderer)

**GENERATOR WORKS**

| ITEM | EQUIPMENT | DETAILS |
|---|---|---|
| 1. | **Diesel Engine** | |
| | Make | |
| | Type | |
| | **Net continuous rating (B.S.649)** | |
| | (a) at sea level | KVA |
| | (b) at site | KVA |
| | **Speed** | Rev/min |
| | **Supercharger** | |
| | Make | |
| | Type | |
| | **Air cooling** | Not Applicable |
| | Quantity of air required | |
| | Details of ducting | |
| | **Water cooling** | To be Applicable |
| | Details of water cooling circuits | |

| ITEM | EQUIPMENT | DETAILS |
|---|---|---|
| | **Radiator:**<br>Make<br>Type<br>Length<br>Breadth<br>Height | <br><br><br>Mm<br>Mm<br>Mm |
| 2. | Aspiration Method<br><br>Quantity of air required<br><br>**<u>Auxiliaries</u>** Filters<br><br>Coolers Primary<br><br>pumps Tachometer<br><br>and drive Governor<br><br>Special cold start devices<br><br>Running hours meter<br><br>Safety devices | |

| ITEM | EQUIPMENT | DETAILS |
|---|---|---|
| | High temperature | |
| | Low pressure (lubricating oil) | |
| | Cooling water flow trip over speed trip | |
| | Speed sensing devices | |
| | Lubricating oil thermometers: | |
| | Number | |
| | Position (s) | |
| 3 | Water thermometer | |
| | Position Exhaust thermometer | |
| | Position | |
| | Starting Battery | |
| | Battery charger<br>Immersion Heater | |
| | **<u>Lubrication</u>**<br>Recommended oil (s) | |
| | Sump | Grade quantity(litres) |
| | Elsewhere (state where) | |
| 4. | **<u>Alternator and Exciter</u>**<br>Make and type | |
| | Bearings | |
| | Insulation class (BS.2757) | |

| ITEM | EQUIPMENT | DETAILS |
|---|---|---|
| 5. | **Electrical Control Panel** | |
| | Main circuit breaker | Amps |
| | Bypass switches | Amps |
| | Automatic changeover contactor | Amps |
| | Automatic voltage regulator | Volts |
| | Ammeter selector switch | |
| | Voltmeter selector switch | |
| | Frequency meter | Hertz |
| | Ammeters --------No. | Amps |
| | Voltmeters--------No. | Volts |
| | Power factor meter | KVAR |
| | Other equipment – give details | |
| 6. | **Performance data** | Ratedoutput Consumption |
| | Fuel consumption | % Litres/hour |
| | | 110 |
| | | 100 |
| | | 75 |
| | | 50 |
| | Maximum output | Ambienttemp. Out-putKVA |
| | | $^0$C |
| | | 40 |
| | | 30 |
| | | 20 |
| | | 10 |

| ITEM | EQUIPMENT | DETAILS |
|---|---|---|
| 6. | Performance Data (cont'd) | |
| | Voltage regulation | % |
| | Frequency regulation | % |
| | Time to accept 75% full load from $5^0$C | Seconds |
| | Time to accept 100% full load from $5^0$C | Seconds |
| | Time to accept 100% full load from $40^0$C | Seconds |
| 7. | **Physical Details** | Litres |
| | Auxiliary fuel storage tank for 72 hour | |

| | | |
|---|---|---|
| 8. | operational running capacity<br><br>Size of set<br><br>Total weight of set Overall<br><br>dimensions of set Weight of<br><br>heaviest component<br><br>Weather proofing<br><br>Integral belly/base fuel tank for daily service for 12 hour operation capacity<br><br>**<u>Operational Details</u>**<br><br>Description of Operation<br>Sequence of the automatic control<br><br>Details of drawings, literature,<br>etc., included with tender. | mm long mm wide mm high<br><br>Kg.<br><br>mm long mm wide mm high<br><br>Kg.<br><br>Litres |

## 3. DEVIATIONS FROM THE SPECIFICATION

The tenderer shall give details of any equipment which does not meet the specification, or any other deviations, omissions, additions or alternatives in respect of the set which they are offering.

If none, write none.

# SECTION G

# BILLS OF QUANTITIES

## BILLS OF QUANTITIES

**(c) Installation Items**

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

(ii) The unit of measurements and observations are as per those described in clause1.0 5 of the section C.

**(d) Summary**

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

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

## SPECIAL NOTES TO BILLS OF QUANTITIES

1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.

2. The prices quoted shall be deemed to include for all obligations under the Contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes applicable at the time of tender.

3. All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part there of.

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

   Should the Contractor install any material not specified here in before receiving **written approva**l from the Project Manager, the Contractor shall remove the material in question and, **at his own cost**, install the proper material.

5. The grand total of prices in the price summary page must be carried forward to the **Form of Tender for the tender to be deemed valid**.

2. Tenderers must enclose, together with their submitted tenders, manufacturer's brochures detailing technical literature and specifications of the lift make that they intend to offer. Where the brochure contains different models and sizes of lifts, the bidders MUST clearly mark out the model and size of lift they intend to offer by using a 'mark pen'.
   **Where tenderers have not enclosed the brochures with their bids and the same may be required during evaluation of the bids, The tenderers will be requested to submit the brochures to assist in the evaluation process.**

7. Tenderers **must** fill all rates and prices in the Bills of Quantities and in the Schedules provided in the Appendices to the Bills of Quantities. **Failure to do so may lead to disqualification.**

**PROPOSED CONSTRUCTION WORKS FOR DELMONTE LAND REGISTRY**

**ELECTRICAL INSTALLATION WORKS**

**BILL NO.1: SUB-CONTRACT PRELIMINARIES**

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| 1 | Discrepancies clause - Sub-contractor shall include all work either shown on the Contract Drawings or detailed in the specification. No claim or extra cost shall be considered for works which has been shown on the drawings or in the specification alone. | 1 | Item | | |
| 2 | Payments clause - Payment will be made through certificates to the Main Contractor, unless he specifically agrees to forego this right, in which case direct payment can be made to the Domestic Sub-contractor. All payments will be less retention as specified in the Main Contract. No payment will become due until materials are delivered to site. | 1 | Item | | |
| 3 | Scope of contract works clause - The sub-contractor shall supply, deliver, unload, hoist, fix, test, commission and hand-over in satisfactory working order the complete installations specified hereinafter and/or as shown on the Contract Drawings attached hereto, including the provision of labour, transport and plant for unloading material and storage, and handling into position and fixing | 1 | Item | | |
| 4 | Extent of contractor's duties clause - The Sub- contractor shall be responsible for verifying all dimensions relative to his work by actual measurements taken on site. Shall mark accurately on one set of drawings and indicate all alterations and/or modifications carried out to the designed system during the construction period. This information must be made available on site for inspection by the Engineer. | 1 | Item | | |
| 5 | Variation clause - Any variation from the contract price in respect of any extra work, alteration or omission requested or sanctioned by the Architect or Engineer shall be agreed and confirmed in writing at the same time such variations are decided and shall not affect the validity of the Contract. Schedule of Unit Rates shall be used to assess the value of such variations. No allowance shall be made for loss of profit on omitted works. | 1 | Item | | |
| | **Sub Total carried to next page** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Sub-Total B/F from Previous Page** | | | | |
| 6 | Government legislation and regulations clause - Sub- contractor shall allow for providing holidays and transport for work people, and for complying with Legislation, Regulations and Union Agreements. The Sub-contractor must also make himself acquainted with current legislation and any Government regulations regarding the movement, housing, security and control of labour, labour camps, passes for transport, etc. | 1 | Item | | |
| 7 | Import duty and VAT clause- (Note this clause applies for materials supplied only whether imported or locally manufactured. The tenderer shall make full allowance in his tender for all such taxes | 1 | Item | | |
| 8 | Samples and materials generally clause - The Sub- contractor shall, when required, provide for approval at no extra cost, samples of all materials to be incorporated in the works. Such samples, when approved, shall be retained by the Engineer and shall form the standard for all such materials incorporated. | 1 | Item | | |
| 9 | Bills of quantities clause - All the Quantities are based on the Contract Drawings and are provisional and they shall not be held to gauge or to limit the amount or description of the work to be executed by the Sub- contractor but the value thereof shall be deducted from the Sub-contract Sum and the value of the work ordered by the Engineer and executed there under shall be measured and valued by the Engineer in accordance with the contract. All work liable to adjustment under this Sub-contract shall be left uncovered for a reasonable time to allow measurements needed for such adjustment to be taken by the Quantity Surveyor or Engineer. Immediately the work is ready for measuring the Sub- contractor shall give notice to the Quantity Surveyor or Engineer to carry out measurements before covering up. If the Sub-contractor shall make default in these respects he shall, if the Architect so directs, uncover the work to enable the necessary measurements to be taken and afterwards reinstate at his own expense. | 1 | Item | | |
| | **Sub Total carried to next page** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Sub-Total B/F from Previous Page** | | | | |
| 10 | Builders work clause 1- All chasing, cutting away and making good will be done by the Main Contractor but the Sub-contractor shall mark out in advance and shall be responsible for accuracy of the size and position of all holes and chases required. | 1 | Item | | |
| 11 | Setting to work and regulating system clause- No testing or commissioning shall be undertaken except in the presence of and to the satisfaction of the Engineer unless otherwise stated by him (Sub-contractor's own preliminary and proving tests excepted). It will be deemed that the Sub-contractor has included in the Sub-contract Sum for the costs of all fuel, power, water and the like, for testing and commissioning as required. | 1 | Item | | |
| 12 | Identification of plant components clause - Sub-contractor shall supply and fix identification labels to all plant, starters, switches and items of control equipment etc with white traffolyte or equal labels engraved in red lettering denoting its name, function and section controlled. | 1 | Item | | |
| 13 | Working drawings clause - Sub-contractor shall prepare such Working Drawings as may be necessary. The Working Drawings shall be complete in such detail not only that the Sub-contract Works can be executed on site but also that the Engineer can approve the Sub-contractor's proposals, detailed designs and intentions in the execution of the Sub-contract Works. | 1 | Item | | |
| 14 | Records Drawings (As Installed) and instructions clause - Record Drawings, will be subject to the approval of the Engineer, include approved Working Drawings adjusted as necessary and certified by the Sub-contractor as a correct record of the installation of the Sub-contract Works. | 1 | Item | | |
| 15 | Maintenance Manual clause - Upon Practical Completion of the Sub-contract Works, the Sub- contractor shall furnish the Engineer four copies of a Maintenance Manual relating to the installation forming part of all of the Sub- contract Works. | 1 | Item | | |
| | **Sub Total carried to next page** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Sub-Total B/F from Previous Page** | | | | |
| 16 | Hand over clause - The Sub-contract Works shall be considered complete and the Maintenance and Defects Liability Period shall commence only when the Sub-contract Works and supporting services have been tested, commissioned and operated to the satisfaction of the Engineer and officially approved and accepted by the Employer, provided always that the handing over of the Sub-contract Works shall be coincident with the handing over of the Main Contract Works. | 1 | Item | | |
| 17 | Testing and inspection - manufactured plant clause - The Engineer reserves the right to inspect and test or witness of all manufactured plant equipment and materials. The right of the Engineer relating to the inspection, examination and testing of plant during manufacture. Sub-contractor shall give two weeks' notice to the Engineer of his intention to carry out any inspection or tests and the Engineer or his representative shall be entitled to witness such tests and inspections | 1 | Item | | |
| 18 | Initial Maintenance Clause - The sub-contractor shall make routine maintenance once a month during the liability for the Defects Period and shall carry out all necessary adjustments and repairs, cleaning and oiling of moving parts. A monthly report of the inspection and any works done upon the installation shall be supplied to the Engineer. Shall allow in the sub-contract Sum of the initial maintenance, inspection and break-down service | 1 | Item | | |
| 18 | a) Supervision by Engineer and site meetings clause - A competent Project Engineer appointed by the Chief Engineer as his representative shall supervise Contract works. The Project Engineer shall be responsible for issuing all the site instructions in any variations to the works and these shall be delivered through the Contractor with the authority of the Project Manager. Any instructions given verbal shall be confirmed in writing. The Sub Contractor shall in his tender allow for the provision of management meetings and site inspections, as instructed by the Engineer, and also profit and attendance on these funds. The funds shall be expended according to Project Manager's instructions to the Contractor. | 1 | Item | 100,000 | |
| | b) Allow for profit and attendance for item (a) above | 1 | Item | | |
| 19 | Bond Clause - The Sub-contractor must submit with his tender the name of one Surety who must be an established Bank only who will be willing to be bound to the Main Contractor for an amount equal to 5% of the Sub-contract amount. | 1 | Item | | |
| | **Total for Bill No 1- Sub-Contract Preliminaries carried forward to price summary page** | | | | |

**SCHEDULE OF LIGHT FITTINGS**

| Item | Description | No. |
|---|---|---|
| **1.00** | **Type C** 1200mm, 2X36W, 6500K 100Lm/W Slim section, 1P 20 LED batten fitting with yellow light output as PHILIPS or approved equivalent. | |
| **2.00** | **Type A** 200mm dia. Circular Surface Ceiling LED Downlight 13W, 4000K, 115Lm/W, 50000 hrs Lamp Life, Plastic Housing and Polycarbonate Diffuser with Integral Control Gear as PHILIPS or approved equivalent. | |
| **3.00** | **Type G** Standard Surface mounted **600 X 600mm LED** Panel Light, 41W, 100Lm/W, 6500K LED, 50000 hrs Lamp Life, Steel Housing and Aluminum Rim, Polystyrene Diffuser with Integral Control Gear as PHILIPS or approved equivalent. | |
| **4.00** | **Type BH** 50W LED flood light,4500 lumen with aluminium casing. IP65 protection As **PHILIPS** or approved equivalent | |
| | | |

**BILL No.L 1: LOWER GROUND FLOOR**

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:-** | | | | |
| 1.00 | **LIGHTING POINTS AND SWITCHES** | | | | |
| 1.00 | Lighting points wired in 3 x 1.5mm$^2$ PVC/SC CU cables drawn in 20mmØ surface mounted HG/PVC conduits complete with all necessary accessories but excluding switches for:- | | | | |
| | i) One way switching | 38 | No. | | |
| | ii) Two way switching | 3 | No. | | |
| 1.01 | 10A, moulded plastic ivory white switch plates as MK or approved equivalent as follows:- | | | | |
| | i) One gang one way | 3 | No. | | |
| | ii) Two gang one way | 1 | No. | | |
| | iii) One gang two way | 3 | No. | | |
| 1.02 | Lighting fittings complete with lamps of appropriate wattage and colour rendering and fixing materials as follows:- | | | | |
| | **i) Type C** | 35 | No. | | |
| | **ii) Type A** | 3 | No. | | |
| | **iii) Type G** | 3 | No. | | |
| 1.03 | Self-contained single sided EXIT sign with 8W fluorescent lamp for non-maintained emergency lighting for 3 hour duration as Thorn EF X3 or approved equivalent. | 1 | No. | | |
| 2.00 | **POWER POINTS** | | | | |
| 2.01 | Raw power socket outlet power points comprising wiring in 3 x 2.5mm$^2$ PVC/SC CU cables drawn in 25mmØ concealed HG PVC conduits/trunking including all conduit accessories but excluding plates | 16 | No. | | |
| 2.02 | 13A moulded switched socket outlet plates as MK or approved equivalent as follows: | | | | |
| | i) Twin switched | 16 | No. | | |
| | **RAW POWER DISTRIBUTION BOARDS** | | | | |
| 2.03 | 125A, 6-Way, TPN DB surface/flush mounted as EATON or approved equivalent | 1 | No. | | |
| 2.04 | SP Miniature circuit breakers for the distribution boards above | | | | |
| | i) 10A SP MCB | 8 | No. | | |
| | ii) 20A SP MCB | 2 | No. | | |
| | iii) 32A SP MCB | 4 | No. | | |
| | v) TP blanking plates | 4 | No. | | |
| | **SUB-MAINS & FEEDER CABLES** | | | | |
| 2.05 | 16 mm$^2$ 5-C PVC/SWA/PVC copper cable to DB above c/w approriate cable lugs | 60 | Lm | | |
| | i) Cable glands for above cable | 4 | No. | | |
| | **Total carried to** Bill No LG 1 **Collection Page** | | | | |

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| 3.00 | **FIRE ALARM SYSTEM** | | | | |
| 3.01 | Fire Alarm points comprising wiring in 1.5mm$^2$ heat resistant cables drawn in 20mmØ concealed HG PVC conduits | 12 | No. | | |
| 3.02 | Addressable Photoelectric Smoke Detector as Menvier or Approved Equivalent | 10 | No. | | |
| 3.03 | Addressable Rate of Rise Heat Detector as Menvier or Approved equivalent | 0 | No. | | |
| 3.04 | Addressable Manual Fire Alarm 'Break Glass' call points as MENVIER or approved equivalent. | 1 | No. | | |
| 3.05 | Addressable Electronic Fire Alarm sounder complete with Red Flashing beacon as MENVIER or approved equivalent. | 1 | No. | | |
| 3.06 | Television cord outlet points comprising 25mmØ HG PVC conduits complete with T.V co-axial socket outlet as M.K or Approved Equivalent | 1 | No. | | |
| 3.07 | 250x250x75mm recessed galvanised sheet steel draw boxes compete with powder coated cover and all other necessary accessories | 2 | No | | |
| | **TRUNKING** | | | | |
| 3.08 | 250 X 50mm - 3 compartment, gauge 16 sheet Deep Powder coated metal trunking complete with bends, outlet plates and other necessary accessories As Manufactured by Power Technics | 100 | LM | | |
| 3.09 | 2x50mmØ PVC HG conduit linking the Draw Boxes and trunkings | 100 | LM | | |
| 3.10 | 2x50mmØ PVC HG conduit linking the Draw Boxes and trunkings | 100 | LM | | |
| | **Total carried to** Bill No LG1 **Collection Page** | | | | |

**Bill No.LG 1: LOWER GROUND FLOOR COLLECTION PAGE**

| Item | Description | Cost Kshs |
|---|---|---|
| 1 | TOTAL B/F Page LG/1…….. | |
| 2 | TOTAL B/F Page LG/2…….. | |
| 3 | | |
| | **Total for Bill No. 1: C/F to Bills Summary Page** | |

**BILL No. 1: GROUND FLOOR**

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:-** | | | | |
| 1.00 | **LIGHTING POINTS AND SWITCHES** | | | | |
| 1.00 | Lighting points wired in 3 x 1.5mm$^2$ PVC/SC CU cables drawn in 20mmØ surface mounted HG/PVC conduits complete with all necessary accessories but excluding switches for:- | | | | |
| | i) One way switching | 82 | No. | | |
| | ii) Two way switching | 65 | No. | | |
| | iii) Unswitched | 3 | No. | | |
| 1.01 | 10A, moulded plastic ivory white switch plates as MK or approved equivalent as follows:- | | | | |
| | i) One gang one way | 14 | No. | | |
| | ii) Two gang one way | 2 | No. | | |
| | iii) Two gang two way | 4 | No. | | |
| | iv) One gang two way | 9 | No. | | |
| | v) Three gang one way | 1 | No. | | |
| 1.02 | Lighting fittings complete with lamps of appropriate wattage and colour rendering and fixing materials as follows:- | | | | |
| | **i) Type C=2x36w** | 25 | No. | | |
| | **ii) Type A=ROUND** | 61 | No. | | |
| | **iii) Type G=600X600** | 53 | No. | | |
| | **iv) Type BH=OUTDOOR BULK HEAD** | 8 | No. | | |
| 1.03 | Self-contained single sided EXIT sign with 8W fluorescent lamp for non-maintained emergency lighting for 3 hour duration as Thorn EF X3 or approved equivalent. | 3 | No. | | |
| 2.00 | **POWER POINTS** | | | | |
| 2.01 | Raw power socket outlet power points comprising wiring in 3 x 2.5mm$^2$ PVC/SC CU cables drawn in 25mmØ concealed HG PVC conduits/trunking including all conduit accessories but excluding plates | 44 | No. | | |
| 2.02 | 13A moulded switched socket outlet plates as MK or approved equivalent as follows: | | | | |
| | i) Twin switched | 44 | No. | | |
| 2.03 | Cooker unit power points comprising wiring in 3 x 6.0mm$^2$ PVC/SC/CU cables drawn in 32mmØ concealed HG PVC conduits | 1 | No. | | |
| 2.04 | 45A, DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 44 | No. | | |
| 2.05 | Fire alarm control panel power points comprising wiring in 3 x 2.5mm$^2$ PVC/SC CU cables drawn in 25mmØ concealed HG PVC conduits including all conduit accessories but excluding plates | 1 | No. | | |
| 2.06 | 20A, unswitched fused spur DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 1 | No. | | |
| | **Total carried to** Bill No 1 **Collection Page** | | | | |

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| 3.00 | **FIRE ALARM SYSTEM** | | | | |
| 3.01 | Fire Alarm points comprising wiring in 1.5mm$^2$ heat resistant cables drawn in 20mmØ concealed HG PVC conduits | 30 | No. | | |
| 3.02 | Addressable Photoelectric Smoke Detector as Menvier or Approved Equivalent | 15 | No. | | |
| 3.03 | Addressable Rate of Rise Heat Detector as Menvier or Approved equivalent | 1 | No. | | |
| 3.04 | Addressable Manual Fire Alarm 'Break Glass' call points as MENVIER or approved equivalent. | 7 | No. | | |
| 3.05 | Addressable Electronic Fire Alarm sounder complete with Red Flashing beacon as MENVIER or approved equivalent. | 7 | No. | | |
| 3.06 | Television cord outlet points comprising 25mmØ HG PVC conduits complete with T.V co-axial socket outlet as M.K or Approved Equivalent | 5 | No. | | |
| 3.07 | 250x250x75mm recessed galvanised sheet steel draw boxes compete with powder coated cover and all other necessary accessories | 8 | No | | |
| | **TRUNKING** | | | | |
| 3.08 | 250 X 50mm - 3 compartment, gauge 16 sheet Deep Powder coated metal trunking complete with bends, outlet plates and other necessary accessories As Manufactured by Power Technics | 150 | LM | | |
| 3.09 | 2x50mmØ PVC HG conduit linking the Draw Boxes and trunkings | 100 | LM | | |
| | **Total carried to** Bill No 1 **Collection Page** | | | | |

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| 4.00 | **ABLUTION BLOCK & GATE HOUSE** | | | | |
| 4.01 | Lighting points wired in 3 x 1.5mm$^2$ PVC/SC CU cables drawn in 20mmØ surface mounted HG/PVC conduits complete with all necessary accessories but excluding switches for:- | | | | |
| | i) One way switching | 10 | No. | | |
| 4.02 | 10A, moulded plastic ivory white switch plates as MK or approved equivalent as follows:- | | | | |
| | i) One gang one way | 7 | No. | | |
| 4.03 | Lighting fittings complete with lamps of appropriate wattage and colour rendering and fixing materials as follows:- | | | | |
| | **i) Type C** | 10 | No. | | |
| | **POWER POINTS** | | | | |
| 4.04 | Raw power socket outlet power points comprising wiring in 3 x 2.5mm$^2$ PVC/SC CU cables drawn in 25mmØ concealed HG PVC conduits/trunking including all conduit accessories but excluding plates | 2 | No. | | |
| 4.05 | 13A moulded switched socket outlet plates as MK or approved equivalent as follows: | | | | |
| | i) Twin switched | 2 | No. | | |
| 4.06 | 100A, 4-Way, consumer unit surface/flush mounted as EATON or approved equivalent | 2 | No. | | |
| 4.07 | 4 mm$^2$ 3-C PVC/SWA/PVC copper cable to consumer unit above c/w approriate cable lugs | 100 | Lm | | |
| | i) Cable glands for above cable | 6 | No. | | |
| 4.08 | SP Miniature circuit breakers for the consumer units above | | | | |
| | i) 10A SP MCB | 2 | No. | | |
| | iii) 32A SP MCB | 2 | No. | | |
| | v) TP blanking plates | 2 | No. | | |
| | **Total carried to** Bill No 1 **Collection Page** | | | | |

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| 5 | **EXTERNAL AREA SOLAR LIGHTING** | | | | |
| 5.01 | 6 Metres, Galvanised steel streetlighting posts for solar lighting including excavations and concrete base of 600mm diameter x 850mm deep and all other necessary accesories. The post should incorporate and be integrated with the following to Engineers approval | 20 | No | | |
| | a) - An all in one 50watts high efficiency LED street light incorporating a monocrystalline solar panel with a Lithium-ion phosphate battery as described in particular specifications. | 20 | No | | |
| | **SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:-** | | | | |
| | **RAW POWER DISTRIBUTION BOARDS** | | | | |
| 5.02 | 125A, 6-Way, TPN DB surface/flush mounted as EATON or approved equivalent | 2 | No. | | |
| 5.03 | SP Miniature circuit breakers for the distribution boards above | | | | |
| | i) 10A SP MCB | 8 | No. | | |
| | ii) 20A SP MCB | 10 | No. | | |
| | iii) 32A SP MCB | 5 | No. | | |
| | iv) 45A SP MCB | 1 | No. | | |
| | v) TP blanking plates | 12 | No. | | |
| | **SUB-MAINS & FEEDER CABLES** | | | | |
| 5.04 | 16 $mm^2$ 5-C PVC/SWA/PVC copper cable to DB above c/w approriate cable lugs | 60 | Lm | | |
| | i) Cable glands for above cable | 4 | No. | | |
| 5.05 | 1x100mmØ PVC HG conduit linking the service duct and consumer unit for the item 1.30 above. | 60 | LM | | |
| 5.06 | 300x300x75mm recessed galvanised sheet steel draw boxes compete with powder coated cover and all other necessary accessories | 2 | No. | | |
| 5.07 | Allow for labelling the distribution boards under this section including all the incoming and outgoing circuits as per the specifications | 1 | Item | | |
| | **Total carried to** Bill No1 **Collection Page** | | | | |

**Bill No. 1: GROUND FLOOR COLLECTION PAGE**

| Item | Description | Cost Kshs |
|---|---|---|
| 1 | TOTAL B/F Page G/3…….. | |
| 2 | TOTAL B/F Page G/4…….. | |
| 3 | TOTAL B/F Page G/5…….. | |
| 3 | TOTAL B/F Page G/6…….. | |
| | **Total for Bill No. 1: C/F to Bills Summary Page** | |

**BILL No. 2:FIRST FLOOR**

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:-** | | | | |
| | **LIGHTING POINTS AND SWITCHES** | | | | |
| 2.00 | Lighting points wired in 3 x 1.5mm$^2$ PVC/SC CU cables drawn in 20mmØ surface mounted HG/PVC conduits complete with all necessary accessories but excluding switches for:- | | | | |
| | i) One way switching | 84 | No. | | |
| | ii) Two way switching | 28 | No. | | |
| | iii) Two way with intermediate switching | 2 | No. | | |
| | iv) Unswitched | 2 | No. | | |
| 2.01 | 10A, moulded plastic ivory white switch plates as MK or approved equivalent as follows:- | | | | |
| | i) One gang one way | 17 | No. | | |
| | ii) Two gang one way | 2 | No. | | |
| | v) Three gang one way | 1 | No. | | |
| | iv) One gang intermediate | 2 | No. | | |
| 2.02 | Lighting fittings complete with lamps of appropriate wattage and colour rendering and fixing materials as follows:- | | | | |
| | **i) Type C=2X36** | 5 | No. | | |
| | **ii) Type D=A** | 51 | No. | | |
| | **iii) Type G=600X600** | 60 | No. | | |
| 2.03 | Self-contained single sided EXIT sign with 8W fluorescent lamp for non-maintained emergency lighting for 3 hour duration as Thorn EF X3 or approved equivalent. | 6 | No. | | |
| | **Total carried to** Bill No 2 **Collection Page** | | | | |

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **POWER POINTS** | | | | |
| 2.04 | Raw power socket outlet power points comprising wiring in 3 x 2.5mm$^2$ PVC/SC CU cables drawn in 25mmØ concealed HG PVC conduits/trunking including all conduit accessories but excluding plates | 45 | No. | 2,800 | 126,000 |
| 2.05 | 13A moulded switched Twin socket outlet plates as MK or approved equivalent as follows:<br>i) Twin switched | 45 | No. | | |
| 2.06 | Hand drier power points comprising wiring in 3 x 4mm$^2$ PVC/SC/CU cables drawn in 25mmØ HG/PVC conduits complete with all necessary accessories | 2 | No. | | |
| 2.07 | 20A, DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 2 | No. | | |
| 2.08 | Cooker unit power points comprising wiring in 3 x 6.0mm$^2$ PVC/SC/CU cables drawn in 32mmØ concealed HG PVC conduits | 1 | No. | | |
| 2.09 | 45A, DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 1 | No. | | |
| 2.10 | Air Conditioning Unit power points comprising wiring in 3 x 4mm2 PVC/SC CU cables drawn in 32mmØ concealed HG PVC conduits | 2 | No. | | |
| 2.11 | 20A DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 2 | No. | | |
| | **Total carried to** Bill No 2 **Collection Page** | | | | |

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **FIRE ALARM SYSTEM** | | | | |
| 2.12 | Fire Alarm points comprising wiring in 1.5mm$^2$ heat resistant cables drawn in 20mmØ concealed HG PVC conduits | 29 | No. | | |
| 2.13 | Addressable Photoelectric Smoke Detector as Menvier or Approved Equivalent | 20 | No. | | |
| 2.14 | Addressable Rate of Rise Heat Detector as Menvier or Approved equivalent | 1 | No. | | |
| 2.15 | Addressable Manual Fire Alarm 'Break Glass' call points as MENVIER or approved equivalent. | 4 | No. | | |
| 2.16 | Addressable Electronic Fire Alarm sounder complete with Red Flashing beacon as MENVIER or approved equivalent. | 4 | No. | | |
| 2.17 | Microprocessor based 2-Loop Addressable Fire Alarm control Panel as Menvier or Approved Equivalent | 1 | No. | | |
| | **TRUNKING** | | | | |
| 2.18 | 200 X 50mm - 2 compartment, gauge 16 sheet Deep Powder coated metal trunking complete with bends, outlet plates and other necessary accessories As Manufactured by Power Technics | 150 | LM | | |
| 2.19 | 250x250x75mm recessed galvanised sheet steel draw boxes compete with powder coated cover and all other necessary accessories | 8 | No | | |
| 2.20 | 2x32mmØ PVC HG conduit linking the Draw Boxes | 200 | LM | | |
| | **Total carried to** Bill No 2 **Collection Page** | | | | |

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **POWER DISTRIBUTION** | | | | |
| | **Supply, Install, Test and Commission the following Distribution Boards as Eaton or approved equivalent** | | | | |
| | **RAW POWER DISTRIBUTION BOARDS** | | | | |
| 2.21 | 125A, 6-Way, TPN DB surface/flush mounted as EATON or approved equivalent | 2 | No. | | |
| 2.22 | SP Miniature circuit breakers for the distribution boards above | | | | |
| | i) 10A SP MCB | 8 | No. | | |
| | ii) 20A SP MCB | 11 | No. | | |
| | iii) 32A SP MCB | 6 | No. | | |
| | iv) 45A SP MCB | 1 | No. | | |
| | v) TP blanking plates | 10 | No. | | |
| | **SUB-MAINS & FEEDER CABLES** | | | | |
| 2.23 | 16 $mm^2$ 4-C PVC/SWA/PVC copper cable to DB above c/w approriate cable lugs | 80 | Lm | | |
| | i) Cable glands for above cable | 4 | No. | | |
| 2.24 | 2x50mmØ PVC HG conduit linking the service duct and DB for the item 2.28 above. | 80 | LM | | |
| 2.25 | 300x300x75mm recessed galvanised sheet steel draw boxes compete with powder coated cover and all other necessary accessories | 2 | No. | | |
| 2.26 | Allow for labelling the distribution boards under this section including all the incoming and outgoing circuits as per the specifications | 1 | Item | | |
| | **Stationeries** | | | | |
| 2.27 | Photocopying Papers size A4 80g/cm2 white | 10 | Ream | | |
| 2.28 | Photocopying Papers size A3 80g/cm2 white | 1 | Ream | | |
| 2.29 | Letterhead quality paper as CONQUERER or equal and approved cream 80g/cm3 | 3 | Ream | | |
| 2.30 | HP Omen 15 laptop, intel core i7-10750H,10th Gen 32GB RAM 512GB SSD 6GB Nvidia GeForce RTX 2060 15.6" FHD Display | 2 | No. | | |
| 2.31 | TK-8735 toners for Kyocera heavy duty printer as; | | | | |
| | i) Black | 2 | No. | | |
| | **Total carried to** Bill No 2 **Collection Page** | | | | |

**Bill No. 2: FIRST FLOOR COLLECTION PAGE**

| Item | Description | Cost Kshs |
|---|---|---|
| 1 | TOTAL B/F Page G/8…….. | |
| 2 | TOTAL B/F Page G/9…….. | |
| 3 | TOTAL B/F Page G/10…….. | |
| 4 | TOTAL B/F Page G/11…….. | |
| | **Total for Bill No. 2: C/F to Bills Summary Page** | |

**BILL No. 3: SECOND FLOOR**

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:-** | | | | |
| | **LIGHTING POINTS AND SWITCHES** | | | | |
| 3.00 | Lighting points wired in 3 x 1.5mm$^2$ PVC/SC CU cables drawn in 20mmØ surface mounted HG/PVC conduits complete with all necessary accessories but excluding switches for:- | | | | |
| | i) One way switching | 58 | No. | | |
| | ii) Two way switching | 41 | No. | | |
| | iii) Two way with intermediate switching | 2 | No. | | |
| | iv) Unswitched | 6 | No. | | |
| | | 107 | | | |
| 3.01 | 10A, moulded plastic ivory white switch plates as MK or approved equivalent as follows:- | | | | |
| | i) One gang one way | 17 | No. | | |
| | ii) Two gang one way | 7 | No. | | |
| 3.02 | v) Three gang one way | 1 | | | |
| | **i) Type C=2X36** | 3 | No. | | |
| | **i) Type C=A** | 39 | No. | | |
| | **iii) Type G=600X600** | 59 | No. | | |
| 3.03 | Self-contained single sided EXIT sign with 8W fluorescent lamp for non-maintained emergency lighting for 3 hour duration as Thorn EF X3 or approved equivalent. | 6 | No. | | |
| | **Total carried to** Bill No 3 **Collection Page** | | | | |

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **POWER POINTS** | | | | |
| 3.04 | Raw power socket outlet power points comprising wiring in 3 x 2.5mm$^2$ PVC/SC CU cables drawn in 25mmØ concealed HG PVC conduits/trunking including all conduit accessories but excluding plates | 40 | No. | | |
| 3.05 | 13A moulded switched socket outlet plates as MK or approved equivalent as follows:<br>i) Twin switched | 40 | No. | | |
| 3.06 | Hand drier power points comprising wiring in 3 x 4mm$^2$ PVC/SC/CU cables drawn in 25mmØ HG/PVC conduits complete with all necessary accessories | 2 | No. | | |
| 3.07 | 20A, DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 2 | No. | | |
| 3.08 | Cooker unit power points comprising wiring in 3 x 6.0mm$^2$ PVC/SC/CU cables drawn in 32mmØ HG/PVC conduits complete with all necessary accessories | 1 | No. | | |
| 3.09 | 45A, DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 1 | No. | | |
| 3.10 | Kitchen/Bathroom/Toilet extract power points comprising wiring in 3 x 2.5mm$^2$ PVC/SC/CU cables drawn in 25mmØ concealed HG PVC conduits | 3 | No. | | |
| 3.11 | 20A, DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 3 | No. | | |
| 3.12 | Air Conditioning Unit power points comprising wiring in 3 x 4mm2 PVC/SC CU cables drawn in 32mmØ concealed HG PVC conduits | 6 | No. | | |
| 3.13 | 20A DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 6 | No. | | |
| 3.14 | Undersink instanteneous water heater power points comprising wiring in 3 x 4mm$^2$ PVC/SC/CU cables drawn in 25mmØ concealed HG PVC conduits | 1 | No. | | |
| 3.15 | 20A DP control switch marked 'Water Heater' with neon light and cord outlet for item above as MK or approved equivalent | 1 | No. | | |
| | **Total carried to** Bill No 3 **Collection Page** | | | | |

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| 3.16 | Toilet Urinal sensor power points comprising wiring in 3 x 2.5mm$^2$ PVC/SC/CU cables drawn in 25mmØ concealed HG PVC conduits | 1 | No. | | |
| 3.17 | 20A DP control switch with neon light and cord outlet for item above as MK or approved equivalent | 1 | No. | | |
| | **FIRE ALARM SYSTEM** | | | | |
| 3.18 | Fire Alarm points comprising wiring in 1.5mm$^2$ heat resistant cables drawn in 20mmØ concealed HG PVC conduits | 27 | No. | | |
| 3.19 | Addressable Photoelectric Smoke Detector as Menvier or Approved Equivalent | 18 | No. | | |
| 3.20 | Addressable Rate of Rise Heat Detector as Menvier or Approved equivalent | 1 | No. | | |
| 3.21 | Addressable Manual Fire Alarm 'Break Glass' call points as MENVIER or approved equivalent. | 4 | No. | | |
| 3.22 | Addressable Electronic Fire Alarm sounder complete with Red Flashing beacon as MENVIER or approved equivalent. | 4 | No. | | |
| | **TRUNKING** | | | | |
| 3.23 | 200 X 50mm - 2 compartment, gauge 16 sheet Deep Powder coated metal trunking complete with bends, outlet plates and other necessary accessories As Manufactured by Power Technics | 170 | LM | | |
| 3.24 | Television cord outlet points comprising 25mmØ HG PVC conduits complete with T.V co-axial socket outlet as M.K or Approved Equivalent | 3 | No. | | |
| 3.25 | 250x250x75mm recessed galvanised sheet steel draw boxes compete with powder coated cover and all other necessary accessories | 10 | No | | |
| | **Total carried to** Bill No 3 **Collection Page** | | | | |

| | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **POWER DISTRIBUTION** | | | | |
| | **Supply, Install, Test and Commission the following Distribution Boards as Eaton or approved equivalent** | | | | |
| | **RAW POWER DISTRIBUTION BOARDS** | | | | |
| 3.26 | 125A, 6-Way, TPN DB surface/flush mounted as EATON or approved equivalent | 2 | No. | | |
| 3.27 | SP Miniature circuit breakers for the distribution boards above | | | | |
| | i) 10A SP MCB | 7 | No. | | |
| | ii) 20A SP MCB | 13 | No. | | |
| | iii) 32A SP MCB | 5 | No. | | |
| | iv) 45A SP MCB | 1 | No. | | |
| | v) TP blanking plates | 10 | No. | | |
| | **SUB-MAINS & FEEDER CABLES** | | | | |
| 3.28 | 16 $mm^2$ 4-C PVC/SWA/PVC copper cable to DB above c/w approriate cable lugs | 80 | Lm | | |
| | i) Cable glands for above cable | 4 | No. | | |
| 3.29 | 2x32mmØ PVC HG conduit linking the service duct and DB for the item 3.29 above. | 20 | LM | | |
| 3.30 | 300x300x75mm recessed galvanised sheet steel draw boxes compete with powder coated cover and all other necessary accessories | 2 | No. | | |
| 3.31 | Allow for labelling the distribution boards under this section including all the incoming and outgoing circuits as per the specifications | 1 | Item | | |
| | **Total carried to** Bill No 3 **Collection Page** | | | | |

**Bill No. 3: SECOND FLOOR COLLECTION PAGE**

| Item | Description | Cost Kshs |
|---|---|---|
| 1 | TOTAL B/F Page G/13…….. | |
| 2 | TOTAL B/F Page G/14…….. | |
| 3 | TOTAL B/F Page G/15…….. | |
| 4 | TOTAL B/F Page G/16…….. | |
| | **Total for Bill No.3: C/F to Bills Summary Page** | |

**BILL No. 4: LV BOARD AND POWER DISTRIBUTION**

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **CONTROL SWITCH GEAR AND SUBMAINS CABLING.** | | | | |
| | **POWER DISTRIBUTION PANEL, LV BOARD:** | | | | |
| 4.00 | Free standing power distribution panel board for floor mounting with both rear and front access panels, cable manager compartments, metal clad 14SWG, 415 mains L.V Switch Board manufuctured to BS EN60 439-1, form 2b seperation and fully wired for one incoming MCCB and 14No. TP outgoing feeders as described here below with the following and all the other necessary accessories: | 1 | Item | | |
| | a) | | | | |
| | i) 300A TPN busbars | | | | |
| | ii) 250 Amps 4 pole Automatic Transfer Switching (ATS) system as Merlin Gerin "BA" or equal and approved. | | | | |
| | iii) Voltmeter/ Ammeters meters complete with associated current transformers; | | | | |
| | iv) space 1no kpl meter and 1no Energy meter | | | | |
| | v) All necessary interconnecting cables; | | | | |
| 4.01 | **b) Incomer Adjustable TPN MCCB** | | | | |
| | i) 250A TP MCCB main Incomer, adjustable and with shunt trip coil as Crabtree or Equal and approved for above board | 1 | No. | | |
| 4.02 | **c) Outgoing MCCBs and MCBs as follows** | | | | |
| | i) 32A TPN MCB | 4 | No. | | |
| | ii) 63A TPN MCB | 6 | No. | | |
| | iii) 20A SPN MCB | 2 | No. | | |
| | iv) Spare spaces | 2 | No. | | |
| 4.03 | Allow for labelling the switch board under this section including all the incoming and outgoing circuits as per the specifications to Engineer's approval | 1 | Item | | |
| 4.04 | Firemans switch including interwiring with the main incommer MCCB | 1 | Item | | |
| 4.05 | Earthing arrangements for the LV switchboard comprising 25x3mm copper tape lead, 1800mm long x 15mm diameter copper earth electrode as Furse or approved equivalent c/w driving stud and tape to rod clamp, 300mm x 300mm x 300mm deep concrete inspection earth pit with removable waterproof cover, 900mm x 900mm copper earth mat, soil conditioning agents comprising (marconite and bentonite) charcoal necessary to achieve earthing value below 10-Ohms and all other necessary accessories as per the requirements of the technical specifications to Engineer's approval | 1 | Item | | |
| | CABLES | | | | |
| 4.06 | a)120 $mm^2$ 4-C PVC/SWA/PVC copper cable from generator to board above c/w approriate cable lugs and glands. | 50 | Lm | | |
| | b)10 $mm^2$ 4-C PVC/SWA/PVC copper cable to lift shaft c/w appropriate cable lugs and glands. | 60 | Lm | | |
| | c)10 $mm^2$ 4-C PVC/SWA/PVC copper cable to gate house c/w approriate cable lugs and glands. | 30 | Lm | | |
| ` | d)10 $mm^2$ 4-C PVC/SWA/PVC copper cable to borehole c/w approriate cable lugs and glands. | 30 | Lm | | |
| ` | e)4 $mm^2$ 2-C PVC/SWA/PVC copper cable to borehole c/w approriate cable lugs and glands. | 30 | Lm | | |
| 4.07 | Allow for trenching to a depth of 750mm , back filling of trenches, and laying of "DANGER " cable tiling (for cable running along non-concrete areas), reinstatement and making of good of ground as directed by the Engineer on site | 40 | Lm | | |
| | **Total for Bill No. 4 C/F to Bills Summary Page** | | | | |

**BILL No.5: LIGHTNING PROTECTION**

| Item | Description | Qty | Unit | Rate Kshs | Cost Kshs |
|---|---|---|---|---|---|
| | **Supply, install, test and commission the following:** | | | | |
| | **AIR TERMINATION** | | | | |
| 5.00 | Supply and lay along the ridge cap 25mm X 3mm thick bare copper tape as Furse or approved equivalent | 90 | M | | |
| 5.01 | State Holdfast for the above tape as Furse or approved equivalent | 90 | No. | | |
| 5.02 | Air termination spike comprising 2000mm by 15mm diameter copper rod, Copper multiple point and Copper ridge saddle as Furse or approved equivalent | 6 | Item | | |
| | **DOWNWARD CONDUCTOR** | | | | |
| 5.03 | Downward conductor comprising 25mm x 3mm thick bare copper tape as item 5.00 | 85 | M | | |
| 5.04 | Copper Oblong test clamp as Furse or approved equivalent | 5 | No. | | |
| 5.05 | Steel conduits 32 mm diameter conduit. | 25 | M | | |
| 5.06 | Saddles for the above item 5.07 | 10 | No. | | |
| | **EARTHING** | | | | |
| 5.07 | Earth inspection concrete chamber 300mm x 300mm x 300mm with an air tight inspection cover to approval. | 5 | No. | | |
| 5.08 | 16 mm nominal diameter by 1500mm threaded copper bond earth rod driven to ground as Furse or approved equivalent | 5 | No. | | |
| 5.09 | Driving stud for the above item as Furse or approved equivalent | 5 | No. | | |
| 5.10 | Earth electrode rod - to - downward conductor copper tape clamps as Furse or approved equivalent | 5 | No. | | |
| 5.11 | Allow for testing and commissioning for entire lightning protection and grounding system to Engineer's approval | 1 | Item | | |
| | **Total for Bill No. 5 C/F to Bills summary Page** | | | | |

**BILL NO.6: SCHEDULE 1- 150KVA PRIME RATED GENERATOR SET**

| ITEM | DESCRIPTION | QTY | UNIT | RATE | KSHS |
|---|---|---|---|---|---|
| 1.01 | Supply, deliver to site, install, test and commission a prime rated 150KVA (165KVA Standby) 3 phase, 415V, 50Hz diesel generating set with a continuous power factor of 0.8 lagging. The generator set is to be complete with an integral base/belly daily service fuel tank with an operational running capacity of 12 hours at 75% full load, microprocessor-based control unit and LED display panel, all in an acoustic (sound attenuated) and weather protective enclosure as detailed in the particular specifications **as cummins C150 D5 or approved equivalent (attach brochures and data sheets to support compliance)** | 1 | No. | | |
| 1.02 | Supply, deliver to site and install a steel exhaust pipe of not less than 14 SWG and of adequate diameter running from the generating set to the outside of the generator house complete with heavy duty silencer | 10 | LM | | |
| 1.03 | Connect the exhaust pipe above in item 1.02 using steel pipes of adequate diameter, and flexible piping off engine exhaust manifold complete with heavy duty silencer | 1 | Item | | |
| | Complete earthing of generating set to electrical engineer's approval | 1 | Item | | |
| 1.04 | Supply, deliver to site and install, to the approval of the project manager, and connect to the daily service base/belly fuel tank, an auxiliary fuel tank (as specified in particular specifications page G-15) with level indicator and with an operational running capacity of 36 hours.(about 1500 liters) The tank is to be complete with stand and all interconnecting G.I pipe work. All to be painted with weather protective paint | item | 1 | | |
| 1.05 | Supply, deliver to site and install a fuel transfer pump for the item above as described in particular specifications. | item | 1 | | |
| 1.06 | Allow for training of client's staff on the operation and maintenance of the generating set. | 1 | Item | | |
| 1.07 | Supply and deliver to site generator diesel with a capacity to run the generator for 24hrs | 600 | ltrs | | |
| 1.08 | Allow for bench test for full load test at the supplier's workshop | 1 | Item | | |
| | **SUB-TOTAL FOR GENERATING SET C/F TO SUMMARY PAGE** | | | | |

**BILL NO.6: SCHEDULE 2- AMF CONTROL PANEL 1**

| ITEM | DESCRIPTION | QTY | UNIT | RATE | KSHS |
|---|---|---|---|---|---|
| | **Supply, deliver to site, install, test and commission the following:** | | | | |
| 2.1 | An electrical control panel complete with suitable-rated incoming MCCBs and contactors for automatic change over operation and complete with all other control accessories as fully described the particular specifications | 1 | No. | | |
| 2.2 | 250 A rated manual by-pass switch with clearly labeled **NORMAL-OFF-BYPASS** positions, **and shall such be wired that when the switch is on either OFF or BYPASS position, the generator shall receive no signal to start** | 1 | No. | | |
| 2.3 | 240V AC/12V DC mains power supply trickle battery charger as specified in the specifications. The trickle charger shall charge the battery when the set is on **IDLE mode**, otherwise when the set is **RUNNING**, the battery shall be charged by the **generator charger**. Wiring shall be done such that the two chargers shall not operate at the same time. | 1 | No. | | |
| 2.4 | 12 volts battery as specified in the particular specifications | 1 | No. | | |
| 2.5 | Amoured cables complete with glands and pvc sleeves: | | | | |
| | (a) 2.5mm$^2$, 4 core, PVC/SWA/PVC copper cable | 45 | LM | | |
| | (a) 120mm$^2$, 4 core, PVC/SWA/PVC copper cable for connecting the generator to LV board | 45 | LM | | |
| 2.6 | Interwire the control panel with the Mains L.V board | 1 | Item | | |
| | **SUB-TOTAL FOR AMF CONTROL PANEL C/F TO PRICE SUMMARY PAGE** | | | | |

**BILL NO 6. : SCHEDULE 3- RECOMMENDED SPARE PARTS AND LUBRICATORS**

| ITEM | DESCRIPTION | QTY | UNIT | RATE | KSHS |
|---|---|---|---|---|---|
| | **For the supply to the site of the following spare parts and lubricators:** | | | | |
| 3.01 | Oil Filters | 4 | No. | | |
| 3.02 | Air Filters | 4 | No. | | |
| 3.03 | Fuel Filters | 4 | No. | | |
| 3.04 | Set of Fan belts to suit the set | 1 | No. | | |
| 3.05 | 10 litres container of sump oil of grade.....* | 1 | No. | | |
| 3.06 | 2 kilogram grease in a tin of grade .....* | 1 | No. | | |
| 3.07 | 10 litre plastic container of distilled water | 1 | No. | | |
| 3.08 | 20 litre of engine oil in a tin of grade | 1 | No. | | |
| | Any other spare parts recommended by Tenderer ** | | | | |
| | *The tenderer to fill in the Grade quality to be supplied | | | | |
| | **SUB-TOTAL FOR SPARE PARTS C/F TO PRICE SUMMARY PAGE** | | | | |

**BILL NO: 6:SCHEDULE 4 -TOOLS TO BE SUPPLIED WITH THE SET**

| ITEM | DESCRIPTION | UNIT | QTY | RATE | KSHS |
|---|---|---|---|---|---|
| | **For the supply to site of the following tools:** | | | | |
| 4.1 | Metal tool box with lock and two keys | No. | 1 | | |
| 4.2 | Set of 8 No. Chrome vanadium ring spanners in sizes to suit the set | No. | 1 | | |
| 4.3 | Set of 3 screwdrivers, 75mm, 200mm and 300mm plus one 200mm Philips type | No. | 1 | | |
| 4.4 | - ditto -but open ended spanners | No. | 1 | | |
| 4.5 | Set of feeler gauges | No. | 1 | | |
| 4.6 | Grease gun to suit greasing points | No. | 1 | | |
| 4.7 | Oil can, trigger type | No. | 1 | | |
| 4.8 | Any other special tools which the tenderer recommends should be purchased as an optional:*<br><br>**NOTE*** Tenderer should give detail and prices of item 4.8 but the price not to be included in total carried forward. | | | | |
| **SUB-TOTAL FOR TOOLS C/F TO PRICE SUMMARY PAGE** | | | | | |

**150KVA SUMMARY PAGE**

| Item | Description | Amount (Kshs) |
|---|---|---|
| 1.00 | Sub-Total for Bill No.2: Schedule 1 - Generating Set | |
| 2.00 | Sub-Total for Bill No.2: Schedule 2 - AMF Panel | |
| 3.00 | Sub-Total for Bill No.2: Schedule 3 - Recommended Spare Parts and Lubricators | |
| 4.00 | Sub-Total for Bill No.2: Schedule 4 - Tools to be Supplied with the Set | |
| | **Total for Bill No.6: C/F to Bills Summary Page** | |

**BILL NO.7**

**SCHEDULE 1- 2No. PASSENGER LIFTS**

| ITEM | DESCRIPTION | QTY | UNIT | RATE | KSHS |
|---|---|---|---|---|---|
| 1.01 | ***Supply,install, test and commission the following:*** ***Two No., 13 persons ,1000kg load capacity passenger lift unit with minimum features and capabilities as described in section F (general and particular specifications).of the tender documents.The first lift to have 3stops and second one 4 stops)*** | 2 | No. | | |
| 1.02 | Allow for all the Builders work associated with the installation of the 2No. Lifts as described in SECTION F pages F1 and F2 of the specifications and Making good all disturbed areas including the lift lobbies. | 1 | Item | | |
| 1.03 | Allow for any associated electrical works including provision of shaft lighting,fire man's switch,power supply and surge protection to meet specifications | 1 | Item | | |
| 1.04 | Price for the initial statutory inspection of the 2No.new lift on commissioning and thereafter two times during the12 months defects liability period for whole period as described on page F/4 clause 14.0 | 1 | item | | |
| 1.05 | Price for 4 sets of operation and maintenance manuals as described in the specifications. | 1 | item | | |
| 1.06 | Price for 2 sets of shop/record drawing as described in the specifications. | 1 | Item | | |
| 1.07 | Price for 1 sets of the EN81-20:2022 and EN81-50:2014 | 1 | Item | | |
| 1.08 | Allow for full load test with weights before commissioning | 1 | Item | | |
| | **SUB-TOTAL FOR 2nO. LIFTS C/F TO NEXT PAGE** | | | | **0** |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | KSHS |
|---|---|---|---|---|---|
| | ***Sub total brought forward from page G/1*** | | | | |
| 1.08 | Price for the **travelling cable** for interfacing fire alarm system, C.C.T.V and Audio system to be installed by others. Include high quality speakers connected to the cable and installed in the lift car to engineer's approval. | 2 | item | | |
| 1.09 | Allow for connection of a telephone extension from the premises EPABX with the telephone instrument in the lift car all wiring and accessories included. | 2 | item | | |
| 1.10 | Provide for lift remote monitoring and connection to the facility's Building management system. | 2 | item | | |
| 1.11 | Price for registration of the lifts by the Ministry of Labour (see clause 18 of section F). | 2 | item | | |
| | **Total for Bill No.7: 2NO LIFTS C/F to Bills Summary Page** | | | | |

**SCHEDULE 2 - PROVISIONAL SUMS**

| ITEM | DESCRIPTION | QTY | UNIT | RATE | KSHS |
|---|---|---|---|---|---|
| 2.01 | Allow for overseas factory inspection by 2No. Engineers from state department of Public Works, and 1No. Employer's representative as described in clause 12.0 page F/4 of Section F | 1 | item | 2,700,000 | 2,700,000 |
| 2.02 | Allow for profit, attendance on item 2.1 above.....% | 1 | item | | |
| 2.03 | Contingency sum to be used at the discretion of the PM | 1 | item | 800,000 | 800,000 |
| | **SUB-TOTAL FOR PROVISIONAL SUMS C/F TO PRICE** | | | | |

**PRICE SUMMARY PAGE FOR 2No.LIFTS**

| Item | Description | Amount (Kshs) |
|---|---|---|
| 1.00 | Sub-Total for Schedule 1 - 2No. Passenger lifts | |
| 2.00 | Sub-Total for Schedule 2 - Provisional Sums | |
| 3.00 | Allow for training of 2No. technicians as described in Clause 11-page F/4 of Section F. | |
| **GRAND TOTAL C/F TO GRAND SUMMARY PAGE** | | |

**BILL NO.8**

**SCHEDULE 1- BOREHOLE SOLAR SYSTEM**

| ITEM | DESCRIPTION | QTY | UNIT | RATE | KSHS |
|---|---|---|---|---|---|
| | ***Supply,install, test and commission the following:*** | | | | |
| 1.01 | 545 Watts, 24V,monocrystalline photovoltaic solar paneLs as per specifications. | 16 | No. | | |
| 1.02 | PV disconect switch | 1 | No. | | |
| 1.03 | 6mm sq ,1 core solar PV cable with all acessories | 150 | M | | |
| 1.04 | A 6KW Solar pumping three phase Hybrid inverter that allows for hybrid connectiont with AC mains (KPLC or Genset) and solar PV modules output as priority as Sunverter SV3 or equivalent. | 1 | item | | |
| 1.05 | A Weather proof and vandal proof inverter enclosure suitable for housing the inverter and the control panel. | 1 | item | | |
| 1.06 | A lightning arrestor kit comprising of a spike,6mm sq copper earth cable (approximately 20M),1500mm earth rod and clamp complete with a manhole and cover. | 1 | Item | | |
| 1.07 | Float switch cabling to overhead tank from the control panel. | 1 | Item | | |
| 1.08 | A Control panel with modules to provide full motor protection functions,water level detecting,overflow and idle running prevention and remote monitoring capabilities. | 1 | Item | | |
| | **SUB-TOTAL FOR 2nO. BOREHOLE SOLAR C/F TO NEXT** | | | | |

| ITEM | DESCRIPTION | QTY | UNIT | RATE | KSHS |
|---|---|---|---|---|---|
| | ***Sub total brought forward from page G/1*** | | | | |
| 1.08 | Price for 2 sets of shop/record drawings. | 1 | item | | |
| 1.09 | Contingency sum to be used at the discretion of the PM | 1 | item | 500,000 | 500,000 |
| | **Total for Bill No.11: BOREHOLE SOLAR C/F to Bills Summary Page** | | | | |

| | BILLS SUMMARY PAGE | Cost Kshs |
|---|---|---|
| 1 | TOTAL FOR Preliminaries…… | |
| 2 | TOTAL FOR BIIL No.L1 B/F Page LG/3…… | |
| 3 | TOTAL FOR BIIL No. 1 B/F Page G/7…… | |
| 4 | TOTAL FOR BIIL No. 2 B/F Page G/12…….. | |
| 5 | TOTAL FOR BIIL No. 3 B/F Page G/17…… | |
| 6 | TOTAL FOR BIIL No. 4 B/F Page G/18…… | |
| 7 | TOTAL FOR BIIL No. 5 B/F Page G/19…… | |
| | | |
| | | |
| | | |
| 8 | TOTAL FOR BIIL No. B/F:GENERATOR Page G/31…… | |
| 9 | TOTAL FOR BIIL No. 7 B/F: 2NO LIFTS Page G/4…… | |
| 10 | TOTAL FOR BIIL No. 8 B/F: BORE HOLE SOLAR Page BH/2…… | |
| | | |
| 11 | TOTAL FOR ELECTRICAL WORKS C/F TO PRICE SUMMARY PAGE | |

GRAND SUMMARY FOR ELECTRICALS

**PROVISIONAL SUMS**

| Item | Description | Cost Kshs |
|---|---|---|
| **A.** | Allow a Provisional Sum of Kshs. One Million Five Hundred Thousand (1,500,000.00) only contingency to be used at the discreation of the Project Engineer | **1,500,000** |
| **B** | Allow a Provisional Sum of Kshs. Two Hundred Thousand (200,000.00) only as Training for State Department for Public Works Electrical Engineers. | **200,000** |
| **C** | Allow a Provisional Sum of Kshs. Eight Hundred Thousand (800,000.00) only for Kenya Power (KPLC) Capital cost / utility power connection. | **800,000** |
| | **Sub total for PROVISIONAL Sums C/F to price Summary page** | **2,500,000** |

**SUMMARY PAGE**

| Item | Description | Cost Kshs |
|---|---|---|
| | | |
| | | |
| A | SUB-TOTAL FOR ELECTRICAL WORKS B/F FROM BILLS SUMMARY PAGE G/32 | |
| | | |
| B | SUB TOTAL FOR PROVISIONAL SUMS B/F FROM PAGE G/33…… | 2,500,000 |
| | | |
| | | |
| C | TOTAL COST FOR ELECTRICAL INSTALLATION WORKS CARRIED TO THE GRAND SUMMARY | |

**TOTAL AMOUNT IN WORDS**

……
……
……
……

**TENDERER'S NAME & STAMP**

……
……
……

**SIGNATURE …… DATE……**

**P.I.N No.,…….. V.A.T CERTIFICATE No……**

**WITNESS……. ADDRESS……**

**SIGNATURE OF WITNESS……. DATE……**

# BILL NO.5 - MECHANICAL WORKS

# PROPOSED ARDHI HOUSE, DELMONTE/MAKENJI, MURANG'A COUNTY

# MECHANICAL WORKS - EVALUATION AND QUALIFICATION CRITERIA

## 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 evaluating Tenders.

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 are to be converted) was originally established.

b) Value of single contract - Exchange rate prevailing on the date of the contract signature.

(a) 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

The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. The tender that (i) meets the qualification criteria, (ii) has been determined to be substantially responsive to the Tender Documents, and (iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

## 2.0 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.

| S/No | MANDATORY REQUIREMENTS(MR) |
|---|---|
| MR1 | Valid Copy of certificate of incorporation/ Registration. |
| MR2 | Valid Current Tax Compliance Certificate from Bidding Company, and if Consortium, from each member of the consortium. |
| MR3 | Submission of valid CR12 form showing the list of directors /shareholding (issued within the last 12 months) or National Identity Card(s) for Sole Proprietorship / Partnership |
| MR4 | Over Five years' experience in works of similar nature. |
| MR5 | Dully filled form of tender |
| MR6 | Dully filled and signed Confidential business questionnaire |

| | |
|---|---|
| MR7 | Duly signed and stamped Statement of compliance. |
| MR8 | Submission of original tender document properly BOUND and sequentially serialized and all pages must be initialed or signed. **(NB: Use of Spring or Box Files will not be allowed and will result in automatic disqualification.)** |
| MR9 | Valid Copy of Current Single Business permit |
| MR10 | The Tender Security (Bid Bond) of **1% of the contract sum** in form of Bank Guarantee from a reputable bank or insurance company approved by Public Procurement Regulatory Authority (PPRA). |
| MR11 | Provide proof of authorization (in form of a Power of attorney signed by commissioner of oaths) as a Tender Signatory if the signatory is not a director or partner of the firm. |
| MR12 | NCA registration certificate and valid NCA 5 and above annual practicing license in Plumbing and Drainage installation works category |

**Note:**
The bid security shall be in accordance with the following notes; -

- *(A) The tenderer shall furnish as part of his tenders a tender surety in the amount as stated in the tender document on the Appendix to Instructions to Tenderers".*
- *(B) The unconditional Tender surety shall be in Kenya shillings and be in form of a certified cheque, bank draft, an irrevocable letter of credit or a guarantee from a reputable Bank/ Insurance approved by PPRA located in the Republic of Kenya. The format of the surety shall be in accordance with the sample form included in the tender documents and the tender surety shall be valid for **150 days** from the date of tender opening".*
- *(C) A substantially responsive tender is one which conforms to all terms and condition and specifications of the tender document without material deviation or reservation and has a valid Bank/Insurance guarantee".*

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

**The bidders' who do not satisfy any of the above requirements shall be considered non-responsive and their tenders will not be evaluated further.**

## 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.

## 6.0 MARGIN OF PREFERENCE

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

6.2 Contractors shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractors qualifies for a margin of preference.

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

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

6.4 All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tender in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A is the lowest, it shall be selected for the award of contract. If a tender from Group B is the lowest, an amount equal to the percentage indicated in Item 6.1 of the respective tender price, including unconditional discounts and excluding provisional sums and the cost of day works, if any, shall be added to

the evaluated price offered in each tender from Group B. All tenders shall then be compared using new prices with added prices to Group B and the lowest evaluated tender from Group A. If the tender from Group A is still the lowest tender, it shall be selected 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 award (ITT 39), more specifically,**

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

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

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

ii) Minimum average annual construction turnover of Kenya Shillings ----------equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 5 years, divided by *5* years

iii) At least 3 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 below

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

| Main Scope of Works ofthis Tender | Main Equipment | Quantity(No) (Minimum) | Owned | Hired/ leased |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Total | | | | |

vi) Other conditions depending on their seriousness.

a) **History of non-performing contracts:**
Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last 2 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 **2** 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*

| Item No. | Qualification Subject | Qualification Requirement | *Documents To be Completed/provided by Tenderer* | *For Procuring Entity's Use (Qualification met or Not Met)* |
|---|---|---|---|---|
| A. PRELIMINARY EVALUATION | | | | |
| 1. | Nationality | Nationality in accordance with ITT 4.5 | Duly filled Forms ELI - 1.1 and 1.2 | |
| 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. | Valid Tax Compliance Certificate or Tax Exemption Certificate | |
| 3. | Company Registration | Has produced Valid Copy of certificate of incorporation / Registration from the registrar of companies | Certified copy of Certificate of Incorporation or Registration as the case may be | |
| 4. | Allowed to do business | Has produced a Copy of Current Single Business permit from the county government | Certified copy of Single Business Permit from the County Government | |
| 5. | Directors | Has produced a valid Copy of CR12 from the department of the registrar or National Identity Card(s) for Sole Proprietorship/Partnership. | Certified copy of CR12 or National Identity Card as the case may be | |
| 6. | NCA Registered | Has produced Valid NCA registration certificate and annual practicing licences as for NCA 5 category and above. | Copy of current NCA registration and practicing certificates | |
| 7. | Conflict of Interest | No conflicts of interest in accordance with ITT 3.3 | Duly filled disclosure of interest Form in the Confidential Business Questionnaire | |
| 8. | Public Procurement Regulatory Authority (PPRA) Eligibility | Not having been declared ineligible by the PPRA as described in ITT 3.7 | Duly filled and signed self-declaration **Form SD1** | |
| 9. | State-Owned Enterprise | Meets conditions of ITT 3.8 | Attach copies of certified documents stated in Forms ELI - 1.1 and 1.2 | |

| Item No. | Qualification Subject | Qualification Requirement | *Documents To be Completed/provided by Tenderer* | *For Procuring Entity's Use (Qualification met or Not Met)* |
|---|---|---|---|---|
| 11. | History of Non- Performing Contracts, Pending Litigation and Litigation History | Meets Post qualification and Contract ward (ITT 39) conditions set out in the Evaluation and Qualification Criteria 7 (iv) (a-c) | Duly filled and signed self-declaration Form CON-2 | |
| 12. | Attendance of Pre-Tender Site Visit | Attend Pre-Tender Site Meeting | Certificate of Pre-Tender Site Visit duly signed by the Project Architect | |
| 13. | Tender Security | Tender Security document | Tender Security in the prescribe Amount, Form and Format | |
| 14. | Submitted Tender Document | ✓ Tape-Bound Tender Document<br>✓ Fill all rates, and amounts,<br>✓ No Alterations of the Quantities<br>✓ All bidders own Corrections must be Countersigned<br>✓ Sequentially serialized<br>✓ All pages with tenderers entries either typed or hand-written initialized and corrections countersigned | Tender Document in the Prescribed Format | |
| *Note: Only tenderers who fully meet the preliminary evaluation stage requirements shall proceed to technical evaluation. The rest shall stand disqualified.* | | | | |
| B. TECHNICAL EVALUATION | | | | |
| 1. | 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 5,000,000.00** equivalent for the subject contract(s) net of the Tenderer's other commitments.<br>(ii) The Tenderers shall also demonstrate, to the | 1. Dully filled Form FIN – 3.1 with proof of sources of finances which shall be in any of the following forms:<br>a. Credit line letter from reputable bank or financial institution;<br>b. Overdraft facility | |

| Item No. | Qualification Subject | Qualification Requirement | *Documents To be Completed/provided by Tenderer* | *For Procuring Entity's Use (Qualification met or Not Met)* |
|---|---|---|---|---|
| | | 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.<br>(iii) The tenderer shall provide certified copies of Audited accounts (Signed by Auditors and directors) for the last three (3) years (2025 ,2024 and 2023). (Certified by an advocate). | from a reputable bank or financial institution;<br>c. Credit facility from material suppliers or manufactures<br>2. Duly signed and certified Audited Accounts for the last three years | |
| 2. | Average Annual Construction Turnover | Minimum average annual construction turnover of **Kenya Shillings 25,000,000.00** equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 5 years, divided by 5 years | Duly filled and signed Form FIN – 3.2 | |
| 3. | 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 10 years, starting 1st January 2016 | Duly filled and signed Form EXP – 4.1 | |
| 4. | Specific Construction & Contract Management Experience | A minimum number of *Three* 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 2016 and tender submission deadline i.e., Five (5) contracts, each of minimum value Kenya shillings ---------- equivalent.<br>[*In case the Works are to be tender as individual contracts under multiple contract procedure, the* | Duly filled and signed Form EXP 4.2(a) complete with award letters and completion certificates. | |

| Item No. | Qualification Subject | Qualification Requirement | *Documents To be Completed/provided by Tenderer* | *For Procuring Entity's Use (Qualification met or Not Met)* |
|---|---|---|---|---|
| | | *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: (*Refurbishments and partitioning works with electrical and mechanical works)* | | |
| 5. | Directors' qualifications | At least one of the directors to have a degree/diploma in relevant engineering field with a minimum of 10 years relevant experience.<br>NOT APPLICABLE | Academic certificates and curriculum vitaes | |
| 6. | Contractor's Representativeand Key Personnel | Curriculum Vitae (CVs) of the Proposed Key Staff must be presented in the provided format and duly signed by the proposed individual together with their Academic Certificates. | Duly filled and signed Forms PER. 1and PER. 2 | |
| | | The site staff shall possess minimum levels set below; | | |
| | | Site Supervisor | At least a diploma in mechanical engineering or related field with a minimum of 10 years relevant experience. | |
| | | 2No. Technicians and 2No. Artisans | Technicians with a certificate in relevant field with a minimum of 5 years relevant experience;<br><br>Artisans with a trade test certificate in relevant field with a minimum of 8 years relevant experience. | . |

| Item No. | Qualification Subject | Qualification Requirement | *Documents To be Completed/provided by Tenderer* | *For Procuring Entity's Use (Qualification met or Not Met)* |
|---|---|---|---|---|
| 7. | Contractors key tools and equipment | i. Bidders shall declare possession / Ownership of various equipment as proposed to be used in the Project by providing Logbooks that demonstrate proof of ownership<br>ii. For Bidders planning to hire, theyshall provide an Active Lease Agreement in Place that can be used | Equipment/Transport:<br>1 At least 1No. relevant means of transport (Vehicle)<br>2 Relevant equipment for the works being tendered for | |
| 8. | Proposed methodology | • Adequacy and quality of theproposed methodology | **Technical approachand methodology**<br>Provided a detailed Work Methodology | |
| | | | Provided a Methodology on safetyduring the construction period | |
| | *Responsiveness* | | | |

***Note: Only tenderers who fully meet the technical evaluation stage requirements shall proceed to financial evaluation. The rest shall stand disqualified.***

C) FINANCIAL EVALUATION:

Financial Evaluation shall involve checking of the consistency of tender rates and any arithmetic errors in the submitted tender. Any tender which in the opinion of the procuring entity is seriously front-loaded shall be disqualified. Similarly, arithmetic errors if determined a major deviation that affects the substance of the tender shall also lead to disqualification of the tender. Recommendation for award of Contract shall done to the **Lowest Evaluated Tender**, subject to Post Qualification Evaluation

D) POST QUALIFICATION EVALUATION:

The procuring entity shall conduct due diligence for the purpose of satisfying itself that the information provided in the lowest evaluated tender is accurate.

The lowest evaluated tender shall be rejected if misrepresentation of information or facts is detected during post qualification evaluation.

## SECTION V - SPECIFICATIONS

Notes for preparing Specifications

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

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

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

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

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

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

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

# GENERAL MECHANICAL SPECIFICATONS

# GENERAL MECHANICAL SPECIFICATION

## 2.0 General

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

## 2.1 Quality of Materials

All plant, equipment and materials supplied as part of the Sub-contract Works shall be new and of first-class commercial quality, shall be free from defects and imperfections and where indicated shall be of grades and classifications designated herein.
All products or materials not manufactured by the Sub-contractor shall be products of reputable manufacturers and so far as the provisions of the Specification is concerned shall be as if they had been manufactured by the Sub-contractor.
Materials and apparatus required for the complete installation as called for by the Specification and Contract Drawings shall be supplied by the Sub-contractor unless mention is made otherwise.
Materials and apparatus supplied by others for installation and connection by the Sub-contractor shall be carefully examined on receipt. Should any defects be noted, the Sub-contractor shall immediately notify the Engineer.
Defective equipment or that damaged in the course of installation or tests shall be replaced as required to the approval of the Engineer.

## 2.2 Regulations and Standards

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

a) The Kenya Government Regulations.
b) The United Kingdom Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.
c) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
d) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
e) The Local Council By-laws.
f) The Electricity Supply Authority By-laws.
g) Local Authority By-laws.
h) The Kenya Building Code Regulations.
i) The Kenya Bureau of Standards

## 2.3 Electrical Requirements

Plant and equipment supplied under this Sub-contract shall be complete with all necessary motor starters, control boards, and other control apparatus. Where control panels incorporating several starters are supplied, they shall be complete with a main isolator.
The supply power up to and including local isolators shall be provided and installed by the Electrical Sub-contractor. All other wiring and connections to equipment shall form part of this Sub-contract and be the responsibility of the Sub-contractor.

The Sub-contractor shall supply three copies of all schematic, cabling and wiring diagrams for the Engineer's approval.
The starting current of all electric motors and equipment shall not exceed the maximum permissible starting currents described in the Kenya Power and Lighting Company (KPLC) By-laws.
All electrical plant and equipment supplied by the Sub-contractor shall be rated for the supply voltage and frequency obtained in Kenya, that is 415 Volts, 50Hz, 3-Phase or 240Volts, 50Hz, 1-phase.
Any equipment that is not rated for the above voltages and frequencies shall be rejected by the Engineer.

## 2.4 Transport and Storage

All plant and equipment shall, during transportation be suitably packed, crated and protected to minimize the possibility of damage and to prevent corrosion or other deterioration.
On arrival at site all plant and equipment shall be examined and any damage to parts and protective priming coats made good before storage or installation.
Adequate measures shall be taken by the Sub-contractor to ensure that plant and equipment do not suffer any deterioration during storage.
Prior to installation all piping and equipment shall be thoroughly cleaned.
If, in the opinion of the Engineer any equipment has deteriorated or been damaged to such an extent that it is not suitable for installation, the Sub-contractor shall replace this equipment at his own cost.

## 2.5 Site Supervision

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

## 2.6 Installation

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

## 2.7 Testing

### 2.7.1 General

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

### 2.7.2 Material Tests

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

For materials where no B.S. Specification exists, tests are to be made in accordance with the best modern commercial methods to the approval of the Engineer, having regard to the particular type of the materials concerned.
The Sub-contractor shall prepare specimens and performance tests and analyses to demonstrate conformance of the various materials with the applicable standards.
If stock material, which has not been specially manufactured for the plant and equipment specified is used, then the Sub-contractor shall submit satisfactory evidence to the Engineer that such materials conform to the requirements stated herein in which case tests of material may be partially or completely waived.
Certified mill test reports of plates, piping and other materials shall be deemed acceptable.

### 2.7.3 Manufactured Plant and Equipment – Work Tests

The rights of the Engineer relating to the inspection, examination and testing of plant and equipment during manufacture shall be applicable to the Insurance Companies or Inspection Authorities so nominated by the Engineer.
The Sub-contractor shall give two weeks' notice to the Engineer of the manufacturer's intention to carry out such tests and inspections.
The Engineer or his representative shall be entitled to witness such tests and inspections.
The cost of such tests and inspections shall be borne by the Sub-contractor.
Six copies of all test and inspection certificates and performance graphs shall be submitted to the Engineer for his approval as soon as possible after the completion of such tests and inspections.
Plant and equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Sub-contractor's own risk and should the test and inspection certificates not be approved; new tests may be ordered by the Engineer at the Sub-contractor's expense.

### 2.7.4 Pressure Testing

All pipe work installations shall be pressure tested in accordance with the requirements of the various sections of this Specification. The installations may be tested in sections to suit the progress of the works but all tests must be carried out before the work is buried or concealed behind building finishes. All tests must be witnessed by the Engineer or his representative and the Sub-contractor shall give 48 hours' notice to the Engineer of his intention to carry out such tests.
Any pipe work that is buried or concealed before witnessed pressure tests have been carried out shall be exposed at the expense of the Sub-contractor and the specified tests shall then be applied.
The Sub-contractor shall prepare test certificates for signature by the Engineer and shall keep a progressive and up-to-date record of the section of the work that has been tested.

### 2.7.5 Shop drawings

Before manufacture or Fabrication is commenced the contractor shall submit Two copies of detailed drawings of all water tanks, fire hose reel pump, water booster pump and any other equipment including their components showing all pertinent information including sizes, capacities, construction details, etc., as may be required to determine

the suitability of the equipment for the approval of the Engineer. Approval of the detailed drawings shall not relieve the contractor of the full responsibility of errors or the necessity of checking the drawings himself or of furnishing the materials and equipment and performing the work required by the plans and specifications.

## 2.8 Colour Coding

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

## 2.9 Welding

### 2.9.1 Preparation

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

### 2.9.2 Method

All welding shall be carried out by the electric arc processing using covered electrodes in accordance with B.S. 639.
Gas welding may be employed in certain circumstances provided that prior approval is obtained from the Engineer.

### 2.9.3 Welding Code and Construction

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

a) Pipe Welding

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

b) General Welding

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

### 2.9.4 Welders Qualifications

Any welder employed on this Sub-contractor shall have passed the trade tests as laid down by the Government of Kenya.
The Engineer may require to see the appropriate to see the appropriate certificate obtained by any welder and should it be proved that the welder does not have the necessary qualifications the Engineer may instruct the Sub- contractor to replace him by a qualified welder.

# PARTICULAR SPECIFICATIONS FOR PLUMBING AND DRAINAGE INSTALLATION WORKS

## 3.0 GENERAL

### SITE LOCATION

The site of the proposed works is at Delmonte / Makenji Murang'a County.

### SCOPE OF WORKS

The works to be carried out under this sub-contract comprise supply, installation, testing and commissioning of the following: -

a) **Plumbing and drainage installation works**

### BROCHURES FOR DEVICES

For consideration and qualification tenderers shall, at their own cost, provide coloured manufacturer's brochures detailing technical literature and specifications where applicable.

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

## 3.1 MATERIALS AND STANDARDS

### 3.1.1 Pipework and Fittings

Pipework materials are to be used as follows:

#### a) Polypropylene Pipes –Random (PP-R) Type 3

PP-R type3 pipe work shall be manufactured in accordance with B.S. 7291part 2001. Dimensions and quality of PP-R Pipes shall be in accordance with DIN 8077 and pipelines in plastics materials joints, Components parts, Installation to be in accordance DIN 16928. Joints and fittings to be in accordance DIN16962.

#### b) Galvanized Steel Pipework

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

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

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

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

#### c) Copper Tubing

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

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

d) CPVC Piping

PVC (polyvinyl chloride) that has been chlorinated via a free radical chlorination reaction. CPVC is produced by adding chlorine to PVC in a water slurry or fluidized bed chlorination process. The chlorination reaction is initiated by ultraviolet light. The chlorinated PVC is compounded with ingredients necessary for the desired properties for further processing.

The chlorine added to PVC gives CPVC higher temperature performance and improved fire and corrosion resistance.

Should conform to ASTM D2846 standard and ASTM F441 Standard for chlorinated poly vinyl chloride pipes.

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

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

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

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

Jointing

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

Testing

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

f) A.B.S. Waste System

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

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

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

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

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

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

g) PVC Soil System

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

Pipes and fittings shall be in accordance with relevant British Standards, including B.S. 4514 and fixed to the manufacturer's instructions and B.S. 5572.

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

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

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

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

### 3.1.2 Valves

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

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

b) Gate Valves

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

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

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

c) Globe Valves

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

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

### 3.1.3 Waste Fitment Traps

a) Standard and Deep Seal P & S Traps

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

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

b) Anti-Syphon Traps

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

The trade name for traps manufactured by this company is 'Grevak'.

### 3.1.4 Pipe Supports

a) General

This sub-clause deals with pipe supports securing pipes to the structure of buildings for above ground application.
The variety and type of support shall be kept to a minimum and their design shall be such as to facilitate quick and secure fixings to metal, concrete, masonry or wood.
Consideration shall be given, when designing supports, to the maintenance of desired pipe falls and the restraining of pipe movements to a longitudinal axial direction only.
The Sub-contractor shall supply and install all steelwork forming part of the pipe support assemblies and shall be responsible for making good damage to builders work associated with the pipe support installation.
The Sub-contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection works commence.

b) PP-R Pipe work

The pipe work for the plumbing installation shall be Polypropylene Pipes –Random (PP-R) tubing which meets the requirements of DIN 8077 and be suitable for potable water installations.
The pipe fittings shall be PP-R pipe fittings and shall meet or exceed the requirements of DIN 16962 and DIN 16928.
All changes in direction will be with standard bends or long radius fittings.
All socket type joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493 and primers that meet or exceed the requirements of ASTM F656. The standard practice for safe handling of solvent cements shall be in accordance with ASTM F402. Solvent cement and primer shall be listed by NSF International for use with potable water, and approved by the pipe and fittings manufacturers.

c) Steel and Copper Pipes and Tubes

Pipe runs shall be secured by clips connected to pipe angers, wall brackets, or trapeze type supports. 'U' bolts shall not be used as a substitute for pipe clips without the prior approval of the Engineer.
An approximate guide to the maximum permissible supports spacing in metres for steel and copper pipe and tube is given in the following table for horizontal runs.

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

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

d) Expansion Joints and Anchors

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

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

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

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

### 3.1.5 Sanitary Appliances

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

### 3.1.6 Pipe Sleeves

Main runs of pipework are to be fitted with sleeves where they pass through walls and floors. Generally, the sleeves shall be of P.V.C. except where they pass through the

structure, where they shall be mild steel. The sleeves shall have 6mm – 12mm clearance all around the pipe or for insulated pipework all around the installation. The sleeve will then be packed with slag wool or similar.

## 3.2 INSTALLATION

### 3.2.1 General

Installation of all pipework, valves, fittings and equipment shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The Sub-contractor shall be responsible to the Main Contractor for ensuring that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

### 3.2.2 Above Ground Installation

a) Water Services

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

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

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

Valves and other user equipment shall be installed with adequate access for operation and maintenance.

Where valves and other operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach from a small step ladder, extension spindles with floor or wall pedestals shall be provided.

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

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

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

The test pressure shall be maintained by the pump for about one hour and if there is any leakage, it shall be measured by the quantity of water pumped into the main in that time. A general leakage of 4.5 litres per 25mm of diameter, per 1.6 kilometres per 24 hours per 30 metres head, may be considered reasonable but any visible individual leak shall be repaired.

b) Sanitary Services

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

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

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

Where a branch requires rodding facilities in a position to which normal access is unobtainable, then that branch shall be extended so as to provide a suitable purpose made rodding eye in the nearest adjacent wall or floor to which easy access is available. The vent stacks shall terminate above roof level and where stack passes through roof, a weather skirt shall be provided. The Sub-contractor shall be responsible for sealing the roof after installation of the stacks.
The open end of each stack shall be fitted with a plastic coated or galvanized steel wire guard.
Access for rodding and testing shall be provided at the foot of each stack.

c) Sanitary Appliances

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

### 3.3. VULCATHENE MATERIAL PROPERTIES

Manufactured from co-polymer polypropylene with 3% carbon black ultra-violet stabilizer. Vulcathene has very high resistance to chemical attack and is well suited to the conveyance of aggressive chemicals, and other liquids as used in chemical plants and laboratory waste.
The performance specification is based on the need to supply a waste system which has a high chemical resistance rating in respect of the corrosive materials which it has to convey. Good tensile strength, ductility, abrasion resistance, high impact strength, weather resistance, and is stable over the range of temperatures normally encountered in the environment in which it is used. Vulcathene is resistant to many concentrated acids and alkalis and some organic solvents. Vulcathene also has a good abrasion resistance throughout its operational temperature range of between -20°C and +100°C. With a smooth bore, it is lightweight with a specific gravity of 0.905. It has high impact strength, which minimizes damage during and after installation. The full specification to which Vulcathene pipe and fittings are manufactured is detailed below.

| Property | Test Method | Unit | |
|---|---|---|---|
| Melt flow index (MFI) | 230°C/2.16 kg | Granules | 6.5 |
| | Density (mean) | $kg/m^3$ | 9.5 |
| Tensile yield stress | ISO 527 | MPa | 27.0 |
| | ASTM D 638M | $kg/cm^2$ | 295 |
| | (50mm/min) | | |
| Flexural modulus | ISO 178 | GPa | 1.15 |
| | ASTM D 790 | $kg/cm^2$ | 14100 |
| Izod impact strength | ISO 180 | kj/m2 23°C | 7.0 |
| | (0.25mm notch radius) | 0°C | 4.5 |
| | | -20°C | 3.0 |
| | | 40°C | - |
| Rockwell hardness | ISO 2039/2, | | |
| | ASTM D 785 | R scale | 90 |

| | | | |
|---|---|---|---|
| Vicat softening temperature | ISO 306A | | |
| (10 N force) | | | |
| BS 2782; 102 A | | °C | 147 |
| Heat distortion temperature | ISO 75/A and /B | | |
| A - 1.8 MPa (18.6kg/cm2) | ASTM D 648-A-B | °C | 55 |
| B - 0.45 MPa (4.6kg/cm2) | | °C | 90 |
| Flammability FMVSS 302 | ISO 3795 | Burning rate (2mm thickness) mm/min | 38 |

### 3.3.1. W001 Pipe

Produced in nominal internal diameters of 38mm, 51mm, 76mm, 102mm and 152mm (Enfusion only), Vulcathene pipes are supplied in standard4m lengths.

| | 1 1/2" | 2" | 3" | 4" | 5" |
|---|---|---|---|---|---|
| Nominal internal diameter | 38 mm | 51 mm | 76 mm | 102 mm | 152 mm |
| Nominal external | 48.3 mm | 60.3 mm | 89.0 mm | 114.3 mm | 168.3 mm |
| Kg/m | 0.43 | 0.58 | 1.25 | 1.63 | 4.34 |

### 3.3.2. 504 Waste

504 Waste The range of 11 /4", 11 /2", and 2" BSP threaded wastes are produced with flange widths of 60, 73 and 85mm to suit ceramic, porcelain, metal or plastic sink outlets. Slotted wastes are available for use where the waste has to accept an overflow. With an integral grating the waste is supplied with a plug ready to accept a chain fastening. Both the 1 1/4" and 1 1/2" waste outlets are available in all flange diameters and either 89mm or 102mm lengths; the 2" waste outlet is available in 85mm flange diameter and 102mm length only. Unslotted waste outlets are supplied with one waste gasket; slotted wastes are supplied with two waste gaskets.

| Cat. No. | 504 |
|---|---|
| A | 60/73/85mm |
| B | 89/102/102mm |
| C | 11/4" BSP/11/2"BSP/2"BSP |
| D | 3/3/3mm |
| gms | 11/4"-65;11/2"-75; 2"-90 |

### 3.3.3. 507 Standing Waste Tube

504 Waste Standing waste tubes are available in three lengths and the diameters are in relation to the need to fit 11 /4", 11 /2, and 2" BSP threaded 504 series wastes. If required they can be supplied with a hanging loop. 51mm size supplied in 225mm length only. 32mm and 38mm supplied in 140mm and 178mm lengths only.

| Cat. No. | 507 |
|---|---|
| A | 140/178/225mm |
| B | 32/38/51mm |
| Gms | 60 |

### 3.3.4. 601 Sink

The 601 sink is extremely robust and has a self-draining base. Its recessed outlet will accept the flange of the 11 /2" BSP 504 non-overflow threaded outlet but, if required, a 509 overflow assembly can be fitted. These sinks are designed for mounting on the underside of work surfaces.

| Cat. No. | 601 |
|---|---|
| A | 492mm |
| B | 171mm |
| C | 76 mm |
| D | 241mm |
| H | 32mm |
| gms | 1030 |
| Radius | 36mm |

### 3.3.5. 604 Sink

Available in three sizes the 604 range of sinks are extremely robust and have a self-draining base. The 76mm recessed outlet will accept the flange of the 11 /2" BSP 504 non-overflow threaded outlet but, if required, a 509 overflow assembly can be fitted. These sinks are designed for mounting on the underside of work surfaces, the 48mm wide top rim, which gives rigidity, has a recess flange to accept the self-adhesive sealing strip supplied with each sink.

| Cat. No. | 604/1 | 604/2 | 604/4 |
|---|---|---|---|
| A | 343mm | 445mm | 492mm |
| B | 140mm | 140mm | 165mm |
| C | 76mm | 76mm | 76mm |
| D | 288mm | 343mm | 419mm |
| E | 152mm | 152mm | 152mm |
| H | 48mm | 48mm | 41mm |
| gms | 2765 | | |
| Radius | 40mm | 40mm | 40mm |

### 3.3.6. 910G Dilution Recovery Trap (Glass Base)

With a 4.5 liter capacity and a 76mm trap seal the 910G, with its clear base of heat resistant, borosilicate glass makes this an ideal choice for use in waste systems which have to cope with large quantities of solid waste matter. The trap allows the volume of solids collected to be quickly assessed and, where necessary, cleared, before they can cause any damage to the system. It also allows the identification and recovery of valuable solids. Outlet connection are made using standard nut and olive. Dip tubes, vertical inlets, horizontal inlets and blanking off plugs should be ordered separately.

| Cat. No. | 910G |
|---|---|

| | |
|---|---|
| A | 200mm |
| B | 230mm |
| C | 264mm |
| D | 140mm |
| gms | 4010 |

### 3.3.7. W916 Flexible Connector

Standard flexible connectors manufactured from polypropylene for use with mobile fume cupboards. The ends are pre-grooved with nut and olive supplied. Size: 38mm Length: 1m, 1.5m, 2m or 3m other lengths can be supplied to special order

### 3.3.8. W90 Access Pipes

Correctly sited at critical points in the pipeline, access pipes simplify the clearing of blockages, inspection and thorough cleansing of the installation. With a clear flow bore, the W90 series access pipes have a bolt on cover and grooved spigot ends to accept nut and olive connection to the Vulcathene Mechanical System.

### 3.3.9. W942 90° Corner Branch

The 90° Corner branch is available in size 102mm x 51mm with spigot ends for either Mechanical or Enfusion jointing. The 51mm branches are at 92 1/2° to the main bore. Additional nuts and olives are required for Mechanical jointing unless connecting to another Vulcathene Mechanical fitting. For 38mm branch connections use Vulcathene W3921 reducers.

| Cat. No. | W942 |
|---|---|
| Sizes: | 102mm x 51mm |
| A | 250mm |
| B | 114.3mm |
| C | 60.3mm |
| D | 62.9mm |
| gms | 480 |

### 3.3.10. W38 45° Double Wye

Available in all sizes. The four equal sized ends have standard nut and olive connections.

| Cat. No. | W381 | W382 | W383 | W384 |
|---|---|---|---|---|
| Nom. Size | 38mm | 51mm | 76mm | 102mm |
| A | 86mm | 91mm | 177mm | 213mm |
| B | 64mm | 76mm | 152mm | 178mm |
| C | 8mm | 17mm | 43mm | 49mm |
| gms | 180 | 228 | 800 | 1600 |

### 3.3.11. W20 921 /2° Reducing Sweep Tee

The two equal and one reduced sized ends have standard nut and olive connections.

| Cat. No. | W2021 |
|---|---|
| Nom. Size | 51x38mm |
| A | 58mm |

| | |
|---|---|
| B | 45mm |
| C | 114mm |
| gms | 146 |

### 3.3.12. W20 921 /2° Equal Sweep Tee

The three equal sized ends have standard nut and olive connections.

| Cat. No. | W201 | W202 | W203 | W204 |
|---|---|---|---|---|
| Nom. Size | 38mm | 51mm | 76mm | 102mm |
| A | 59mm | 62mm | 83mm | 98mm |
| B | 39mm | 52mm | 39mm | 76mm |
| C | 97mm | 114mm | 122mm | 175mm |
| gms | 104 | 160 | 471 | 860 |

### 3.3.13. AC1221/AC1361 AC5144/AC1362 Flexible Adaptor Coupling

For connecting 76mm and 102mm Vulcathene stacks to underground drainage systems of other materials where a flange connection is not available. Flexible adaptor couplings have a stepped molded nitrile sleeve with different diameters at each end to enable pipes of differing outside diameters to be jointed economically and quickly without the use of bushes. The sleeve is fitted with two stainless steel clamping bands by which they are secured to the pipe ends.

| Cat. No. | AC1221 | AC1361 | AC5144 | AC1362 |
|---|---|---|---|---|
| Size range A/B (mm) | 110-122/80-95 | 121-136/80-95 | 110-125/100-115 | 121-136/100-115 |
| Width (mm) | 100 | 100 | 100 | 100 |
| Application (100mm) | PVC-U | Vitrified Clay | Super sleeve | Vitrified Clay |
| | Cast Iron | Asbestos Cement | Cast Iron | Salt Glazed Ware |
| | Super sleeve | Salt Glazed Ware | Ductile Iron | Asbestos Cement |
| | | | Asbestos Cement | |
| gms | 400 | 460 | 463 | 500 |

### 3.3.14. W50 Anti-Siphon Unit

Anti-siphon units are designed to prevent the release of foul air whilst admitting air under conditions of induced or self-siphonage in discharge pipes preventing water seals in traps from being drawn. The W50 is suitable for connection to 51mm Vulcathene pipe and incorporates a rubber seal which must first be inserted into the pipe followed by the anti-siphon unit.

| Cat. No. | W50 |
|---|---|
| Sizes: | 51mm |
| A | 61mm |
| B | 22mm |

| | |
|---|---|
| C | 36mm |

### 3.3.15. W450 Air Admittance Valve

Air admittance valves enable Vulcathene stacks to be terminated inside the building thereby avoiding costly roof penetration. They are designed to prevent the release of foul air whilst admitting air under conditions of reduced pressure in discharge pipes preventing water seals in traps from being drawn. The valves also contribute to the ventilation of the main drain to which the discharge stack incorporating the valve is connected. The Vulcathene air admittance valve is designed to suit 102mm Vulcathene pipe and incorporates a rubber finned tail for internal pipe connection and a removable screw cap for maintenance access. To connect to a 76mm Vulcathene stack use a 102mm/76mm reducer and insert the valve into the 102mm socket.

| Cat. No. | W450 |
|---|---|
| Sizes: | 102mm |
| A | 245mm |
| B | 60mm |
| C | 135mm |
| Gms | 872 |

## TESTING AND INSPECTION

### 3.4 Site Tests – Pipework Systems

a) Above Ground Internal Water Services Installation

All water service pipe system installed above ground shall be tested hydraulically for a period of ten hours to not less than one and half times to design working pressure.
If preferred, the Sub-contractor may test the pipelines in sections. Any such section found to be satisfactory need not be the subject of a further test when system has been completed, unless specifically requested by the Engineer.
During the test, each branch and joint shall be examined carefully for leaks and any defects revealed shall be made good by the Sub-contractor and the section re-tested.
The Sub-contractor shall take all necessary precautions to prevent damage occurring to special valves and fittings during the tests. Any item damaged shall be repaired or replaced at the Sub-contractor's expenses.

b) Above Ground Soil Waste and Ventilation System

All soil, waste and ventilating pipe system forming part of the above ground installation, shall be given appropriate test procedures as described in B.S. 5572, 1972.
Smoke tests on above ground soil, waste and ventilating pipe system shall not be permitted.
Pressure tests shall be carried out before any work which is to be concealed is finally enclosed.
In all respects, tests shall comply with the requirements of B.S. 5572.

### 3.5 Site Test – Performance

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

All hot water pipework shall be installed with pre-formed fibre glass lagging to a thickness of 25mm where the pipe runs above a false ceiling or in areas where the ambient temperature is higher than normal with the result that pipe "sweating", due to condensation will cause nuisance.
All lagged pipes which run in a visible position after erection shall be given a canvas cover and prepared for painting as follows:

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

All lagging for cold and hot water pipes erected in crawlways, ducts and above false ceiling which after erection are not visible from the corridors of rooms, shall be covered with a reinforced aluminium foil finish banded in colours to be approved by the Engineer.
In all respects, unless otherwise stated, the hot and cold-water installation shall be carried out in accordance with the best standard of modern practice and described in C.P.342 and C.P.310 respectively to the approval of the Engineer.
The test pressure shall be applied by means of a manually operated test pump or, in the case of long main or mains of large diameter, by a power-driven test pump which shall not be left unattended. In either case precautions shall be taken to ensure that the required pressure is not exceeded.
Pressure gauges should be recalibrated before the tests.
The Sub-contractor shall be deemed to have included in his price for all test pumps, and other equipment required under this specification.
The test pressure shall be one and a half times the maximum working pressure except where a pipe is manufactured from a material for which the relevant B.S. specification designates a maximum test pressure.

## 3.6 STERILISATION OF COLD-WATER SYSTEM

All water distribution system shall be thoroughly sterilized and flushed out after the completion of all tests and before being fully commissioned for handover.
The sterilization procedures shall be carried out by the Sub-contractor in accordance with the requirements of B.S. Code of Practice 301, Clause 409 and to the approval of the Engineer.

# PARTICULAR SPECIFICATIONS FOR PORTABLE FIRE EXTINGUISHER AND HOSE REEL INSTALLATIONS

## 4.0 GENERAL

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

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

## 4.1 SCOPE OF WORKS

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

## 4.2 WATER/CO2 EXTINGUISHERS

These shall be 9-litre water filled $CO^2$ cartridge operated portable fire extinguishers and shall comply with B.S. 1382: 1948 and to the requirements of B.S.4523: 1977. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping. There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:

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

## 4.3 PORTABLE CARBON DIOXIDE FIRE EXTINGUISHERS

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

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

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

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

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

The following markings shall be applied to the extinguishers: -

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

## 4.4 DRY CHEMICAL POWDER PORTABLE FIRE EXTINGUISHER

The portable dry powder fire extinguishers shall comply with BS3465: 1962 and BS 5423. The body shall be constructed to steel not less than the requirements of BS 1449 or aluminium to BS 1470: 1972 and shall be suitably protected against corrosion.
The dry powder charge shall be not-toxic and retain its free-flowing properties under normal storage conditions. Any pressurizing agent used as an expellant shall be in dry state; in particular compressed air.
The discharge tube and gas tube if either is fitted shall be made of steel, brass, copper or other not less suitable material. Where a hose is provided it shall not exceed 1,060mm and shall be acid and alkali resistant. Provision shall be made for securing the nozzle when not in use.
The extinguisher shall be clearly marked with the following information

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

## 4.5 AIR FOAM FIRE EXTINGUISHER

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. 5423 with the following specifications: -

**Cylinder:** to B.S. 1449
**Necking:** to be 76mm outside diameter steel EN 3A $2^3/_4$ X 8TPI female thread.
**Head cap:** to be plastic moulding acetyl resin.
**$CO_2$ Cylinder:** to be 75gm P.V.C coated.
**Internal Finish:** to be polythene lining on phosphate coating.
**External finish:** to be phosphated - One coat primer paint and one coat stove enamel B.S. 381 C.

## 4.6 FIRE BLANKET

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

## 4.7 SIGNAGE

### 4.7.1 Fire Exit Sign

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

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

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

### 4.7.2 Fire Instruction Notice

Print fire instruction on the Perspex plates with White Colour Background measuring 510mm length x 380mm width x 4mm thick as follows;

FIRE INSTRUCTION NOTICE
In the event of fire;

1. Raise the alarm by actuating the nearest alarm system point, Sound Siren /gong or Shout Fire

2. Attack fire using the nearest available equipment

3. Call nearest fire Brigade or Police 999 and inform your switchboard (PABX) Operator

4. Ensure that all personnel not involved in firefighting evacuation to safety outside the building.

5. Close but DO NOT LOCK doors behind as you leave.

6. Evacuate the building using stairs or fire escapes. Do not use Lifts/Escalators. Walk calmly. Avoid panic. Do not stop or return for personal belongings.

7. Assemble as per floor outside the building for roll call

# 5 BOOSTED HOSE REEL SYSTEM

## 5.1 General

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

## 5.2 Hose Reel Pumps

The fire hose reel pumps shall consist of a duplicate set of multi-line centrifugal pumps from approved manufacturers. The pumps shall be capable of delivering $3M^3$/hr at a running pressure of 3 bars.

The pump casing shall be of cast iron construction with the impeller shaft of stainless steel with mechanical seal.

## 5.3 Control Panel

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

The pump shall be controlled by a flow switch therefore, the control panel shall include the following facilities:

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

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

## 5.4 Hose Reel

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

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

The hose reel shall be supplied and installed complete with a first-aid non-kinking hose 30 or 45 meters long with a nylon spray / jet / shut-off nozzle fitted. A screw down chrome - plated globe valve to B.S 1010 to the inlet to the reel is to be supplied.

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

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

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

## 5.5 Pipe Work

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

## 5.6 Pipe Fittings

The pipe fittings shall be wrought steel pipe fittings, welded or seamless fittings conforming to B.S. 1740 or malleable iron fittings to B.S 143.

All changes in direction will be with standard bends or long radius fittings. No elbows will be provided.

### 5.7 Non-return Valves

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

### 5.8 Gate Valves

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

### 5.9 Sleeves

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

#### 5.9.1 Earthing

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

#### 5.9.2 Finish Painting

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

#### 5.9.3 Testing and Commissioning

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

#### 5.9.4 Instruction Period

The Sub-contractor shall allow in his contract sum for instructing of the use of the equipment to the Client's maintenance staff. The period of instruction may be within the contract period but may also be required after the contract period has expired.
The period of time required shall be stipulated by the Client but will not exceed two days in which time the Client's staff shall be instructed on the operation and maintenance of the equipment.

#### 5.9.5 Hose Reel Label

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

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

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

# PARTICULAR SPECIFICATIONS FOR RAIN WATER HARVESTING

## 6.0 INTRODUCTION

The specification is for rain water harvesting systems. Necessary design considerations and operation requirements are also outlined.

Rainwater harvesting is an ancient technique practiced in rural areas but now enjoying a revival even in urban areas.

Reasons for this include but is not limited to; -

-Inherent quality of the water.

-The need to enhance water supply by local authority's utility companies.

-Need to reduce flooding. Harvesting the rain water reduces the flow into storm water drains.

-Interest in reducing consumption of treated water

-Minimal cost since the only cost incurred is in the distribution systems.

## 6.1 DEFINITIONS

Within the context of this publication, the following definitions apply; -

### 6.2 Rainwater

Water which falls from the sky.

### 6.3 Rainwater Harvesting

The collection, trapping, conveyance and storage of rain water.

### 6.4 Catchment Surface

The roof of a building or an open-sided barn used for purpose of trapping and collection of rainwater.

### 6.5 Gutters

Channels all-round the edge of a sloping roof to collect and transport rainwater.

### 6.6 Downspouts

Conduits/pipelines that carry the water from the gutters down to the storage tank.

### 6.7 First-Flushing Diverters

A diversion valve, placed along the downspout that routes the first flow of water from the catchment surface away from the storage tank.

### 6.8 Leaf screen

A coarse mesh placed along the gutter or the downspout that prevent the passage of debris to the storage tank.

### 6.9 Filter

A device with a chamber filled with a filter media installed to remove finer pollutants (debris and dirt), that may have passed through the coarse leaf screen.

#### 6.9.1 Storage facility.

Tanks constructed and installed for storing the harvested rainwater

## 7 DESIGN OVERVIEW of key components (Source; -CIBSE Knowledge Series on Reclaimed Water).

### 7.1 Storage Tank

The sizing of storage tanks requires assessment of the actual volume of water available and the likely demand for its use within the building.
The maximum amount of rainwater retrievable each year may be calculated from the equation:

$$Yr = Ac \times Rm \times Cr \times F$$

Where:

Yr is the annual rainwater yield (litre/year)

Ac is the collection area(m2). The plan area, rather than the slope area, available for rainwater collection.
Rm is the average annual rainfall (mm). The average annual rainfall for the particular location. Can be read in the Meteorological Weather book.
Cr is the run-off co-efficient; the percentage of water actually coming off the roof/paved area after allowing for evaporation, and absorption by the materials. See table 1 below; -
F is the fractional collector efficiency; the percentage of water captured by rainwater collection filters. Typically, between80-90% but can be confirmed from the manufacturer.

**Table 1; -Run-off co-efficient, Cr**

| Catchment Area | Run-off Co-efficient |
|---|---|
| Guttering around pitched roof; | |
| -slate tiles | 0.8-0.9 |
| -concrete tiles | 0.75-0.8 |
| -Guttering around flat roof | 0.4-0.5 |
| Permeable paving; | |
| -concrete blocks with wide joints | 0.5-0.7 |
| -gravel covered | 0.15-0.3 |

### 7.2 Gutters, *Downspouts etc*

The sizing of gutters, gutter boxes, gutter outlets and downpipes/downspouts shall be as outlined for rainwater systems in the Plumbing Engineering Services Design Guide, Section C.
However, the following table, Table 2, gives an idea about the diameter of pipe required for draining out rainwater based on rainfall intensity and roof area; -

Table2; -Sizing of Rainwater Pipe For Roof Drainage (source; National Building Code-USA)

| Diameter of Pipe(millimeter) | Average rate of rainfall in mm/H(millimeters per hour) | | | | | |
|---|---|---|---|---|---|---|
| | 50 | 75 | 100 | 125 | 150 | 200 |
| 50 | 13.4 | 8.9 | 6.6 | 5.3 | 4.4 | 3.3 |
| 65 | 24.1 | 16.0 | 12.0 | 9.6 | 8.0 | 6.0 |
| 75 | 40.8 | 27.0 | 20.4 | 16.3 | 13.6 | 10.2 |
| 100 | 85.4 | 57.0 | 42.7 | 34.2 | 28.5 | 21.3 |
| 125 | - | - | 80.5 | 64.3 | 53.5 | 40.0 |
| 150 | - | - | - | - | 83.6 | 62.7 |

## 7.3 SPECIFICATIONS

### 7.3.1 Catchment Surface

As water quality is a function of the type of roof material, beside climatic conditions and the surrounding environment it is important that the catchment area material be well selected.

Suitable roofing shall be of either of the following materials; -

i) Metal; - To be either aluminum/zinc alloy-coated sheet steel (Coating with epoxy paint acceptable), galvanized iron sheet (SWG 20 to 22) or corrugated sheets

ii) Clay/Concrete tiles.

Will contribute 10% loss of water due to texture, inefficient flow or evaporation. To reduce this the roof to be coated with a sealant or painted. This shall also prevent bacterial growth.

iii) Composite or Asphalt Shingle.

Not suitable for portable water. May be used for irrigation water.

iv) Other Materials; - these include wood Shingle, tar, gravel etc.

### 7.3.2 Gutters

These shall be continuous or seamless. For portable water, lead shall not be used as the slightly acidic rain water could dissolve lead and thus contaminate the water supply.

The gutters to be half-round PVC, Vinyl, Seamless aluminium or galvanized steel and complete with brackets, straps and other hardware necessary to fasten the gutters to the fascia.

Other materials for gutters include bamboo or betel trunks cut vertically or other locally available materials mostly used in rural traditional systems.

### 7.3.3 Downspouts

The materials for these pipes to be compatible with materials used for the gutters as described above.

### 7.3.4 First-Flushing Diverters

This shall be constructed from approved material and act as a diversion valve. Shall route the first flow of water from the catchments surface away from the storage tank. Each shall be capable of diverting a minimum of 10 gallons for every 1000 square feet of collection surface.

### 7.3.5 Leaf screen

To remove debris that gather on the catchment, a leaf screed shall be incorporated in the system along the gutter or in the down sprout. This shall be a coarse mesh screen of approved non-corrosive material. To be in PVC, stainless steel, or galvanized steel.

Alternatively, a funnel-type downspout filter made of PVC or galvanized steel fitted with a stainless steel or brass screen should be installed.

### 7.3.6 Roof Washers

To be placed just ahead of the storage tank. To be capable of filtering small debris for portable systems.
To consist of a tank of approximate capacity 30-50 gallons with leaf strainers and a filter

### 7.3.7 Filter

For portable water the filter to be capable of removing particles of size 3 micron. A wide range of Filters from the simplest to complicated ones are available in the market. Selection shall depend on the size and complexity of the system.

## 7.4 Storage facility.

### 7.4.1 Location

Tanks to be located as close to supply as possible to reduce the distance water is conveyed.
To be either at ground level or beneath ground or partly beneath ground, but must be fully accessible for cleaning, disinfecting and servicing of the internal.
To be placed on a stable, level bed/base.

### 7.4.2 Construction

The tank to be opaque, either upon purchase or painted later, to inhibit algae growth.
The shape to be either cylindrical, rectangular or square.
The tank to be vented to prevent the build-up of gases.
The cover to be strong and secure to minimize the risk of accidents.
Underground level tank should be raised slightly above ground level to prevent the ingress of surrounding dirt or vegetation.

### 7.4.3 Material

For portable water the tank shall be of either of the following materials; -

i) Reinforced cement concrete

The concrete to be either in situ or prefabricated. For portable system, the tank to be plastered with a high-quality approved material

ii) Ferrocement masonry,

The concrete, sand and mortar to be applied under pressure from a gun over the formwork.

iii) Plastic(polypropylene)

To mostly be installed above ground. Specially reinforced tanks will be necessary for buried installation.

iv) Metal (galvanized iron).

To be made from galvanized sheet metal or corrugated galvanized steel dipped in hot zinc for corrosion resistance.

For portable use the inside to be lined with an approved food-grade liner (e.g. polyethylene or PVC, or coated with an approved epoxy paint.

v) Fiberglass and wood tanks.

These must be lined with a food-grade liner to store portable water.

vi) Rain barrel/drum.

This to be used for simple rain water installations

# PARTICULAR SPECIFICATION FOR THE DESIGN SUPPLY AND ERECTION OF WATER STORAGE TANKS AND BOOSTER PUMPS

## 8.0 Description of Site

The Sub-contractor is deemed to have visited the site at Delmonte Murang'a county and if unable to locate it or its details apply to the Principal Secretary, State Department for Public Works.

No claims will be allowed for the travelling or other expenses, which may be incurred by the sub-contractor's works.

## 8.1 Scope of Contract

The work to be carried out under, this sub-contract comprises the designs, manufacture, supply, delivery, erection, together with testing and commissioning of galvanized steel tank as here-in specified.

All work shall be performed in straightforward manner by competent workmen under skilled supervision to the entire satisfaction of the project manager.

## 8.2 Compliance with Regulations

The sub-contractor shall comply in all respects to the provisional and regulations of the By-laws of the Local Authority, Kenya Building Code, as 449 Part B5 1964. BS 4211, CP2 chapters V part 1 and 2 MOPW Structural steel work specification (1973) code of practice for design and construction of buildings and structures in Relation to Earthquake (1972) wherever applicable to the sub-contract works.

The Structural Engineer shall be responsible for the design of the foundation subject to giving approval of the sub-contractor's design of the tower and due allowance should be given for this work to be carried out in sub-contractor's programme of works. The main contractor is responsible for the construction of the foundation in accordance with approved designs.

## 8.3 Structural Drawings and Calculations

2No copies of general arrangement and fabrication drawings properly dimensioned and detailed showing the whole tower and its accessories together with 2No copies of the structural calculations complying with all the relevant BS and CP are to be submitted for approval prior to the commencement of the work.

The calculations are to indicate the maximum downward and upward loads on the foundations for the Engineer to design the foundation

## 8.4 Steel Water Tanks

The tank shall be Galvalume High Tensile Steel Tank complete with Body Liner & Galvalume Roof complying in all respects to BS 1564 Types 1 or 2 unless otherwise specified.

The jointing materials shall be non-toxic and non-insoluble to water and the tank cover shall be joined throughout the tank top ensuring that the joint is both water proof and dust proof.

Cover framing and members shall be designed to withstand supper-imposed loading complying with the requirement complying with the requirements of CP2 Chapter V part 1 and BS 149 Part 2.

All internal stays are to be provided as required by the tank manufacture and the Sub-contractor shall be responsible for ensuring the stays are adequate in number and position and properly tightened.

Access manhole with hinged cover together with a filtered vent outlet shall be installed.

The Sub-contractor is to notify the Engineer of the type of panel he is proposing to use and the manufacturer who is to be approved.

The inflow and outflow connection shall be as shown on the drawing.

The outflow supply pipe shall be at least 50mm above the tank bottom while the inflow pipe shall be 200mm below the tank rim. The overflow pipe shall be about 1000mm long, away from the tank. The drain pipe shall be at the lowest part of the tank.

### 8.4.1 HIGH LEVEL TANK

Tank Capacity: 39,000 litres. It shall be constructed of Galvalume High Tensile Steel Tank complete with Body Liner & Galvalume Roof. Preferred dimensions Diameter 4.1m x 2.95m high

Height from ground level to the underside of the tank will be 15 metres.

Tank to be supplied with:

1. 65mm and 50mm diameter inflow connection (Council and Borehole Supply)
2. 80mm diameter outflow connection
3. 80mm diameter overflow pipe
4. 1 No. Ventilator Static - 76 mm
5. 1No. level regulator
6. 1No. Water level indicator
7. 1No. internal ladder
8. 1No. external ladder to 3m off-ground level with cage
9. 1No. perimeter walkway and handrail around the tank

### 8.4.2 PIPEWORK

The sub-contractor shall supply and fix all pipe work and fitting up to ground level as detailed on the drawing or in this specification. All pipe work shall be adequately supported and secured to the tank structure. The washout pipe will have a bend leading to a reasonable place where the drainage will not interfere with the structure.

The inflow outflow and washout pipes shall be fixed against the tower structure so as to facilitate fixing and good support.

The following pipework shall be used depending on the condition: -

a) Medium Grade Galvanized steel and must conform with BS 1987 1967 class 'B'

b) PP-R pipe works to be manufactured in accordance with the current European standards i.e DIN 8077 and DIN 8078 for PN 20 tubing, with metallic joints to DIN 8076, joints and fittings for tubing to DIN 16962.

The sub-contractor shall provide high pressure ball valve capable of coping with the maximum area's local water supply pressure.

### 8.4.3 Access Ladder

Internal ladder shall be supplied for the tank and shall be fixed adjacent at the manhole but easily removable for cleaning the inside of the tank (i.e hooked connection).

The tanks shall be provided with an external ladder leading to the manhole and complying to BS 4211. The stringers shall be parallel, minimum width 15 inches apart and of flat bar of minimum dimensions 1½" by 2/8 inches. The rugs shall be of round bars not less than ¾ inches diameter and the distance between centers shall be 9 – 10 inches. The external ladder shall be fitted with safety hoofs made to conform with BS 4211.

### 8.4.5 Platform

The tower is to have a periphery walkway at tank level having minimum width of 600mm clear between the edge of the tank and the inside of the protective safety handrail. The platform is to be provided with a steel chequered place floor of similar approved and to be completely sealed so as not to allow anybody or items such as bolts and spanners to fall on persons on the ground.

All loading for the design of such platform are to be provided in the structural calculations.

### 8.4.6 Painting

The tank shall be painted inside with one coat of bituminous non-toxic paint (or any other equivalent and approved) and on the outside with coat of primer before erection. After erection, the tank inside shall be painted with two coats of aluminium paint. The other structures shall be cleaned and painted one coat lead oxide or red lead before erection and two coats of aluminium paints after erection.

All the painting shall be approved by the Engineer.

### 8.4.7 Erection

The sub-contractor shall erect the tank complete, on foundation prepared and designed by others and with all necessary pipes, ladders, tower etc. as listed herein and shown on the drawing.

The main contractor shall prepare the foundation to the sub-contractor's and MORPW&H Structural Department's details. The main contractor shall also concrete or ground in the HD bolts to the sub-contractor's requirements.

## 9.0 POLYETHYLENE WATER STORAGE TANKS

(a) The tanks are made of graded polyethylene that has been effectively stabilized against the harmful effects of sunlight. This being achieved by incorporating more than 2% carbon black into the melt.

(b) The tank to be manufactured as per the relevant Kenyan Standard.

### 9.1 Booster pumps

2 No. electrically operated submersible pumps capable of pumping 5 cubic metres per hour of water against 65 metres static head shall be installed. The pumps to be as Pedrollo 4SR 6/13 Model or equal and approved.

Each pump shall be directly driven by a three-phase motor; the pump motor being mounted on a common base.

Pump casing shall be manufactured from good quality cat iron and impellers, shafts and other material in contract with water shall be of corrosion resistant metal. The pumps shall be suitable for pumping filtered water treated for human consumption.

The motor shall be completed protected against possible damage due to entry of water, dust etc. They shall be fitted with glands for the entry of PVC armored cables with overall PVC sheath. The completed cable connection to the motor terminal box shall be proof against ingress of water or dust.

The pump shall be mounted on concrete plinth which shall be constructed by the main contractor in accordance with specifications form the sub-contractor.

Holes for holding down bolts shall be left in concrete and after the concrete has cured the pumps shall be placed in position and bolts grounded into position. A grout shall be floated under pump motor base to ensure an even surface for the pump to rest upon.

### 9.2 Electrical works

It shall be the responsibility of the sub-contractor to provide all electrical wiring between all items of his sub-contract works to ensure the correct functioning of his equipment. The sub-contractor's electric works shall start from nearest electrical isolator.

### 9.3 Control panel

The sub-contractor shall provide an electric control panel and shall be responsible for its fixing and satisfactory operation. The panel shall be fabricated from minimum thickness. 1.2mm steel sheet and finished grey stoved enamel. The panel shall be wall

mounted with a removable hinged front access panel. Motor control switch gear shall be of approved type. The panel shall have an integral isolator.

Pump changeover shall be automatic alternating after each duty cycle. A green 'running' red 'trip' lamp shall be provided for each pump. The control system (float switches etc) shall be energized when a pump is started. The motor system shall be wired so that they operate only automatically as called for by the switches except that starter push button shall be connected so as to enable the pumps to be started and run and cease to run when the push button is allowed to its normal position. An emergency stop button shall be located adjacent to each pump.

The level regulator shall be wired and set in such a manner that the duty pumps shall be called to start when the high-level tank is full. The electrode in the Underground tank shall override instructions form high level regulator and stop when the water is approximately 600mm high. Where a three-phase motor is used, a single phasing protector shall be provided if the motor does not have one. A phase failure relay shall be installed in 3 phase – operated pumps.

## 9.4 Testing

Testing shall be done by filling the tank with water after erection. The water will be from the local supply and the main contractor shall apply from the Authority for connection.

In cases where water is already on site and being used by the client, the contractor will make necessary arrangements and reimburse the client amount equivalent to volume of water used. Testing shall be witnessed by the Project Manager or his representative.

## 9.5 Guarantee

The sub-contractor shall guarantee the tanks against leaks, and the tower for a period of (12) months form the testing date. Any damage incurred due to bad workmanship shall be made good by the contractor.

## 9.6 SCHEDULES

The tenderer shall complete all schedules. The schedules shall be read in conjunction with the specification. The GRAND TOTAL of prices in the main summary of prices schedule shall be deemed to have been included in another part of section.

# PARTICULAR SPECIFICATIONS FOR MECHANICAL VENTILATION SYSTEM

## 10.0 SCOPE OF WORK

The scope of the works comprises Installation, Testing, and Commissioning of Mechanical Ventilation and Air Conditioning systems in accordance with Specifications and drawings.
All the necessary elements and details for complete system are to be included.
Excluded from the specifications are the following: -

- All concrete works
- All block works
- Electrical wiring, isolators and switch boards, except internal wiring for control system from a local isolator.

## 10.1 SYSTEM COMPONENTS

Dimensions and capacities of ducts and fans are calculated and based on a specific requirement of air, and on an assumed resistance through grilles, silencers etc. However, the installer shall be responsible for the correct functioning of the system. Subsequently it is therefore his duty to size the systems' components with consideration to his offered equipment.

## 10.2 DRAWINGS

The Engineer's drawings show the main layout and principles for the Ventilation and Air Conditioning Systems. If need for further detailing is required in order to carry out the work, working drawings and details shall be produced for approval by the Engineer before the work is executed.

In preparation of the working drawings, care should be taken to coordinate the Ventilation and Air Conditioning works with other services involved and avoid any interference with these.

## 10.3 MATERIALS AND WORKMANSHIP

In the specification, equipment is generally described according to capacities and a given standard in order to aid in identification of the particular equipment to satisfy specifications. The equipment selected shall be of reputable manufacture with adequate Back-Up service.

If the Engineer finds it necessary, samples of the materials will be submitted for approval before placing an order. The Engineer shall reject any materials which he finds to be of unsatisfactory quality.

Works shall be carried out by competent workmen under experienced supervision.
The Engineer shall have the authority to have any substandard work or equipment redone and/or equipment replaced.

## 10.4 DUCTWORK

### 10.4.1 General Ductwork

All seams, joints and connections to plant shall be so made as to reduced air leakage to a minimum. Internal roughness and obstructions to airflow will not be accepted. Sharp edges or corners on the outside of ductwork, flanges, supports, etc, will not be accepted. Any

part of galvanized ductwork where the galvanizing is damaged during manufacture or erection shall be painted with two coats of aluminium, zinc or other corrosion – resisting paint to the approval of the Engineer.

Where ducts pass through roofs (and external walls where applicable) these shall be fitted with angle flanges and weather cravats to ensure a weather-proof fitting to the building structure.

Connections to equipment shall be made with angle flanged joints. Ductwork which may have to be moved to enable plant to be removed shall incorporate angle flanged joints. For long duct runs, angle flanged joints shall be included at intervals to facilitate any subsequent alternations.

Bends and offsets shall have a minimum throat radius equal to the width of the duct. Where short radius elbows are indicated or agreed by the Engineer as necessary due to site limitations the dimensions and internal vane (s) shall be in accordance with HVCA publication DW/121.

Ductwork shall be constructed by galvanized, cold rolled, close annealed patent flattened sheets. Tests holes shall be provided in branch ducts from grilles and there shall be three or four tests' holes on side of duct according to duct depth at each test position. At branch positions there shall be one test hole. Air tight swivel type metal covers shall be fitted over the test holes in such a manner that they shall be readily removed as required.

### 10.4.2 Rectangular ductwork

Construction of ductwork shall be as per the following Guidelines:

- Up to 300mm longer side – 22 S.W.G.
- over 300mm and up to 460mm longer size – 20 S.W.G.
- over 460mm and up to 900mm longer side 18 S.W.G (stiffening to be 25mm x 25mm x 3mm. M.S angle at slip joints at 180mm spacing)
- Over 900mm and up to 1370mm. longer side 16 S.W.G. (stiffening to be 30mm x 30mm x 3mm M.S angle at 900mm spacing).
- Over 1370mm longer side – 14 S.W.G. (Stiffening to be 40mm x 40mm x 5mm M.S angle at 900mm. spacing).

Ductwork constructed from 22 and 20 S.W.G sheet shall have folded locked seams and ductwork constructed from 18, 16 and 14 S.W.G. sheets shall have riveted seam with 8 S.W.G rivets at 2" pitch.

Joints for ductwork having a side greater in width than 610mm shall be flanged by means of 30mm x 30mm x 3mm mild steel angles. Mild steel used as flanges or stiffeners shall be riveted to the ductwork, with 8 S.W.G rivets at 2" pitch. The joint faces of flanges shall be drilled for 10mm bolts at 75mm pitch.

Air tight access doors shall be provided on the ductwork wherever indicated on the drawings. The access doors, of sufficiently heavy construction to avoid distortion, complete

with handles, shall be secured by brass wing nuts screwed into studs provided, on galvanized mild steel stiffening frames riveted, or bolted to the ductwork. The access doors shall be provided with felt or rubber gaskets to ensure that when closed they are perfectly tight.

The ductwork shall be installed with all joints air tight and adequately stiffened and braced shall have the largest radius possible with a minimum throat radius of one diameter if possible. Square or miter elbows will only be allowed where shown on the drawings. Turning vanes shall be fitted in square or miter elbows.

Transformer pieces except where situated on fan suction shall be constructed so that the angle on any side does not exceed 15° to the axis of the duct where possible.

Branch ducts shall enter main ducts expansion sections where possible. Where branch ducts occur, at taper or transformation pieces, the length of such pieces in the main duct shall be symmetrical about the axis of the branch.

## 10.5 BRACKETS AND SUPPORTS

Supports and brackets for ductworks shall be made adjustable for height, spaced to ensure support and where practicable shall be fitted at each joint of the ductwork. Vertical ductwork shall be supported at each floor level, horizontal ducts at intervals not exceeding 2280mm and adjacent to fans, canvas joints and other equipment. All members of supports in contact with metal ductwork shall be galvanized after fabrication.

Socketed joints shall have a minimum overlap of 50mm in the direction of flow. The joint shall be made with an approved type jointing compound with bolts or rivets at centres not exceeding 50mm. wherever access cannot be made for riveting or bolting self tapping screw of the shortest length which will give a satisfactory joint shall be used in lieu of the rivets or bolts, on size or diameters up to 530mm. All slip joints on circular ductwork are to have a spigot carefully swaged damper leaf shall be multi leaf type. The quadrants shall be of robust construction and securely fixed to the ductwork. The leaves shall be linked with a connecting rod and the ends of the spindle shall be housed in bearings. Dampers are to indicate the full and closed positions and are to be marked and then locked after air Volume has been set.

## 10.6 JOINTS

### 10.6.1 Flexible Joints

Flexible joints shall be provided on fan inlet and outlet connections and elsewhere on the ductwork where indicated. They shall be over the full cross-sectional area of the mating fan inlet or outlet section. The ends of the duct and fan connections shall be in line.

Flexible joints shall consist of, or be protected by, material having a fire penetrating time of at least fifteen minutes when tested in accordance with BS 476 Part 1 Section 3. The material shall be of the glass fibre cloth type, canvas or other approved material. The width of joints from metal edge to metal edge shall not be less than 80mm and more than 250mm.

All flexible joints other than fan inlet connections shall be between flanged ends. The

flexible material flange shall be backed by an angle or flat iron flange and the flexible joint flat iron bar used with fan inlets shall not be less than 5mm thick.

### 10.6.2 Flexible Connections.

Where flexible connections are indicated or required between rigid ductwork and particular components or items of equipment, the internal diameter of the flexible duct shall be equal to the external diameter of the rigid ductwork and of the spigot type. The use of flexible duct between rigid sections of sheet metal ductwork to change direction or plane will not be permitted except where indicated or expressly authorized by the Engineer.

The flexible duct shall have a liner a cover of tough tea-resistant fabric equal in durability and flexibility to glass fibre shall be impregnated and coated with plastics. It shall be reinforced with a bonded galvanized spring steel wire helix or glass fibre cord or equal and shall be bonded to cover to ensure regular convolutions.

Alternatively, the flexible duct shall consist of flexible corrugated metal tubing of stainless steel, aluminium, tinplated steel or aluminium coated steel. The metal may be lined on the inside or the outside or both with plastics materials.

The joints to rigid spigots shall be sealed with a brush coat of pipe jointing paste or mastic compound. Ducts up to 150mm diameter shall be secured with a worm drive type hose clip complying with BS 3628. Ducts over 150mm diameter shall be secured with band clip.

The frictional resistance to air flow per unit length of the flexible duct shall not exceed 50% more than the frictional resistance per unit length of galvanized steel ducts of equivalent diameter. The radius ratio R/D for bends shall not be less than 2, where R is the centre line radius and D is the diameter of the flexible duct.

Flexible ducts shall be suitable for an operating temperature range of 18oC to 120oC and shall comply with BS 476 Part 1, Section 2, Clause 7 (Clause 1; surface of very low flame spread).

## 10.7 FINISH PAINTING

Upon completion of the installation and after all tests have been carried out to the satisfactory of the Engineer, the plant, equipment, supports, etc. shall be examined and all priming coats damaged during erection made good.

Any plant or equipment, ductwork, etc., which is to be insulated, shall have had the priming paint protection made good before the application of the insulation. After the above procedures have been carried out to the satisfaction of the Project Manager, the various surface shall be given the necessary preparation as recommended by the paint and insulation manufacturers and finish painted in colours to be agreed between the Sub-Contractor and Project Manager, at a later date.

For the purposed of the Specification, however, it shall be deemed that the sub-contractor's tender price was based on the identification requirements for the various services detailed in Code of Practice DW/161 Identification of Ductwork as published by

the H.V.A.

## 10.8 AIR INTAKES AND OUTLETS

Unless otherwise indicated fixed louvers on external walls will be fitted at air intake and outlet positions. A galvanized steel wire mesh screen of 20mm diamond mesh and at 2mm diameter wire and complete with a frame of galvanized steel rod with securing lugs or of flat iron shall also be fitted on the inner side of the louvers.

## 10.9 FANS

### 10.9.1 General

Fans shall capable of giving the specified performance when tested in accordance with BS 848. Although estimated values of the resistance to airflow of items of equipment may be indicated, this does not relieve the Contractor to the responsibility for providing fans capable of delivering the required air volume flow through the system.

The make and design of fans shall be approved by the Engineer and evidence supporting noise levels and fan efficiencies shall be provided. Where fans are supplied with noise attenuations, full details of the attenuations shall be given.

Belt driven fans shall be fitted with pulleys suitable for V-belts; pulleys of the taper lock type may be used for drivers up to 30KW output. Alternatively, and in any case above 30KW output, pulleys shall be secured to the fan and the motor shafts by keys fitted into machined keyways. Pulleys shall be keyed to the fan shaft in the overhung position. Keys shall be easily accessible so that they can be withdrawn or tightened and they shall be accurately fitted so that the gib head does not protrude beyond the end of the shaft.

Machined bolts, nuts and washers only shall be used for the assembly of fans; all bearing surfaces for the heads of bolts or washers shall be count faced. Holding down bolts for fans and meters shall be square section under the head or be fitted with snugs to prevent them tuning in the fan base plate when the nuts are tightened.

Any fan which is too large or too heavy for safe manhandling shall provided with eyebolts or other lifting facilities to enable mechanical lifting equipment to be used.

### 10.9.2 Axial Flow Fans

Axial flow fans shall be of either the single stage type or the multi-stage contra-rotating type with each impeller mounted on an independent motor. Casings shall be rigidly constructed of mild steel stiffened and braced to obviate drumming and vibration. Cast iron of fabricated steel feet shall be provided where necessary for bolting to the base or supports. Inlet and outlet ducts shall terminate in flanged rings for easy removal. The length of the fan (s) and motors(s) shall also terminate in flanges in order that the complete section may be removed without disturbing adjacent ductwork. Electrical connections to the motor(s) shall be through an external terminal box secured to the casing. Impellers shall be of steel or aluminium, the blades shall be secured to the hub or the blades and the hub shall be formed in one piece. The hub shall be keyed to a substantial mild steel shaft and the whole statically balanced. Blades shall be of aerofoil section. Shafts shall be carried in two bearings which may be ball roller or sleeve type. Lubricators shall be extended to

the outside of the casing.

Where axial flow fans are driven by a motor external to the casing the requirements for pulleys and for V-belt drives and guards shall be met. Unless otherwise indicated a guard is not required for any part of a drive which is within the fan casing. An access door of adequate size shall be provided.

Where axial flow fans of the bifurcated type are indicated the motors shall be out of the air stream. Motors may be placed between the two halves of the casing in the external air or may be placed within the fan casing provided that effective ventilation is given to the motor. Where hot gases or vapours are beings handled the motor and the bearings shall be suitable for operation at the temperature they may experience.

## 11.0 DAMPERS

### 11.1 General

Sufficient dampers shall be provided to regulate and balance the system. Dampers on grills or diffusers shall be used for fine or secondary control. All dampers shall be sufficiently rigid to prevent fluttering. Unless otherwise indicated, the air leakage past dampers in the fully-closed position shall not exceed 5% of maximum design air flow in the duct. All duct dampers except fire dampers and self-closing flaps shall be fitted with locking devices and position indicators. Dampers shall be generally in accordance with the appropriate HVCA Specification.

Each Primary control damper shall be fitted with a non-corrodible label stating the actual air flow in M3/S and the cross-sectional area. Alternatively, these figures shall be painted in a visible position on the adjoining ductwork or insulation. The position of a damper as set after final regulation and balancing be indelibly marked on the damper quadrant

#### 11.1.2 Butterfly dampers

Butterfly dampers shall each consist of two plate's edge seamed, and of the same thickness of material as that from which the associated duct is made, and rigidly fixed to each side of a mild steel operating spindle, the ends of which shall be turned and housed in non-ferrous bearings.

#### 11.1.3 Bifurcating dampers

Bifurcating dampers shall be of 2mm thick sheet for sizes up to 450mm square. For larger sizes, the thickness shall be as indicated. Damper plates shall be rigidly fixed to square section mild steel spindles the ends of which shall be turned and housed in non-ferrous bearings.

#### 11.1.4 Multi-leaf dampers

Multi – leaf dampers shall consist of two plates of material of the same thickness as the associated duct and rigidly fixed to each side of an operating spindle, the ends of which shall be housed in brass, nylon, oil impregnated sintered metal, PTFE impregnated or ball bearings. The ends of the spindles shall be linked such that one movement of the operating handled shall move each leaf an equal amount. An inspection door shall be provided adjacent to each multi-leaf damper.

On low velocity systems only, multi-leaf damper blades may be of a single plate, at least 1.6mm thick and suitably stiffened, and the blade linkages may be within the duct. Those dampers shall have bearings and inspection doors as specified above.

### 11.1.5 Damper Quadrants and Operating Handles

Quadrants and Operating handles shall be of die-cast aluminium with the words" OPEN" and "SHUT" cast on the Quadrants. Quadrants shall be securely fixed to the damper spindles and shall be close-fitting in the quadrants hubs to prevent any damper movement when the damper levers are locked.

### 11.1.6 Self-closing dampers

Self-closing dampers shall be designed so as to present the minimum of resistance to airflow under running conditions, to take up a firm, non-fluctuating position under running conditions and to give a tight shut-off when closed. They shall incorporate rubber stops to prevent rattling and to give a tight shut-off when closed. They shall incorporate rubber stops to prevent rattling.

### 11.1.7 Sliding Dampers

Sliding dampers shall be provided only where indicated. They shall be of 2mm. thick sheet steel for size up to 450mm square. For larger sizes the thickness shall be as indicated. They shall run in guides lined with felt.

### 11.1.8 Iris type dampers.

Iris type dampers may be used in ducting up to 600mm, dia. Or 450mm square. The control shall be on the outside of the damper. The design shall be such that the leaves of the damper can be easily moved for adjustment.

## 11.2 GRILLES

### 11.2.1 Supply & Return Registers

Supply registers shall be manufactured from high grade, extruded Aluminium sections with lacquered finish and fixing shall be 32mm with bevelled edges.

The registers shall have a front set of blades parallel to the long dimension, of rear set of blades parallel to the short dimension, the blades being at 17mm centres and individually adjustable with opposed blade dampers.

### 11.2.2 Extract grilles

Extract grilles shall be similar to the Supply Registers described above with the exception that they have only one set of blades parallel to the long dimension.

### 11.2.3 Fresh Air Grilles

These shall be manufactured from sheet steel with steel fixing flanges and shall be galvanized after manufacture. An insect screen shall be fixed downstream.

### 11.2.4 Diffusers

These shall be manufactured from high grade extruded sections with lacquered finish, bevelled flanges and removable core. Fixing shall be by self-tapping screws through the

duct into neck of the diffuser.

### 11.2.5 Louvers

Discharge and Fresh air Intake louvers shall be manufactured from mild steel and be galvanized after manufacture. A screen shall be fixed to the back of the louvers

## 11.3 ATTENUATORS

### 11.3.1 General

Purpose made attenuators and sound absorbing material shall be designed to air flow, have adequate strength and cohesion to resist erosion by air flow and do not produce dust. They shall be free of odour and proof against rot, damp and vermin and shall comply with the requirements as to fire and smoke hazards. Adhesives shall be compatible with the sound absorbent material and should preferably be non-flammable.

Where sound absorbent material and /or special attenuators are indicated they shall either reduce the sound level in the space, due to the equipment, to the specified value or shall give the specified sound level attenuation over the specified range of frequencies. Purpose made attenuators shall be tested in accordance with HVRA Laboratory Report No. 55 (Code for the measurement of the performance of unit silencers). The insertion loss and generated noise level for each octave band and the pressure loss of the silencer shall be stated.

Attenuators shall be suitable for internal air pressure of 100N/m2, air stream temperatures of up to 40oc and free from air stream erosion for velocities up to 25m/s. The mineral wool lining shall be rot, vermin and fire-proof. Attenuator casing shall be pre-galvanized sheet steel with galvanized pre-drilled flanges.

### 11.3.2 Rectangular Attenuators

These shall be rectangular in section with splitters forming air passages in parallel. The mineral wool lining shall be resin bonded.

### 11.3.3 Circular Attenuators

Circular section attenuators will have a central pod. The mineral wool lining shall be retained by expanded steel. The end flanges shall be match drilled to suit the fan which they are fixed to.

### 11.3.4 Acoustic lining

Where indicated on the contract drawings, the ductwork shall be acoustically lined. The lining shall consist of resin bonded mineral wool 25mm, thick fixed to the ductwork by a suitable adhesive.

## 11.4 INSTRUMENTS

### 11.4.1 General

The instruments, gauges etc, detailed in this section shall be provided in addition to those associated with specific items of plate and detailed elsewhere, they shall be mounted in accessible positions and shall be easily read.

### 11.4.2 System Static Pressure Gauge

A system static pressure gauge shall be provided for the system. It shall consist of a small inclined manometer gauge similar to a filter gauge. The edge of the gauge shall be connected to the system and the other end shall be left open to the plant room but where fluctuation of the static pressure in the plant room may occur the gauge shall be connected across the main fan. Such fluctuations may be caused by wind pressure affecting large open-air intakes to the plant room.

## 11.5 VIBRATION, NOISE AND SOUND INSULATION

### 11.5.1 Anti-Vibration Mountings

Fans, compressors, motors and any other vibration-inducing equipment shall be isolated from the building structure by anti-vibration mountings which shall be compressed machinery cork, spring or rubber dampers or rubber/metal bearers as indicated.

### 11.5.2 Noise

The noise produced by the installation in the spaces served, in any adjacent buildings and in the open-air surrounding plant rooms shall be kept as low as possible. This shall be specially considered in the selection of fan motors, grilles and the internal finish and arrangements of extraction ducting.

Noise level information for fans based on octave analysis data, shall be stated. The reference level and the testing technique shall be stated.

The sound level in the spaces served, due to the equipment shall comply with the recommended design criteria given in the IHVE Guide (Table 13.1 of 1965 Edition). The maximum sound pressure level due to ventilation system must not exceed value mentioned below measured by a reference value of 2 x 10 x 10-5 N/m2 transferred to a logarithmic scale, and measured at any point 1.5 meters above the floor and 1.0 meters from the walls.

The maximum sound pressure level measured at any point 4 metres from the extract point must not exceed 55dB.

The maximum sound pressure level measured at any point 4 metres from fans must not exceed 60dB.

## 11.6 THERMAL INSULATION

### 11.6.1 General Description

All heated, cooled, and re-circulated air ductwork shall be insulated.

Insulation shall be of 25mm thick expanded polystyrene sheet, or spray applied polyurethane foam to a uniform thickness of 25mm. Polystyrene shall be fixed so that the edges butt closely without gap and the insulation shall overlap at corners by the thickness of the insulation. The sheet shall be fixed by means of a suitable adhesive and plastic impingement pines attached to the ductwork.

### 11.6.2 Ductwork in Plant Room

The insulation described above in Clause 5.1 above shall be finished by the application of a

15mm thick layer of hard setting finish. Insulation shall bevelled thick to angle of 45o at all connecting flanges, access hatches and all other places where operation or maintenance is likely to cause the breaking of the insulation.

The insulation shall then be given a vapour sealing by the application of two coats of anti-condensation paint.

### 11.6.3 Ductwork External to plant Rooms

The insulation described in Clause 5.1 above shall finish by the application of two coats of bitumastic.

## 11.7 ELECTRICAL EQUIPMENT AND WIRING

### 11.7.1 Scopes

The responsibility for electrical equipment and wiring shall be as defined as below-:

An on-off starter shall be provided and placed in the appropriate position for connection of the fans required for the installation and within a time agreed with the Engineer fully detailed wiring diagrams for all connections to them shall be availed.

The Installer shall be responsible for the accuracy of all wiring diagrams provided by him and for the correct internal wiring of all pre-wired equipment supplied. The Installer shall reimburse the full cost of abortive or remedial work arising from any error in these aspects.

### 11.7.2 General

Unless otherwise indicated all electrical equipment and installation shall be suitable for use in ambient temperatures up to 40oC and relative humidity up to 90%. For tropical climates, electrical equipment shall be suitable for use in the temperature and humidity as indicated; it shall be proof against atmospheric corrosion, including that of saline air where relevant, and materials shall not be susceptible to mould growth or attack by termite and similar hazards.

### 11.7.3 Electrical Motors

Electrical motors shall comply with BS 170 2048 or with BS 2613 and BS 3979 as appropriate. All motors shall have Class E insulation (BS2757) and can be continuously rated.

They shall be screen protected (BS2817) unless otherwise indicated under all normal conditions, without being overloaded. All motors larger than 0.75kw output shall be three phase, for motors above 15kw output the type of motor and method of starting shall be such as to limit the starting and run-up currents to three times the rated full load current unless otherwise indicated. No motor shall run faster than 25rev/s unless otherwise indicated.

## 11.8 INSPECTION, COMMISSION AND TESTING

### 11.8.1 General

Unless otherwise indicated tests shall be carried out in accordance with the appropriate BS or CP. Test certificates for works tests, site tests and tests required by BS shall be submitted in duplicate to the Engineer.

### 11.8.2 Testing

Where an individual inspection or tests take place at outside the site of the works representatives of the Engineer will be required to be present.

Unless otherwise indicated the contract shall include the cost of all tests, necessary instruments, plant supervision and labour both at work and on site. The accuracy of the instruments shall be demonstrated where so directed by the Engineer.

The site test shall be of at least six hours duration. Any defects or workmanship, materials and performance maladjustments or other irregularities which become apparent during the tests shall be rectified by the supplier at his expense and the tests shall be repeated at his expense to the satisfaction of the Engineer.

The Supplier/Installer's representative present at the site tests shall be fully conversant with the operation of the thermostatic controls and shall be expected to explain the operation and safety controls forming part of the installation to the employer's representatives.

### 11.8.3 Site Tests

The Installer shall supply all instruments and equipment necessary to carry out site tests and shall arrange with other parties for the testing of associated equipment which may affect the performance of the plants installed under these works.

### 11.8.4 Site Tests-Fans

All fans shall be charged with suitable lubricant and shall be tested upon completion of the auxiliary system erection to ascertain that the performance of each fan complies with the requirements of the specification.

### 11.8.5 Completion of Works – Balancing and Commissioning

Following the site tests and prior to handover, Mechanical Ventilation or Air-Conditioning systems shall be balanced by means of grills, dampers and other special controls installed so to give the required air flow rates and where applicable the required temperatures, pressures and humidity conditions in all areas served by the said systems.

The complete system shall be balanced and commissioned as a whole. Sectional balancing and commissioning on any part of the system where this excludes, final complete system balancing and commissioning shall not be accepted.

Test volumes within ducts shall be within +5% of the design volumes, and volumes at grills and diffusers shall be within +10% of the design volumes.

When the system has been balanced to the satisfaction of the project manager, it shall be run under complete automatic control for 72 hours continuous operation to ascertain any faults in operation before acceptance and handover. Any faults discovered during this time shall be corrected and another test or tests of 72 hours duration shall be carried out to ensure satisfactory operation, all at the expense of the Supplier/Installer.

During this phase, particular attention shall be paid to:

- The maintenance of cleanliness of all plant and extraction systems during construction and ensuring that extraction systems are cleaned through as part of commissioning.
- The protection of plant, particularly sensitive or fragile items, from the activities of other trades during construction and from dirt and mal operation during commissioning.
- The protection of electrical of electrical equipment from damp during construction and commissioning.

## 11.9 CONTROL SYSTEM

Particular attention shall be paid to the following features:

- Satisfactory operation of any automatic or manually operated sequence to be used in the event of fire.
- Safety in the event of failure and of sudden resumption of electricity supply.
- Satisfactory operation of safety interlocks designed for the protection of personnel, such as those associated with the high voltage electrically operated plant.

The following items shall be checked and/or tested and recorded on the site Test Certificate: -

- Set devised value of all control devices
- Satisfactory operation of equipment protection devices.
- Satisfactory operation of all sequencing operations and alternate working selections and automatic or manual change-over of duplicate plant.

## 12.0 NOISE AND SOUND CONTROL

Sound level reading shall be taken with a simple sound level meter using the 'A' scale weighting network. The spaces in which readings shall be taken shall be as agreed with the Engineer but will in general be the following: -

- Plant rooms
- Occupied rooms adjacent to plant rooms
- Outside plant rooms facing air intakes and exhaust to assess possible nuisance to adjacent accommodation. If the adjacent accommodation is private residential building tests may be required at night.
- In the space served by the first grille or diffuser after a fan outlet.
- In any space where, by the addition of special silencing material or techniques of by classification of use, a low level of noise is clearly required.

Alternatively, sound level reading shall be taken using a sound analyser to give an octave band analysis of the ground spectrum and to pinpoint the frequency values of peak sound levels. The spaces in which readings shall be taken shall be as agreed with the Engineer but will in general be as detailed in paragraph above.

## 13.0 OPERATING AND MAINTAINANCE INSTRUCTION

The Supplier/Installer shall demonstrate and explain the plant and the method of starting,

running and stopping to such staff as the Engineer shall nominate.
He shall provide three sets of operating and maintenance instructions which shall be enclosed in durable covers. The operating and maintenance instructions shall include; -

- A brief outline of the operation of the plant.
- Instructions on how to start and stop the plant, noting any safety and / or sequencing arrangements.
- Details of required maintenance with suggested frequency of action
- Details of all lubricating oils and greases required and filter replacement
- Details of each item of plant including the name and address of the manufacturer, type and model, serial number, duty and rating.

The operating and maintenance instructions shall be handed to the Engineer not later than at the end of the commissioning period.

## 14.0 SPARE PARTS

The Installer shall submit a priced list of any extra materials which he recommends should be purchased for the Ventilating and Air Conditioning Plants and all associated equipment and control gear and extras not supplied as standard. He shall be required to give a guarantee that he will hold sufficient running stock of spare parts for the maintenance of the equipment.

# PARTICULAR SPECIFICATIONS FOR AIR CONDITIONING SYSTEMS

## 15.0 SCOPE OF WORKS

The works to be carried out comprises of the supply, delivery, installation, setting to work, testing and commissioning of all materials and equipment called for in this specification and/or shown in the contract drawings.

The tenderer shall include for all appurtenances and appliances not particularly called for in this specification or on the contract drawings but which are necessary for the completion and satisfactory functioning of the system.

No claim for extra payment shall be accepted from the contractor for non-compliance with the above requirements.

If in the opinion of the tenderer there exists difference between the specification and the contract drawings, the tenderer shall clarify the difference with the engineer before tendering.

The Works to be installed under the contract shall comply with the Ministry of Public Works requirements for contract works under "GENERAL MECHANICAL SPECIFICATION".

## 15.1 CLIMATIC CONDITIONS

The following climatic conditions apply at the sites of the works and all materials and equipment used shall be suitable for these conditions: -

| PARAMETERS | (CONDITIONS) DELMONTE/MAKENJI |
|---|---|
| Maximum mean outdoor dry bulb Temperature, $t_o$ | 29°C |
| Minimum Temperature | 11.5°C |
| Relative Humidity | 50% |
| Altitude | 1,400m ASL |
| Longitude | 37.10087° E |
| Latitude | 0.96481° S |
| Max. solar radiation occurs during the month of February | |

## 15.2 SYSTEMS DESIGN DATA

The air-conditioning systems are designed to maintain the following internal conditions with ambient conditions of 28ºC DB and 55% RH

| | |
|---|---|
| Internal Temperature | 23 ± 1ºC |
| Relative Humidity | 50± 10% |

The equipment described here under covers the specific requirements of equipment to be used for this contractor work and shall be used in conjunction with the accompanying contract drawings.
It shall be deemed that the tenderer has based his tender on plant and equipment which is equal in performance to that stated within the specification.

## 15.3 SPLIT AIR CONDITIONING SYSTEM

This shall be installed in the

The system shall be complete with;

## 15.4 Indoor wall mounted cooling unit (Evaporator)

Each coil unit shall consist of a cooling coil, air circulating fan, fan-guard and a thermostatic expansion valve. A timer unit shall be mounted in the control panel to both the de-frosting intervals and defrosting periods, both of which shall be variable.

The evaporator unit shall be of capacity as specified under the specified conditions, and shall be of the dry expansion type, and preferably of similar make as that of the condensing units. The unit shall be cassette type, high wall mounted or ceiling mounted as will be specified by the Engineer.

The coil shall be manufactured from seamless copper tubing with aluminium fins mechanically bonded to the tubes.

The panel shall be interlocked such, that on energizing the heater, the compressor, condenser and evaporator fan shall be de-energized and only re-energized when the heater is switched off by an evaporator mounted thermostat. A manual overriding switch shall by-pass the timer switch.

The air-circulating fan shall be manufactured from rigid aluminium sheet and finished in white casing. A drip tray with 25mm diameter connections shall be incorporated in the base of the casing.

The Unit shall be complete with the following:

- 1 No. air purifying filter.
- Built in drain pump to automatically drain water.
- Refrigeration pipe work with flared connections
- Fixing brackets/wall mounting kit/ground mounting kit
- Thermostat to control room temperature
- High- and low-pressure units
- Condensate discharge pipe work in Black PVC, 15mm diameter
- Service access valves
- Voltage Surge Protector

The system shall be suitable for 240V, 1 – Phase, 50Hz power supply
The split air-conditioning system shall be designed to maintain room inside temperature of 23±1º C and relative humidity of 50±10%.

### 15.5 Outdoor Units.

The outdoor units shall be installed and mounted on the wall using appropriate and approved mounting brackets. They shall be complete with hermetically sealed compressors. Safety devices shall include overload/surge protection among others.

The unit shall be connected to power provided by others. It shall also be connected to refrigerant piping and control wiring. It shall have adequate charge of refrigerator oil and R 407 refrigerant.

The air conditioning units shall be as York or approved equivalent and shall be provided with approved mounting brackets.

The Unit shall be complete with the following:

- Casing constructed of 18-gauge zinc coated mild steel, zinc phosphate bonderized, coated with oven baked polyester paint and weatherized for outdoor installation. It shall have weep holes on base to allow ease of drainage.
- Hermetically sealed compressor mounted to unit base with rubber isolated hold down bolts, uniform in oil & pressures and shall have internal overload protection.
- Refrigeration pipe work with flared connections
- Distributor with refrigeration control
- Fixing brackets/wall mounting kit/ceiling mounting kit
- Heat exchanger capacity controls
- Precise inverter frequency controls
- New oil returning system (refrigerant oil control system)
- High- and low-pressure units
- An innovation of installation with automatic address settings for indoor units with twin multiplex transmission system of no polarity.
- Condensate discharge pipe work
- Service access valves
- Voltage Surge Protector

### 15.6 Refrigeration Piping

Refrigerant pipe work shall be approved copper tubing and fittings, and shall be properly sized in conformity with the system manufacturer specifications. Pipework shall be joined together by soldering/brazing and shall be complete with all necessary joints, reducers and accessories.
The Ozone friendly refrigerant flow shall be controlled with either a capillary tube or thermostatic expansion valve. Installation shall be carried out by competent and qualified craftsmen. The Engineer may demand proof of qualifications and experience in installation of refrigeration systems.

Pipe work shall be tested for leaks after installation to the Engineers satisfaction. It shall be properly anchored, insulated and no vibration of pipes shall be allowed during the running of the systems. An electronic leak detector shall be used to test for leaks.

## 15.7 VARIABLE REFRIGERANT FLOW (VRF) SYSTEM

The VRF system shall be a dual aspect system (zone heating/cooling) with reduced energy & maintenance costs. The system shall be complete with flexible and user-friendly central management system that will be integrated to building management system. The system shall be capable of more personalized & accurate calculations of energy consumption. The required capacity and the relating technical parameters for the indoor units shall be electronically relayed to the system management and outdoor unit.

## 15.8 Inverter Controlled Outdoor Unit

The three-way pipe outdoor units shall be installed and mounted on the 3rd floor sky garden using appropriate and approved anti-vibration mounting/base. They shall be complete with hermetically sealed compressors. Safety devices shall include overload/surge protection among others.

The air conditioning unit shall allow for maximum 48 indoor units of different capacity & types to be connected to a single refrigerant circuit. It shall have an outdoor unit capacity ratio of 50-130% with nominal cooling load as stated in the bill of quantities and capacity control in the range of 10 - 130% according to the indoor cooling load.

There shall be two outdoor units operating as duty and standby and connected to the same indoor units through control panel.

The Unit shall be complete with the following:

- Casing constructed of 18-gauge zinc coated mild steel, zinc phosphate bonderized, coated with oven baked polyester paint and weatherized for outdoor installation. It shall have weep holes on base to allow ease of drainage. It shall have permanently attached base rails with 3-way forklift access and lifting holes.
- Hermetically sealed compressors mounted to unit base with rubber isolated hold down bolts, uniform in oil & pressures and shall have internal overload protection.
- Advanced compressor oil management system
- Compact flow selector unit
- TCC link: state-of-the-art communication bus system with automatically configured addressing and shall be Building management system (BMS) compatible.
- Heat exchanger capacity controls
- Precise inverter frequency controls with intelligent power drive unit (IPDU)
- New oil returning system (refrigerant oil control system)
- High- and low-pressure units
- An innovation of installation with automatic address settings for indoor units with twin multiplex transmission system of no polarity.
- Condensate discharge pipe work
- Service access valves

- Voltage Surge Protector

### 15.9 Indoor cooling unit (Evaporator)

Each coil unit shall consist of a cooling coil, air circulating fan, fan-guard and a thermostatic expansion valve. A timer unit shall be mounted in the control panel to both the de-frosting intervals and defrosting periods, both of which shall be variable.

The evaporator unit shall be of capacity as specified under the specified conditions, and shall be of the dry expansion type, and preferably of similar make as that of the condensing units. The unit shall be high static pressure ducted unit, cassette type, high wall mounted or ceiling mounted as will be specified by the Engineer.

The coil shall be manufactured from seamless copper tubing with aluminium fins mechanically bonded to the tubes.

The panel shall be interlocked such, that on energizing the heater, the compressor, condenser and evaporator fan shall be de-energized and only re-energized when the heater is switched off by an evaporator mounted thermostat. A manual overriding switch shall by-pass the timer switch.

The air-circulating fan shall be manufactured from rigid aluminium sheet and finished in white casing. A drip tray with 25mm diameter connections shall be incorporated in the base of the casing.

The Unit shall be complete with the following:

- 1 No. air purifying filter.
- Built-in drain pump to automatically drain water.
- Refrigeration pipe work with flared connections
- Fixing brackets/wall mounting kit/ground mounting kit
- Thermostat to control room temperature
- High- and low-pressure units
- Condensate discharge pipe work in Black PVC, 15mm diameter
- Service access valves
- Voltage Surge Protector
- Pulsed modulating valves (PMV) to permit linear variation of refrigerant flow in any circuit directly proportional to the thermal load.

The system shall be suitable for 240V, 1 – Phase, 50Hz power supply

#### 15.9.1 Control Panel

Each system shall be provided for with a purpose made control panel fabricated from mild steel sheet of minimum SWG18 with a hinged door and then powder coated after manufacture. It shall be provided with an integral lock. It shall be complete with;

- Isolator
- Contactors
- Controlling thermostat with temp range from -100C to +300C
- 80mm dial thermometer with temp range from -100C to +300C
- Motor starters & current overload relays

- MCBs
- Phase failure relay with over and under voltage protection
- Timer switch for defrost control
- Push buttons for start and stop
- Audible and visual high temperature alarm with manual reset

The panel shall also have green light running indicators, red "door open" light and equipment circuit trip lights.

### 15.9.2 System Controls Unit

Controls Unit for each system shall incorporate complete controls to ensure continuous system services. Such controls shall include protection against any possible motor overload and over-heat, central control and monitoring for all the indoor units, individual temperature setting for each indoor unit, group control, set lock for each indoor unit and shall have self diagnosis function (display system errors).

The control unit shall control the duty and standby outdoor units to work alternately for twelve hours. This will be achieved by opening and closing of solenoid valves which will close or open the refrigerant pipes to achieve this operation.

The unit shall have a lock release to allow for control of the system by using wireless or wired remote control at the place where the indoor unit is installed. It shall also have a setup of a weekly and detailed schedule of the individual air conditioner.

The control unit shall have an open network control designed for building management systems. It shall also have diagnostic software that will enable download of all operating parameters and instant analysis for commissioning and service.

The control system shall be complete with;

- Weekly timer for a 7-day timer complete with day omit
- Infrared wireless remote controller
- Remote temperature sensor for all indoor units
- Network/protocol adaptor kit to enable integration with artificial intelligence network
- External master on/off control board
- Error output control board
- Power peak cut control board
- Touch screen controller for full control of up to 64 indoor unit including electric billing
- Intelligent server and software package to allow connection to touch screen controller
- Energy monitoring interface

### 15.9.3 Testing and Commissioning Standards

The system shall be balanced to the satisfaction of the project engineer. It shall be run under complete automatic controls for 72 hours continuous operation to ascertain any faults in operation before acceptance and handover.

Any faults discovered during this time shall be corrected and a further test or tests of 72 hours duration shall be carried out to ensure satisfactory operation, all at the expenses of the contractor.

All accessories/equipment have to tested for capacity, efficiency, leakages and other human errors and shall meet standards and specifications.

### 15.9.4 As-Built-Drawings and maintenance manuals

Once the air conditioning system has been tested and commissioned, drawings and maintenance manuals shall be provided. They shall be a true and accurate representation of what has been commissioned.

### 15.9.5 Training

Adequate personnel shall be trained to perform normal operations and routine maintenance of the air conditioning system. The number of personnel to be trained shall be specified for particular pool.

### 15.9.6 TESTING & COMMISSIONING

All the pipe work and connections herein described shall be tested in the presence of the Engineer and to the hydraulic pressure the Engineer deems satisfactory and for a minimum period of 1 hour.

These tests must be before any insulation work is undertaken or any pipe work is finally enclosed in any ducts, etc and due allowance is to be made in the tender for these tests.

The tenderer is to include for providing for all the testing equipment, temporary plugging and refilling etc.

### 15.9.7 ELECTRICAL WORKS

The tenderer shall include for supply, installation and commissioning of all starters, control apparatus, control panels and interconnecting wiring and conduits for equipment that the tenderer is supplying.

Power points shall be provided within 5 metres of the equipment installation point and the tenderer shall connect his equipment from this point.

### 15.9.8 BUILDERS WORKS

The tenderers shall allow for perforation of holes, hacking of walls etc. All disturbed surfaces shall thereafter be made good by the tenderer upon satisfactory completion of the works.

# PARTICULAR SPECIFICATIONS FOR BOREHOLE DRILLING AND EQUIPPING

## 16.0 PURPOSE

The borehole to be drilled, constructed, test pumped and equipped with a submersible pump under this contract will be to provide water intended for domestic use. The maximum ground water abstraction permitted from the borehole shall be 90m$^3$/day with the maximum abstraction period not exceeding 10 hours per day.

The execution of the works shall be in full compliance with relevant provisions of the Water Act.

The proposed drilling site will be at Kabete - Nairobi. The Sub-contractor is deemed to have visited the site at Delmonte, Murang'a County and if unable to locate it or its details apply to the Permanent Secretary, State Department for Public Works, Ngong Road, Nairobi.

No claims will be allowed for the traveling or other expenses, which may be incurred by the sub-contractor's works.

## 16.1 SCOPE OF THE WORK

The works included in the contract consist of: -

(i) The drilling of one borehole of sufficient diameter to provide for a finished cased and screened borehole of 200mm diameter to the provisional depth of about 300metres.
(ii) The provision and installation of steel casings, steel screens, and gravel pack, borehole cap, together with cementation works necessary.
(iii) The collection of formation samples at 2-meter interval of drilling progress to the bottom and also water sample at every aquifer struck and at the beginning and at the end of test pumping operation for both chemical and biological analysis.

NOTE: -These depths and any other works can be varied by the Engineer depending on the actual conditions encountered in the process of executing of the works.

(iv) The supply and installation of 1No. Submersible borehole pump, complete with the necessary controls.
(v) Connection of the water from the borehole to the water storage tank.

## 16.2 LOCAL CONDITIONS

The borehole will be drilled, constructed and test pump in both unconsolidated and consolidated formation and the contractor must be prepared to carry out the required work through any type of formation in the project area.

## 16.3 BORE HOLE DATA

a) Total depth – 320m of 200mm diameter from surface (Provisional)

b) Casings to be 152mm diameter and screened depth to be determined after borehole construction.

c) Static water level – not known

d) Dynamic water level – not known

e) Recommended pumping rate – 11m³/hr (for the purpose of quotation but to be confirmed after testing)

f) (Pump) setting level – 200m (for the purpose of quotation but to be confirmed after testing)

g) Total dynamic head to be determined on site

### 16.4 Casings

a) Casings to be used as part of the permanent borehole structure shall be black steel pipe conforming to BS 1387 and having nominal diameter of 200mm.
b) If any casing other than that to be left permanently in the borehole is required temporarily for execution of work, it shall be supplied by the contractor at the borehole free of charge.

### 16.5 Screens

The screens to be furnished and installed shall be of the pipe size variety having a minimum nominal diameter of 152mm and can be fabricated in three-meter lengths. The screens shall be of continuous slot type and constructed entirely of stainless steel. The screen shall have slot size opening of 1.4m.

### 16.6 Grouting

Grouting shall be done by either cement or bentonite to seal off unwanted upper aquifers under direction of the Engineer.

### 16.7 Construction Method

The borehole to be constructed shall be drilled by cable-tool percussion method or the combination air/ hydraulic rotary method. The method of drilling shall be left to the discretion of the Contractor. After drilling to the final depth, the Contractor shall proceed to insert permanent casings and screens as directed by the Engineer.

### 16.8 Gravel Pack

If filter gravel will be necessary, it will consist of durable, naturally rounded quarzitic particles properly washed and cleaned prior to insertion in the borehole. The gravel shall be introduced in the annular space between the wall of the borehole and the 200mm casing from the bottom to about 2 meters below surface. The final casing and screens must be centralized before gravel back and the Contractor must supply suitable equipment for lowering of gravel pack.

### 16.9 Cementation

The space above the gravel pack shall be grouted with a mix of one part of cement to two parts of sand and two parts of ballast, in order of 1:2:2 concrete may be used near the surface to form an annular plug around the casing of dimensions 1.0 x 1.0 x 1.0 meters. There shall be 2000mm diameter concrete plinth on top of the borehole and shall be

constructed as shall be directed by the Project Engineer and the Structural Engineer.

Any other cementation works to be done as directed by the Project Engineer.

### 16.9.1 Development

The Contractor shall furnish all necessary pumps, compressor, plungers, bailing or other needed equipment and shall develop the borehole by such approved methods as shall be necessary to give the maximum yield of water per increment of drawdown and extract from the formation of maximum practical quality of such sands as may, during the life of the borehole, be drawn through the screens when the borehole is operating under maximum conditions of draw down.

### 16.9.2 Test Pumping

After the borehole has been completed, constructed and developed, the subcontractor shall make necessary arrangements for conducting a 24-hour continuous test pumping up to a maximum of 30hr and 12-hour recovery test under the supervision of the Engineer. Where the Engineer or his representative cannot be present on such pumping test, the Contractor may continue without him keeping accurate records of the test in terms of discharge and drawn down but must seek permission from the Project Engineer. Should the Contractor fail to keep such records, the Engineer shall order the test to be repeated at no extra cost.

### 16.9.3 Sample Formation

The Contractor shall keep an accurate record of the top and bottom of each stratum penetrated and shall save and deliver to the Engineer a sample of materials taken from each 1m of formation, or at every change of formation and at such other intervals as may be ordered by the Engineer. Those samples shall be placed in approved Contractor supplied containers with labels which indicate the depth at which the sample was obtained.

### 16.9.4 Water Samples

Water samples shall be collected at every water struck while drilling and also shall be collected at the start of every test and toward the end of the test in a three-litre sterilized plastic container for both chemical and bacteriological analysis and submitted in a competent laboratory for analysis.

### 16.9.5 Reports

The contractor shall submit to the Engineer daily progress reports showing: -

(i) The depth each day indicating drilling in meters per hour with comments on degree of hardness of materials being penetrated.
(ii) Depth at which each water bearing zone is encountered and the rise and fall of water level in different formations.
(iii) The full details of work carried out in respect of operations which are paid for at hourly rate.
(iv) The full details of the number of hours worked each day.

### 16.9.6 Cessation of Work

The Engineer reserves the rights to stop drilling operations if in his opinion: -

a) A sufficient supply of water has been obtained.
b) The work is not being carried out in a satisfactory manner or
c) Further drilling is unlikely to be advantageous or for any other reason

In this event, payment shall be made only for the amount of work done up to the date of stoppage.

### 16.9.7 Retention Time

Waiting time shall be such time as the whole of the drilling equipment and staff is on site and is available for use, and all the operation connected with the Contact are at a standstill due to the absence of instructions from the Engineer.

The request for the necessary instructions and/ or guidance to the Project Manager by the Contractor shall be within 48 hours, provided that the Project Manager does not delay the said instructions/ or guidance to the Contractor unnecessarily.

All claims for waiting time shall be made on the basis of a normal 8 hour day, including Sundays and Public holidays.

### 16.9.8 Supply and Installation of Pump

The Contractor shall supply and install: -

a) One electric submersible pump which will conform to the specification stated, for operation on 415 volt, 3-phase.
b) All necessary electrical equipment for the pump such as control panel with starter, ammeter, single phasing cut-out, low voltage cut-out and all necessary cables for connection.
c) Suitable diameter Galvanized Steel pipe class 'C' to carry water to the surface / to water storage tank
d) Low level cut-out switch
e) Airline 20mm galvanized steel pipe for water level measurements
f) Pressure gauge
g) The gate valves, non-return valves before the master meter
h) Master meter for measuring the water from the borehole.

In addition, the Contractor shall carry out 24 hours test run at the completion of the works. This test has to be certified by the Project Manager.

### Note on Pump Installation

The Contractor shall make the necessary electrical connections and include in his prices all cable, starter-panel, switches etc required to put the pump in operation while tendering for this part of the document and return it will full description literature and performance curves for the proposed equipment together with the tender for drilling works.

The installation of the submersible pump into the borehole shall be done immediately the borehole drilling is completed, test pumped and water analysed for suitability for human consumption.

The final production pump to be installed in the newly drilled borehole shall be determined and installed as per the actual conditions encountered on completion of the drilling works. Hence the specifications given under the section of 'borehole data' are only for the purpose of quotation. After establishing the actual conditions of the drilled borehole, only the engineer's approved submersible pump shall be installed.

### 16.9.9 Electrical works

It shall be the responsibility of the Contractor to provide all electrical wiring between all items of his Contract to ensure the correct function of his equipment. The Contractor's electrical works shall start from the nearest electrical isolator which will be supplied by others within five metres.

## STATEMENT OF COMPLIANCE

a) I confirm compliance of all clauses of the General Conditions, General Specifications and Particular Specifications in this tender.
b) I confirm I have not made and will not make any payment to any person, which can be perceived as an inducement to win this tender.

Signed: …… for and on behalf of the Tenderer

Date: ……..

Official Rubber Stamp: ……

# MECHANICAL BILLS OF QUANTITIES

## SPECIAL NOTES

1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.
2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including 16% VAT).
3. In accordance with Government policy, 3% Withholding Tax and 6% Withholding VAT shall be deducted from all payments made to the Tenderer, and the same shall be forwarded to the Kenya Revenue Authority (KRA).
4. All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part thereof.
5. The brief description of the items given in the Bills of Quantities are for the purpose of establishing a standard to which the sub-contractor shall adhere. Otherwise, alternative brands of equal and approved quality will be accepted.
6. Should the sub-contractor install any material not specified here in before receiving written approval from the Project Manager, the sub-contractor shall remove the material in question and, at his own cost, install the proper material.
7. The grand total of prices in the price summary page must be carried forward to the Form of Tender for the tender to be deemed valid.
8. Tenderers must enclose, together with their submitted tenders, detailed manufacturer's Brochures detailing Technical Literature and specifications on all the equipment they intend to offer.

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **SANITARY APPLIANCES**<br>Supply, deliver, install, test and commission the following sanitary appliances complete with all the accessories including all connections to the services, waste, jointing to water supply overflows, supports and all plugging and screwing to walls and floors.<br>**Note:**<br>(i) All sanitary fittings shall be in approved colour.<br>(ii) The Model and Ref No. indicated is only a guide to the type and quality of fittings.<br>(iii) Equivalent & Approved models may be acceptable. | | | | |
| A | **Squatting Water Closet (WC)**<br>Squatting water closet suite in white vitreous china comprising of wc bowl with top plate and intergral foot threads, S trap connector, 9 litres high cistern and fittings and pull chain including siphon, 15mm diameter side inlet ball valve, 20mm diameter side overflow, plastic flush pipe, inlet connector and cistern supports. All to be as ideal standard' or equal and approved. | 3 | No. | | |
| B | **Water Closet (WC) Suite**<br>Close-coupled WC suite with ('S' or 'P'-trap) in approved colour complete with horizontal outlet to BS 3402 with 7.5 litre valveless low level ceramic cistern and fittings including siphon, 15mm diameter side inlet ball valve, 20mm diameter side overflow, plastic flush bend, dual (full and half) flushing mechanism, inlet connection, chrome - plated flush button and heavy duty plastic seat and seat cover with metal top fixed (chrome plated) hinges. | 18 | No. | | |
| C | **Toilet paper dispensor**<br>Jumbo toilet paper dispensor as Velvex or approved equivalent | 5 | No. | | |
| D | **Toilet Roll Holder**<br>Wall mounted toilet roll holder and cover in Chrome Stainless steel to be as Ideal Standard or approved equivalent. | 16 | No. | | |
| E | **Toilet Brush and Holder**<br>Wall mounted toilet brush holder and brush of approved colour as Ideal Standard or approved equivalent. | 21 | No. | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| A | **Hand towel / Paper dispenser**<br>Paper/ towel dispenser for dispensing interfolded paper tissue. The dispenser shall include a casing having a narrow dispensing slot in the bottom surface. The dispenser should have a proper mechanism to prevent excessive quantities of tissue. The paper towel dispenser shall be in approved colour. | 2 | No. | | |
| B | **Wash Hand Basin**<br>Counter top Wash hand basin size 600 x 460mm with single centre tap hole, 32mm diameter chrome plated chain waste, chain stay hole and heavy duty plastic bottle trap (32mm 'P' trap) with 75mm seal. The wash hand basin to be as Ideal standard or equal and approved. | 19 | No. | | |
| C | **Basin Tap**<br>Chrome plated non-conculsive time delay press action pillar tap with pop up waste as 'Vado' Ref. PRO 167 or approved equivalent | 19 | No. | | |
| D | **Mirrors**<br>(i) 6mm thick polished plate glass silver backed mirror with beveled edges, size 610 x 610mm, Plugged and screwed to wall with 4No. Chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam. | 1 | No. | | |
| | (ii) 6mm thick polished plate glass silver backed mirror with beveled edges, size 1200 x 610mm, Plugged and screwed to wall with 4No. Chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam. | 3 | No. | | |
| | (iii) 6mm thick polished plate glass silver backed mirror with bevelled edges, size 1800 x 610mm, plugged and screwed to wall with 4No. chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam. | 5 | No | | |
| E | **Soap Dispenser**<br>Stainless steel bright finish wall mounted soap dispenser. Top filling lid and a press action soap release mechanism complete with fixing screws with a capacity of about 1.5 litres. Allow for initial soap supply. To be as 'Mediclinics' or approved equivalent. | 11 | No. | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| A | **Hand drier**<br>Automatic hand drier in white colour, operating on an infra-red automatic sensing system with heating element safety cut-out complete with a 30 seconds safety timer, plastic rawl plugs and fixing screws. The hand drier to have a heating capacity of 2.1kw and performance flow rate of 135cfm (3.82m3/min) and to be of size 270 x 264 x 143mm deep. It shall have a noise level below 72.5 dBA at 1.5m. It shall be as **Mediclinic** or approved equivalent. | 8 | No. | | |
| B | **Waste Bin**<br>Stainless steel Sanitary Napkin disposal bin 5 Litre capacity with self-closing lid and foot operated. To have epoxy external finish. Shall be as Mediclinics PP006 or equivalent | 4 | No. | | |
| C | **Flexible Tubing**<br>15mm diameter x 300mm long flexible connectors complete with integral chrome plated angle valve as Cobra or equal and approved. | 46 | No. | | |
| D | **Urinal Slab**<br>Enameled Stainless Steel urinal slab with partitions, 1800mm in length, 14 litre concealed cistern with automatic flushing fittings, 15mm diameter 'pegler' bib tap with star handles, concealed chrome plated flush pipes with concealed horizontal sparge pipes, 50mm dia. chrome plated hinged outlet with grating, cast iron shallow p-trap, 330mm raised fireclay tile floor treads. The unit shall be 1800 x 1050mm high with a channel as Ideal Standard or equal and approved | 1 | No. | | |
| E | **Urinal Bowl**<br>Profile 21' rimmed back inlet urinal bowl diameter chrome plated outlet with grating firmly fixed on the wall with chrome plated screws. The bowl to be of ceramic material. The fittings shall be as ideal Standard E5701(01) or equal and approved. | 9 | No. | | |
| F | **Urinal bowl trap**. E6227(67) Urinal syphon connector with 75mm water seal and 40mm outlet. To be as ideal or equal and approved. | 9 | No. | | |
| G | **Urinal bowl spreader**. Back inlet Stainless steel urinal bowl spreader for above urinal bowls. To be as ideal standard or equal and approved. | 9 | No. | | |
| H | **Urinal Connecting set**. To be as ideal standard product code K7106(67) or equal and approved | 9 | No. | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| A | **Urinal bowl hangers.** Unrinal bowl stainless steel hangers complete with stainless steel crewing nuts for hangering on the wall firmly. | 9 | No. | | |
| B | **Urinal Bowl Flush Valves**<br>25mm urinal bowl press type flush valve for the above urinal bowls complete with, back entry with integral vacuum breaker, self closing mechanism, non-hold-open features and non-return valve, inlet control stop and wall plate. The fittings shall be as Jaguar or equal and approved. | 9 | No. | | |
| C | **Urinal divisions**<br>Ceramic urinal bowl divisions separating the above described urinal bowls fixed firmly on the wall. The fittings shall be as ideal standard or approved equivalent. | 6 | No. | | |
| D | **Cleaner Sink**<br>Heavy duty sink size 465 x 410 x 285mm deep in enamelled fireclay complete with hardwood pad on the front edge and fitted bucket stainless steel grating and 20mm chrome plated wall mounted inclined bricon tap, chrome plate chain and rubber stopper and heavy gauge 40mmn chrome plated bottle trap, stainless steel legs and bearers and 40mm grid waste fitting. All as Twyfords "cleaners sink" or approved equivalent. | 5 | No. | | |
| E | **Kitchen Sink**<br>Single Bowl Single Drainer sink size 1200 x 600mm with bowl size 420 x 355 x 150mm deep made out of 18/8 stainless steel complete with: 1No. 15mm diameter wall mounted chrome plated sink mixer with over-arm swivel spout as 'Ideal Standard' Ref.B2218AA with carina handles, 1No. 40mm waste fittings, plugs, chain stays, overflow, 1No. Heavy duty plastic bottle trap with 75mm deep seal. Sink shall be as "FRANKE stainless steel sink" or approved equivalent. | 3 | No. | | |
| F | **Undersink Heater**<br>10 litres capacity undersink instantaneous water heater complete with 3.0kw electric heating element, externally adjustable capillary type thermostat, polyurethane form thermal insulation, corrosion-proof moulding outer casing, mountings, water and electrical connections. The heater shall be as *Ariston* or approved equivalent with power supply 3.0kw, 240/50Hz. | 3 | No. | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| A | **Waste Bin (Kitchennette)**<br>Stainless steel pedal operated cylindrical bin of 20 Litre capacity with self-closing lid and foot operated. To have epoxy external finish for collection of tissue paper waste in washrooms and kitchennette waste. Shall be as Mediclinics PP1321CS or equivalent | 3 | No. | | |
| B | **Disabled Persons WC and WHB Facility**<br>Wheel chair accessible facility Comprising of the following:-<br>**i)** Close coupled W.C with 7.5 litre cistern with bottom inlet and overflow. The bowl shall be of size 375 x 560 x 420mm high. The bowl and cistern shall be manufactured from vitreous china complying with B.S 3402. The unit shall be complete with valve less cistern fittings including syphon, 1/2" side inlet ball valve, 3/4" side overflow, plastics flush bend, Inlet connector and reversible metallic chrome plated cistern lever. There shall also be a heavy duty seat (25mm high) and cover with chrome plated metal hinges, toilet roll holder, 610 x 610 x 6mm thick mirror and robe hook.<br>**ii)** Semi pedestal wall mounted W.H.B of size 600 x 500 x 545mm high with flexible connectors to waste and taps. The basin shall be manufactured from vitreous china complying with B.S 3402. It shall have one L/H tap hole with 1/2" chrome plated lever action pillar tap, chrome plated waste with height adjustable trap, pedestal and wall fixing bolts.<br>**iii)** Wall mounted soap dispenser with a capacity of about one litre sensor operating soap release action complete with fixing screws. Allow for initial soap supply. To be as Mediclinic soap dispenser or approved equivalent.<br>**iv)** Hinged support rail with toilet roll holder 770mm long manufactured in nylon coated aluminium and mounted on a wall fixing plate size 230 x 100mm, 3No. 600mm grab rails with covered wall plates. The set shall be as Twyfords DOC.M wheelchair accessible W.C. facility or approved equivalent. | 4 | Set | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs.) |
|---|---|---|---|---|---|
| | **Laboratory Vulcathene Pipework and Fittings**<br>Supply, deliver and install the following Vulcathene drainage systems to BS EN 12056-2:2000. All uPVC and Vulcathene branches, tees, reducing tees, reducers etc are to be formed in strict accordance with the manufacturer's printed instructions and and tenderers must allow in their pipework prices for all the various sizes of connectors, socket reducers, holderbats, clips, etc required for the proper and satisfactory functioning of the system. | | | | |
| | **Laboratory Sink** | | | | |
| A | Laboratory sink to be RECTANGULAR MS 505 with MV 88 ANT-VAC BOTTLE TRAP.The sink to be complete with 38mm diameter BSP waste,and black nut,Butyl rubber gasket,Water taps to be as Laboratory sink PN 106. equal and approved. | 3 | No. | | |
| | **Dilution Recovery Traps** | | | | |
| B | Dilution Recovery Traps with a capacity of 2.3 litres with a trap seal of 76mm and a three top inlet connections. To be made of heat resistant borrosilicate glass base and supplied complete with horizinbtal inlet adapter,vertical inlet,glass dip tube and blanking off plug together with suitabler support and nut couplings for screwing to waste inlets and outlets as Vulcathane W681 or equal and approved. | 2 | No. | | |
| | **Vulcathene Pipes** | | | | |
| C | 38mm diameter vulcathene pipe | 4 | Lm | | |
| D | 51mm diameter vulcathene pipe | 4 | Lm | | |
| | **Vulcathene Floor Traps** | | | | |
| E | 100 x 50mm diameter acid resistant floor trap | 2 | No. | | |
| | **Bends** | | | | |
| F | 38mm diameter vulcathene sweep bend | 4 | No. | | |
| G | 51mm ditto | 4 | No. | | |
| | **Tees** | | | | |
| H | 38mm vulcathene sweep tee | 4 | No. | | |
| I | 51mm ditto | 4 | No. | | |
| | **Access cap** | | | | |
| J | 38 diameter vulcathene access cap | 1 | No. | | |
| K | 51 diameter ditto | 1 | No. | | |
| | **Reducing coupler** | | | | |
| L | 51 x 38 Vulcathene reducing socket | 2 | No. | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **INTERNAL PLUMBING**<br>Supply, deliver and install Polypropylene Random (PP-R) PN 20 pipework to DIN 8077 with joints, couplings, reducers, tees, adaptors, pipe fixing clips etc all to DIN 16962 and DIN 16928. Pipe jointing shall be by polyfusion or use of electric coupling. Where pipework is not chased proper anchoring using approved fixtures shall be done. No pipework shall be left exposed to the sun. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints, support raceways, isolating sheaths, elastic materials, expansion arms and bends, crossovers, couplings, clippings, connectors, joints etc. as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system. | | | | |
| | **PPR (PN 20)Pipework** | | | | |
| A | 25mm diameter pipework | 120 | Lm | | |
| B | 32mm diameter pipework | 24 | Lm | | |
| C | 40mm diameter pipework | 12 | Lm | | |
| D | 50mm diameter pipework | 12 | Lm | | |
| | **Extra - over PN 20 pipework for the following.** | | | | |
| | **Bends/Elbow** | | | | |
| E | 25mm diameter bend | 36 | No. | | |
| F | 32mm diameter bend | 16 | No. | | |
| G | 40mm diameter bend | 12 | No. | | |
| H | 50mm diameter bend | 12 | No. | | |
| | **Tees** | | | | |
| I | 25mm equal tee | 32 | No. | | |
| J | 32mm equal tee | 16 | No. | | |
| K | 40mm equal tee | 12 | No. | | |
| L | 50mm equal tee | 8 | No. | | |
| | **Reducers** | | | | |
| M | 40 x 25mm diameter reducer | 8 | No. | | |
| N | 32 x 25mm diameter reducer | 12 | No. | | |
| O | 50 x 25mm diameter reducer | 8 | No. | | |
| P | 50 x 32mm diameter reducer | 12 | No. | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Gate valves** | | | | |
| | Supply, deliver, install, test and commission DZR brass gate valves as PEX model or equal and approved by the project mechanical engineer | | | | |
| A | 50mm DZR brass gate valve | 4 | No. | | |
| B | 40mm DZR brass gate valve | 4 | No. | | |
| C | 32mm DZR brass gate valve | 14 | No. | | |
| D | 25mm DZR brass gate valve | 14 | No. | | |
| | **Unions** | | | | |
| E | 25mm diameter pipe unions | 28 | No. | | |
| F | 32mm diameter pipe unions | 28 | No. | | |
| G | 40mm diameter pipe unions | 8 | No. | | |
| H | 50mm diameter pipe unions | 8 | No. | | |
| | **Male/Female Adapters (CPVC threaded)** | | | | |
| I | 25mm brass threaded adapter | 36 | No. | | |
| J | 32mm ditto | 12 | No. | | |
| | **Threaded Brass Coupling** | | | | |
| K | 25mm threaded brass coupling | 24 | No. | | |
| L | 32mm ditto | 12 | No. | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **FOUL WATER DRAINAGE** | | | | |
| | Supply and fix uPVC soil system to BS 4660 and BS 4515 and MuPVC waste systems to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. for the proper and satisfactory functioning of the system. | | | | |
| | **uPVC and MuPVC pipework** | | | | |
| A | 150mm heavy duty golden brown pipe class D | 144 | Lm | | |
| B | 100mm heavy duty golden brown pipe class D | 66 | Lm | | |
| C | 100mm diameter heavy duty grey pipe class D | 60 | Lm | | |
| D | 50mm ditto | 66 | Lm | | |
| E | 40mm ditto | 6 | Lm | | |
| F | 32mm ditto | 12 | Lm | | |
| | **Extra over uPVC and MuPVC pipework** | | | | |
| | **Bends** | | | | |
| G | 100mm diameter long radius bend | 12 | No. | | |
| H | 100mm diameter $45^0$ bend | 4 | No. | | |
| I | 50mm diameter sweep bend | 18 | No. | | |
| J | 40mm dia. -ditto- | 4 | No. | | |
| K | 32mm dia. -ditto- | 6 | No. | | |
| | **Tees** | | | | |
| L | 100mm diameter sweep tee | 12 | No. | | |
| M | 50mm diameter sweep tee | 18 | No. | | |
| | **Access Caps** | | | | |
| N | 100mm diameter access cap | 6 | No. | | |
| O | 50mm ditto | 12 | No. | | |
| P | 40mm ditto | 6 | No. | | |
| Q | 32mm ditto | 8 | No. | | |
| | **WC Connectors** | | | | |
| R | 100mm diameter WC connector | 14 | No. | | |
| | **Single branches** | | | | |
| S | 100mm diameter double branch | 8 | No. | | |
| | **Double branches** | | | | |
| T | 100mm diameter double branch | 4 | No. | | |
| | **Boss Connectors** | | | | |
| U | 100 x 50mm diameter boss connector | 12 | No. | | |
| | **Traps** | | | | |
| V | 100 x 50mm diameter floor trap and grating | 18 | No. | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| A | Standard 300 x 300 x 450mm masonry gully trap complete with Heavy duty cover as made by FIBERITE or Equivalent. | 5 | No. | | |
| | **Reducers** | | | | |
| B | 50 x 32mm diameter reducer | 6 | No. | | |
| C | 50 x 40mm diameter reducer | 6 | No. | | |
| D | **Weathering Slates and Vent Cowls** | | | | |
| E | 100mm diameter weathering slate and apron. | 3 | No. | | |
| F | 100mm diameter vent cowl | 3 | No. | | |
| | **Supporting Brackets** | | | | |
| G | Allow for suitable supporting steel brackets for anchoring and supporting drainage pipes bends below floor slabs. To be painted to match the walling colour. | 24 | No. | | |
| | **Excavation** | | | | |
| H | Excavate trench in soil/murram for drainage pipes not exceeding 1200mm deep, lay pipe, part return in, fill, ram and surplus cart away. | 210 | Lm | | |
| | **Inspection Chambers** | | | | |
| I | Standard 600 x 450 x (600-1000)mm inspection chamber complete with Heavy duty cover as made by FIBERITE or Equivalent. | 18 | No. | | |
| | **Testing and Commissioning** | | | | |
| J | Allow for testing and commissioning of the plumbing and drainage installations to the satisfaction of the Engineer. | 1 | Item | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | WATER STORAGE | | | | |
| | Accessories for the 100,000 Litres underground reinforced concrete tank | | | | |
| A | 100mm diameter for vent / overflow gms pipe | 2 | Lm | | |
| B | 50mm diameter gms outlet pipe | 2 | Lm | | |
| C | 1No. 50mm diameter gms inlet pipe (County water) | 1 | Item | | |
| D | 1No. 150mm diameter inlet pipe (Rain water) | 1 | Item | | |
| E | 100mm diameter washout with gate valve | 1 | No. | | |
| F | Float switch regulator | 2 | No. | | |
| G | Water level indicator | 1 | No. | | |
| H | Galvanized mild steel Internal ladder | 2 | No. | | |
| I | 50mm diameter high pressure ball valve | 2 | No. | | |
| | Fittings approval | | | | |
| J | Allow Kshs. 100,000. for approved factory/showroom visit with the Project engineer for selection and approval of all fittings samples. | 1 | Item | | |
| K | Allow for profit and overheads for the above (…. %) | 1 | Item | | |
| | Roof Water Tank | | | | |
| L | Supply, deliver and install vertical close end plastic moulded tank of capacity 4000 litres and diameter 1670 x 2010mm high. The tank to be assembled complete with cover and having screwed connections for inlet, outlet, overflow, 25mm high pressure ball valve, drain pipes and any other necessary item for its proper functioning. The tank shall be mounted on roof and shall be as ROTO Model or approved equivalent. | 4 | No. | | |
| M | Supply, deliver and install vertical close end plastic moulded tank of capacity 2000 litres and diameter 1350 x 1590mm high. The tank to be assembled complete with cover and having screwed connections for inlet, outlet, overflow, 25mm high pressure ball valve, drain pipes and any other necessary item for its proper functioning. The tank shall be mounted on roof and shall be as ROTO Model or approved equivalent. | 2 | No. | | |
| N | Supply, deliver and install vertical close end plastic moulded tank of capacity 1000 litres and diameter 1110 x 1060mm high. The tank to be assembled complete with cover and having screwed connections for inlet, outlet, overflow, 25mm high pressure ball valve, drain pipes and any other necessary item for its proper functioning. The tank shall be mounted on roof and shall be as ROTO Model or approved equivalent. | 1 | No. | | |
| | Total Carried Forward to Summary Page 104 | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **High Level Water Tank** | | | | |
| A | Galvalume High Tensile Steel Tank complete with Body Liner & Galvalume Roof. The tank capacity to be 39kl = 39,000ltrs (Gross Capacity) c/w below accessories: Free board capacity of tank to be **39,000 Litres** of preferred dimensions Diameter **4.1m x 2.95m** high. The tank to be complete with:<br>- 1 No. Fixed Ladder Assembly; 3 Ring 600mm; complete with internal & external Ladders_ Platform_ Cages_ Hand Rails & Access Hatch<br>- 50NB Inlet Nozzle, Side Mount, Int & Ext Thrd<br>- 65NB Outlet Nozzle, Side Mount, Int Antivortex Std, & Ext Thrd<br>- 80NB Overflow Nozzle, Side Mount, Int Bell Mouth, Ext Thrd<br>- 1 No. Scour 80NB; Floor Mount; int Flange; ext-Thrd<br>- 1 No. Water Level Indicator Mechanical - 3 Ring<br>- 2No.s Ventilator Static - 76 mm | 1 | Item | | |
| B | 15M STEEL Tower Supporting 39Kl tank comprising of columns, bracings, hopped cat ladder, top walkways and seating plate | 1 | Item | | |
| C | Delivery of tank to site,<br>Tank and tower installation<br>Mobilization & demobilization | 1 | Item | | |
| | **Builder's Works** | | | | |
| D | Allow for builders works associated with the installation of the High Level Water tank. This shall include but not limited to ground clearance and levelling, building of reinforced concrete foundation base for the tank tower to Structural Engineers details | 1 | Item | | |
| | **Valve Chamber** | | | | |
| E | Valve chamber size 600 x 450 x 600mm deep with 100mm concrete (1: 3: 6) base 100mm block sides rendered all round in cement and sand (1:4) and with approved hinged and flanged cast iron cover and frame including all necessary excavation, disposal and formwork. | 1 | No. | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| A | **Submersible Pump**<br>A submersible pumpset capable of delivering 5.0m$^3$/hr against 40M head, power rating 0.55KW, single phase, 50HZ as Pedrollo 4SR 6/13 Model or equal and approved complete with control panel, associated electrical works, protection against dry run, on/off neon lights, control/pump status display panel, audio alarm with manual silencer to indicate when the pump is faulty, float switch and all necessary controls. | 2 | Set | | |
| B | **Control Pannel**<br>Control Panel mounted on the same base frame as pumpset and presure vessel with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer. All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet in oven baked 'fire-red' powder coated colour. It should include a change - over switch to enable the pumps to work alternately. | 1 | Item | | |
| C | **Electrical Works**<br>Allow for electrical works wiring and fitting to all pumps, control panel and float switches, from isolator provided by others with 3 metres distance. | 1 | Item | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | EXTERNAL WATER RETICULATION | | | | |
| | Supply, deliver and install galvanized mild steel pipes to BS 1387 class 'B' with screwed and socketed joints to BS 134 and 1256 and of approved manufacturer with galvanizing to BS729. Tenderers must allow in their pipe work prices for all the couplings, unions, connectors joints, holder bats, reducers etc. as required in the running length of the pipework and also where necessary for pipe fixing clips, plugged and screwed. | | | | |
| | GMS PIPEWORK | | | | |
| A | 32mm ditto | 70 | Lm | | |
| B | 40mm ditto | 60 | Lm | | |
| C | 50mm ditto | 36 | Lm | | |
| D | 65mm ditto | 40 | Lm | | |
| | Bends | | | | |
| E | 32mm diameter bend | 20 | No. | | |
| F | 40mm ditto | 12 | No. | | |
| G | 50mm ditto | 8 | No. | | |
| H | 65mm ditto | 8 | No. | | |
| | Tees | | | | |
| I | 32mm diameter tee | 8 | No. | | |
| J | 40mm diameter tee | 6 | No. | | |
| K | 50mm diameter tee | 4 | No. | | |
| L | 65mm diameter tee | 5 | No. | | |
| | Reducers | | | | |
| M | 65 x 50mm diameter reducer | 8 | No. | | |
| N | 50 x 40mm diameter reducer | 8 | No. | | |
| O | 50 x 32mm diameter reducer | 8 | No. | | |
| P | 40 x 32mm diameter reducer | 4 | No. | | |
| | Sockets/pipe coupler | | | | |
| Q | 65mm diameter pipe socket | 10 | No. | | |
| R | 50mm diameter pipe socket | 10 | No. | | |
| S | 40mm diameter pipe socket | 15 | No. | | |
| T | 32mm diameter ditto | 18 | No. | | |
| | Gate valve | | | | |
| | Supply, deliver, install, test and commission DZR brass gate valves as PEX model or equal and approved by the project mechanical engineer | | | | |
| U | 65mm DZR brass gate valve | 2 | No. | | |
| V | 50mm DZR brass gate valve | 2 | No. | | |
| W | 40mm DZR brass gate valve | 4 | No. | | |
| X | 32mm DZR brass gate valve | 3 | No. | | |
| | Total Carried Forward to Summary Page 104 | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Unions** | | | | |
| A | 32mm diameter pipe unions | 6 | No. | | |
| B | 40mm diameter ditto | 8 | No. | | |
| C | 50mm diameter ditto | 4 | No. | | |
| D | 65mm diameter ditto | 4 | No. | | |
| | **Bulk Water Meters** | | | | |
| E | Apply for and connect 50mm bulk water meter as 'Kent' or equal and approved equivalent for the connection to the main supply of water to site and local council charges. | 1 | No. | | |
| | **Water Meter Chamber** | | | | |
| F | Meter chamber size 450 x 450 x 450mm deep with 100mm concrete (1: 3: 6) base 50mm block sides rendered all round in cement and sand (1:4) and with approved hinged and flanged cast iron cover and frame including all necessary excavation, disposal and formwork. | 1 | No. | | |
| | **Excavations** | | | | |
| G | Excavate trench in soil/murram for water pipes not exceeding 1000mm deep and average 750mm deep, part return in, fill, ram and surplus cart away. | 60 | Lm | | |
| | **Water Line Markers** | | | | |
| H | Standard precast concrete ware line marker, post marked 'WL' set in concrete (1:3:6) base, including formwork, excavations backfilling and disposal. The plate to be painted with blue gloss oil paint. | 4 | No. | | |
| | **Pipe Sleeves** | | | | |
| I | 100mm diameter heavy duty PVC Class 41 pipe sleeves for crossing over pathways and driveways. The sleeves will be encased in 150mm concrete surround. | 20 | Lm | | |
| | **Connection to External Water Reticulation** | | | | |
| J | Allow for connection of the water sytem to the water Reticulation line including the check water meter | 1 | Item | | |
| | **Sterilization** | | | | |
| K | Allow for flushing out and sterilizing the whole system with chlorine to the satisfaction of the engineer | 1 | Item | | |
| | **Testing and commissioning** | | | | |
| L | Allow for pressure testing and commissioning of the plumbing installation to the satisfaction of the Engineer with provision of pressure testing certificates of minimum 6 Bar | 1 | Item | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **RAIN WATER HARVESTING**<br>Supply and fix uPVC soil system to BS 4660 and BS 4515 and MuPVC waste systems to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system's manufacturer's written instructions. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. for the proper and satisfactory functioning of the system. | | | | |
| | **MuPVC pipework** | | | | |
| A | 100mm diameter heavy gauge grey MuPVC down pipes | 42 | Lm | | |
| B | 100mm diameter heavy gauge uPVC rainwater pipework | 42 | Lm | | |
| C | 150mm diameter heavy gauge uPVC rainwater pipework | 172 | Lm | | |
| | **Bends** | | | | |
| D | 150mm diameter bend with access | 4 | No. | | |
| E | 100mm diameter bend with access | 4 | No. | | |
| F | 100mm diameter sweep bend | 6 | No. | | |
| G | 100mm diameter $45^0$ bend | 8 | No. | | |
| | **Tees** | | | | |
| H | 150 x 100mm diameter sweep tee | 8 | No. | | |
| I | 100mm diameter sweep tee | 8 | No. | | |
| | **Extra Over uPVC Piping for the following:** | | | | |
| | **Fulbora** | | | | |
| J | 100mm diameter cast iron fulbora | 8 | No. | | |
| K | Downpipe outlet guard | 8 | No. | | |
| L | 100mm First flush diverter to be fitted to all rainwater down pipes | 8 | No. | | |
| M | 300 x 300mm PVC/aluminium sloped debris diverter with fine mesh screen | 1 | No. | | |
| N | 300 x 300mm PVC/Aluminium sloped debris diverter with mesh screen | 8 | No. | | |
| O | The necessary monitoring equipment including flow meter, water meter and pressure gauge | 1 | Item | | |
| | **Rainwater Gulley** | | | | |
| P | 600 x 450 x 600mm deep inspection gulley complete with 14 s.w.g cover with handle & frame. | 12 | No. | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| A | Soil Trap Chamber with three chambers size 1800 x 900 x 900mm deep with 100mm concrete (1: 3: 6) base 100mm block sides rendered all round in cement and sand (1:4) and with approved hinged and flanged cast iron cover and frame including all necessary excavation, disposal and formwork. It shall have a basket for removing the leaflets and other debris from the water. | 1 | No. | | |
| B | Excavate trench for uPVC rainwater pipework not exceeding 1200mm deep and 750mm deep on average, part refill and ram, and surplus cart away. | 172 | Lm | | |
| C | **Fibre glass pressure sand filter**<br>Capable of handling rain water of 4.0m$^3$/hr at pressure of 3 bars. The filter to be filled carefully with graded chemically inert silica sand media charged in layers and complete with a 6- way multiport valve, pressure gauge, automatic air release valve. Pipe connectors and sand media agitatum equipment for back-washing and all other necessary attachments. The filter to be as **'DAYLIFF'** Model **'CX 500'** or equal and approved. | 2 | No. | | |
| D | Allow for testing and commissioning of the rain water harvesting installations to the satisfaction of the Engineer. | 1 | Item | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **SERVER ROOM AIR CONDITIONING**<br>Server Room Air Conditioning Supply, deliver and install the following equipment as described. Prices to be inclusive of all taxes. Equipment to be approved before installation.<br>**Split Air Conditioning System**<br>Split Air Conditioning System Split air conditioning system consisting of one outdoor unit and a corresponding fan coil evaporator indoor unit. The capacities of the units are as outlined below: | | | | |
| A | **High wall (Single Split Unit - 7.2 kW)**<br>Highwall single split air conditioining system with a rated cooling capacity of 7.2 kW (24,000 Btu/hr). The system to run on R32 refrigerant and be capable of air filtration, directional air flow and error autodiagnosis. To have the following features:<br>i)mounted white indoor unit c/w fascia panel and mounting brackets as **"Daikin Cora FTXM71Q"** or approved equivalent.<br>ii)Outside wall mounted outdoor unit c/w mounting brackets as **"Daikin Cora RKM71QVMA"** or approved equivalent | 1 | No. | | |
| | **Refrigeration Pipework** | | | | |
| B | Refrigeration liquid line pipework including 25mm Amaflex insulation. | 15 | LM | | |
| C | Refrigeration gas line pipework including 25mm Amaflex insulation. | 15 | LM | | |
| | **Drain** | | | | |
| D | 25mm PVC condensate drainage pipework including bends, clips, joints and tees in the running lengths of the pipe and fitted with anti-rodent/insect wire mesh | 15 | LM | | |
| | **Initial Refrigerant charge** | | | | |
| E | Allow R32 refrigerant for charging air conditioning systems as per the manufacturer instructions | 1 | Item | | |
| | **AC Voltage Guard** | | | | |
| F | 24 ampere automatic voltage protection for the unit as **'Sollatek, A/C Guard'** or equal and approved with high & low voltage protection, spikes and surges protection, short circuit and overload protection circuit breaker with intelligent power back time delay | 2 | No. | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| A | **Remote Controller**<br>Infra-red Wireless Remote controller as "Daikin Cora" or equal and approved | 1 | No. | | |
| B | **Mounting Bracket**<br>Mounting bracket for the outdoor unit complete with a cage and provided with purpose-made protective steel iron angle frame and all other anchoring accessories including rawl bolts and anti- vibration rubber mountings to engineer's approval. | 1 | Item | | |
| C | **Electrical Connections**<br>Allow electrical cabling from the isolator provided by the others, switchgear and any other items necessary for optimum functioning of the systems. | 1 | Item | | |
| D | **Trunking**<br>75 x 50mm approved PVC trunking for concealing the refrigerant pipework. | 45 | LM | | |
| E | **Testing and Commissioning**<br>Testing and commissioning, setting of work to the requirements of the specification and to the satisfaction of the Project Engineer. | 1 | Item | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **HOSE REEL SYSTEM**<br>Supply delivery and installation of hosereels system | | | | |
| A | **Hose Reel**<br>Swinging type hose reel fitted with 30 Metres Long, 20mm diameter reinforced non-kink rubber hose with 5/6 mm lever operated shut-off nozzle, mild steel feed pipe, isolation valve, guide and all other accessories as 'Angus Fire Armour' or equal and approved. | 7 | No. | | |
| B | **Hosereel Cabinets**<br>Allow for steel fire cabinets 300 x 800 x 800mm for the hosereel to approval. All shall be FM Approved and UL Listed | 7 | No. | | |
| C | **Pumps for boosted hose reel system**<br>***(Brochure/catalogue must be attached)***<br>Hose reel pumpset, one duty, the other standby mounted on a frame with a mild steel base plate. Each pump shall have a duty **$3m^3/hr$** against **25m head** as Pedrollo Model or approved equivalent. In addition, there shall be a 60 litres diaphragm pressure vessel (as Varem or approved equivalent), pressure switches, a switch to protect dry run, 50mm foot valve and strainer, tank connections, gate valves and non-return valves. The pressure set to be as Dayliff or equal and approved.Control shall be effected via a pressure switch through a pre-wired control panel which shall give automatic change-over from duty to standby pump within 5 seconds should the duty pump fail to deliver for any reason. The pumpset shall include all non-returns valves, timer, isolating valves and pipe connections. Control panel for above pumps with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer, 120 meters long float switch control 4-core cable to the roof tanks, start/stop push buttons and indicator lights. All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet that is oven powder coated. There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to not more than 6 per hour. It should include a change-over switch to enable the pumps to work alternately. | 1 | Set | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Electrical Works** | | | | |
| A | Allow for electrical works wiring and fitting to all pumps, control panel and float switches, from isolator provided by others with 3 metres distance. | 1 | Item | | |
| | **Automatic Fire Extinguisher** | | | | |
| B | Supply and Install FM200 10Kg Automatic Hanging Fire Extinguisher complying with B.S 3465 and B.S 5423 to include the appropriate nominal charge of gas and mounting brackets | 4 | No. | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Associated Pipework**<br>Supply and installation of Galvanized mild steel piping and fittings with screwed & socketed joint to medium grade class "B" to BS. 1387. | | | | |
| | **GMS Pipework** | | | | |
| A | 50mm dia. GMS pipes | 56 | Lm | | |
| B | 25mm dia. ditto | 12 | Lm | | |
| | **Extra over Pipework** | | | | |
| C | 50mm diameter bends/elbows | 12 | No. | | |
| D | 25mm diameter ditto | 6 | No. | | |
| | **Equal Tees** | | | | |
| E | 25mm diameter equal tee | 4 | No. | | |
| F | 50mm diameter equal tee | 8 | No. | | |
| | **Union** | | | | |
| G | 50mm diameter union | 8 | No. | | |
| H | 25mm diameter union | 8 | No. | | |
| | **Reducing bush** | | | | |
| I | 50 x 25mm diameter reducer | 6 | No. | | |
| J | HP ProBook 460 G11, Intel Core ultra 7, 16GB RAM 512GB SSD | 1 | No. | | |
| | **Valves** | | | | |
| K | 50mm dia. approved medium pressure screw down full way non-rising stem wedge gate valve to BS 1952, with wheel and head joints to tubing. The gate valve to be as "Pegler" or approved equivalent. | 1 | No. | | |
| L | 25mm ditto | 7 | No. | | |
| | **Painting** | | | | |
| M | Allow for painting of the hose reel pipework to signal red | 1 | Item | | |
| | **Testing and Commissioning** | | | | |
| N | Allow for testing and commissioning of hose reel pump set and associated pipework to the satisfaction of the Project Engineer. | 1 | Item | | |
| O | Allow kshs. 450,000 for Continous Proffesional Development (CPD) and Training for State Department for Public Works Mechanical Engineering Directorate Staff. | 1 | Item | | |
| P | Allow for profit and overheads for the above (…. %) | 1 | Item | | |
| **Total Carried Forward to Summary Page 104** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **PORTABLE FIRE PROTECTION EQUIPMENT**<br>Supply, deliver, install, test and commission the following portable fire extinguishers and conforming to BS EN 3 / BS 1449. | | | | |
| A | **Carbon dioxide Gas Fire Extinguisher**<br>5 Kg carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets. | 7 | No. | | |
| B | **Dry Chemical Powder**<br>6 Kg dry chemical powder portable extinguisher complete with initial charge and mounting brackets | 7 | No. | | |
| C | **Water/Carbon dioxide Gas Fire Extinguisher**<br>9 litres water/Carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets. | 7 | No. | | |
| D | **Manual Alarm Bell**<br>9" (225mm) manual operated alarm bell (Gong) | 7 | No. | | |
| E | **Fire Blanket**<br>Made of fire resistant glass fiber fabric with silicone coating of size 1.2m x 1.8m, Weight of 480g/m2 and temperature of 550°C. Packing Covered in Nylon Bag and Packed in Hard PVC Red Pack to conform to BS EN1869:1997 as NAFFCO's NFB 4.6 or equal and approved | 3 | No. | | |
| F | **Fire Notices**<br>Allow for fire signage for the hose reel system, fire exits and fire instructions as directed by the Engineer. | 12 | No. | | |
| G | **Record (As-installed) Drawings**<br>Prepare and submit **three sets** of working drawings for Plumbing & Drainage, Rain water harvesting, Fire hosereel system & Water Storage Tanks Layout, before commencement of works and record (As-built) plan and isometric layout drawings after completion of works to easily readable scale, A1 or A0 paper size format as follows;<br>i) general arrangement drawings of all equipment, plant etc.<br>ii) wiring (electrical & control) details<br>iii) any other details as per specifications<br>Drawings are to be submitted in soft copy (AutoCAD format) & hard copy to the client, the Architect and the Engineer. The soft copies to be stored in 32GB flash disk. | 1 | Item | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **MECHANICAL VENTILATION-AIR SUPPLY & EXTRACT SYSTEM** | | | | |
| | **Supply Fan** | | | | |
| A | Supply and install an Axial Aerofoil air supply fan capable of delivering 0.34m$^3$/s against a pressure drop of 180 Pa. The fan to come complete with mounting brackets, anti vibration mountings and flexible connector. The fan to be as "WOODS" or equal and approved. | 1 | No. | | |
| | **Extract Fan** | | | | |
| B | Supply and install an Axial Aerofoil air supply fan capable of delivering 0.272m$^3$/s against a pressure drop of 150 Pa. The fan to come complete with mounting brackets, anti vibration mountings and flexible connector. The fan to be as "WOODS" or equal and approved. | 1 | No. | | |
| | **Fan Control Panels** | | | | |
| C | A splash proof fan control panel complete with operational switches shall be installed in a room remote from the fan. It shall incorporate isolator, contactors, phase failure relay, overheat safety controls and fuses and pilot lamps to enable operating conditions to be checked. The panel shall be cut of mild steel and anodized after manufacture. | 2 | No. | | |
| | **Ductwork** | | | | |
| D | Galvanized mild steel ductwork 1.0mm (22swg) thick, complete with bends, transformation pieces, offsets, joints, branches, gaskets, supports, sleeves, stiffeners, splitters, turning vanes, test holes, access doors and any other accessories necessary for the complete laying of the supply and extract system ductwork. | 54 | SM | | |
| | **Transformation Pieces** | | | | |
| E | Allow for various sizes of transformation pieces in Galvanised mild steel thickness 1.2mm as indicated on the contract drawings and necessary for complete ductwork installation. | 2 | Item | | |
| | **Total Carried Forward to the Next Page 95** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | Total Brought forward from the Previous Page 94 | | | | |
| A | **Supply Silencer**<br>90° mitred bend splitter type rectangular silencer capable of providing the following attenuation due to fan sound power level within the octave mid-frequency bands 0-7-13-8-4-1-0. The silencer to be as 'WOODS' mitred type or equal and approved. | 1 | No. | | |
| B | **Extract Silencer**<br>Circular silencer casing constructed from cold formed pre-galvanized sheet steel and absorbent material of acoustic grade resin bonded mineral fibre with erosion resistant lining. The silencer shall be fitted with absorption pod and shall be of bore size 450mm. To be as woods or equal and approved. | 1 | No. | | |
| C | **Thermal Insulation**<br>Allow for supply ductwork thermal insulation to 25mm thickness and finish painting all as described in the General mechanical specification. | 54 | SM | | |
| D | **Acoustic Insulation**<br>Allow for the lining of the ductwork with a 25mm thick flame attenuated fiber glass or polystyrene, bonded with thermal setting frame. The inside lining to be done on sections of ductwork as will be pointed out by the engineer on site and shall act as the acoustic insulation. | 54 | SM | | |
| E | **Duct Work Painting**<br>Allow for painting (2No. coats) of the ductwork internally and externally with suitable matt black paint. | 54 | SM | | |
| F | **Supply Air Diffusers with damper**<br>4-way outlet ceiling register size 425 x 125mm. capable of supplying $0.07m^3/s$ (84 l/s) at sound levels less than 25NC (18 dBA) at 3m from the outlet. The diffuser shall have an approximate throw of 4.7m for terminal velocities of 0.15m/s. | 5 | No. | | |
| G | **Extract Air grilles with dampers**<br>Ceiling extract grilles size 425 x 125mm wide capable of extracting $0.112m^3/s$ (112 l/s) of air while producing direct noise level of less than 20NC at 3m distance from outlet. | 4 | No. | | |
| | Total Carried Forward to the Next Page 96 | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | Total Brought forward from the Previous Page 95 | | | | |
| A | **Flexible Connector**<br>Allow for flexible connections of rubber bellows or Neoprene for connection of the fan units to the ductwork. | 4 | Set | | |
| B | **Anti vibration mountings**<br>Neoprene mounts for isolation of the fan's vibration from the building structure. | 2 | Item | | |
| C | **Fire damper**<br>Shutter fire damper complete with fusible link and micro switch for de-activating the fan when damper closes suitable for a 400 x 400mm duct. | 2 | No. | | |
| D | **Volume Control Dampers**<br>Variable volume control dampers suitable for 400 x 400mm duct size. | 2 | No. | | |
| E | Variable volume control dampers suitable for 400 x 350mm duct size. | 2 | No. | | |
| F | **External Weather Louvers**<br>External Weather Louvers size 600 x 600mm shall be mounted at the air inlet and outlet external surfaces. This shall consist of a perimeter angle frame enclosing louvre blades set at 45° and overlapped on 40mm pitch centre. A bird mesh screen shall be mounted on the rear of the louvre made from extruded aluminium sections of 19 SWG as 'TECNALCO' EWLM series or equal and approved | 2 | No. | | |
| G | **Electrical works**<br>Allow for electrical works (Supply & Extract) including wiring and fitting from the local isolator provided by others within 2 metres on the roof slab to the fans. It shall include a push and turn safety switch near the fans for isolation during maintenance. | 1 | Item | | |
| H | **Balancing of the Systems**<br>The systems shall be balanced such that the spaces to be ventilated shall be balanced as per the designed flowrates indicated in the drawings. It will be the onus of the tenderer to make sure that the flows are adjusted to meet these requirements. | 1 | Item | | |
| | Total for 1 No. Ventilated Room | | | | |
| | Multiply by 2No. Ventilated Rooms | | | | X2 |
| | Total Carried Forward to Summary Page 104 | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Testing and Commissioning** | | | | |
| A | Allow for testing and commissioning of the whole mechanical ventilation installations to the satisfaction of the Engineer. | 1 | Item | | |
| B | Prepare and submit **three sets** of working drawings for the Archives Mechanical ventilation Layout, before commencement of works and record (As-built) plan and isometric layout drawings after completion of works to easily readable scale, A1 or A2 paper size format as follows;<br>i) general arrangement drawings of all equipment, plant etc.<br>ii) wiring (electrical & control) details<br>iii) any other details as per specifications<br>Drawings are to be submitted in soft copy (AutoCAD format) & hard copy to the client, the Architect and the Engineer. The soft copies to be stored in 32GB flash disk. Allow for preparation & submitting draft and three final copies of operation, instruction and maintenance manuals to Engineer's approval. | 1 | Item | | |
| | **Project Stationery for Mechanical Directorate SDPW** | | | | |
| C | ASUS ROG Zephyrus G14 OLED 16GB RAM 1TB SSD GA403UV-G14.R94060 | 1 | No. | | |
| D | SanDisk 2TB Extreme Portable External SSD - Up to 550MB/s - USB-C, USB 3.1 - SDSSDE60 - 2T00 - G25 | 2 | No. | | |
| E | INo. of Toner Cartridge for Kyocera TASKalfa 8353ci color laser multifunction printer for each of the 4 different colours namely;<br>**Black**<br>**Yellow**<br>**Magenta**<br>**Cyan** | 1 | Item | | |
| F | Toner Cartrige for HP Laser jet Printer as **HP 26A** | 4 | No. | | |
| G | Photocopy paper, size A4, 80g/cm$^3$, White, 500 sheets | 15 | Reams | | |
| | **Total Carried Forward to Summary Page 104** | | | | |

## BOREHOLE DRILLING AND EQUIPPING INSTALLATION WORKS

### Part 1: Borehole Drilling Works

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | *NB: All measurements are provisional and are subject to re-measurements on site.* | | | | |
| | **NEMA Report** | | | | |
| A | Conduct an Environmental Impact Assesment develop report on behalf of the client for submission to National Environmental Management Authority. Obtain NEMA approval for the project. | 1 | Item | | |
| | **Drilling Permit and County Approvals** | | | | |
| B | Submit application for drilling permit from the Water Resources Authority on behalf of the client. Additionally, acquire necessary statutory permits from the County Government before commencement of the works (Note: No payments to be made before the permit is acquired and submitted to the Client). | 1 | Item | | |
| | **Mobilization / Demobilization** | | | | |
| C | Mobilization/demobilization of drilling unit, equipment materials, personnel and all other required supplies. This shall include erecting / dismantling of drilling unit. | 1 | Item | | |
| | **Allow for:** | | | | |
| D | (a) Supply of water and drilling fluids for drilling operations and field camp | 1 | Item | | |
| | **Drilling** | | | | |
| E | Drilling of 254mm diameter borehole from the surface through all types of loose formations until a stable formation is encountered, including disposal of excavated material, taking any remedial measures to overcome caving-in, or over drilling to accommodate sloughed material and keeping drilling records as specified. | 20 | Lm | | |
| F | Drilling of 225mm diameter borehole from stable formation upto 100m from the surface through all types of stable strata, including disposal of excavated material, taking any remedial measures to overcome caving-in, or over drilling to accommodate sloughed material and keeping drilling records as specified. | 80 | Lm | | |
| G | Ditto but from 101-200m below surface. | 100 | Lm | | |
| H | Ditto but from 201-300m below surface. | 10 | Lm | | |
| | **Total Carried Forward to the Next Page 99** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | Total Carried Forward from Previous Page 98 | | | | |
| | **Allow for:** | | | | |
| A | (a) Reaming and boring | 10 | Lm | | |
| B | (b) Supply, install and retain 254mm diameter temporary casing | 10 | Lm | | |
| | **Drill Cutting Samples** | | | | |
| C | Allow for taking of drill cuttings samples at two (2) meters intervals. | 1 | Item | | |
| | **Casing** | | | | |
| D | Supply and install of 152mm diameter plain steel (class B) casing into the borehole | 110 | Lm | | |
| E | Supply and installation of 152mm diameter slotted steel (class B) casing at appointed intervals of the borehole | 100 | Lm | | |
| | **Case Grouting** | | | | |
| F | Grout between the casing and the borehole for the top ten (10) meters. | 1 | Item | | |
| | **Gravel Pack** | | | | |
| G | Supply and install 2-4mm inert quartz gravel pack in the annular space between the borehole and the casing. | 10 | Ton | | |
| | **Well Development** | | | | |
| H | Physical and chemical development of the borehole including inserting and removal of development equipment | 12 | Hrs | | |
| | **Constant Discharge Test** | | | | |
| I | Undertake a constant discharge test to ascertain borehole yield for at least 24 hours including installation and withdrawal of pumping unit and recovery measurements. | 1 | Item | | |
| | **Water Level Observation** | | | | |
| J | Undertake water level observation and record recovery | 12 | Hrs | | |
| | **Microbial and Chemical Analysis** | | | | |
| K | Take borehole water samples, conduct microbial and chemical analyses and generate a report at certified laboratory as part of borehole completion. | 1 | Item | | |
| | **Making Good** | | | | |
| L | Reinstate and make good the area surrounding the borehole on completion of drilling works. | 1 | Item | | |
| | Total for Part 1 Carried Forward to Collection Page 103 | | | | |

Part 2: Borehole Equipping

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| A | **Borehole Pump**<br>Supply and install centifugal multistage submersible borehole pump, continously rated and capable of pumping **11m$^3$/hr** of water against a total head of **160m**. The entire pump-set body, impellers, shaft etc shall be made of heavy duty stainless steel material and shall be complete with submersible cable, level controls and their cabling. The pump shall have inbuilt non-return valve, tail strainer and cable guard. The pump shall be suitable for 3- phase 415V. The pump shall be as '**PEDROLLO 4SR8/42**' or equal and approved with a maximum assembly diameter of 130mm. | 1 | Item | | |
| B | Supply and install a control panel to be mounted off the wall. The control panel shall allow automatic duty operation of the pump with manual switch override. The panel to have an isolator switch indicator, indicator lights for pump status, ammeter, voltmeter, hour meter and main switch and power available light indication for the panel.<br>The panel to also have, among other items, but not limited to: over and under voltage protection, phase failure, overload relays, connections for borehole level controls, and volt free contacts for remote indication all housed in a stove baked enamel painted cabinet mounted on wall and with a plastic envelope sheathed circuit wiring diagram locked in the cabinet to approval. The panel to be as '**Dayliff**' or approved equivalent. | 1 | Item | | |
| C | **Level Control Electrodes**<br>Level Control and dry run protection electrodes for the borehole complete with cabling, interconnections and connections to the control panel. A second set of electrodes for the water tank complete with cabling to control panel | 1 | Lot | | |
| **Total Carried Forward to the Next Page 101** | | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Total Carried Forward from Previous Page 100** | | | | |
| | **Cabling** | | | | |
| A | 16mm² 4-core PVC flat PVC submersible electric cable. Waterproof. | 160 | Lm | | |
| B | 16mm² 4-core armoured underground electric cable to control panel | 30 | Lm | | |
| C | 2.5mm² 2-core PVC submersible PVC electrode cables waterproof. | 160 | Lm | | |
| D | 2.5mm² 2-core armoured underground electrode cables to control panel | 30 | Lm | | |
| | **Termination / Junction Box** | | | | |
| E | Supply and install an IP67 rated junction for termination of submersible pump and level control cables from the borehole and the armoured cables from the control panel | 1 | Item | | |
| | **Excavation** | | | | |
| F | Excavate trench 300mm wide and 500mm deep to lay cables. The laid cables to be covered with 50mm thick layer of fine soil, covered with tiles as '**Hatari**' then back filled, rammed and excess soil carted away. | 30 | Lm | | |
| | **Well Head** | | | | |
| G | Supply and install a well head comprising a test tap, pressure gauges, sockets for services as '**Grundfos**' well discharge head to approval. | 1 | Item | | |
| | **Borehole Protection Cover** | | | | |
| H | Construct a masonry borehole protection cover measuring 1.5 m x 1.5 m x 0.75 m, with rendered walls , screeded slab with a drain pot. The cover to have a hinged opennable cover made of 1.5mm thick mild steel chequer plate c/w framing, two (2 No.) heavy duty stainless steel padlocks and painted with two coats of aluminium. | 1 | Item | | |
| | **Excavation** | | | | |
| I | Excavate trench 300mm wide and 500mm deep to lay water pipe. The laid water pipe to be back filled, rammed and excess soil carted away. | 30 | Lm | | |
| | **Observation Pipe** | | | | |
| J | Supply and install 20mm diameter uPVC pipe (observation pipe), | 210 | Lm | | |
| | **Total Carried Forward to the Next Page 102** | | | | |

| Item | Description | Qty | Unit | Rate (Kshs) | Amount (Kshs) |
|---|---|---|---|---|---|
| | **Total Carried Forward from Previous Page 101** | | | | |
| | **Pressure Gauge** | | | | |
| A | Supply and install high quality pressure gauge as '**Kent**' or equivalent range 0-7kgf/cm² complete with accessories for mounting on galvanised pipe. | 1 | No | | |
| | **Water Pipe** | | | | |
| B | Supply and install 40mm diameter rising main GMS water pipe, Class B. | 160 | Lm | | |
| C | 40mm diameter GMS bend | 2 | No | | |
| D | 40mm diameter Black steam sockets as '**Crane**' | 28 | No | | |
| | **HDPE PIPEWORK - PN 16** | | | | |
| E | 40mm diameter HDPE pipework | 50 | Lm | | |
| F | 40mm diameter bend / elbow | 6 | No | | |
| | **HDPE Valve Adapters** | | | | |
| G | 40mm x 11/4" HDPE valve adapter | 2 | No. | | |
| | **Valve Chamber** | | | | |
| H | Standard precast concrete valve chamber of size 600 x 450 x 450mm deep made of concrete (1:3:6) base, including formwork, excavations backfilling and disposal. | 1 | No | | |
| I | Contractor to provide 3-phase electric power to conduct the necessary tests for the borehole equipment on site. | 1 | Item | | |
| J | Prepare and submit operation and mainatenance manuals including all circuit diagrams for all the installations in 3 copies all to approval. | 1 | Item | | |
| | **Abstraction Permit** | | | | |
| K | Obtain relevant documents from client, facilitate registration of the drilled borehole with Water Resources Authority (WRA) and acquisition of abstraction permit. | 1 | Item | | |
| L | Allow for construction of standard pump house, to house the control panel, pressure gauge, kplc meter and water meter. | 1 | Item | | |
| M | Allow for testing and commissioning of the borehole | 1 | Item | | |
| | **Total for Part 2 Carried Forward to Collection Page 103** | | | | |

COLLECTION PAGE FOR BOREHOLE DRILLING & EQUIPPING AND SOLARIZATION WORKS

| Item | Description | Amount (Kshs) |
|---|---|---|
| A | Total for borehole drilling works b/f from Page…….99 | |
| B | Total for borehole equipping b/f from Page……102 | |
| Total Carried Forward to Summary Page 104 | | |

| SUMMARY PAGE MECHANICAL WORKS | | |
|---|---|---|
| Item | Description | Amount (Kshs) |
| | **Sanitary Fittings** | |
| 1 | Total amount brought forward from page.....71 | |
| 2 | Total amount brought forward from page.....72 | |
| 3 | Total amount brought forward from page.....73 | |
| 4 | Total amount brought forward from page.....74 | |
| 5 | Total amount brought forward from page.....75 | |
| | **Laboratory Fittings** | |
| 6 | Total amount brought forward from page.....76 | |
| | **Internal Plumbing** | |
| 7 | Total amount brought forward from page.....77 | |
| 8 | Total amount brought forward from page.....78 | |
| | **Foul Water Drainage** | |
| 9 | Total amount brought forward from page.....79 | |
| 10 | Total amount brought forward from page.....80 | |
| | **Water Storage** | |
| 11 | Total amount brought forward from page.....81 | |
| 12 | Total amount brought forward from page.....82 | |
| 13 | Total amount brought forward from page.....83 | |
| | **External Water Reticulation** | |
| 14 | Total amount brought forward from page.....84 | |
| 15 | Total amount brought forward from page.....85 | |
| | **Rain Water Harvesting** | |
| 16 | Total amount brought forward from page.....86 | |
| 17 | Total amount brought forward from page.....87 | |
| | **Server Room Air Conditioning** | |
| 18 | Total amount brought forward from page.....88 | |
| 19 | Total amount brought forward from page.....89 | |
| | **Fire Fighting Installations** | |
| 20 | Total amount brought forward from page.....90 | |
| 21 | Total amount brought forward from page.....91 | |
| 22 | Total amount brought forward from page.....92 | |
| 23 | Total amount brought forward from page.....93 | |
| | **Printing & Archive Rooms Mechanical Ventilation System** | |
| 24 | Total amount brought forward from page.....96 | |
| 25 | Total amount brought forward from page.....97 | |
| | **Borehole Drilling and Equipping** | |
| 26 | Total amount brought forward from page.....103 | |
| 27 | **Contigency Sum** | 2,500,000.00 |
| TOTAL AMOUNT FOR MECHANICAL WORKS CARRIED TO GRAND SUMMARY | | |

## SCHEDULE OF UNIT RATES

1. The tenderer shall insert unit rates against the items in the following schedules and may add such other items as he considers appropriate.
2. The unit rates shall include for supply, transport, insurance, delivery to site, storage as necessary, assembling, cleaning, installing, connecting, profit and maintenance in defects liability and any other obligation under this contract.
3. The unit rates will be used to assess the value of additions or omissions arising from authorized variations to the contract works.
4. Where trade names or manufacturer's catalogue numbers are mentioned in the specification, the reference is intended as a guide to the type of article or quality of material required. Alternative brands of **equal** and **approved** quality will be accepted

| ITEM | DESCRIPTION | UNIT | RATE (Kshs) |
|---|---|---|---|
| 1. | Robe Hook | No. | |
| 2. | 1,500 Litres Polyethylene water tank | No. | |
| 3. | 16,000 Litres Polyethylene water tank | No. | |
| 4. | 24,000 Litres Polyethylene water tank | No. | |

## TECHNICAL SCHEDULE

1. The tenderer shall submit technical schedules for all materials and equipment upon which he has based his tender sum.
2. The tenderer shall also submit separate comprehensive descriptive and performance details for all plant apparatus and fittings described in the technical schedules. Manufacturer's literature shall be accepted. Failure to comply with this may have his tender disqualified.
3. Completion of the technical schedule shall not relieve the Contractor from complying with the requirements of the specifications except as may be approved by the Engineer.

**NB.** The tenderer must complete in full the technical schedule. Apart from the information required in the technical schedule, the tenderer **MUST SUBMIT LEGIBLE** comprehensive manufacturer's technical brochures and performance details for all items listed in this schedule and **CLEARLY HIGHLIGHT THE SPECIFIC REQUIRED ITEM ONLY.**

| | | MANUFACTURER | COUNTRY OF ORIGIN | REMARKS (Catalogue No. etc.) |
|---|---|---|---|---|
| 1. | Water Closet (WC) Pan | | | |
| 2. | Urinal Bowl | | | |
| 3. | Urinal flush-valve | | | |
| 4. | Urinal Division | | | |
| 5. | Wash hand basin | | | |
| 6. | Basin Tap | | | |
| 7. | Soap Dispenser | | | |
| 8. | Hand Drier | | | |
| 9. | Stainless steel pedal operated cylindrical bin | | | |
| 10. | Stainless steel Sanitary Napkin disposal bin | | | |
| 11. | Single Bowl Single Drainer sink | | | |
| 12. | Under sink heater | | | |
| 13. | PPR pipes | | | |
| 14. | uPVC & MuPVC pipes | | | |
| 15. | GMS pipe | | | |
| 16. | DZR brass Gate Valves | | | |
| 17. | Borehole Pump | | | |
| 18. | Submersible water booster pump set | | | |
| 19. | Fire Hose reel and Fire Hose reel cabinets | | | |
| 21. | Fire extinguishers; H20, CO2 & dry powder portables | | | |
| 22. | FM200 10Kg Automatic Hanging Fire Extinguisher | | | |
| 23. | Hose Reel Booster pump set | | | |
| 24. | Pressure Sand filter | | | |
| 25. | 5,000 Litres Polyethylene water tank | | | |
| 26. | Axial Aerofoil air supply fan | | | |
| 27. | Axial Aerofoil air extract fan | | | |
| 28. | Supply Air Diffusers | | | |
| 29. | Extract Air Grilles | | | |
| 30. | High wall (single split AC unit - 7.2 Kw) | | | |

**Catalogue MUST be attached for all the items in the schedule of material above**

# BILL NO.8 - PROVISIONAL SUMS

| ITEM | DESCRIPTION | QTY | UNIT | RATE | AMOUNT (KSHS) |
|---|---|---|---|---|---|
| | **BILL NO.6**<br>**PROVISIONAL SUMS**<br><br>The following provisional sums shall be expended in part or whole as directed by the Project Manager in consultation with the Client | | | | |
| A | Allow a provisional sum of Kenya Shillings Five Million (Ksh. 5,000,000.00) only for Fluctuations | | SUM | | 5,000,000.00 |
| B | Provide Kenya Shillings Ten Million (Kshs.10,000,000.00) only for contingencies | | SUM | | 10,000,000.00 |
| | TOTAL FOR PROVISIONAL SUMS CARRIED TO GRAND SUMMARY | | | | 15,000,000.00 |

# GRAND SUMMARY

PROPOSED CONSTRUCTION OF ARDHI HOUSE AT DELMONTE/MAKENJI- MURANGA COUNTY.
(PHASE 1) W.P ITEM NO.D1112/CE/MUR/2601 JOB NO. 11716A

GRAND SUMMARY

| BILL NO | DESCRIPTION | PAGE NO. | TENDERER'S USE (KSHS) | OFFICIAL USE (KSHS) |
|---|---|---|---|---|
| 1 | PRELIMINARIES | PRELIMS/1 | | |
| 2 | BUILDER'S WORK | BW/1 | | |
| 3 | CIVIL WORKS | CW/1 | | |
| 4 | ELECTRICAL WORKS | E/39 | | |
| 5 | MECHANICAL WORKS | MEC/32 | | |
| 6 | PROVISIONAL SUMS | PS/1 | | |
| | TOTAL TENDER SUM CARRIED TO FORM OF TENDER | | | |

Amount in words: Kenya Shillings……..
……
……

Tenderer's name: ……

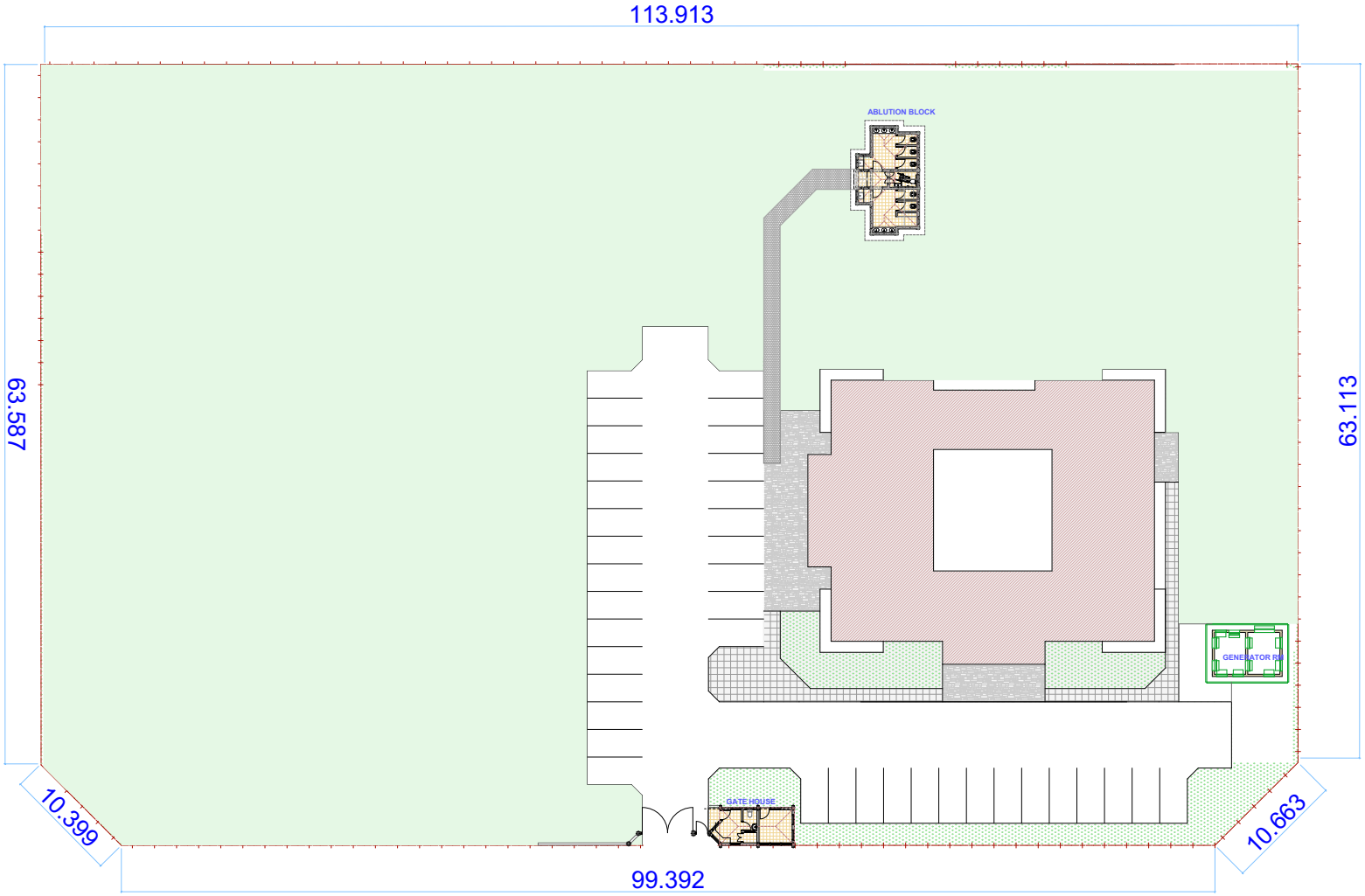
Tenderer's signature:…… Date:……

Official stamp/company seal:……

Signed:

Witness's name:……..……..

Witness's signature:……..……Date:……..




# SITE PLAN

## NOTES

### general

This drawing is to be read in conjuction with engineers' drawings
All dimensions are in mm unless otherwise specified.
drawings are not to be scaled. Only figured dimensions to
to be used. The contractor must check & verify all the
dimensions before commencement of the work.

### construction

All slabs at ground level to be layed over 1000 gauge
polythene sheeting on 50mm thick murram blinding,on
well compacted hardcore. All sink under slabs & around
external foundation to be poised for the termites control.

### structural

All black cotton soil to be removed from below all
building & paved surfaces. All paved surfaces to be
clear of black cotton soil to a distance of 500m
outside the edge of the surface.

For all R.C works, refer to SE's details.
Foundation depths to be determined on site to the SE
approval. All walls less than 200mm thick to be reinforced
with hoop iron of every alternate course.
All adjacent R.C work and masonry walls to be tied
with strap irons at every course.

### mechanical

All plumbing & drainage work to comply with P.H specifications.
All surface ducts to be accessible from all floors.
S.V.P denotes soil vent pipe and to be provided at the head of
the drainage. Drains passing beneath buildings and driveways
to be encased in 150mm concrete sarround. All underground
foul & waste drain pipes shall be of PVC. to comply with BS2255.
All exposed waste pipes and fittings in plumbing shall be cast iron
to comply with BS.437 Table 2 Grade A.
The storm water drain pipes to comply with BS. 556.
Minimum slope in the drain pipes to be 1%
No chases for pipes will be allowed in the slabs.
Sleeves will be allowed with written approval from the SE
No cutting of concrete without express approval of the Architect,
or SE. All testing of pipes must be cordinated with electrical
& any conflicts must be clarified before works begins.
P.V denotes permanent vents.

### electrical

All conduits must be laid before plastering.

### fire fighting

Provide a 1130 litres reserve tank with a booster pump
Dry risers
Provide a 1x30m hydraulic Hose-reel, on every floor
\Provide manual/ electric break glass fire alarm system.
Provide 4x9kg litres water CO2 fire extinguishers on every floor

### revisions

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|---|---|
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| | |
| | |
| | |

**project**

Proposed Ardhi House-

Delmonte/Makeni, Murang`a County

**drawing title**

SITE PLAN

**WP Item no.**

**client ministry/department**

Ministry of Lands and Physical Planning

**client signature**

**code**

| scale | | |
|---|---|---|
| | 1 | 1:100 |
| | 2 | |
| | 3 | |

**project job no.** **drawing no.**

| | name | signed | date |
|---|---|---|---|
| **Drawn & Designed by** | Arch.Calvin Wambura | | |
| **Checked by** | Arch. Kark Fundi | | |
| **Team leader** | Arch. J. N. Kamau | | |

**APPROVED**

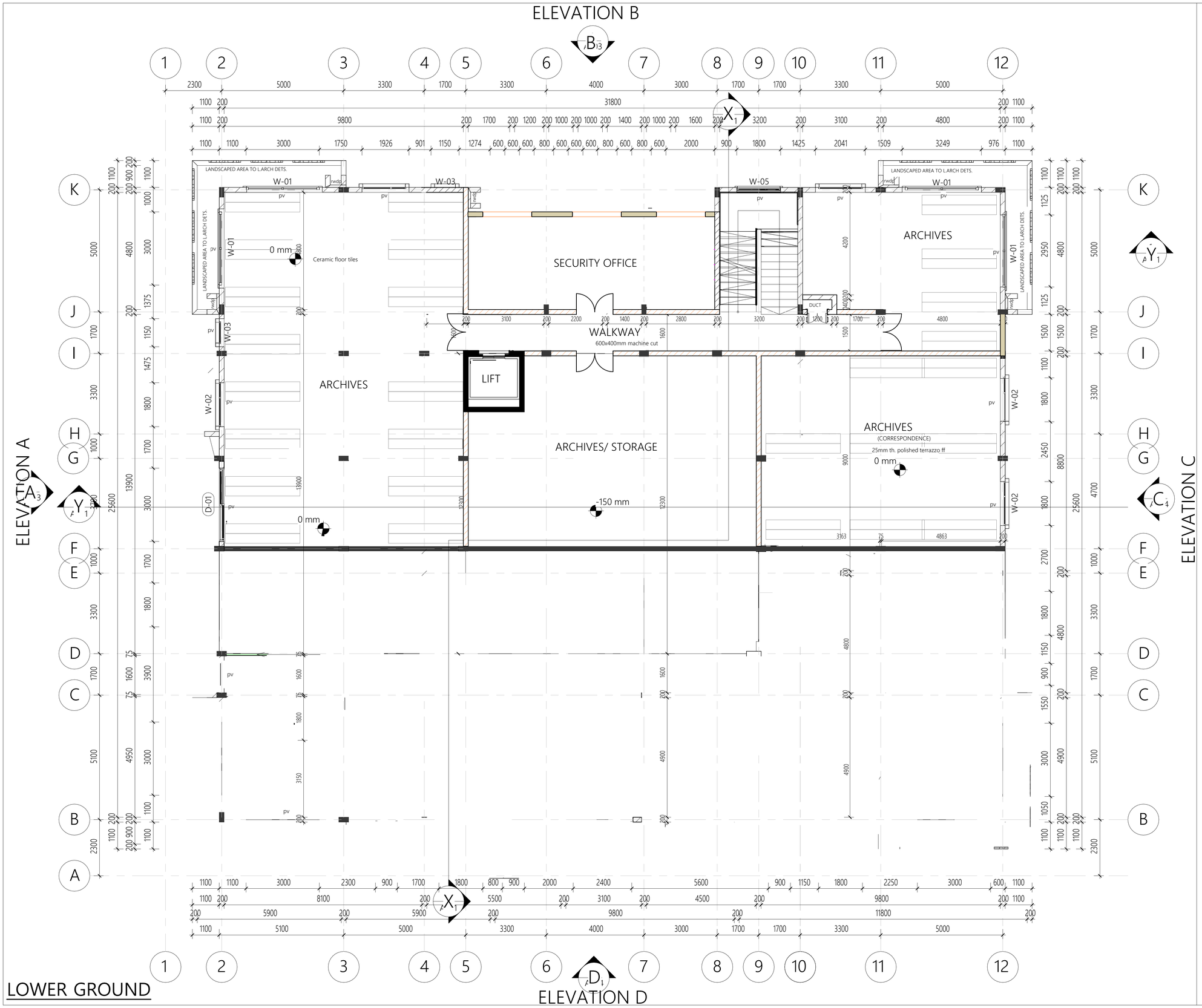
**Architect D.M Waititu**
**Chief Architect**

**MINISTRYOF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT**

STATE DEPARTMENT FOR PUBLIC WORKS

ARCHITECTURAL DEPARTMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA




## NOTES

### general

This drawing is to be read in conjuction with engineers' drawings
All dimensions are in mm unless otherwise specified,
drawings are not to be scaled. Only figured dimensions to
to be used. The contractor must check & verify all the
dimensions before commencement of the work.

### construction

All slabs at ground level to be layed over 1000 gauge
polythene sheeting on 50mm thick murram blinding.on
well compacted hardcore. All soils under slabs & around
external foundation to be poised for the termites control.

### structural

All black cotton soil to be removed from below all
building & paved surfaces. All paved surfaces to be
clear of black cotton soil to a distance of 500m
outside the edge of the surface.

For all R.C works, refer to SE's details.
Foundation depths to be determined on site to the SE
approval. All walls less than 200mm thick to be reinforced
with hoop iron at every alternate course.
All adjacent R.C work and masonry walls to be tied
with strap irons at every course.

### mechanical

All plumbing & drainage work to comply with P.H specifications.
All surface ducts to be accessible from all floors.
S.V.P denotes soil vent pipe and to be provided at the head of
the drainage. Drains passing beneath buildings and driveways
to be encased in 150mm concrete somound. All underground
foul & waste drain pipes shall be of PVC. to comply with BS5255.
All inspection chambers covers and framing shall be cast iron
to comply with BS.497 Table 2 Grade A.
The storm water drain pipes to comply with BS. 556.
Minimum slope in the drain pipes to be 1%.
No chases for pipes will be allowed in the slabs.
Sleeves will be allowed with written approval from the SE
No cutting of concrete without express approval of the Architect.
or SE. All testing of pipes must be cordinated with electrical
& any conflicts must be clarified before works begins.
P.V denotes permanent vents.

### electrical

All conduits must be laid before plastering.

### fire fighting

Provide a 1130 litres reserve tank with a booster pump
Dry risers
Provide a 1x30m hydraulic Hose-real, on every floor.
\Provide manual/ electric break glass fire alarm system.
Provide 4x9kg litres water CO2 fire extinguishers on every floor

### revisions

| | |
|---|---|
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| | |
| | |

**project**
Proposed Ardhi House-
Delmonte/Makeni, Murang`a County

**drawing title**
Lower Floor Plan

**WP item no.**

**client ministry/department**
Ministry of Lands and Physical Planning

**client signature**

**code**

| scale | | |
|---|---|---|
| | 1 | 1:100 |
| | 2 | |
| | 3 | |

**project job no.** **drawing no.**

| | name | signed | date |
|---|---|---|---|
| Drawn & Designed by | Arch.Calvin Wambura | | |
| Checked by | Arch. Korir Fundi | | |
| Team leader | Arch. J. N. Kamau | | |

**APPROVED**

**Architect D.M Waititu**
**Chief Architect**

**MINISTRYOF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT**
STATE DEPARTMENT FOR PUBLIC WORKS
ARCHITECTURAL DEPARTMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

# GROUND FLOOR PLAN

## NOTES

### general

This drawing is to be read in conjuction with engineers' drawings
All dimensions are in mm unless otherwise specified.
drawings are not to be scaled. Only figured dimensions to
to be used. The contractor must check & verify all the dimensions before commencement of the work.

### construction

All slabs at ground level to be layed over 1000 gauge polythene sheeting on 50mm thick murram blinding,on well compacted hardcore. All soils under slabs & around external foundation to be poised for the termites control.

### structural

All black cotton soil to be removed from below all building & paved surfaces. All paved surfaces to be clear of black cotton soil to a distance of 500m outside the edge of the surface.

For all R.C works, refer to SE's details.
Foundation depths to be determined on site to the SE approval. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
All adjacent R.C work and masonry walls to be tied with strap irons at every course.

### mechanical

All plumbing & drainage work to comply with P.H specifications.
All surface ducts to be accessible from all floors.
S.V.P denotes soil vent pipe and to be provided at the head of the drainage. Drains passing beneath buildings and driveways to be encased in 150mm concrete sorround. All underground foul & waste drain pipes shall be of PVC., to comply with BS5255.
All inspection chambers covers and framing shall be cast iron to comply with BS.497 Table 2 Grade A.
The storm water drain pipes to comply with BS. 556.
Minimum slope in the drain pipes to be 1%
No chases for pipes will be allowed in the slabs.
Sleeves will be allowed with written approval from the SE
No cutting of concrete without express approval of the Architect, or SE. All testing of pipes must be cordinated with electrical & any conflicts must be clarified before works begins.
P.V denotes permanent vents.

### electrical

All conduits must be laid before plastering.

### fire fighting

Provide a 1130 litres reserve tank with a booster pump
Dry risers
Provide a 1x30m hydraulic Hose-real, on every floor.
\Provide manual/ electric break glass fire alarm system.
Provide 4x9kg litres water CO2 fire extinguishers on every floor

### revisions

| | |
|---|---|
| | |
| project | Proposed Ardhi House- Delmonte/Makeni, Murang`a County |
| drawing title | Ground Floor Plan |
| WP item no. | |
| client ministry/department | Ministry of Lands and Physical Planning |
| client signature | |
| code | |
| scale | 1:100 |
| project job no. | |
| drawing no. | |

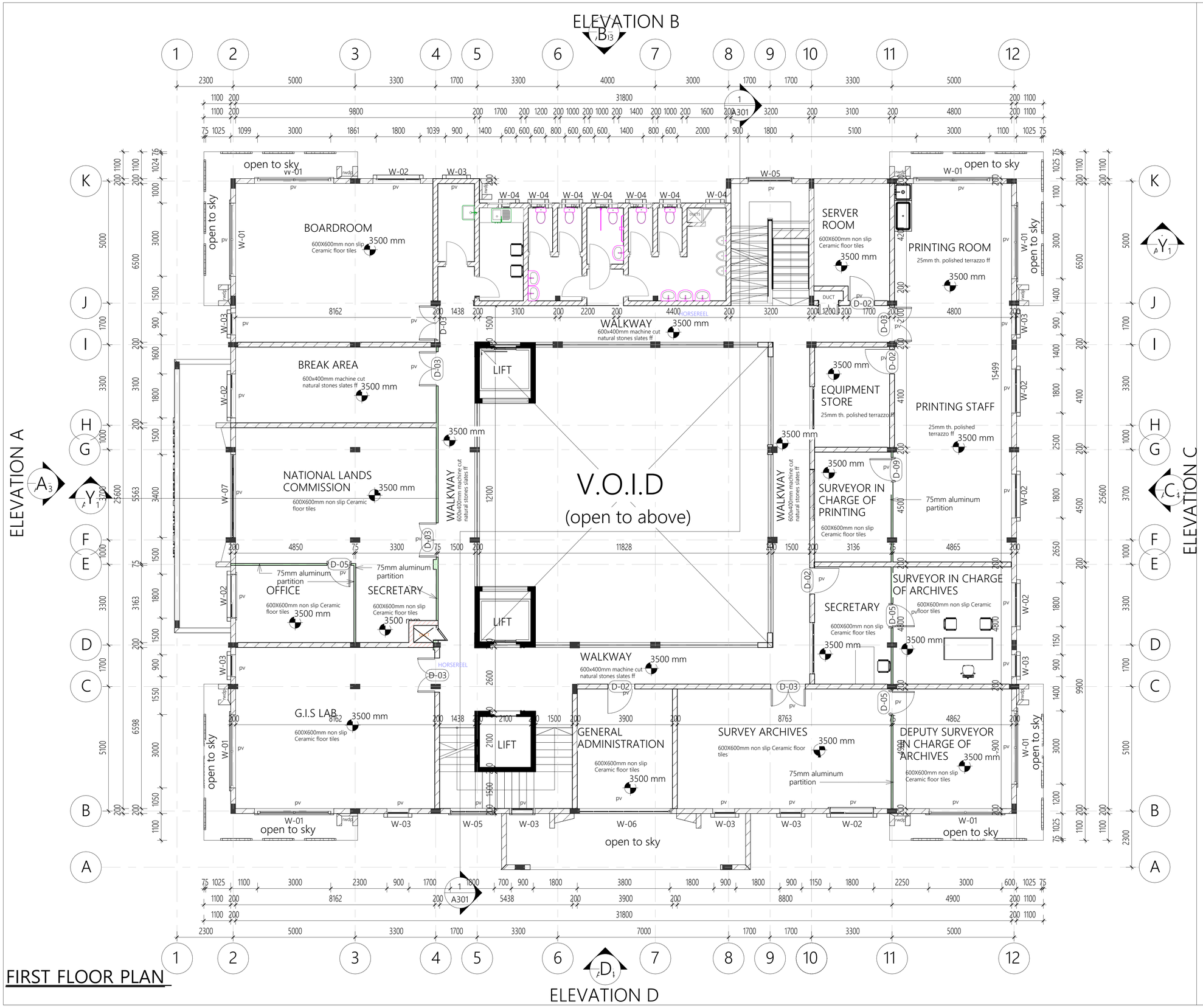
| | name | signed | date |
|---|---|---|---|
| Drawn & Designed by | Arch.Calvin Wambura | | |
| Checked by | Arch. Korir Fundi | | |
| Team leader | Arch. J. N. Kamau | | |

APPROVED

Architect D.M Waititu
Chief Architect

MINISTRYOF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR PUBLIC WORKS
ARCHITECTURAL DEPARTMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA




## NOTES

### general

This drawing is to be read in conjuction with engineers' drawings
All dimensions are in mm unless otherwise specified,
drawings are not to be scaled. Only figured dimensions to
to be used. The contractor must check & verify all the
dimensions before commencement of the work.

### construction

All slabs at ground level to be layed over 1000 gauge
polythene sheeting on.50mm thick murram blinding.on
well compacted hardcore. All soils under slabs & around
external foundation to be poised for the termites control.

### structural

All black cotton soil to be removed from below all
building & paved surfaces. All paved surfaces to be
clear of black cotton soil to a distance of 500m
outside the edge of the surface.

For all R.C works, refer to SE's details.
Foundation depths to be determined on site to the SE
approval. All walls less than 200mm thick to be reinforced
with hoop iron at every alternate course.
All adjacent R.C work and masonry walls to be tied
with strap irons at every course.

### mechanical

All plumbing & drainage work to comply with P.H specifications.
All surface ducts to be accessible from all floors.
S.V.P denotes soil vent pipe and to be provided at the head of
the drainage. Drains passing beneath buildings and driveways
to be encased in 150mm concrete sansound. All underground
foul & waste drain pipes shall be of PVC. to comply with BS5255.
All inspection chambers covers and framing shall be cast iron
to comply with BS.497 Table 2 Grade A.
The storm water drain pipes to comply with BS. 556.
Minimum slope in the drain pipes to be 1%.
No chases for pipes will be allowed in the slabs.
Sleeves will be allowed with written approval from the SE
No cutting of concrete without express approval of the Architect.
or SE. All testing of pipes must be cordinated with electrical
& any conflicts must be clarified before works begins.
P.V denotes permanent vents.

### electrical

All conduits must be laid before plastering.

### fire fighting

Provide a 1130 litres reserve tank with a booster pump
Dry risers
Provide a 1x30m hydraulic Hose-real, on every floor.
\Provide manual/ electric break glass fire alarm system.
Provide 4x9kg litres water CO2 fire extinguishers on every floor

### revisions

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**project**
Proposed Ardhi House-
Delmonte/Makeni, Murang`a County

**drawing title**
FIRST Floor Plan

**WP Item no.**

**client ministry/department**
Ministry of Lands and Physical Planning

**client signature**

**code**

| scale | | |
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| | 1 | 1:100 |
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**project job no.** **drawing no.**

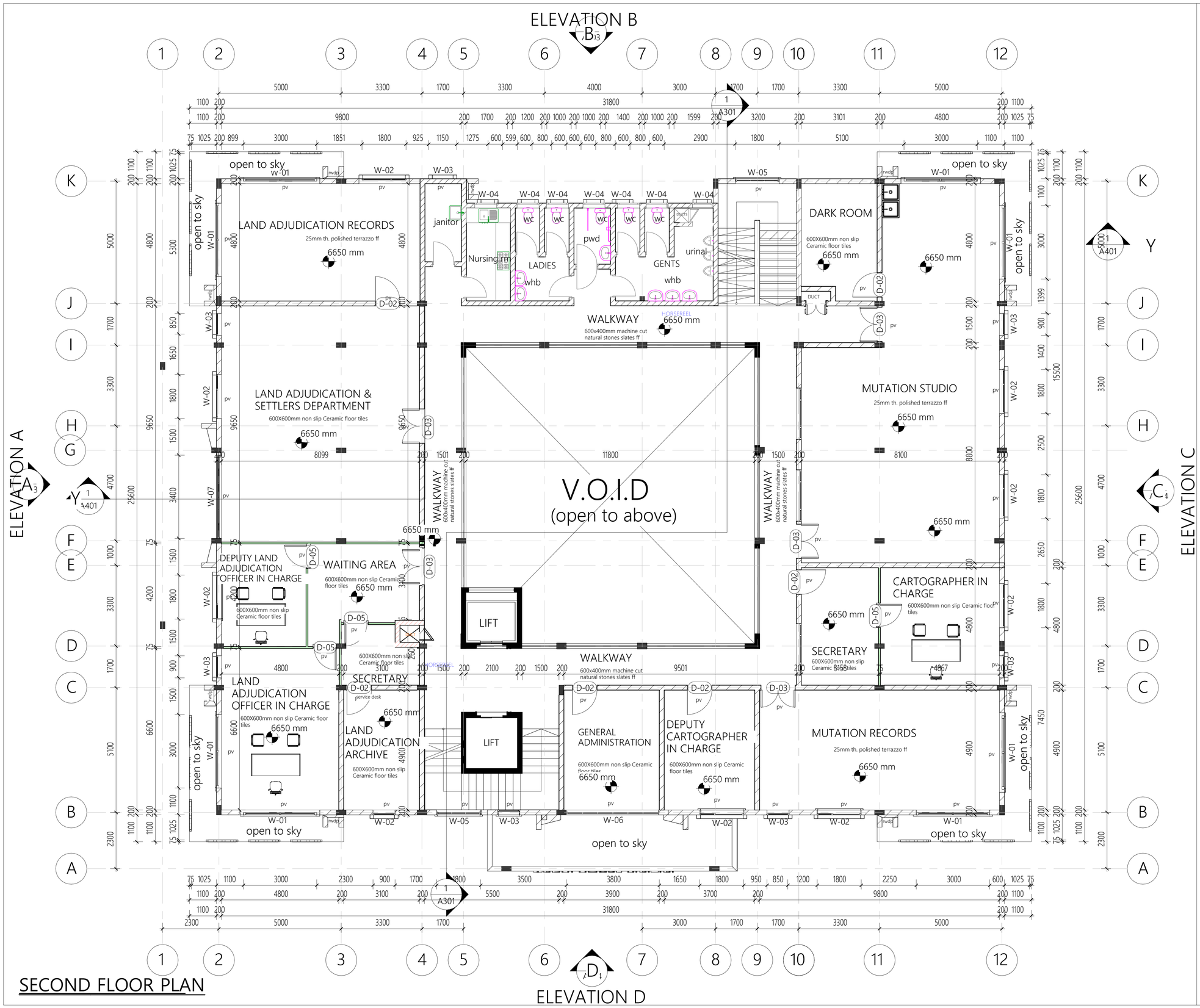
| | name | signed | date |
|---|---|---|---|
| Drawn & Designed by | Arch.Calvin Wambura | | |
| Checked by | Arch. Karir Fundi | | |
| Team leader | Arch. J. N. Kamau | | |

**APPROVED**

**Architect D.M Wailitu**
**Chief Architect**

**MINISTRYOF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT**
STATE DEPARTMENT FOR PUBLIC WORKS
ARCHITECTURAL DEPARTMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA




SECOND FLOOR PLAN

## NOTES

### general

This drawing is to be read in conjuction with engineers' drawings
All dimensions are in mm unless otherwise specified.
drawings are not to be scaled. Only figured dimensions to
to be used. The contractor must check & verify all the
dimensions before commencement of the work.

### construction

All slabs at ground level to be layed over 1000 gauge polythene sheeting on 50mm thick murram blinding.on well compacted hardcore. All soils under slabs & around external foundation to be poised for the termites control.

### structural

All black cotton soil to be removed from below all building & paved surfaces. All paved surfaces to be clear of black cotton soil to a distance of 500m outside the edge of the surface.

For all R.C works, refer to SE's details.
Foundation depths to be determined on site to the SE approval. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
All adjacent R.C work and masonry walls to be tied with strap irons at every course.

### mechanical

All plumbing & drainage work to comply with P.H specifications.
All surface ducts to be accessible from all floors.
S.V.P denotes soil vent pipe and to be provided at the head of the drainage. Drains passing beneath buildings and driveways to be encased in 150mm concrete sorround. All underground foul & waste drain pipes shall be of PVC. to comply with BS3255.
All inspection chambers covers and framing shall be cast iron to comply with BS.497 Table 2 Grade A.
The storm water drain pipes to comply with BS. 556.
Minimum slope in the drain pipes to be 1%
No chases for pipes will be allowed in the slabs.
Sleeves will be allowed with written approval from the SE
No cutting of concrete without express approval of the Architect. or SE. All testing of pipes must be cordinated with electrical & ahy conflicts must be clarified before works begins.
P.V denotes permanent vents.

### electrical

All conduits must be laid before plastering.

### fire fighting

Provide a 1130 litres reserve tank with a booster pump
Dry rises
Provide a 1x30m hydraulic Hose-real. on every floor.
\Provide manual/ electric break glass fire alarm system.
Provide 4x9kg litres water CO2 fire extinguishers on every floor

### revisions

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**project**
Proposed Ardhi House-
Delmonte/Makeni, Murang`a County

**drawing title**
Second Floor Plan

**WP item no.**

**client ministry/department**
Ministry of Lands and Physical Planning

**client signature**

**code**

| scale | | |
|---|---|---|
| | 1 | 1:100 |
| | 2 | |
| | 3 | |

**project job no.** | **drawing no.**

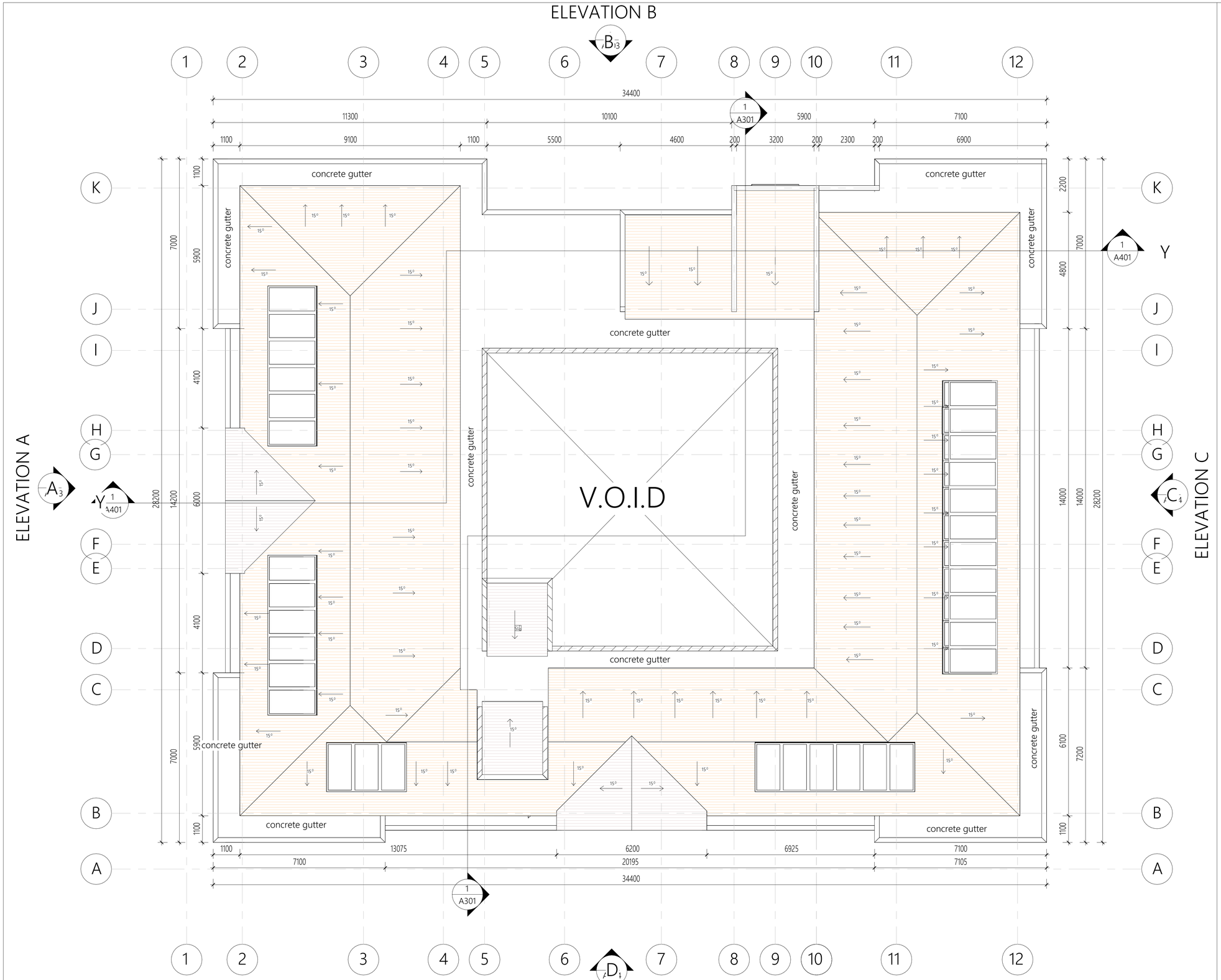
| | name | signed | date |
|---|---|---|---|
| Drawn & Designed by | Arch.Calvin Wamburu | | |
| Checked by | Arch. Kolir Fundi | | |
| Team leader | Arch. J. N. Kamau | | |

**APPROVED**

**Architect D.M Wailitu**
**Chief Architect**

**MINISTRYOF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT**
STATE DEPARTMENT FOR PUBLIC WORKS
ARCHITECTURAL DEPARTMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA




## ROOF LEVEL PLAN

**NOTES**

### general

This drawing is to be read in conjuction with engineers' drawings
All dimensions are in mm unless otherwise specified,
drawings are not to be scaled. Only figured dimensions to
to be used. The contractor must check & verify all the
dimensions before commencement of the work.

### construction

All slabs at ground level to be layed over 1000 gauge
polythene sheeting on 50mm thick murram blinding,on
well compacted hardcore. All soils under slabs & ground
external foundation to be poised for the termites control.

### structural

All black cotton soil to be removed from below all
building & paved surfaces. All paved surfaces to be
clear of black cotton soil to a distance of 500m
outside the edge of the surface.

For all R.C works, refer to SE's details.
Foundation depths to be determined on site to the SE
approval. All walls less than 200mm thick to be reinforced
with hoop iron at every alternate course.
All adjacent R.C work and masonry walls to be tied
with strap irons at every course.

### mechanical

All plumbing & drainage work to comply with P.H specifications.
All surface ducts to be accessible from all floors.
S.V.P denotes soil vent pipe and to be provided at the head of
the drainage. Drains passing beneath buildings and driveways
to be encased in 150mm concrete sorround. All underground
foul & waste drain pipes shall be of PVC. to comply with BS5255.
All inspection chambers covers and framing shall be cast iron
to comply with BS.4971 Table 2 Grade A.
The storm water drain pipes to comply with BS. 556.
Minimum slope in the drain pipes to be 1%.
No chases for pipes will be allowed in the slabs.
Sleeves will be allowed with written approval from the SE
No cutting of concrete without express approval of the Architect,
or SE. All testing of pipes must be cordinated with electrical
& any conflicts must be clarified before works begins.
P.V denotes permanent vents.

### electrical

All conduits must be laid before plastering.

### fire fighting

Provide a 1130 litres reserve tank with a booster pump
Dry risers
Provide a 1x30m hydraulic Hose-real, on every floor.
\Provide manual/ electric break glass fire alarm system.
Provide 4xKg litres water CO2 fire extinguishers on every floor

**revisions**

**project**
Proposed Ardhi House-
Delmonte/Makeni, Murang`a County

**drawing title**
Roof Plan

**WP item no.**

**client ministry/department**
Ministry of Lands and Physical Planning

**client signature**

**code**

| scale | | |
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| | 1 | 1:100 |
| | 2 | |
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**project job no.** **drawing no.**

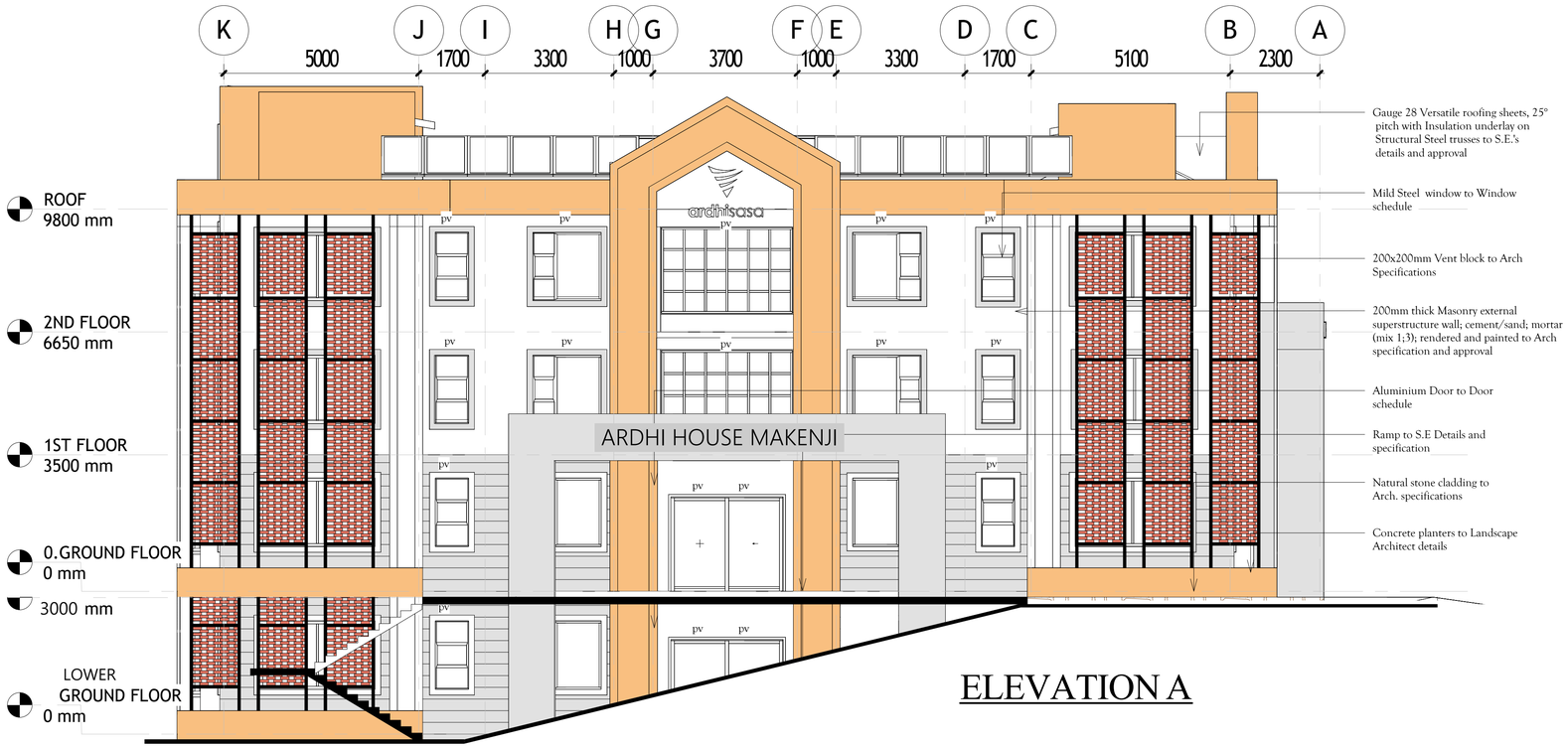
| | name | signed | date |
|---|---|---|---|
| Drawn & Designed by | Arch.Calvin Wambura | | |
| Checked by | Arch. Korir Fundi | | |
| Team leader | Arch. J. N. Kamau | | |

**APPROVED**

**Architect D.M Waititu**
**Chief Architect**

**MINISTRYOF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT**
STATE DEPARTMENT FOR PUBLIC WORKS
ARCHITECTURAL DEPARTMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA




# ELEVATION A

# ELEVATION B

## NOTES

### General
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### construction
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### structural
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All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
All adjacent R.C work and masonry walls to be tied with strap irons at every course.

### mechanical
All plumbing & drainage work to comply with P.H specifications.
All surface ducts to be accessible from all floors.
S.V.P denotes soil vent pipe and to be provided at the head of the drainage. Drains passing beneath buildings and driveways to be encased in 150mm concrete surround.
All underground foul & waste drain pipes shall be of PVC. to comply with BS5255.
All inspection chambers covers and framing shall be cast iron to comply with BS.497 Table 2 Grade A.
The storm water drain pipes to comply with BS. 556.
Minimum slope in the drain pipes to be 1%
No chases for pipes will be allowed in the slabs.
Sleeves will be allowed with written approval from the S.E
No cutting of concrete without express approval of the Architect. or SE. All testing of pipes must be coordinated with electrical & any conflicts must be clarified before works
P.V denotes permanent vents.

### electrical
All conduits must be laid before plastering.

### fire fighting
Provide a 1150 litres reserve tank with a booster pump Dry risers
Provide a 1x30m hydraulic Hose-real, on every floor.
\Provide manual/ electric break glass fire alarm system.
Provide 4x9kg liters water CO2 fire extinguishers on every floor

**Revisions**

Project

Proposed Ardhi House Kiritiri Town, Embu County

Drawing Title

ELEVATIONS

W.P Item No

BD 1112/EN/EMB/2501

Client/ ministry /department

State Department for Lands and Physical Planning,
P.O Box 30450-00100, Nairobi.

Client Signature

Scale 1 : 100

Project job no. 11569A

Drawing no.

| | Name | Signed | Date |
|---|---|---|---|
| Team Leader. | Arch. James Kamau | | |
| Snr. Prin. Supt. Arch | Arch Mambo Matola | | |
| Arch.Asst | Wahu Muchuku | | |

**CHIEF ARCHITECT**

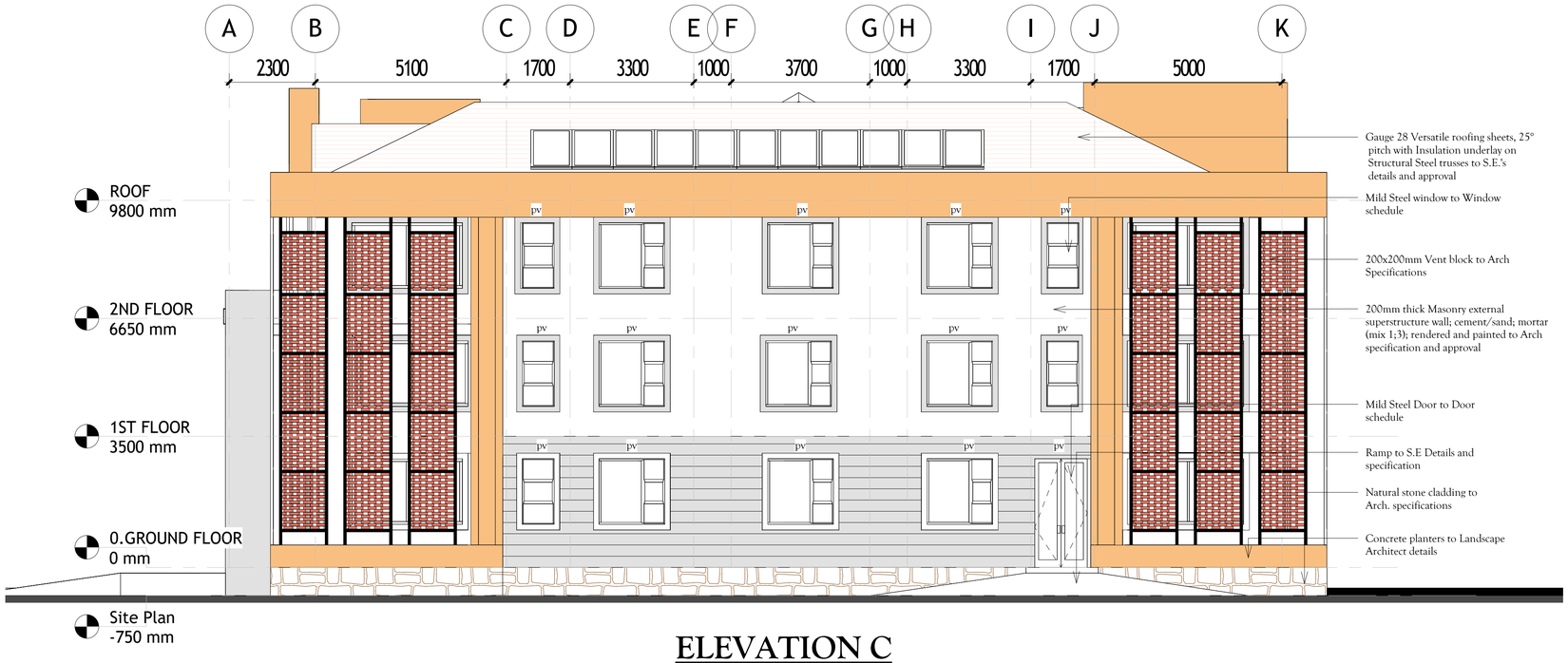
Arch D.M.Waititu

**Stamp**

MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING, URBAN DEVELOPMENT AND PUBLIC WORKS

STATE DEPARTMENT FOR PUBLIC WORKS
ARCHITECTURAL DEPARTMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA




# ELEVATION C

# ELEVATION D

## NOTES

### General
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### construction
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For all R.C works, refer to SE's details.
Foundation depths to be determined on site to the SE approval.
All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
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### mechanical
All plumbing & drainage work to comply with P.H specifications.
All surface ducts to be accessible from all floors.
S.V.P denotes soil vent pipe and to be provided at the head of the drainage. Drains passing beneath buildings and driveways to be encased in 150mm concrete surround.
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The storm water drain pipes to comply with BS. 556.
Minimum slope in the drain pipes to be 1%
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No cutting of concrete without express approval of the Architect. or SE. All testing of pipes must be coordinated with electrical & any conflicts must be clarified before works
P.V denotes permanent vents.

### electrical
All conduits must be laid before plastering.

### fire fighting
Provide a 1130 litres reserve tank with a booster pump
Dry risers
Provide a 1x30m hydraulic Hose-real, on every floor.
\Provide manual/ electric break glass fire alarm system.
Provide 4x9kg liters water CO2 fire extinguishers on every floor

**Revisions**

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|---|---|
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Project

Proposed Ardhi House Kiritiri Town, Embu County

Drawing Title

ELEVATIONS

W.P Item No

BD 1112/EN/EMB/2501

Client/ ministry /department

State Department for Lands and Physical Planning,
P.O Box 30450-00100,
Nairobi.

Client Signature

| Scale | |
|---|---|
| 1 : 100 | 1 |
| | 2 |
| | 3 |

| Project job no. | Drawing no. |
|---|---|
| 11569A | |

| | Name | Signed | Date |
|---|---|---|---|
| Team Leader. | Arch. James Kamau | | |
| Snr. Prin. Supt. Arch | Arch Mambo Matola | | |
| Arch.Asst | Wahu Muchuku | | |

**CHIEF ARCHITECT**

Arch D.M.Waititu

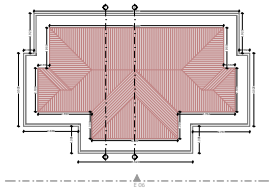
**Stamp**

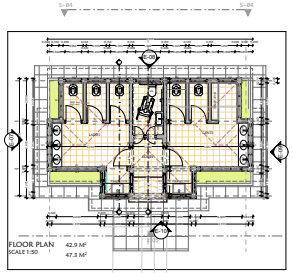
MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING, URBAN DEVELOPMENT AND PUBLIC WORKS

STATE DEPARTMENT FOR PUBLIC WORKS
ARCHITECTURAL DEPARTMENT

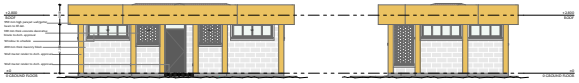
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

## PUBLIC TOILETS





FLOOR PLAN
SCALE 1:50
42.9 M²
47.3 M²



ELEVATION 05
SCALE 1:50

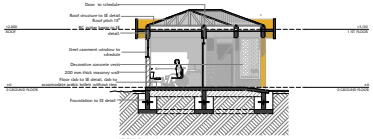


ELEVATION 06
SCALE 1:50

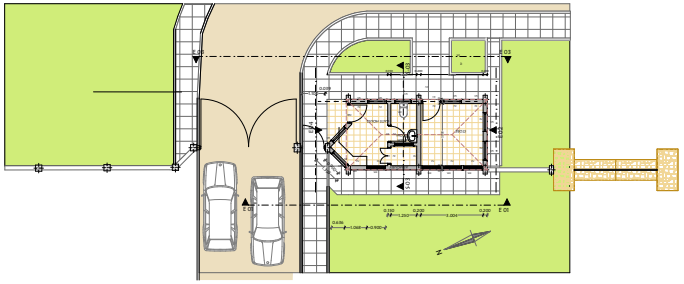
ELEVATION 07
SCALE 1:50



ELEVATION 08
SCALE 1:50



SECTION 02
SCALE 1:50



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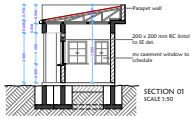
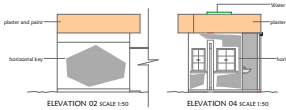
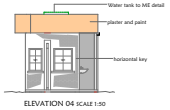


SECTION 01
SCALE 1:50



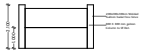
ELEVATION 02 SCALE 1:50



ELEVATION 04 SCALE 1:50

ELEVATION 03 SCALE 1:50

ELEVATION 01 SCALE 1:50



GABION WALL FENCE

chain link fence Approx 55metres (3m high) to cover front boundary and side

## NOTES

### general

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dimensions before commencement of the work.

### construction

All slabs at ground level to be laysed over 1000 gauge
polythene sheeting on 50mm thick murram binding on
well compacted hardcore. All soils under slabs & around
external foundation to be poised for the termites control.

### structural

All black cotton soil to be removed from below all
building & paved surfaces. All paved surfaces to be
sloped to drain away from the presence of 300m
outside the edge of the surface.

For all R.C. works, refer to SE's details.

Foundation depths to be determined on site to the SE
approval. All walls less than 200mm thick to be reinforced
with hoop iron at every alternate course.
All adjacent R.C. work and masonry walls to be tied
with strap irons at every course.

### mechanical

All plumbing & drainage work to comply with P.H specifications.
All surface ducts to be accessible from all floors.
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the drainage. Drains passing beneath buildings and driveways
to be encased in 150mm concrete surround. All underground
foul & waste sewer pipes shall be of PVC. to comply with BS2035.
All above ground drainage pipes and fittings shall be cast iron
to comply with BS.497 Table 2 Grade A.
The storm water drain pipes to comply with BS. 556.
Minimum slope in the drain pipes to be 1%.
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Sleeves will be allowed with written approval from the SE
No cutting of concrete without express approval of the Architect.
or SE. All testing of pipes must be coordinated with electrical
& any conflicts must be clarified before works begins.
P.V denotes permanent vents.

### electrical

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Provide a 1130 litres reserve tank with a booster pump
Dry risers.
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Provide manual/ electric break glass fire alarm system.
Provide 4x9kg litres water CO2 fire extinguishers on every floor

| revisions | |
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**project**
Proposed Ardhi House-
Delmonte/Makeni, Murang'a County

**drawing title**

**WP item no.**

**client ministry/department**
Ministry of Lands and Physical Planning

**client signature**

**code**

| scale | | |
|---|---|---|
| | 1 | 1:100 |
| | 2 | |
| | 3 | |

**project job no.** **drawing no.**

| | name | signed | date |
|---|---|---|---|
| Drawn & Designed by | Arch.Calvin Wambura | | |
| Checked by | Arch. Karir Fundi | | |
| Team leader | Arch. J. N. Kamau | | |

**APPROVED**

**Architect D.M Wallilu**
**Chief Architect**

**MINISTRYOF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT**
STATE DEPARTMENT FOR PUBLIC WORKS
ARCHITECTURAL DEPARTMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA