REPUBLIC OF KENYA
MINISTRY OF TOURISM AND WILDLIFE
STATE DEPARTMENT OF WILDLIFE

BIDDING DOCUMENT

FOR

TENDER NO: MOTW/SDW/ONT/001/2022-2023

CONSTRUCTION OF PROPOSED FACILITIES FOR SECURITY HUB AT KWS TSAVO CONSERVATION AREA

EMPLOYER:	**PRINCIPAL SECRETARY,** **STATE DEPARTMENT OF WILDLIFE** **P.O. BOX 41394 -00100** **NAIROBI**
COUNTRY:	**REPUBLIC OF KENYA**
ISSUED ON:	**27th September 2022**
CLOSING DATE	**11th October 2022**

TABLE OF CONTENTS

SECTION I: INVITATION TO TENDER

The *State* Department of Wildlife invites sealed tenders for the construction of Water pans and small dams under the wildlife water supplementation project in Tsavo conservation area Construction of **Proposed Facilities for Security Hub At KWS Tsavo Conservation Area**

Tendering will be conducted under open competitive method (National) using a standardized tender document. Tendering is open to all qualified and interested Tenderers.

1. Tendering will be conducted under open competitive method (National) using a standardized tender document. Tendering is open to all qualified and interested Tenderers.

2. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours 0800 **to 1700 hours** at the address given below.

3. Tender documents containing detailed specifications can be downloaded free of charge from our website *www.tourism.go.ke or www.tenders.go.ke* and register for notifications for the tender in the www.tenders.go.ke. All clarifications shall be posted on the tender portal.

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

5. All Tenders must be accompanied by a Tender Security of **Ksh.1,000,000 in** form of Bank Guarantee.

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

7. Completed tenders must be delivered to the address below on or before *[insert time and date]* **The Principal Secretary, State Department for Wildlife, P. O. Box 41394 - 00100,** and be deposited into the tender box at the State Department for Wildlife, NSSF Building, Block-A, Eastern Wing, 15th Floor, on or before 12:00 noon, 11th October, 2022. Electronic Tenders will not be permitted.

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

9. Late tenders will be rejected.

10. The addresses referred to above are:

    Address for obtaining further information and for purchasing tender documents

    The Principal Secretary,
    State Department for Wildlife,
    NSSF Building, Block-A, Eastern Wing, 15th Floor
    P. O. Box 41394 - 00100,
    NAIROBI

ABBREVIATIONS AND ACRONYMS

CDS	Contract Data Sheet
GCC	General Conditions of Contract
IFT	Invitation for Tender
ITT	Instruction to Tenderers
PE	Procuring Entity
PM	Project Manager
PPADA 2015	Public Procurement and Asset Disposal Act, 2015
PPDR 2020	Public Procurement and Disposal Regulations, 2020
PPOA	Public Procurement Oversight Authority
STD	Standard Tender Documents
SOR	Statement of Requirements
SP	Service Provider
TDS	Tender Data Sheet
VAT	Value Added

SECTION II: INSTRUCTIONS TO TENDERERS (ITT)

Table of Clauses

A. Introduction

1. Scope of Tender

1.1 The Procuring Entity indicated in the **Tender Data Sheet** (TDS) invites Tenders for the construction of works as specified in the **Tender Data Sheet** and Sections VI (Technical Specifications) and VII (Drawings).

1.2 The successful Tenderer will be expected to complete the works by the required completion date specified in the **Tender Data Sheet.**

1.3 The objectives of the works are listed in the **Tender Data Sheet**. These are mandatory requirements. Any subsequent detail is offered to support these objectives and must not be used to dilute their importance.

2. Source of Funds

2.1 The Government of Kenya has set aside funds for the use of the Procuring Entity named in the **Tender Data Sheet** during the Financial Year indicated in the **Tender Data Sheet.** It is intended that part of the proceeds of the funds will be applied to cover eligible payments under the contract for the works as described in the **Tender Data Sheet.**

Or

The Government of Kenya through Procuring Entity named in the **Tender Data Sheet** has applied for/received/ intends to apply for a [loan/credit/grant] from the financing institution named in the **Tender Data Sheet** towards the cost of the Project named in the **Tender Data Sheet.** The Government of Kenya intends to apply a part of the proceeds of this [loan/credit/grant] to payments under the Contract described in the **Tender Data Sheet**.

2.2 Payments will be made directly by the Procuring Entity (or by financing institution specified in the **Tender Data Sheet** upon request of the Procuring Entity to so pay) and will be subject in all respects to the terms and conditions of the resulting contract placed by the Procuring Entity.

3. Eligible Tenderers

3.1 A Tenderer may be a natural person, private or public company, government-owned institution, subject to sub- Clause 3.4 or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a joint venture, consortium, or association. In the case of a joint venture, consortium, or association, unless otherwise specified in the **Tender Data Sheet**, all parties shall be jointly and severally liable.

3.2 The Invitation for Tenders is open to all suppliers as defined in the Public Procurement and Disposal Act, 2005 and the Public

Procurement and Disposal Regulations, 2006 except as provided hereinafter.

3.3 National Tenderers shall satisfy all relevant licensing and/or registration with the appropriate statutory bodies in Kenya,
such as the Ministry of Public Works or the Energy Regulatory Commission.

3.4 A Tenderer shall not have a conflict of interest. All Tenderers found to have a conflict of interest shall be disqualified. A Tenderer may be considered to have a conflict of interest with one or more parties in this Tendering process, if they:

a) Are associated or have been associated in the past directly or indirectly with employees or agents of the Procuring Entity or a member of a board or committee of the Procuring Entity;

b) Are associated or have been associated in the past, directly or indirectly with a firm or any of its affiliates which have been engaged by the Procuring Entity to provide
consulting services for the preparation of the design, specifications and other documents to be used for the
procurement of the works under this Invitation for Tenders;

c) Have controlling shareholders in common; or

d) Receive or have received any direct or indirect subsidy from any of them; or

e) Have the same legal representative for purposes of this Tender; or

f) Have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Tender of another Tenderer, or influence the decisions of the Procuring Entity regarding this Tendering process; or

g) Submit more than one Tender in this Tendering process; however, this does not limit the participation of subcontractors in more than one Tender, or as Tenderer and subcontractor simultaneously.

3.5 A Tenderer will be considered to have a conflict of interest if they participated as a consultant in the preparation of the design or technical specification of the project and related services that are the subject of the Tender.

3.6 Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Government of Kenya in accordance with GCC sub-Clause 3.2.

3.7 Government owned enterprises in Kenya may participate only if they are legally and financially autonomous, if they operate under commercial law, are registered by the relevant registration board or authorities and if they are not a dependent agency of the Government.

3.7 Tenderers shall provide such evidence of their continued eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

4. One Tender per Tenderer

4.1 A firm shall submit only one Tender, in the same Tendering process, either individually as a Tenderer or as a partner in a joint venture pursuant to ITT Clause 5.

4.2 No firm can be a subcontractor while submitting a Tender individually or as a partner of a joint venture in the same Tendering process.

4.3 A firm, if acting in the capacity of subcontractor in any Tender, may participate in more than one Tender but only in that capacity.

4.4 A Tenderer who submits or participates in more than one Tender (other than as a subcontractor or incases of alternatives that have been permitted or requested) will cause all the Tenders in which the Tenderer has participated to be disqualified.

5. Alternative Tenders by Tenderers

5.1 Tenderers shall submit offers that comply with the requirements of the Tendering documents, including the basic Tenderer's technical designas indicated in the specifications and Drawings and Bill of Quantities. Alternatives will not be considered, unless specifically allowed for in the **Tender Data Sheet**. If so allowed, sub-Clause 5.2 and 5.3 shall govern.

5.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the **Tender Data Sheet** as will the method of evaluating different times for completion.

5.3 If so allowed in the **Tender Data Sheet**, Tenderers wishing to offer technical alternatives to the requirements of the Tendering documents must also submit a Tender that complies with the requirements of the Tendering documents, including the basic technical design as indicated in the specifications. In addition to submitting the basic Tender, the Tenderer shall provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including technical

specifications, breakdown of prices, and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Tenderer conforming to the basic technical requirements shall be considered by the Procuring Entity.

6. Cost of Tendering

6.1 The Tenderer shall bear all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Tendering process.

7. Site Visit and Pre-Tender Meeting

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

7.2 The Procuring Entity may conduct a site visit and a pre-Tender meeting. The purpose of 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's designated representative is invited to attend a site visit and pre-Tender meeting which, if convened, will take place at the venue and time stipulated in the **Tender Data Sheet**.

7.4 The Tenderer is requested as far as possible, to submit any questions in writing or by electronic means to reach the procuring Entity before the pre-Tender meeting. It may not be practicable at the meeting to answer all questions, but
questions and responses will be transmitted in accordance with sub-Clause 7.5.

7.5 Minutes of the pre-Tender meeting, including the text of the questions raised and the responses given together with any responses prepared after the pre-Tender meeting will be transmitted within the time stated in the **Tender Data Sheet** to all purchasers of the Tendering documents. Any modification of the Tendering documents listed in sub-Clause 8.1 that may become necessary as a result of the pre-Tender meeting shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT sub-Clause 10.2 and not through the minutes of the pre-Tender meeting.

7.6 Nonattendance during the site visit or pre-Tender meeting will not be a cause for disqualification of a Tenderer unless specified to the contrary in the **Tender Data Sheet**.

B. Tendering Documents

8. Content of Tendering Documents

8.1 The works required, Tendering procedures, and contract terms are prescribed in the Tendering Documents. In addition to the Section I Invitation for Tenders, Tendering documents which should be read in conjunction with any addenda issued in accordance with ITT sub Clause 10.2 include:

Section II Instructions to Tenderers
Section III Tender Data Sheet
Section IV General Conditions of Contract
Section V Contract Data Sheet
Section VI Specifications
Section VII Drawings
Section VIII Bill of Quantities
Section IX Forms of Tender

- Form of Tender
- Appendix to Tender
- Confidential Business Questionnaire
- Integrity Declaration
- Letter of Acceptance
- Form of Contract Agreement

Section X Forms of Security

- Tender Security Form
- Tender Securing Declaration
- Performance Bank or Insurance Guarantee
- Advance Payment Guarantee

Section XI Form RB 1 Application to Public Procurement Administrative Review Board

8.2 The number of copies to be completed and returned with the Tender is specified in the **Tender Data Sheet.**

8.3 The Invitation for Tenders (Section I) issued by the Procuring Entity is not part of the Tendering Documents and is included for reference purposes only. In case of discrepancies between the Invitation for Tenders and the Tendering Documents listed in sub-Clause 8.1 above, the said Tendering Documents will take precedence.

8.4 The Procuring Entity is not responsible for the completeness of the Tendering Documents and their addenda, if they were not obtained directly from the authorized staff of the Procuring Entity.

8.5 The Tenderer is expected to examine all instructions, forms, terms and specifications in the Tendering documents. Failure to furnish all information required by the Tendering Documents or to submit a Tender substantially responsive to the Tendering documents in every respect will be at the Tenderer's risk and may result in the rejection of its Tender.

9. Clarification of Tendering Documents

9.1 A prospective Tenderer requiring any clarification of the Tendering documents may notify the Procuring Entity in writing, e-mail or facsimile at the Procuring Entity's address indicated in the **Tender Data Sheet**.

9.2 The Procuring Entity will within the period stated in the **Tender Data Sheet** respond in writing to any request for clarification provided that such request is received no later than the period indicated in the **Tender Data Sheet** prior to the deadline for the submission of Tenders prescribed in
sub-Clause 22.1.

9.3 Copies of the procuring entity's response will be forwarded to all Purchasers of the Tendering documents, including a description of the inquiry, but without identifying its source.

9.4 Should the Procuring Entity deem it necessary to amend the Tendering documents as a result of a clarification, it shall do so following the procedure under ITT Clause 10.

10. Amendments of the Tendering Documents

10.1 Before the deadline for submission of Tenders, the Procuring Entity may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Tenderer, modify the Tendering documents by issuing addenda.

10.2 Any addendum issued shall be part of the Tender documents pursuant to sub-Clause 8.1 and shall be communicated in writing, by e-mail or facsimile to all who have obtained the Tendering documents directly from the Procuring Entity.

10.3 In order to allow prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity at its discretion shall extend, as necessary, the deadline for submission of Tenders, in accordance with sub-Clause 22.2

C. Preparation of Tenders

11. Language of Tender

11.1 The Tender, and all correspondence and documents related to the Tender exchanged by the Tenderer and the Procuring Entity shall be written in the Tender language stipulated in the **Tender Data Sheet**. Supporting documents and printed literature furnished by the Tenderer may be in another language provided they are accompanied by an accurate translation of the relevant passages in the
above stated language, in which case, for purposes of

interpretation of the Tender, the translation shall prevail.

12. Documents Constituting the Tender

12.1 The Tender submitted by the Tenderer shall consist of the following components:

a) The Form of Tender (in the format indicated in Section IX) completed in accordance with ITT Clause 15, 16 and 17;

b) Information requested by Instructions to TenderersITT sub-Clause 13.2; 13.3 and 13.4;

c) Tender Security or Tender Securing Declaration in accordance with Instructions to Tenderers ITT Clause 19;

d) Priced Bill of Quantities;

e) Qualification Information Form and Documents;

f) Alternative offers where invited in accordance with Instructions to Tenderers ITT Clause 5;

g) Written confirmation authorizing the signatory of the Tender to commit the Tenderer in accordance with Instructions to Tenderers ITT sub Clause 19.2; and

h) And any information or other materials required to be completed and submitted by Tenderers, as specified in the **Tender Data Sheet**.

13. Documents Establishing Eligibility and Qualifications of the Tenderer

13.1 Pursuant to ITT Clause 13, the Tenderer shall furnish, as part of its Tender, documents establishing the Tenderer's eligibility to Tender and its qualifications to perform the contract if its Tender is accepted.

13.2 In the event that pre-qualification of potential Tenderers has been undertaken, only Tenders from pre-qualified Tenderers will be considered for award of contract. These qualified Tenderers should submit their Tenders with any information updating the original pre-qualification applications or, alternatively, confirm in their Tenders that the originally submitted pre-qualification information remains essentially correct as of the date of Tender submission. The update or confirmation should be provided in Section IX.

13.3 If the Procuring Entity has not undertaken pre- qualification of potential Tenderers, to qualify for award of the contract, Tenderers shall meet the minimum qualifying criteria specified in the **Tender Data Sheet**:

13.4 Tenders submitted by a joint venture of two or more firms as partners shall comply with the following requirements, unless otherwise stated in the **Tender Data Sheet**:

a) The Tender shall include all the information listed in the **Tender Data Sheet** pursuant to sub-Clause
13.3 above for each joint venture partner;

b) The Tender shall be signed so as to be legally binding on all partners;

c) One of the partners will be nominated as being in charge, and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners;

d) The partner in charge shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of a joint venture and the entire execution of the Contract, including payment, shall be done exclusively with the
partner in charge;

e) All partners of the joint venture shall be liable jointly and severally for the execution of the contract in accordance with the contract terms and a statement to this effect shall be included in the authorization mentioned under (c) above as well
as in the Tender and in the Agreement (in case of a successful Tender); and

f) A copy of the joint venture agreement entered into by all partner shall be submitted with the Tender. Alternatively, a Letter of Intent to execute a joint venture agreement in the event of a successful Tender shall be signed by all partners and submitted with the Tender, together with a copy
of the proposed Agreement.

g) The Tender Security and Tender Securing Declaration as stated in accordance with ITT Clause 19, and in case of a successful Tender, the Agreement, shall be signed so as to be legally binding on all partners.

14. Lots Package

14.1 When Tendering for more than one contract under the lots arrangements, the Tenderer must provide evidence that it meets or exceeds the sum of all the individual requirements for the lots being tendered in regard to:

a) Average annual turnover;
b) Particular experience including key production rates;
c) Financial means, etc;
d) Personnel capabilities; and
e) Equipment capabilities.

14.2 In case the Tenderer fail to fully meet any of these criteria, it may be qualified only for those lots for which the Tenderer meets the above requirement.

15. Form of Tender

15.1 The Tenderer shall fill the Form of Tender furnished in the Tendering Documents. The Form of Tender must be completed without any alterations to its format and no substitute shall be accepted.

16. Tender Prices

16.1 The Contract shall be for the whole Works, as described in sub-Clause 1.1, based on the priced Bill of Quantities submitted by the Tenderer.

16.2 The Tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items for which no rate or price is entered by the Tenderer will not be paid for by the Procuring Entity when executed and shall be deemed covered by the other rates and prices in the Bill of quantities.

16.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 15 days prior to the deadline for submission of Tenders, shall be included in the rates, prices and total Tender price submitted by the Tenderer.

16.4 The rates and prices quoted by the Tenderer shall be subject to adjustment during the performance of the Contract if provided for in the **Tender Data Sheet** and the provisions of the Conditions of Contract. The Tenderer shall submit with the Tender all the information required under the **Contract Data Sheet**.

17. Tender Currencies

17.1 The unit rates and prices shall be quoted by the Tenderer in the currency as specified in the **Tender Data Sheet.**

17.2 Tenderers shall indicate details of their expected foreign currency requirements in the Tender, if any. The rates of exchange to be used by the Tenderers in arriving at the local currency equivalent shall be the selling rates for similar transactions established by the authority specified in the **Tender Data Sheet** prevailing on the date 28 days prior to the latest deadline for submission of Tenders. These exchange rates shall apply for all payments so that no exchange risk will be borne by the Tenderer. In any case, payments will be computed using the rates quoted in the Tender.

17.3 Tenderers may be required by the Procuring Entity to clarify their foreign currency requirements and to substantiate that the amounts included in the rates and prices and in the Contract Data Sheet are reasonable and responsive to sub-Clause 17.1.

18. Tender Validity Period

18.1 Tenders shall remain valid for the period specified in the **Tender Data Sheet** after the Tender submission deadline prescribed by the Procuring Entity, pursuant to ITT Clause 22. A Tender valid for a shorter period shall be rejected by the Procuring Entity as non- responsive.

18.2 In exceptional circumstances, prior to expiry of the original Tender validity period, the Procuring Entity may request that the Tenderers extend the period of validity for a specified additional period. The request and the Tenderers' responses shall be made in writing or by cable. A Tenderer may refuse the request without forfeiting its Tender Security or causing to be executed its Tender Securing declaration. A Tenderer agreeing to the request will not be required or permitted to otherwise modify the Tender, but will be required to extend the validity of its Tender Security or Tender Securing declaration for the period of the extension, and in compliance with ITT Clause 19 in all respects.

18.3 In the case of fixed price contracts, if the award is delayed by a period exceeding sixty (60) days beyond the expiry of the initial Tender validity period, the contract price will be increased by a factor specified in the request for extension. The Tender evaluation shall be based on the Tender price without taking into consideration on the above correction.

19. Tender Security and Tender

19.1 Pursuant to ITT Clause 12, where required in the **Tender Data Sheet**, the Tenderer shall furnish as part of its Tender, a Tender Security in original form

Securing Declaration

and in the amount and currency specified in the **Tender Data Sheet**.
A Tender Securing Declaration as specified in the **Tender Data Sheet** in the format provided in section X shall be provided as a mandatory requirement.

19.2 The Tender Security or Tender Securing Declaration is required to protect the Procuring Entity against the risk of Tenderer's conduct which would warrant the security's forfeiture, pursuant to ITT sub-Clause 19.9.

19.3 The Tender Security shall be denominated in the currency of the Tender and shall be in one of the following forms:

a) Cash;

b) A Bank Guarantee;

c) An Insurance Bond issued by an insurance firm approved by the PPOA located in Kenya;

d) An irrevocable letter of credit issued by a reputable bank.

19.4 The Tender Security shall be in accordance with the Form of the Tender Security included in Section X or another form approved by the Procuring Entity prior to the Tender submission.

19.5 The Tender Security shall be payable promptly upon written demand by the Procuring Entity in case any of the conditions listed in sub-Clause 19.8 are invoked.

19.6 Any Tender not accompanied by a Tender Security in accordance with sub-Clauses 19.1 or 19.3 shall be rejected by the Procuring Entity as non-responsive, pursuant to ITT Clause 28.

19.7 The Procuring Entity shall immediately release any Tender Security if:

a) The procuring proceedings are terminated;

b) The Procuring Entity determines that none of the submitted Tenders is responsive;

c) A contract for the procurement is entered into.

19.8 The Tender Security shall be forfeited and the Tender Securing Declaration executed if the Tenderer:

a) Withdraws its Tender after the deadline for submitting Tenders but before the expiry of the period during which Tenders must remain valid;

b) Rejects a correction of an arithmetic error pursuant to sub-Clause 29.2;

c) Refuse to enter into a written contract in accordance with ITT Clause 40;

d) Fails to furnish the Performance Security in accordance with ITT Clause 41.

19.9 The Tender Security and Tender Securing Declaration of a joint venture must be in the name of the joint venture submitting the Tender.

19.10 A Tenderer shall be suspended from being eligible for Tendering in any contract with the Procuring Entity for the period of time indicated in the Tender Securing Declaration:

a) If the Tenderer withdraws its Tender, except as provided in ITT sub-Clauses 18.2 and 29.2; or

b) In the case of a successful Tenderer, if the Tenderer fails within the specified time limit to:

(i) Sign the contract; or

(ii) Furnish the required Performance Security.

20. Format and Signing of Tender

20.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT Clause 12 of these Instructions to Tenderers, with the Form of Tender, and clearly marked **"ORIGINAL"**. In addition, the Tenderer shall submit copies of the Tender, in the number specified in the **Tender Data Sheet**, and clearly marked as **"COPIES"**. In the event of discrepancy between them, the original shall prevail.

20.2 The original and all copies of the Tenders shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified in the **Tender Data Sheet** 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, except for un-amended printed literature, shall be initialed by the person or persons signing the Tender.

20.3 Any interlineations, erasures, or overwriting shall be valid only if they are initialed by the person or persons signing the Tender.

20.4 The Tenderer shall furnish information as described in the Form of Tender on commissions or gratuities, if any, paid or to be paid to agents relating to this Tender and to contract execution if the Tenderer is awarded the contract

D. Submission of Tenders

21. Sealing and Marking of Tenders

21.1 The Tenderer shall seal the original and each copy of the Tender in separate envelopes, duly marking the envelopes as **"ORIGINAL"** and **"COPY"**. The envelopes shall then be sealed in an outer envelope securely sealed in such a manner that opening and resealing cannot be achieved undetected.

21.2 The inner and outer envelopes shall:

a) Be addressed to the Procuring Entity at the address given in the **Tender Data Sheet**; and

b) Bear the Project name indicated in the **Tender Data Sheet**, the Invitation for Tenders (IFB) title and number indicated in the **Tender Data Sheet**, and a statement: **"DO NOT OPEN BEFORE,"** to be completed with the time and the date specified in the **Tender Data Sheet**, pursuant to ITT sub-Clause 22.1.

21.3 In addition to the identification required in sub-Clause 21.2, the inner envelopes shall also indicate the name and address of the Tenderer to enable the Tender be returned unopened in case it is declared late, pursuant to sub-Clause 22.1 and for matching purpose under ITT Clause 23

21.4 If the outer envelope is not sealed and marked as required by ITT sub clause 21.2, the Procuring Entity shall assume no responsibility for misplacement or premature opening of the Tender.

22. Deadline for Submission of Tenders

22.1 Tenders shall be received by the Procuring Entity at the address specified under ITT sub-Clause 21.2 no later

than the date and time specified in the **Tender Data Sheet.**

22.2 The Procuring Entity may, in exceptional circumstances and at its discretion, extend the deadline for the submission of Tenders by amending the Tendering documents in accordance with ITT Clause 9, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline will thereafter be subject to the new deadline.

22.3 The extension of the deadline for submission of Tenders shall not be made later than the period specified in the **Tender Data Sheet** before the expiry of the original deadline.

23. Late Tenders

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

23.2 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. Modification, Substitution and Withdrawal of Tenders

24.1 A Tenderer may modify or substitute or withdraw its Tender after it has been submitted, provided that written notice of the modification, including substitution or withdrawal of the Tender, is received by the Procuring Entity prior to the deadline prescribed for submission of Tenders prescribed under ITT sub-Clause 22.1.

24.2 The Tenderer's modification or substitution or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of ITT Clauses 20 and 21 with the outer and inner envelopes additionally marked "**MODIFICATION**" or **SUBSTITUTION** or "**WITHDRAWAL"** as appropriate. The notice may also be sent by electronic mail and facsimile, but followed by a signed confirmation copy, postmarked not later than the deadline for submission of Tenders.

24.3 No Tender may be withdrawn, replaced 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 Tender Form. Withdrawal of a Tender during this interval shall result in the Tenderer's forfeiture of its Tender Security or execution of Tender Securing Declaration, pursuant to the ITT sub-Clause 19.9.

24.4 Withdrawal of a Tender between the deadline for submission of Tenders and the expiration of the period of Tender validity specified in the **Tender Data Sheet** or as extended pursuant to sub-Clause 22.2 shall result in the forfeiture of the Tender Security and execution of Tender Securing Declaration pursuant to ITT sub-Clause 19.9.

24.5 Tenderers may only offer discounts to, or otherwise modify the prices of their Tenders by submitting Tender modifications in accordance with this Clause, or included in the original Tender submission.

E. Opening and Evaluation of Tenders

25. Opening of Tenders

25.1 The Procuring Entity will open all Tenders including modifications, substitution or withdraw notices made pursuant to ITT Clause 24, in public, in the presence of Tenderers or their representatives who choose to attend and other parties with legitimate interest and Tender proceedings, at the place on the date and at time specified in the **Tender Data Sheet**. The Tenderers' representatives who are present shall sign a register as proof of their attendance.

25.2 Envelopes marked **"WITHDRAWAL"** shall be opened and read out first. Tenders for which an acceptable notice of withdrawal has been submitted pursuant to ITT Clause 24 shall not be opened but returned to the Tenderer. If the withdrawal envelope does not contain a copy of the "Power of Attorney" confirming the signature as a person duly authorized to sign on behalf of the Tenderer, the corresponding Tender will be opened. Subsequently, all envelopes marked **"MODIFICATION"** shall be opened and the submissions therein read out in appropriate detail. Thereafter all envelopes marked or **"SUBSTITUTION"** opened and the submissions therein read out in appropriate detail.

25.3 All other envelopes shall be opened one at a time. The Tenderers' names, the Tender prices, the total amount of each Tender and of any alternative Tender (if alternatives have been requested or permitted), any discounts, the presence or absence of Tender security, and such other details as the appropriate tender opening committee may consider appropriate, will be announced by the Secretary of the Tender Opening Committee at the opening.

25.4 Tenders or modifications that are not opened and not read out at Tender opening shall not be considered further for evaluation, irrespective of the circumstances.

In particular, any discount offered by a Tenderer which is not read out at Tender opening shall not be considered further.

25.5 Tenderers are advised to send in a representative with the knowledge of the content of the Tender who shall verify the information read out from the submitted documents. Failure to send a representative or to point out any un-read information by the sent Tenderer's representative shall indemnify the Procuring Entity against any claim or failure to read out the correct information contained in the Tenderer's Tender.

25.6 No Tender will be rejected at Tender opening except for late Tenders which will be returned unopened to the Tenderer, pursuant to ITT Clause 23.

25.7 The Secretary of the appropriate tender opening committee shall prepare minutes of the Tender opening. The record of the Tender opening shall include, as a minimum: the name of the Tenderers and whether or not there is a withdrawal, substitution or modification, the Tender price per Lot if applicable, including any discounts and alternative offers and the presence or absence of a Tender Security or Tender Securing Declaration.

25.8 The Tenderers' representatives who are present shall be requested to sign the record. The omission of a Tenderer's signature on the record shall not invalidate the contents and affect the record.

25.9 A copy of the minutes of the Tender opening shall be furnished to individual Tenderers upon request.

26. Confidentiality

26.1 Information relating to the examination, clarification, evaluation, and comparison of Tenders and recommendations for the award of a Contract shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the award to the successful Tenderer has been announced.

26.2 Any effort by a Tenderer to influence the Procuring Entity's processing of Tenders or award decisions may result in the rejection of his Tender.

26.3 Notwithstanding sub-Clause 26.2, from the time of Tender opening to the time of Contract award, if any Tenderer wishes to contact the Procuring Entity on any matter related to the Tendering process, it should do so in writing.

27. Clarification of Tenders

27.1 To assist in the examination, evaluation, comparison of Tenders and post-qualification of the Tenderer, the Procuring Entity may, at its discretion, ask a Tenderer for clarification of its Tender including breakdown of prices. Any clarification submitted by a Tenderer that is
not in response to a request by the Procuring Entity shall not be considered.

27.2 The request for clarification and the response shall be in writing. No change 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 Tenders in accordance with ITT Clause 29.

27.3 From the time of Tender opening to the time of Contract award if any Tenderer wishes to contact the Procuring Entity on any matter related to the Tender it should do so in writing.

28. Preliminary Examination of Tenders

28.1 Prior to the detailed evaluation of Tenders, the Procuring Entity will determine whether:

a) The Tender has been submitted in the required format;

b) Any Tender Security submitted is in the required form, amount and validity period;

c) The Tender has been signed by the person lawfully authorized to do so;

d) The required number of copies of the Tender have been submitted;

e) The Tender is valid for the period required;

f) All required documents and information have been submitted; and

g) Any required samples have been submitted.

28.2 The Procuring Entity will confirm that the documents and information specified under ITT Clause 12 and ITT Clause 13 have been provided in the Tender. If any of these documents or information is missing, or is not provided in accordance with the Instructions to Tenderers, the Tender shall be rejected.

28.3 The Procuring Entity may waive any minor informality, nonconformity, or irregularity in a Tender which does not constitute a material deviation, provided such waiver

does not prejudice or affect the relative ranking of any Tenderer

28.4 A substantially responsive Tender is one which conforms to all the terms, conditions, and specifications of the Tendering documents, without material deviation or reservation. A material deviation or reservation is one that:

a) Affects in any substantial way the scope, quality, or execution of the Works;

b) Limits in any substantial way, inconsistent with the Tendering documents, the Procuring Entity's rights or the Tenderer's obligations under the Contract; or

c) If rectified, would affect unfairly the competitive position of other Tenderers presenting substantially responsive Tenders.

28.5 If a Tender is not substantially responsive, it will be rejected by the Procuring Entity, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

29. Correction of Errors

29.1 Tenders determined to be substantially responsive will be checked by the Procuring Entity for any arithmetic errors. Errors will be corrected by the Procuring Entity as follows:

a) If there is a discrepancy between unit prices and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected, unless in the opinion of the Procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which the total price as quoted shall govern and the unit price shall be corrected;

b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

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

29.2 The amount stated in the Tender will, be adjusted by the Procuring Entity in accordance with the above procedure for the correction of errors and, with, the concurrence of the Tenderer, shall be considered as binding upon the

Tenderer. If the Tenderer does not accept the corrected amount, its Tender will then be rejected, and the Tender Security may be forfeited and the Tender Securing Declaration may be executed in accordance with sub-Clause 19.9.

30. Conversion to Single Currency

30.1 To facilitate the evaluation and comparison, the Procuring Entity will convert all Tender prices expressed in the amounts in various currencies in which the Tender prices are payable toKenya Shillings at the selling exchange rate established for similar transactions by the Central Bank of Kenya ruling on the date specified in the **Tender Data Sheet**.

31. Comparison of Tenders

31.1 The Procuring Entity shall evaluate and compare only the Tenders determined to be substantially responsive in accordance with ITT Clause 28.

31.2 In evaluating the Tenders, the Procuring Entity will determine for each Tender the evaluated Tender price by adjusting the Tender price as follows:
Making any correction for errors pursuant to ITT Clause 29;
Excluding provisional sums and the provision, if any for contingencies in the Bill of Quantities, but including Day work , where priced competitively ; and
Making appropriate adjustments to reflect discounts or other price modifications offered in accordance with sub-Clause 24.5.

31.3 The Procuring Entity may waive any minor informality or non-conformity, which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative standing of any Tenderer. Variations, deviations, and alternative offers and other factors,
which are in excess of the requirements of the Tendering documents or otherwise result in unsolicited benefits for the Procuring Entity will not be taken into account in Tender evaluation.

32. National Preference

32.1 In the evaluation of Tenders the Procuring Entity shall apply exclusive preference to citizens of Kenya where:

a) The funding is 100% from the Government of Kenya or a Kenyan body;

b) The amounts are below the prescribed threshold of KShs.200 million;

32.2 To qualify for the preference the candidate shall provide evidence of eligibility by:

a) Proving Kenyan citizenship by production of a Kenyan Identity Card; or

b) Providing proof of being a "citizen contractor" in terms of section 3(1) of the Act, i.e. being a natural person or an incorporated company wholly owned and controlled by persons who are citizens of Kenya.

32.3 The Minister of Finance may prescribe additional preference and/or reservation schemes, for example for procurements above these thresholds. If such additional preference schemes apply, details will be given in the **Tender Data Sheet**.

33. Determination of the Lowest Evaluated Tender

33.1 The Tender with the lowest evaluated price from among those which are eligible, compliant and substantially responsive shall be the lowest evaluated Tender.

34. Post-qualification of Tenderer

34.1 If specified in the **Tender Data Sheet**, post-qualification shall be undertaken.

34.2 The Procuring Entity will determine to its satisfaction whether the Tenderer that is selected as having submitted the lowest evaluated responsive Tender is qualified to perform the contract satisfactorily, in accordance with
the criteria listed in sub-Clause 13.3.

34.3 The determination will take into account the Tenderer's financial, technical, and production capabilities. It will be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to sub-Clause 13.3, as well as such other information as the Procuring Entity deems necessary and appropriate. Factors not included in these Tendering documents shall not be used in the evaluation of the Tenderer's qualifications.

34.4 An affirmative determination will be a prerequisite for award of the contract to the Tenderer. A negative determination will result in rejection of the Tenderer's Tender, in which event the Procuring Entity will proceed to the next lowest evaluated Tender to make a similar determination of that Tenderer's capabilities to perform satisfactorily.

F. Award of Contract

35. Criteria of Award

35.1 Subject to ITT Clause 35 and 36, the Procuring Entity will award the Contract to the Tenderer whose Tender has been determined to be substantially responsive to the Tendering documents and who has offered the lowest

Evaluated Tender Price, provided that such Tenderer has been determined to be:

a) Eligible in accordance with the provisions of ITT Clause 3;

b) Is determined to be qualified to perform the Contract satisfactorily;

c) Successful negotiations have been concluded.

35.2 If, pursuant to sub-Clause 14.1, this Contract is being awarded on a "lot and package" basis, the lowest evaluated Tender price will be determined when evaluating this Contract in conjunction with other Contracts to be awarded concurrently, taking into account any discounts offered by the Tenderer for award of more than one Contract.

36. Clarifications

36.1 Clarifications may be undertaken with the lowest evaluated Tenderer relating to the following areas:

a) A minor alteration to the technical details of the statement of requirements;

b) Reduction of quantities for budgetary reasons, where the reduction is in excess of any provided for in the Tendering documents;

c) A minor amendment to the Contract Data Sheet;

d) Finalizing payment arrangements;

e) Mobilization arrangements;

f) Agreeing final delivery or work schedule to accommodate any changes required by the Procuring Entity;

g) The methodology or staffing; or

h) Clarifying details that were not apparent or could not be finalized at the time of Tendering.

36.2 Clarifications shall not change the substance of the tender.

37. Procuring Entity's Right to Accept any

37.1 Notwithstanding ITT Clause 35, the Procuring Entity reserves the right to accept or reject any

Tender and to Reject any or all Tenders

Tender, and to cancel the Tendering process and reject all Tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected Tenderer or Tenderers.

37.2 Notice of the rejection of all Tenders shall be given promptly within 14 days to all Contractors that have submitted Tenders.

37.3 The Procuring Entity shall upon request communicate to any Tenderer the grounds for its rejection of its Tenders, but is not required to justify those grounds.

38. Procuring Entities Right to Vary Quantities at the Time of Award

38.1 The Procuring Entity reserves the right at the time of contract award to increase or decrease the quantity of goods or related services originally specified in these Tendering documents (schedule of requirements) provided this does not exceed by the percentage indicated in the **Tender Data Sheet**, without any change in unit price or other terms and conditions of the Tender and Tendering documents.

39. Notification of Award

39.1 The Tenderer whose Tender has been accepted will be notified of the award by the Procuring Entity prior to expiration of the Tender validity period by e-mail or facsimile confirmed by registered letter. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the sum that the Procuring Entity will pay the Contractor in consideration of the provision and maintenance of the Work(s) as prescribed by the Contract (hereinafter and in the Contract called the “Contract Price”).

39.2 The notification of award will constitute the formation of the Contract, subject to the Tenderer furnishing the Performance Security in accordance with ITT Clause 41 and signing the Contract in accordance with sub-Clause 40.2

39.3 At the same time as the person submitting the successful Tender is notified, the Procuring Entity will notify each unsuccessful Tenderer, the name of the successful Tenderer and the Contract amount and will discharge the Tender Security and Tender Securing Declaration of the Tenderer pursuant to ITT sub Clause 19.7.

39.4 If, after notification of award, a Tenderer wishes to ascertain the grounds on which it's Tender or application for pre-qualification was unsuccessful, it should address its request to the secretary of the Tender Committee that authorized the award of contract. The secretary of the Tender Committee shall, within fourteen days after a request, provide written reasons as to why the Tender, proposal or application to be pre-qualified was unsuccessful. However, failure to take this opportunity to clarify the grounds for rejection does not affect the Tenderer's right to seek immediate review by the Public Procurement Administrative Review Board under Clause 45.

40. Signing of Contract

40.1 Promptly, and in no case later than 14 days, after notification, Procuring Entity shall send the successful Tenderer the Agreement and Contract Data Sheet, incorporating all agreements between the parties obtained as a result of Contract negotiations.

40.2 Within the period specified in the notification or Tender Data Sheet but not earlier than fourteen (14) days since notification of award of contract, the successful Tenderer shall sign and date the contract and return it to the Procuring Entity.

41. Performance Security

41.1 Within thirty (30) days but after 14 days after receipt of the Letter of Acceptance, the successful Tenderer shall deliver to the Procuring Entity a Performance Security in the amount and in the form stipulated in the Tender Data Sheet and the Contract Data Sheet, denominated in the type and proportions of currencies in the Letter of Acceptance and in accordance with the Conditions of Contract.

41.2 If the Performance Security is provided by the successful Tenderer in the form of a Bank Guarantee or Insurance Bond, it shall be issued either:

a) At the Tenderer's option, by a bank or insurance firm located in Kenya, or a foreign bank or insurance firm through a correspondent bank or insurance firm located in Kenya;

b) With the consent of the Procuring entity, directly by a foreign bank acceptable to the Procuring entity.

41.3 Failure of the successful Tenderer to comply with the requirement of sub-Clause 41.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security, in which event the Procuring Entity may make the award to the next lowest evaluated Tenderer or call for new Tenders.

42. Advance Payment

42.1 The Procuring Entity will provide an Advance Payment as stipulated in the Conditions of Contract, subject to a maximum amount, as stated in the Tender Data Sheet.

42.2 The Advance Payment request shall be accompanied by an Advance Payment Security (Guarantee) in the form provided in Section X. For the purpose of receiving the Advance Payment, the Tenderer shall make an estimate of, and include in its Tender, the expenses that will be incurred in order to commence work. These expenses will relate to the purchase of equipment, machinery, materials, and on the engagement of labour during the first month beginning with the date of the Procuring Entity's "Notice to Commence" as specified in the Contract Data Sheet.

43. Adjudicator

43.1 The Procuring Entity proposes the person named in the Tender Data Sheet to be appointed as Adjudicator under the Contract, at an hourly fee specified in the Tender Data Sheet, plus reimbursable expenses. If the Tenderer disagrees with this proposal, the Tenderer should so state in the Tender. If, in the Letter of Acceptance, the Procuring Entity has not agreed on the appointment of the Adjudicator, the Adjudicator shall be appointed by the Appointing Authority designated in the Contract Data Sheet at the request of either party.

G. Review of Procurement Decisions

44. Right to Review

44.1 A Tenderer who claims to have suffered or risk suffering, loss or damage or injury as a result of breach of a duty imposed on a Procuring Entity or an Approving Authority by the Public Procurement and Disposal Act, 2005 and the Public Procurement

and Disposal Regulations 2006, the procurement proceedings or processes, may seek administrative review as prescribed by the Act. The following matters, however, shall not be subject to the administrative review:

a) The choice of procurement method;

b) a decision by the Procuring Entity to reject all Tenders, proposals or quotations;

c) Where a contract is signed in accordance to Section 68 of the Public Procurement and Disposal Act,2005;

d) Where an appeal is frivolous.

45. Time Limit on Review

45.1 The Tenderer shall submit an application for review in the number of copies and pay fees as prescribed by the Public Procurement and Disposal Regulations 2006 within fourteen (14) days of the time the Tenderer became or should have become aware of the circumstances giving rise to the complaint or dispute.

46. Submission of Applications for Review by the Public Procurement Administrative Review Board

46.1 Any application for administrative review shall be submitted in writing to the Secretary, Public Procurement Administrative Review Board on Form RB 1 at the address shown in the Tender Data Sheet. The secretary to the review board shall immediately after filing of the request, serve a copy thereof on the Procuring Entity or Director-General as the case may be.

46.2 The application for administrative review shall be in accordance with the requirements of Regulation 73 of the Public Procurement and Disposals Regulations,2006, including:

a) Reasons for the complaint ,including any alleged breach of the Act or Regulations;

b) An explanation of how the provisions of the Act and or Regulation has been breached or omitted, including the dates and name of the responsible public officer, where known;

c) Statements or other evidence supporting the complaint where available as the applicant considers necessary in support of its request;

d) Remedies sought;

e) Any other information relevant to the complaint.

47. Decision by the Public Procurement Administrative Review Board

47.1 The Administrative Review Board shall within thirty days after receipt of an application for administrative review deliver a written decision which shall indicate:

a) Annulling anything the Procuring Entity has done in the procurement proceedings, including annulling the procurement proceedings in their entirety;

b) Giving directions to the Procuring Entity with respect to anything to be done or redone in the procurement proceedings;

c) Substituting the decision of the Review Board for any decision of the Procuring Entity in the procurement proceedings;

d) Order the payment of costs as between parties to the review.

47.2 The decision made by the Review Board shall, be final and binding on the parties unless judicial review thereof commences within fourteen (14) days from the date of the Review Board's decision.

48. Appeal on the decision of the Review Board

48.1 Any party to the review aggrieved by the decision of the Review Board may appeal to the High Court and the decision of the High Court shall be final.

SECTION III: TENDER DATA SHEET

Tender Data Sheet (TDS)

Instructions to Tenderers Clause Reference

TDS Reference Number	ITT Clause Number	Amendments of, and Supplements to, Clauses in the Instruction to Tenderers
		A. Introduction
1.	**1.1**	The Procuring Entity is … **State Department for Wildlife,**
2.	**1.1**	Name of Project is **MOTW/SDW/ONT/001/2022-2023 Construction Of Proposed Facilities For Security Hub At Kws Tsavo Concervation area**
3.	**1.2**	The expected completion date of the works is **10 months upon the after the commencement Date**
4.	**1.3**	The Objectives of the Project are **to improve coordination towards reduction of poaching activities**
5.	**2.1**	Name of financing institution is **GEF UNDP Kenya** Name of the Procuring entity is **State Department for Wildlife,** Financial Year :**2022/2023** Describe works under the contract **Construction of Security hub at KWS and Kasigau**
6.	**2.2**	The loan/ credit number Is **N/A**
7.	**5.1**	Alternative Tenders are *"***not allowed"** in this Tender.
8.	**5.2**	Alternative time for completion **N/A**
9.	**3.1**	Only Tenderers registered as **Registered under class 5 and above with the National Construction Authority**
10.	**7.3**	Pre-Tender site visit meeting will **Not** take place
11.	**7.5**	The minutes of the pre-Tender meeting will be transmitted within **N/A**
	7.6	Non-attendance at the pre-tender meeting **N/A**

B. Tendering Documents		
12.	**8.2**	The number of copies to be completed and returned with the Tender is ***two copies: 1 original and 1 copy***
13.	**8.1**	Address for clarification of Tendering Document is **Principal Secretary, State Department for Wildlife P.O BOX 41394-00100 Nairobi, located, NSSF Building, Block A, Eastern Wing, 15th Floor,**
14.	**8.2**	Period to Respond to request for clarification by the Procuring Entity ***[4 days]*** Period Prior to deadline for submission of Tenders for Tenderers to request clarification ***7 days***

C. Preparation of Tenders				
15.	**11.1**	Language of Tender and all correspondence shall be ***English***		
16.	**13.3**	**Evaluation and comparison of Tenders:** The following evaluation criteria shall be applied not withstanding any other requirement in the tender documents. ***a) Eligibility Criteria (EC)*** The following requirements must be met by the tenderer		
		No.	**Requirements**	**Responsive/Non-Responsive**
		EC1	Must Submit a copy of certificate of Registration/Incorporation	
		EC2	Must Submit a copy of Valid Tax Compliance certificate	
		EC3	Registered with the National Construction Authority category **6 and above , Civil works class**	
		EC4	Signatory for this tender must have authorized power of attorney (Partners in Joint Venture must submit a joint venture agreement or letter of intent for Joint Venture)	
		EC5	Must Fill the Bill of Quantities in the Format provided	
		EC6	Must Fill the Form of Tender in the Format provided	
		EC7	Must submit a bid security in the format provided of **KSHs. 1,000,000 (One Million)**	
		EC8	Duly serialized tender document (**Every page of the bid document must be serialized**)	

		At this stage, the tenderer's submission will either be responsive or non-responsive. The non-responsive submissions will be eliminated from the entire evaluation process and will not be considered further.
17.	**13.4**	***b) Qualification Criteria (QC)*** This section (Technical Evaluation) will be marked out of 100 and will determine the technical score (TS)

No.	**Evaluation Attribute**	**Compliance Requirements**	**Documentation**
History of Nonperforming Contracts Non	Non-performance of a contract did not occur within the last three (3) years prior to the deadline for application submission based on all information on fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract, and where all appeal instances available to the	Must Meet requirement	Litigation History
Key Personnel (Attach evidence)	**(i) Programme Manager;1No** At least Degree in a civil engineering or equivalent. with 10 years relevant experience	Must Meet requirement	Standard Form C (**With attachments) Qualification Certificate Resume (CV) with Practical experience.**
	(ii) Site Agent;1No At least diploma in a civil/ engineering or equivalent. with 10 years relevant experience	Must Meet requirement	Standard Form C (**With attachments) Qualification Certificate Resume (CV) with Practical experience.**
	(iii) Mechanical Engineer;1No At least Degree in a Mechanical engineering or equivalent. with 10 years relevant experience	Must Meet requirement	Standard Form C (**With attachments) Qualification Certificate Resume (CV) with Practical experience.**

	(iv) Supervisor; 2No At least diploma in a civil Engineering or equivalent. with 5 years relevant experience	Must Meet requirement	Standard Form C (**With attachments) Qualification Certificate Resume (CV) with Practical experience. Experience**)
General Construction Experience	At least 3No Projects of similar nature, complexity and Magnitude completed in the last Five (5) years where firm was prime contractor. The average value of each of the three projects should be at least Ksh.40 million	Must Meet requirement	Standard Form C (With attachments)
Specific Experience	At least 3No Projects of similar nature, complexity and Magnitude completed in the last Five (5) years where firm was prime contractor. The average value of each of the three projects should be at least Ksh.40 million	Must Meet requirement	Standard Form C (With attachments)
Current Commitments	Not more than 2 No. ongoing projects of similar nature, complexity and magnitude whose contract period extends beyond 11th October 2022, unless if the firm can demonstrate liquidity and sufficient working capital to carry-out the same	Must Meet requirement	Standard Form C (With attachments)
Equipment Holdings	Schedules of contractor's equipment and transport (proof of evidence of ownership, lease or hiring) • 2No. Pick Up • 2 No Concrete Mixer • Other Equipment to be used in the delivery of the works	Must Meet requirement	Standard Form C (**With attachments) Certified Copy of Logbooks Lease Agreement Ownership Documents of lessor**

					Attached)
		Historical Financial Performance	Audited financial reports for the last three (3) years(2019,2020 & 2021) to demonstrate the current soundness of the bidder's financial position and its prospective long-term profitability	Must Meet requirement	Standard Form C (With attachments)
		Average Annual Turnover	Average Annual Turnover (AAT) for the last three years of KShs 75 million	Must Meet requirement	Standard Form C (With attachments)
		Financial Resources	Evidence of Financial Resources (cash in hand, lines of credit, over draft facility, etc.) Has financial resources equal or above the cost of the project (as per the bid sum)	Must Meet requirement	Standard Form C **(With attachments**) **Letters from banks Affirming availability Of credit facilities should be dully signed and Stamped by the Authorised officers**)
		Only bidders who qualify at this stage will be subjected to the award criteria. Financial comparison which will be in accordance to Section 82 ,PPADA 2015			
18.	**16.4**	The price shall be F**ixed** Information to be submitted with the Tender are: (state if any).			
19.	**17.1**	The currency in which the prices shall be quoted shall be: **Kenyan Shilling**			
20.	**17.2** **30.2**	The authority for establishing the rates of exchange shall be Central Bank of Kenya. The applicable date for exchange rates for tendering and evaluation purposes is 28 days earlier than the final deadline for the submission of tenders.			
21.	**18.1**	The Tender validity period shall be ……**120**…….. days.			
22.	**19.1**	The amount of Tender Security shall be **KES. 1,000,000**			
23.	**20.1**	In addition to the original of the Tender, the Tenderer should submit **one copy** of the Tender			
24.	**20.2**	Written confirmation of authorization N/**A**			

		D. Submission of Tenders
25.	**21.2 a)**	Tenders shall be submitted to: **Principal Secretary, State Department for Wildlife,** Street Address: **NSSF Building, Block A, Eastern Wing, 15th Floor** City/Town. Nairobi
26.	**21.2 b)**	Project name : **Construction Of Proposed Facilities For Security Hub At KWS Tsavo Conservation area** Tender number… **MOTW/SDW/ONT/001/2022-2023**
27.	**22.1**	The deadline for Tender submission is a) Day: **Tuesday** b) Date: **11th October 2022** c) Time **12.00 Noon**.
28.	**22.3**	The extension of the deadline for submission of Tenders shall be made not later than **3 days** before the expiry of the original deadline.
29	**24.4**	Expiry of Tender validity is **120 Days after Tender Submission Date**

		E. Opening and Evaluation of Tenders
29.	**25.1**	The Tender opening shall take place at: the State Department for Wildlife **NSSF Building, Block A,** **Eastern Wing, 15th Floor** City/Town: Nairobi Country: **Kenya** Date: **11th October 2022** Time **12.00 Noon.**
30.	**32.3**	Additional Preference------**N/A**----------
31.	**34.1**	Post- qualification will **be undertaken**
32.	**38.1**	Percentage for quantities increase or decrease should **not exceed 15 percent**
		F. Award of Contract

33.	**41.1**	The amount of Performance Security shall be ***10% of the contract price Against a non-conditional bank guarantee***
34.	**42.1**	The Advance Payment shall be **N/A**
35.	**43.1**	The proposed adjudicator for the project is: **Chairman IEK**
		G. Review of Procurement Decisions
37.	**46.1**	The address for submitting appeals to Administrative Review Board: The Secretary, Public Procurement Administrative Review Board, The Public Procurement Regulatory Authority, 10th Floor, National Bank House, P.O. Box 58583-00200, NAIROBI, Kenya. Tel: +254 (0) 20 3244000 Email: info@ppoa.go.ke Website: www.ppoa.go.ke

SECTION IV: GENERAL CONDITIONS OF CONTRACT

Table of Clauses

A. General

1. Definitions 1.1 Boldface type is used to identify defined terms.

The **Adjudicator** is the person appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in Clauses 27 and 28 hereunder.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Tender.

Compensation Events are those defined in Clause 47 hereunder. The **Completion**

Date is the date of completion of the Works as certified by the Project Manager, in accordance with Sub- Clause 58.1.

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

The **Contractor** is a person or corporate body whoseTender to carry out the Works has been accepted by the Procuring Entity.

The **Contractor's Tender** is the completed Tendering document submitted by the Contractor to the Procuring Entity.

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days; months are calendar months.

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

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

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

The **Defects Liability Period** is the period named in the **Contract Data Sheet** and calculated from the Completion Date.

Drawings include calculations and other information provided or approved by the Project Manager for the execution of the Contract.

The **Procuring Entity** is the party who employs the Contractor to carry out the Works.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The **Initial Contract Price** is the Contract Price listed in the Procuring Entity's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The

Intended Completion Date is specified in the **Contract Data Sheet**. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

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

Plant is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

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

The **Site** is the area defined as such in the **Contract Data Sheet**.

Site Investigation Reports are those that were included in the Tendering documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.

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

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

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

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

A **Variation** is an instruction given by the Project Manager that varies the Works.

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

"**Force Majeure**" means an event which is beyond the reasonable control of a Party and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

2. Interpretation

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way round. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically

defined. The Project Manager will provide instructions clarifying queries about these Conditions of Contract.

2.2 If sectional completion is specified in the **Contract Data Sheet**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

2.3 The documents forming the Contract shall be interpreted in the order of priority given in the **Contract Data Sheet**:

(1) Agreement;

(2) Letter of Acceptance; (3)

Contract Data Sheet;

(4) Conditions of Contract; (5)

Technical Specifications; (6)

Contractor's Tender;

(7) Drawings;

(8) Bill of Quantities; and

(9) Any other document listed in the **Contract Data Sheet** as forming part of the Contract.

3. Language, Law, Fraud and Corruption

3.1 The language of the Contract and the law governing the Contract are stated in the **Contract Data Sheet**.

3.2 The Government requires that Procuring Entities (including beneficiaries of Government funded projects) as well as Tenderers/Suppliers/Contractors under Government financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. It is the responsibility of the Procuring Entity to ensure that Tenderers, suppliers, and contractors and their subcontractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy:

For the purpose of this provision, the following definitions are provided:

(i). "**Corruption**" has the meaning assigned to it in the Anti-Corruption and Economic Crime Act 2003 and includes the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement or disposal process or in contract execution;

(ii). "**Fraudulent Practice**" includes a misrepresentation of fact in order to influence a procurement or disposal process or the execution of a contract to the detriment of the Procuring Entity and includes collusive practices amongst Tenderers prior to or after Tender submission designed to establish Tender prices at

artificial noncompetitive levels and deprive the Procuring Entity of the benefits of free and open competition;

(iii). **"Collusive Practice"** means an arrangement between two or more suppliers, contractors and subcontractors designed to achieve an improper purpose, including to influence improperly the actions of the Procuring Entity prior to or after Tender submission , designed to establish Tender prices at artificial noncompetitive levels and to deprive the Procuring Entity of the benefit of free and open competition;

(iv). **"Coercive Practice"** means impairing or harming, or threatening to impair or harm, directly or indirectly a supplier, contractor or subcontractor or the property of any of them to influence improperly the actions of a Procuring Entity;

(v). **"Obstructive Practice" means** deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an investigation 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.

A Procuring Entity has the right to require that Tenderers, suppliers, and contractors and their subcontractors permit persons duly appointed by KACC/PPOA/KNAO to inspect their accounts and records and other documents relating to the Tender submission and contract performance;

The Procuring Entity will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt, fraudulent practices or others stated under Clause 44.1.a in competing for the contract;

In pursuit of the policy defined in sub-Clause 44.1 the Procuring Entity will cancel the portion of the funds allocated to a contract for goods, works, or services if it at any time determines that corrupt or fraudulent practices were engaged in by representatives of the Procuring Entity or Approving Authority or of a beneficiary of the funds during the procurement or the execution of that contract;

In the event that the Procuring Entity or Approving Authority does not take timely and appropriate action satisfactory to the Government of Kenya to remedy the situation, then the Director-General may order an investigation of procurement proceedings for the purpose of determining whether there has been a breach of the Public Procurement and Disposal Act, 2005.

3.3 The Director-General may, on the advice of the Advisory Board, debar a person from participating in procurement proceedings

on the ground that the person has committed an offence under the Public Procurement and Disposal Act, 2005. A debarment shall be for a period of time of not less than five years. Before a person is so debarred, he/she will be given an opportunity to make representations to the Director-General and may request the Review Board to review the debarment.

3.4 Any communication between the Tenderers and the Procuring Entity related to matters of alleged fraud or corruption must be made in writing.

4. Confidentiality

4.1 The Service Providers, their Subcontractors, and the Personnel of either of them shall not disclose any proprietary or confidential information relating to the Project, the Services, this Contract, or the Procuring Entity's business or operations without the prior written consent of the Procuring Entity.

5. Project Manager's Decisions

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

6. Delegation

6.1 The Project Manager may delegate any of his duties and responsibilities to other people except to the Adjudicator, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.

7. Communication s

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

8. Subcontracting

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

9. Other Contractors

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

10. Personnel

10.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel, as referred to in the **Contract Data Sheet**, who shall be appropriately qualified and registered with the appropriate bodies to carry out the functions stated in the Schedule or other personnel approved by the Project Manager. The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the Schedule.

10.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves

the Site within seven days and has no further connection with the work in the Contract.

11. Procuring Entity's and Contractor's Risks

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

12. Procuring Entity's Risks

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

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

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

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

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

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

(a) A Defect which existed on the Completion Date;

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

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

13. Contractor's Risks

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

14. Insurance

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

(a) Loss of or damage to the Works, Plant, and Materials; (b) Loss of or damage to Equipment;

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

(d) Personal injury or death.

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

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

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

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

15. Site Investigation Reports

15.1 The Contractor, in preparing the Tender, shall rely on any Site Investigation Reports referred to in the **Contract Data Sheet**, supplemented by any information available to the Tenderers.

16. Queries about the Contract Data Sheet

16.1 The Project Manager will clarify queries on the **Contract Data Sheet**.

17. Contractor to Construct the Works

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

18. Commencement and Completion

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

19. Approval by the Project Manager

19.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, who is to approve them if they comply with the Specifications and Drawings.

19.2 The Contractor shall be responsible for the design of Temporary Works.

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

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

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

20. Protection of the Environment

20.1 The Contractors shall take all reasonable steps to protect the environment and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.

20.2 The Contractors shall ensure that emissions, surface discharges and effluent from his activities shall not exceed prescribed values in the environmental laws.

21. Labour Laws

21.2 The Contractor shall comply with all the relevant labour laws applicable in the Country, including laws relating to workers employment, working hours, health, safety, welfare, and immigration, and shall allow them all their legal rights.

21.2 The Contractor shall require his employees to obey all applicable laws, including those concerning safety at work.

22. Health and Safety

22.1 The Contractor shall at all times take all reasonable precautions to maintain the health and safety of his personnel.

22.2 The Contractor shall ensure that first aid facilities are available at all times at the site and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

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

22.4 The Contractor shall conduct an HIV-Aids awareness programme, and shall take other such measures as specified in the **Contract Data Sheet** to reduce the risk of transfer of HIV virus between and among Contractor personnel, the Procuring Entity's Staff and the surrounding community.

23. Discoveries

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

24. Possession of the Site

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

25. Access to the Site

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

26. Instructions, Inspections and Audits

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

26.2 The Contractor shall permit the Kenya Government to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Kenya Government, if so required by the Kenya Government

27. Disputes

27. 1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within 14 days of the notification of the Project Manager's decision.

28. Procedure for Replacement of Adjudicator

28.1 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.

28.2 The Adjudicator shall be paid by the hour at the rate specified in the **Tender Data Sheet** and **Contract Data Sheet**, together with reimbursable expenses of the types specified in the **Contract Data Sheet**, and the cost shall be divided equally between the Procuring Entity and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision will be final and binding.

28.3 The arbitration shall be conducted in accordance with the arbitration procedure published by the institution named and in the place shown in the **Contract Data Sheet**.

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

B. Time Control

30. Programme

30.1 Within the time stated in the **Contract Data Sheet**, the Contractor shall submit to the Project Manager for approval a Programme showing the general methods, arrangements, order, and timing for all the activities in the Works.

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

30.3 The Contractor shall submit to the Project Manager for approval an updated Programme at intervals no longer than the period stated in the **Contract Data Sheet**. If the Contractor does not submit an updated Programme within this period, the Project Manager may withhold the amount stated in the **Contract Data Sheet** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.

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

31. Extension of the Intended Completion Date

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

31.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full

supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

32. Acceleration

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

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

33. Delays Ordered by the Project Manager

34. Management Meetings

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

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

35. Early Warning

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

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

C. Quality Control

36. Identifying Defects

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

37. Tests

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

38. Correction of Defects

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

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

38.3 If the Contractor has not corrected a defect within the time specified in the Procuring Entity's notice, a penalty for lack of

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

performance will be paid by the Contractor. The amount to be paid will be calculated as a percentage of the cost of having the defect correct, assessed as described in Clause 39.

39. Uncorrected Defects

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

D. Cost Control

40. Bill of Quantities

40.1 The Bill of Quantities shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.

40.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor shall be paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

41. Changes in the Quantities

41.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change.

41.2 The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Procuring Entity.

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

42. Variations

42.1 All Variations shall be included in the updated Programmes produced by the Contractor.

43. Payments for Variations

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

43.2 If the work in the Variation corresponds with an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work is above the limit stated in Sub- Clause 41.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work.

43.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the

Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.

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

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

44. Cash Flow Forecasts

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

45. Payment Certificates

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

45.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor within twenty eight 28 days of receipt of the certificate from the contractor.

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

45.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

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

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

45.7 The Project Manager shall not be bound to certify any payment, if the net amount, after all retentions and deductions would be less than minimum amount of Interim Payment Certificate stated in the **Contract Data Sheet.**

46. Payments

46.1 Payments shall be adjusted for deductions for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Project Manager within 28 days of the date of each certificate. If the Procuring Entity makes a late payment, the Contractor shall be paid interest on the late payment in the next payment Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made as indicated in the **Contract Data Sheet.**.

46.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the

Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

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

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

47. Compensation Events

47.1 The following shall be Compensation Events:

(a) The Procuring Entity does not give access to a part of the Site by the Site Possession Date stated in the **Contract Data Sheet**.

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

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

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

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

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

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

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

(i) The advance payment is delayed.

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

(k) The Project Manager unreasonably delays issuing aCertificate of Completion.

(l) Other Compensation Events described in the Contract or determined by the Project Manager shall apply.

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

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

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

48. Taxes

48.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 28 days before the submission of Tenders for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of Clause 50.

49. Currencies

49.1 Where payments are made in currencies other than the Kenya Shillings, the exchange rates used for calculating the amounts to be paid shall be the exchange rates stated in the Contractor's Tender.

50. Price Adjustment

50.1 The amounts payable to the Contractor, in various currencies pursuant to Sub-Clause 45.1, shall be adjusted in respect of the rise or fall in the cost of labour, Contractor's Equipment, Plant, materials, and other inputs to the Works, by applying to such amounts the formulae prescribed in this clause based on the prevailing consumer price index obtained from the Central Bureau of Statistics or the monthly inflation rate issued by the Central Bank of Kenya.

50.2 To the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the provisions of this or other clauses in the Contract, the unit rates and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other rise or fall of costs.

50.3 The adjustment to be applied to amount payable to the Contractor as certified in Payment Certificates shall be determined 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 as follows;

$$Pn = a + b\frac{Ln - Lo}{Lo} + c\frac{Mn - Mo}{Mo} + d\frac{En - Eo}{Eo} + etc.$$

where;

Pn is a price adjustment factor to be applied to the amount in each specific currency for the payment of the work carried out in the subject month, where such variations and daywork are not otherwise subject to adjustment;

a is a constant, specified in the **Appendix to Tender**, representing the nonadjustable portion in contractual payments;

b, c, d, etc., are weightings or coefficients representing the estimated proportion of each cost element (labour, materials, equipment usage, etc.) in the Works or sections thereof, net of Provisional Sums, as specified in the **Appendix to Tender**; the sum of a, b, c, d, etc., shall be one;

Ln, Mn, En, etc., are the current cost indices or reference prices of the cost elements in the specific currency of origin for month "**n,**" determined pursuant to Sub-Clause 50.5, applicable to each cost element; and

Lo, Mo, Eo, etc., are the base cost indices or reference prices corresponding to the above cost elements at the date specified in Sub- Clause 50.5

The value of net work done, certified by the Project Manager, in any monthly Interim or Final Certificate as payable by the Procuring Entity to the Contractor before deduction of any retention money shall be increased or decreased by an amount of **'F'.**

$$F = PnxPc$$

where;

The effective value **Pc** of work done which is to be subjected to increase or decrease shall be the difference between:

(i) the amount which, in the opinion of the Project Manager, is due to the Contractor under Clause 45 (before deduction of retention money and before deducting sums previously paid on account) less:

- any amount for payment or repayment of any advance payment;
- any amount for materials on site (if any);
- any amounts for nominated sub-contractors (if any)
- any amounts for any other items based on actual cost or current prices; or
- any sums for increase or decreases in the Contract Price paid under this Sub-Clause

and

(ii) the amount calculated in accordance with (i) above of this Sub-clause and included in the last preceding statement.

50.4 The sources of indices shall be those listed in the **Appendix to Tender**, as approved by the Engineer. Indices shall be appropriate for their purpose and shall relate to the Contractor's proposed source of supply of inputs on the basis of which his Contract Price and expected foreign currency requirements shall have been computed. As the proposed basis for price adjustment, the Contractor shall have submitted with his Tender the tabulation of Weightings and Source of Indices in the **Appendix to Tender**, which shall be subject to approval by the Engineer.

50.5 The base cost indices or prices shall be those prevailing on the day 28 days prior to the latest date for submission of Tenders. Current indices or prices shall be those prevailing on the day 28 days prior to the last day of the period to which a particular Interim Payment Certificate is related. If at any time the current indices are not available, provisional indices as determined by the Engineer will be used, subject to subsequent correction of the amounts paid to the Contractor when the current indices become available.

50.6 If the Contractor fails to complete the Works within the time for completion prescribed under Clause 58 adjustment of prices thereafter until the date of completion of the Works shall be made using either the indices or prices relating to the prescribed time for completion, or the current indices or prices, whichever is more favourable to the Procuring Entity, provided that if an extension of time is granted pursuant to Clause 28, the above provision shall apply only to adjustments made after the expiry of such extension of time.

50.7 The weightings for each of the factors of cost given in the **Appendix to Tender** shall be adjusted if, in the opinion of the Engineer, they have been rendered unreasonable, unbalanced, or inapplicable as a result of varied or additional work already executed or instructed under Clause 43 or for any other reason.

51. Retention

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

51.2 On completion of the whole of the Works, half the total amount retained shall be repaid to the Contractor and the other half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected.

51.3 On completion of the whole Works, the Contractor may substitute retention money with an "on demand" Bank guarantee.

52. Liquidated Damages

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

52.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in Sub- Clause 46.1.

52.3 If the Contractor has not corrected a defects within the time specified in the Procuring Entity's notice, the Procuring Entity will assess the cost of having the defect corrected, the Contractor will pay this amount, and a penalty for lack of performance calculated as described in Clause 38.

53. Bonus

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

54. Advance Payment

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

54.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall

demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

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

55. Performance Securities

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

56. Dayworks

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

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

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

57. Cost of Repairs

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

E. Finishing the Contract

58. Completion Certificate

58.1 The Contractor shall request the Project Manager to issue a certificate of Completion of the Works, and the Project Manager will do so upon deciding that the work is completed.

59. Taking Over

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

60. Final Account

60.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and

certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

61. Operating and Maintenance Manuals

61.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the **Contract Data Sheet**.

61.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the **Contract Data Sheet**, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount stated in the **Contract Data Sheet** from payments due to the Contractor.

62. Termination

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

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

(a) The Contractor stops work for 28 days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Project Manager;

(b) The Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;

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

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

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

(f) The Contractor does not maintain a Security, which is required; and

(g) The Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in the **Contract Data Sheet**.

(h) If the Contractor, in the judgment of the Procuring Entity has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this paragraph:

"corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution and includes inter alia, bribery and extortion or coercion which involves threats of injury to person ,property or reputation, and.

"fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Procuring Entity, and includes collusive practice among 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.

62.3 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under Sub-Clause 62.2 above, the Project Manager shall decide whether the breach is fundamental or not.

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

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

63. Payment upon Termination

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

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

64. Property

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

65. Release from Performance

65.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Procuring Entity or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and

shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

66. Suspension of Financing

66.1 In the event that the source of financing is suspended to the Procuring Entity, from which part of the payments to the Contractor are being made:

(a) The Procuring Entity is obligated to notify the Contractor of such suspension within 7 days of having received the financing agency's suspension notice.

(b) If the Contractor has not received sums due it within the 28 days for payment provided for in Sub-Clause 46.1, the Contractor may immediately issue a 14-day termination notice.

SECTION V: CONTRACT DATA SHEET (CDS)

Contract Data Sheet

Instructions for completing the Contract Data Sheet

CDS Clause	GCC Clause	Description
		A. General
1	**1.1**	**(Itemise Definitions to take the same numbering as per the General Conditions)** The Procuring Entity is State **Department for Wildlife** The Adjudicator is **Chairman IEK** The Defects Liability Period is **180** days. The Project Manager is **Secretary Wildlife** The name and identification number of the Contract is **MOTW/SDW/ONT/001/2022-2023** The Works **consist of construction** The objectives of the contract are **Provide.** The Start Date shall be **the date as prescribed in the commencement letter shall be the commencement date.** The Intended Completion Date for the whole of the Works shall be **10 Months after Start Date** The following documents also form part of the Contract: **Notification of award** **Letter of acceptance** **Work programme** **Performance bond** **Particular Conditions** **General conditions of contract** **Specifications** **Drawings**

		Priced bill of quantities **Schedule Of Personnel** The Site is located at **Tsavo East/west National** **Parks Kasigau** And is defined in drawings No:
2.	**2.2**	Indicate whether there is sectional completion **N/A**
3.	**2.3(9)**	List other documents that form part of the contract if any: **a) Any other documents relevant to the contract as shall be determined during and after contract signature** The Site is located at **Tsavo East national park and Kasigau**
4.	**3.1**	The language of the Contract documents is **English** The law that applies to the Contract is the **Kenyan Law**.
5.	**9.1**	Include the Schedule of Other Contractors, if any. **N/A**
6.	**10.1**	Include the Schedule of Key Personnel. • **Programme Manager** • **Site Agent** • **Supervisors** • **Mechanical Engineer** • **Electrical Engineer**
7.	**14.1**	The minimum insurance covers shall be: **As per Kenya Law** (a) loss of or damage to the Works, Plant, and Materials (b) loss of or damage to Equipment and vehicles**;** (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract and (d) personal injury or death
8.	**15.1**	Site Investigation Reports available to the Tenderers are: **N/A**
9.	**22.4**	The other measures include: a. Minimizing the number of migrant workers employed on the project and household in the site camp b. Providing access to voluntary counselling and testing (VCT)

		c. Providing psychological support and health care including prevention and treatment of opportunistic infections for workers infected and affected, as well as their families d. Providing condoms (male and female) to workers
10.	**24.1 & 47.1**	The Site Possession Date shall be **at least 7(seven) days after signing the contract**

11.	**28.2**	Hourly rate of Fees payable to the Adjudicator is: **To be agreed by the parties** Types of reimbursable expenses to be paid to the Adjudicator include: **To be agreed by the parties**
12.	**28.3**	Arbitration will take place at ***Nairobi*** in accordance with rules and regulations published by **Chartered Institute Of Arbitrators-Kenya Chapter**
13.	**29.1**	Appointing Authority for the Adjudicator: **Chairman Chartered Institute Of Arbitrators- Kenya Chapter Chartered Institute Of Arbitrators-Kenya Chapter**
		B. Time Control
14.	**30.1**	The Contractor shall Submit a Programme for the Works within **2** days of delivery of the Letter of Acceptance.
15.	**30.3**	The period between Programme updates is ***5* days.**
16.	**30.3**	The amount to be withheld by the Project Manager in the case the contractor does not submit an updated programme is **Kshs. 10,000 (Ten thousand Kenya shillings).**
		C. Quality Control
17.	**38.1**	The Defects Liability Period is **180** days.
		D. Cost Control
18.	**45.7**	Minimum Amount of Interim Payment Certificate will be **50%** ***of the contract sum***
19.	**46.1**	The interest rate shall be above prevailing interest rate for commercial borrowing from the contractors bank.
20.	**47.1(a)**	The Site Possession Date shall be **at least 7(seven) days after signing the contract**
21.	**50**	The contract **is not** subject to price adjustment in accordance with Clause 50 of the General Conditions of Contract.
22.	**51.1**	The amount of retention is **10%** of value of works of Interim Payment Certificate'.
		Limit of retention will be ***10%*** of contract price.

23.	**52.1**	The rate of liquidated damages is **0.15 percent of contract price per day**
	52.1 **62.2 (g)**	The maximum amount of liquidated damages is **5% of Contract Price**
24.	**53.1**	The bonus for early completion is **……N/A**……..
25.	**54.1**	The amount of advance payment shall be …**N/A**
		Monthly Recovery of Advance Payment: **N/A** percent of amount of Interim Payment Certificate.
26.	**55.1**	The Performance Security shall be **10% of the contract price**
		E. Finishing the Contract
27.	**61.1**	As built drawings shall be supplied by the contractor by ……**N/A**……. Operating manual shall be supplied by the contractor by **N/A**
28.	**61.2**	The amount to be withheld by the Project Manager in the case the contractor does not submit as built drawings is: **N/A** The amount to be withheld by the Project Manager in the case the contractor does not submit operating manual is:……**N/A**…….
29.	**63.1**	The percentage to apply to the value of the work not completed, representing the Procuring Entity's additional cost for completing the Works, is ***N/A***

SECTION VI: SPECIFICATIONS

1. GENERAL SPECIFICATIONS

1.1 Introduction

These specifications cover the construction of the works as shown on the drawings and listed in the Bills of Quantities and shall be read in conjunction with the Contract Documents as listed in Volume I, Instructions to Tenderers.

All references given are intended solely for the convenience of those using the above documents and shall be in no way exclude the application of the other clauses in the documents which may, in the opinion of the Engineer have any bearing on the point in question.

1.1.1 Location

The site for the proposed KWS Voi and Kasigau: Tsavo west/east national parks.

1.1.2 Scope of Works

The Works consist of site clearing, Excavation of reservoir, construction of Earth Fill Embankment and Spillway.

1.2 Extent of Contracts

The works specified under this contract shall include all general works preparatory to the construction of the works and materials and work of any kind necessary for the due and satisfactory construction, completion and maintenance of the works to the intent and meaning of the Drawings and this specifications and further Drawings and
instructions that may be issued by the Engineer from time to time whether specifically mentioned or not into the clauses of this specification.

1.3 Precedence of Contract Documents

Should the provisions of any clauses of any or all of the Contract Documents to be shown to be mutually at variance or exclusive, the following order of precedence shall be applied in order to establish which of the said provisions mutually at variance or exclusive, shall be deemed to be true and correct intent of the contract entered into by Employer, and the Contractor shall forthwith be absolved from any liability under the provisions not so proved to be the true and correct intent of the contract, provided that in the execution of the contract the Contractor has, or shall have complied with such true and correct intent.

(i) Provision of the Standard or Special Specifications shall take precedence over those of the General Conditions of Contract.

(ii) Provision of the Special Specifications shall take precedence over the Standard Specifications unless otherwise indicated.

(iii) Details shown or noted on the Contract drawings shall take precedence over the requirements of both the Standard and the Special Specifications.

(iv) Detail Drawings shall take precedence over General Drawings.

(v) Within the Standard Specifications, the provisions of any section particular to the provisions at variance shall take precedence over the General Section, and within any section clauses particular to the provisions at variance shall take precedence over those not so particular. The foregoing order of precedence shall apply also to sections and clauses of the Special Specifications.

(vi) Where there is conflict in units of measurement quoted in Standard Specifications and units quoted in Bills of Quantities the units in latter will apply.

Notwithstanding any fore-written provisions, should the application of the foregoing order of precedence fail to resolve any variance or mutual exclusions as to the true and correct intent of the contract to the satisfaction of the Engineer, the Engineer may exercise the right to arbitrarily give a ruling as to the true and correct intention of the contract, and the Contractor shall have the right to claim additional payment for any additional expenses incurred by him as a consequence of such variance or exclusion and arbitrary ruling.

1.4 Standards

In the specifications, Bills of Quantities, and Drawing reference has been made to relevant British Standard Specifications and Codes of Practice- to which the materials and workmanship should comply with. However, the materials and workmanship complying with equivalent Kenya Bureau of Standards (KEBS) or International Standards Organization (I.S.O) standard for that particular material or workmanship will also be acceptable. Mixture of different Standards in one trade will not be allowed. For instance, if pipes are to be provided to KEBS Standard, then all the pipes in the works are to be to KEBS Standard.

Where the dimension in one standard does not completely correspond to the dimension of the other standard which is being used for construction of works, ruling of the Engineer will be sought and any decision given by the Engineer will be final and binding upon the Contractor.

1.5 Quality of Materials and Workmanship

The materials and workmanship shall be of the best of their respective kinds and shall be to the approval of the Engineer. In reading of these Specifications, the words "to the approval of the Engineer" shall be deemed to be included in the description of all materials incorporated in the works, whether manufactured or natural, and in the description of all operations for the due execution of the works.

No materials of any description shall be used without prior approval by the Engineer and any condemned as unfit for use in the works shall be removed immediately from the site, and without recompense to, the Contractor. All works or parts thereof shall be in accordance with the latest edition of either Kenya Bureau of Standards (KEBS) Specification or British Standard (B.S) Specifications and British Codes of Practices (C.P) as published by British Standard Institution.

All materials shall be of approved manufacture and origin and the best quality of their respective kind, equal to sample and delivered on to the site a sufficient period before they are required to be used in the works to enable the Engineer to take such samples

as he may require for testing or approval, and the Contractor shall furnish any information required by the Engineer as to the quality, weight, strength, description, etc. of the materials. No materials of any description shall be used without prior approval by the Engineer and any condemned as unfit for use in the works shall be removed immediately from the site by, and without recompense to, the Contractor.

1.11 Trade Names

Trade Names and Catalogue References are given solely as the guide to the quality and alternative manufacturers of the materials or goods of equivalent quality will be accepted at the discretion of the Engineer.

1.7 Samples

Samples of all materials shall be deposited with the Engineer and approved prior to ordering or delivery to site. The Engineer reserves his right to test any sample to destruction and retain samples until the end of the maintenance period. No payment will be made for samples and the Contractor must in the rates of prices allow for costs of samples. All materials delivered to site shall be equal or better in all respects than the samples delivered to the Engineer.

All sampling of materials on the site must be done by or in the presence of the Engineer. All other samples will be deemed not to be valid under the contract.

All material delivered to the site or intended for the works not equal or better than the samples approved by the Engineer shall be removed and replaced at the Contractor's expense.

1.8 Testing

As provided in Clause 311 of the Conditions of Contract and in accordance with the Specification quoted for any material used on works of this contract, tests may be called upon by the Engineer to be carried out at the place of manufacture or on the site. The Contractor may assume that the tests will be required on soils, workmanship, and materials whether natural or manufactured to verify their compliance with the specifications. Samples of all such materials and manufactured articles together with all necessary labour, materials, plant and apparatus for sampling and for carrying out of the tests shall be supplied by the Contractor at his own expense.

1.9 Programme for the Execution of Works

(i) In accordance with Clause 14 of the Conditions of Contract, the Contractor upon receiving Engineer's order to commence shall within 7 days draw up a working programme setting out order in which the works are to be carried out with appropriate dates thereof together with delivery dates for materials. The Contractor shall together with his work programme supply an expenditure chart showing monthly anticipated expenditure.

(ii) The programme shall be deemed to have taken into account normal variations in climatic conditions to provide for completion of the works in the order and within the times specified therein.

(iii) The order in which it is proposed to execute the permanent works shall be subject to adjustment and approval by the Engineer, and Contractor's price shall be held to include for any reasonable and necessary adjustment required by the Engineer during the course of the works.

(iv) The Contractor shall carry out the contract in accordance with the programme agreed with the Engineer, but he shall in no manner be relieved by the Engineer's approval of the programme of his obligations to complete the works in the prescribed order and by the prescribed completion date and he shall from time to time review his progress and make such amendments to his rate or executions of the works as may be necessary to fulfil these obligations.

(v) Once the proposed programme is approved by the Engineer, the Contractor shall not depart from the programme without the written consent of the Engineer. In the event of unforeseen difficulties or disturbances arising, which forces the Contractor to depart from the approved programme of works, he shall advise the Engineer in
writing of such occurrences without delay and submit proposals for any necessary remedial measures, for which he shall obtain the Engineer's approval before putting such measures into effect.

(vi)The Contractor shall furnish the Engineer with a monthly statement of all works done on the contract and of all materials on site.

1.10 Substantial (Practical) Completion

Substantial or Practical Completion of Works is to be understood as a state of completion, which leaves out only minor outstanding items that can be readily completed within a period of less than 1 month without interfering with the normal operation of the works.

The works will not be considered as substantially or practically completed without the works being capable of being used by the Employer in accordance with the purpose of the works. This means amongst other things and where relevant, that all final tests have been carried out, the pumping stations and treatment plant fully operational to
the required capacity, all storage tanks filled up, operation manuals provided, and clearance of the site upon completion of the works has been carried out, all to the satisfaction of the Engineer.

The Contractor shall allow for a period of one month for the completion by others of as built drawings before the works are handed over to the Employer.

1.11 Nominated Sub-Contractors and Nominated Supplies

The Contractor shall be responsible for Nominated Sub-Contractor in responsibility to ensure that each Sub-Contractor commences and completes the work in a manner so as to conform with the working programme, as specified above.

It is also the responsibility of the Contractor to ensure a satisfactory progress of the works and to ensure that the works are completed to a standard satisfactory to the Engineer.

The Contractor shall accept liability for and bear the cost of General and Specific Attendance on Nominated Sub-Contractors which shall be deemed to include for:-

(i) Allowing the use of standing scaffolding, providing special scaffolding, maintenance and alteration of all scaffolding, retention of all scaffolding until such time as all relevant Sub-Contractor's works are complete and removal of all scaffolding on completion.

(ii) Providing equipment and labour for unloading and hoisting SubContractor's materials.

(iii) Providing space for office accommodation, and for storage of plant and materials; allowing use of sanitary accommodation; the supply of all necessary water, power, lighting and watching and clearing away all rubbish.

Carting away for and making good after the work of Sub-Contractors as may be required will be measured and valued separately in the Bills of Quantities.

Before placing any orders with nominated Sub-Contractors or nominated Suppliers, the Contractor should enter into an agreement with the nominated Sub- Contractor/nominated Suppliers to ensure that the Conditions and delivery of materials to site comply with the conditions of contract and the working programme.

Particular clause should be inserted in the agreement with the nominated Suppliers ensuring the validity of the rates for the supply of materials as per the delivery schedule.

Nominated Suppliers who are unable to meet the delivery schedule will not be given allowance for any increases in prices incurred after the delivery time agreed in the delivery schedule.

1.12 Entry upon Land, Working Site and Adjoining Lands

The Employer shall provide land, right of ways and way leaves for work specified in the contract.

If nothing else is mentioned, the Contractor will be allotted for execution of the works only the actual area as necessary for the extent of the construction.

The Contractor shall give notice to the Engineer at least 14 days before he wishes to enter onto the land required to carry out the Contract.

The Contractor shall not enter onto any land or commence any operations until such time as he receives formal confirmation from the Engineer that all necessary compensation formalities have been completed and that permission has been obtained from the landowner to enter the land and commence operations. Should the Contractor enter onto any land or commence operations without first obtaining this confirmation, he shall be liable in whole or in part, at the sole discretion of the Engineer, for all additional costs and/or legal charges which might arise therefore.

The Contractor shall on his own accord obtain rights of admission, and Right of using all other areas which are necessary for storing and manufacturing, or for setting up
site offices and Resident Engineer's office or whatsoever will be necessary. No

separate payment will be made to the Contractor on account of these items and the Contractor must make due allowance for them in his rates.

The Contractor shall take care to prevent injury, damage and trespass on lands, fences and other properties near and adjacent to the works and must in this connection make all necessary arrangements with adjoining landowners, or into the case of Government Property with officers appointed for this purpose, and ensure the Workmen's observance of all Government rules and Ordinances regarding game protection and other matters and provide, maintain and clear away on completion of the Works, all temporary fencing which may be required for execution of the works.

Before completion of the works, the Contractor must make good or compensate any such injury, damage or trespass on Lands, fences and other properties which have no otherwise been provided for in the Contract.

1.13 Preservation of Survey Beacons

Ordinance Survey Beacons, Bench marks, etc., or around the site of the works shall not be disturbed unless permission has been obtained by the Engineer from the Survey of Kenya.

In the event of unauthorized disturbance of such beacons, bench marks etc., in the course of the works being carried out, the Contractor shall be responsible for reporting same to the Engineer and the Survey of Kenya, and for payment of any fees due to
said Survey of Kenya for replacement of such disturbed beacons, bench marks, etc. The Contractor shall not replace such disturbed beacons bench marks, etc. on his own accord.

1.14 Land for Camp Site

The Employer shall make available free of charge to the Contractor all land under or through which the works other than Temporary Works are to be executed or carried out all as indicated in the Drawings or as detailed in the Specifications. Such land shall exclude land for Resident Engineer's offices and land required by the Contractor for his own camps, offices, houses, temporary works or any other purpose.

1.15 Existing Services

Drains, pipes, cables and similar services encountered in the course of the Works shall be guarded from damage by the Contractor at his own cost to safeguard a continued uninterrupted use to the satisfaction of the owners thereof, and the Contractor shall not store materials or otherwise occupy any part of the site in the manner likely to hinder the operation of such services.

The Contractor shall on the Engineer's direction arrange for the construction of permanent or temporary diversions of the said drains etc., together with their reinstatement in liaison with the respective Departments, Bodies, Corporations or Authorities. The cost of such works or diversions including reinstatement shall be charged against the appropriate provision sum provided into the Bills of Quantities. The Contractor shall be at liberty, subject to the approval of the works, bear the cost of reinstatement of addition diversion. No services may be tampered with by the

Contractor and all works in connection with any kind of services shall be carried out by their respective owners.

It is the responsibility of the contractor to inform the Engineer immediately any existing service is exposed.

1.111 Damage to Services

The Contractor shall be held liable for all damage and interference to mains and pipes, to electric cables or lines of any kind either above or below ground caused by him or his Sub-contractors in execution of the Works, whether such services are located on
the Contractor's Drawings or not. The contractor must make good or report to the appropriate authorities the same without delay and do any further work considered by the Engineer or owner. The Contractor shall provide for these contingencies in the rates inserted in the Bills of Quantities.

1.17 Temporary Roads and Traffic Control

The contractor shall provide and maintain all temporary roads, bridges and other work required for the construction of the Work including the access to quarries, borrow- pits, accommodation etc.

1.18 Road Closure

Where a road used by the Contractor for delivery of any materials used in the works is closed under Section 71 of the Traffic Ordinance Act 19112 or amendments thereto, the contractor shall obey such closure order and use alternative roads.

1.19 Road and Railway Crossing and Traffic Control

Whether the pipeline is crossing the classified roads and railway line, the Contractor will contact the relevant authorities in advance and obtain necessary permission to dig across the road and railway line in accordance with requirement of the authorities concerned and shall pay any royalties connected with this work, and the Contractor will provide temporary detour road together with any warning signs necessary. There will be no separate payment for this and cost of all expenses connected with road and railway crossing for which no separate items have been included in the Bills of Quantities.

1.20 Protection from Water

Unless otherwise mentioned, Contractor shall keep the whole of the Works free from water and allow in his rates for all dams, coffer, dams pumping, piling, shoring, temporary drains, slumps, etc., necessary for this purpose and shall make good at his own cost all damage caused thereby.

1.21 Weather Conditions

The Contractor shall be deemed to take into account all possible weather conditions when preparing his tender and he shall not be entitled for extra payment by the reason of the occurrence or effect of high winds, excessive rainfall, temperature or any other meteorological phenomena.

1.22 Protection from Weather

All materials shall be stored on site in a manner approved by the Engineer and the Contractor shall carefully protect from the weather all works and materials which may be affected thereby.

No separate payment will be made for this and Contractor will allow in his rate for this.

1.23 Explosive and Blasting

At works requiring the use of explosives, the Contractor shall employ men experienced in blasting, and these men must be in possession of a current blasting certificate. The purchase, transport, storage, and use of explosive shall be carried out in accordance with the most recent Explosives Ordinance and Rules issued by the Government and the Contractor shall allow in his rates for excavation and quarrying for all expenses incurred in meeting these requirements, including the provision of suitable stores. Blasting operations shall be carried out with as little interference as possible to traffic or persons and the rates shall include for all flagging, watching barricade and clearance of debris.

In all cases previous permission from the Engineer must be obtained before commencing any blasting operation.

If, in the opinion of the Engineer, blasting would be dangerous to persons or property, or it is carried out in a reckless manner, the Engineer can prohibit any further use of explosives.

1.24 Liaison with Police, etc.

The Contractor shall keep himself in close contact with the Police, Labour Officers and other officials in the areas concerned regarding their requirements in the control of workmen, passage through townships, or other matters and shall provide all assistance and/or facilities which may be required by such officials in execution of their duties in connection with the works. Any instruction given by the traffic police concerning fencing off of trenches or other excavations must be followed explicitly.

1.25 Provision of Water

The Contractor shall provide water for use in the Works. He shall supply all hydrants, hose, vessels and appliances necessary for the distribution there-of and shall provide pumps, tanks, carts, vessels and appliances, transport and labour when and where-ever it is necessary for water to be carted for use at the works. All water used in
connection with the works shall if possible be obtained from a public water supply and the Contractor shall make all necessary arrangements and pay all the charges for connection to main and for water used.

1.211 Temporary Lighting

The Contractor shall provide all artificial lighting and power for use on the works, including all sub-contractors and specialists requirements and including all temporary connections, wiring, fittings, etc., and clear away on completion. The contractor shall pay all fees and charges and obtain all permits in connections there with.

1.27 Sanitation

The medical Officer of health or other Sanitary Authority shall be informed when Works are contemplated and when works are about to commence.

The site shall be kept in a clean and proper sanitary condition. No nuisance shall be committed on or around work, and latrines for the workmen and staff shall provide in accordance with the requirements of the medical officer or Sanitary Authorities. The Contractor shall be responsible for the sanitary discipline of his labour.

The Engineer's representative has the right to order, who in the opinion of the Engineer's representative does not have a satisfactory sanitary discipline, off the site with immediate effect. The Contractor shall make sure that his personnel working on the site are medically fit, and he shall bear the cost of any medical test required to determine that his personnel are free from infectious diseases.

The Contractor shall follow the safety rules set down by the Factories Inspectorate, Ministry of Labour.

1.28 Medical Facilities

Contractors attention is drawn to Legal Notice No. 79 of 22nd September 1978 by which it is mandatory that every Contractor employing more than twenty people should appoint (in writing) a safety supervisor. A safety supervisor advice the management on all matters regarding safety, hygiene and welfare of the people affected by the Contractor's undertaking on the site. The safety officer may in addition carry out other duties. The contractor shall provide adequate first-aid equipment on the site and ensure that at least two of his site staff are completely trained in first aid.

1.29 Signboards

The Contractor shall erect signboards as shown on the drawing in prominent positions adjacent to the works to the satisfaction of the Engineer. The location of the signboards shall be specified by the Resident Engineer.

1.30 Setting Out and Survey Equipment

The Contractor must before commencing any construction works, make sure that levels shown on the drawings correspond with levels found on the site.

Should any discrepancy be discovered between the level shown on the drawings and those found on the site, which may affect the level and dimensions of any part of the works, the Contractor shall notify the Engineer, who if necessary, will issue drawings showing the amended level and dimensions.

The Contractor shall allow for in his rates, the cost of the necessary qualified and experienced staff to set out the works and during the continuance of the Contract for the sole use of the Engineer, provide approved new and accurate instruments together with all other requisites, all necessary chainmen and other attendance and transport required for setting out and checking the works or purpose in connection therewith.

The major requirements are as minimum but not limited to following: Description

No.

(a) 2 m ranging rods	11
(b) Modern Universal Theodolite and Tripod	1
(c) Automatic level and Tripod	1
(d) 4 level staff with leveling bubble	2
(e) 100 m steel tape	2
(f) 50 m steel tape	2
(g) 3 m pocket tapes	3

The contractor shall clear the site and set out the Works well in advance to enable the Engineer to inspect and approve the setting out prior to commencement of the Works. The Contractor shall amend at his own cost any error due to inaccurate setting out.

Any checking or approval by the Engineer of the setting out, bench marks, plans or schedule will not relieve the Contractor of his responsibilities under the Contract. The Contractor shall provide plan showing the position of his site offices, storage, sheds, accommodation, Engineer's Representatives office etc., to the permanent works for
the approval of the Engineer before commencing erection of his camp.

1.31 Backfilling of Holes and trenches

The Contractor shall immediately upon approval of any work at his own expense and to the satisfaction of the Engineer backfill all holes trenching and temporary quarries which have been made (except permanent borrow pits), level all moulds or heaps of earth that may have been raised or made and clear away all rubbish caused by the execution of the work. The Contractor shall bear and pay all costs charges damages and expenses of any kind whatsoever which may occur by reason of holes and trenches connected with the works or materials, tools or plant being left or placed in improper situation.

1.32 Inspection of Works

No part of the works shall be built in or covered over until it has been inspected and approved by the Engineer and the Contractor must give due notice in writing to the Engineer's representative when any part of the works are ready for inspection.

1.33 Cleaning Up of Site

Before final acceptance upon the completion of the Works, the Contractor shall, at his own expenses, remove and dispose of all rubbish and remove all equipment, surplus materials camp and buildings, which the contractor has provided, and temporary works ordered by the Engineer and shall leave the Site absolutely clear thereof and in good order and condition to the entire satisfaction of the Engineer.

1.34 Testing of Water-Retaining Structure

All water-retaining structures shall on completion be tested for water tightness in the following manner. The structure shall be filled with potable water in stage and held at each stage for such time as the Engineer may require. Should any dampness or leakage occur at any stage, the water shall be drained off and the defects made good. The procedure shall be continued and finally the structure shall after a period allowed for absorption remain full for seven days. Within those seven days, the level of the surface of the

water should be recorded and measurements made at intervals of 24 hours. The total leak must not exceed 0.3% of the total volume of water in the tested structure.

If the structure does not satisfy the Condition of the test, and the daily drop in water level is decreasing, the period of test may be extended for a further 7 days, and if the specified limit is then not exceeded, the structure may be considered as satisfactory.

Should any dampness or leakage or other defects occur they shall be made good and the structure re-tested until the water tightness is approved by the Engineer. Faces of submerged structures may not be covered before testing.

The Contractor shall allow in his rates for all expenses and shall provide water and all necessary labour and materials for testing the structures.

1.35 Testing of Roofs

Where structures are used for storage of potable water adequate precautions should be taken to ensure that the roof is watertight in order to give projection against potential sources of pollution.

The roof should be tested by lagooning the concrete slab to a minimum depth of 75 mm for a period of 3 days; the roof slab should be regarded as satisfactory if no damp patches occur on the soffit. The roof screed should be completed immediately after testing.

All water, labour and materials for the test are to be provided by the contractor who shall allow for this in his rates.

1.311 Cleaning and Sterilizing Water-Retaining Structures

The interior of all potable water-retaining structure shall be thoroughly cleaned and washed after the water tightness test has been approved by the Engineer in order to remove al contamination.

The structure shall then be filled to overflow level with clean water containing 50 parts per million of chlorine and left for a period of at least 24 hours. The chlorinated water shall then be drained away and the structure refilled with clean water from which samples shall be taken for bacteriological examination and for tests of residual chlorine. If any of the results of the tests are unsatisfactory when compared with those of the control sample of the supply water, the sterilizing process shall be repeated until the results of the tests are satisfactory.

The costs of the initial sampling, analysis and preparing on the bacteriological quality of the water shall be borne by the employer, but should the initial report be unsatisfactory, the costs of any subsequent sampling analysis and preparing reports shall be borne by the Contractor.

The Contractor shall allow for - in his rates providing water, all labour, materials, chemicals and other things necessary for cleaning and sterilizing the water-retaining structures.

1.37 Contractor's Superintendence

The Contractor shall give or provide all necessary superintendence during the execution of the works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The Contractor or his competent and authorized Agent or representative approved in writing by the Engineer (which approval may at any time be withdrawn) is to be constantly on the works and shall give his while time to the superintendence of the same. If such approval shall be

withdrawn by the Engineer, the Contractor shall after receiving written notice or such withdrawal, remove the Agent from the Site within the time stated in the notice and shall replace him by another Agent approved by the Engineer.

1.38 Transport of Workmen

The Contractor shall include in his rates for all transport of staff and workmen to and from and in connection with the various parts of the works, and all costs incurred in recruiting and transporting labour to the site, where such labour is from outlying areas and costs of returning labour on termination of the contract.

1.39 Normal Working Hours

The contractor shall inform the Engineer in writing, at the time of submitting the work programme, the normal working hours. The Contractor shall respect all Public Holidays. Where the Contractor wishes to work outside these hours, he shall request the Engineer in writing at lease 24 hours in advance for consideration.

1.40 Transport, Travelling and Leave

In his rates, the contractor shall allow for and be responsible for all charges which may arise out of the transport to the site of materials, plant or equipment from any source, all applicable customs duties, all licences or other costs whatsoever together with all handling, packing and insurances. The prices shall also include all charges arising out of the provision of transport to the site of staff and labour from any source and shall include all costs in respect of fares, insurances, customs, medical or other fees, subsistence, leave and all other matters.

1.41 Compliance with Statutes and Local Regulations

In addition to requirements of Clause 211 of the Conditions of Contract, the Contractor shall be responsible for acquainting himself with all current valid Statute Ordinance or Bye-Laws or Regulations provided in the Bills of Quantities. This applies to training Levy and other similar taxes for which no claims on the part of the Contractor other than the one inserted in the Bills of Quantities will be allowed.

1.42 Accommodation for Workmen

The Contractor shall provide and maintain suitable shelters and mess facilities for his workmen and supervisory staff. The facilities shall be of sufficient size and to a standard considered satisfactory by the Engineer. The Contractor shall throughout the contract provide an adequate supply of potable water for the workmen.

1.43 Storage Space and Sheds

Suitable temporary stores and workshop shall be erected and later removed on completion of the works. All building shall be adequate for protection of the equipment or materials to be kept there-in and shall be constructed and located to the satisfaction of the Engineer

1.44 Office for the Contractor

The Contractor shall erect an office near the works on the site to be kept open at all hours during which the work is in progress.

Any notice to be given to or served upon the Contractor shall be deemed and taken to be effectively given or served upon by the delivery there-of at such office on the Site.

1.45 Office for the Engineer's Representative

The contractor shall if required by special specification rent and maintain offices, laboratories, survey and laboratory equipment and furniture for the Engineer and his staff.

1.411 Housing for the Engineers Staff

The employer shall provide housing for Engineers Staff

1.47 Maintenance of the Resident Engineer's Staff Houses, Offices, Furniture and Equipment

For the entire duration of the contract the Contractor will:-

if) For rented houses, ensure that the landlord attends to any maintenance problems regularly. The furniture shall be maintained by the Contractor.

ii) Keep all buildings provided by him, for the use of the Resident Engineer and his Staff, in well maintained, clean and fully habitable condition, and shall maintain all access roads, car parks, footpaths, fences, gates, drains, potable water supplies, gas, electricity and waterborne sewage disposal system in good stage of repair, all to the satisfaction of the Engineer.

iii) The Contractor shall also provide an adequate refuse collection for all houses and offices provided by him.

iv) The Contractor shall maintain all furniture and equipment provided by him in reasonable state of repair and usable condition and shall replace promptly any item which becomes unserviceable or is lost.

v) The Contractor shall provide day and night watchmen for the Resident Engineer's staff houses whether rented or constructed by him.

The Contractor shall insert his rate against lump sum item included in Bills of Quantities for the maintenance of offices, houses equipment and furniture.

Payment for the maintenance of resident Engineer's staff houses, offices furniture and equipment will be spread over in equal monthly instalments, spread over from the time houses or offices as appropriate are taken over by the Engineer until the end of the Contract. (In the event, no interim certificate is issued in any month then the installment shall be added to subsequent certificate).

1.48 Attendance upon Resident Engineer and Resident Engineer‘s Staff

For duration of the Contract.

i) The Contractor shall provide all assistance including labourers, chainmen, clerks and junior staff as and when required by the resident Engineer for checking, setting out surveying measuring or for testing of work. The Contractor shall also provide a full time typist in Resident Engineer's office.

ii) The Contractor shall provide all tools and protective clothing, wooden pegs, iron pins and pickets, water cement and aggregate for concreting, transport for labourers and materials as may be required by the resident Engineer and his staff for checking, settling out, surveying, measuring or testing or the work.

An item has been included in Bills of Quantities for the above, which shall include all expenses including housing etc. which are due to the manpower. No further payment will be made for attendance upon the Engineer and Contractor shall include other costs elsewhere in his rates.

Payment for the attendance will be spread over in equal monthly instalments over the contract period. (In event, no interim certificate is issued in any month, then the instalment shall be added to the subsequent certificate).

1.49 Insurance

All buildings, furniture and equipment provided by the Contractor for the Engineer's representative shall be insured by the Contractor against loss or damage by accident, fire, theft and other risks ordinarily insured against for the duration of the contract. The theft shall include personal belongings of the tenants in the Resident Engineer's staff houses.

1.50 Transport for Engineer's Representative

The Employer shall provide transport for the Engineer's Representative.

The Contractor shall as stated in the Bills of Quantities provide maintenance, fuel and lubricants and must keep the vehicle clean and in a good roadworthy condition throughout the contract.

All maintenance shall be carried out at the prescribed intervals by an approval dealer. In the event of

service and repair with a duration of more than one day, the Contractor shall provide suitable replacement vehicle to the approval of the Engineer.

The costs of the above shall upon presentation of receipts be paid against the Provisional sums entered in the Bill of Quantities.

1.51 Removal of Camps

On the completion of the contract, the contractor shall, if so requested take down and remove all structures connected with his camp and shall take up all pipes, drains and culverts, backfill trenches, fill up all latrine pits, soakways and other sewage disposal excavations and shall restore the site as far as practicable to its origin condition and leave it neat and tidy to the satisfaction of the Engineer.

1.52 Site Meetings

Site meetings will normally be held monthly, but will be called for wherever the progress of works so require or when demanded by the Engineer.

The Contractor shall at all meetings be represented by a responsible representative other than the site Agent, who has the powers to commit the Contractor in all matters concerning the Contract.

In the event, no responsible representative of the Contractor is present at the meetings, any decision taken by the Engineer at the meeting will be binding upon the Contractor.

TECHNICAL SPECIFICATIONS

1. SITE CLEARANCE

1.1 Clearance of Trees, Bushes, Scrub, etc.

The contractor shall unless otherwise directed cut down all trees remove bushes, plantations, crops and other vegetable growth and grub up all roots, take down all huts, buildings, wall fence and any other obstruction and handle and transport salvaged usable materials, to a site approved by the Engineer. All salvaged and usable materials are the property of the respective owners. The clearing and demolition here-in described shall be carried out to a width of the minimum excavation plus 1.50 m on either side.

With exception of the salvaged material fore-mentioned, the Contractor shall destroy or otherwise remove the whole of the rubbish from the site to an approved tip or number of tips provided by him.

Trees shall be cut down to as near the ground level as possible and the rate entered in the Bill of Quantities shall include for cutting down, removing branches and foliage, cutting into suitable lengths, grubbing up stumps and roots, stacking up, burning or disposing off as directed.

Before commencing any site clearance, general clearance, clearance of pipelines etc., the contractor shall inform the Engineer's Representative of his intention. The Engineer's Representative will by visiting the section of works concerned, determine the extent of the clearance expressly required.

Payment for clearance will be authorized on the basis of what is expressly required and at the discretion of the Engineer's Representative.

1.2 Damage to Land, etc.

Except where necessary for the proper execution of the Works, the Contractor shall not interfere with any fence, hedge, trees, land or crop forming the boundary of the site, or elsewhere. In the event of any interference, the Contractor shall make good any damage to such fence, hedges, trees, land or crop to the satisfaction of the Engineer and the owner thereof.

Where the work is to be executed in private land, the Employer will be responsible for negotiating and obtaining rights of way and the serving of all notices as may be required upon the owners and/or occupiers of the land and it shall be the obligation of the Contractor to keep the Employer and the Engineer fully informed concerning the rate of progress and of his intention to enter and begin work with any way leave as provided for under the Conditions of Contract and required by this Specification.

1.3 Clearing the Site on Completion

On completion of the Work, the Contractor shall clear the Site of all plant, building, spoils, dumps, rubbish, etc. and leave the Site to the satisfaction of the Employer.

Borrow pits and temporary quarries shall be made good and covered with vegetable soil. Dumps for waste materials shall be covered with at least 0.5 m of soil of which at least a 0.1m layer in top shall be vegetable soil

2. EARTHWORKS SPECIFICATIONS

2. GENERAL

2.1 Method Statements

At least seven (7) days prior to the commencement of any open excavation at any section of the Works, the Contractor shall submit for the Employer's Representative's (Engineer's) approval, a statement of the excavation methods and procedures he intends to adopt on that section.

The statement shall include a description of the following, together with any other items which the Contractor considers relevant:

Sequence of operations; - A detailed programme of events and any consequent change in the overall programme of the Works;

Excavation protection and support, including drainage and temporary works; - Disposal or re-use of materials, including quantities and locations.

The methods adopted shall provide for the safe and efficient execution of the excavation work in such a way as to conform to the programme for completion of the Works and so that they do not interfere with other operations in progress of the Contractor or others.

The Employer's Representative's (Engineer's) approval of the Contractor's method of excavation shall not relieve the Contractor of any of his responsibilities or obligations under the Contract.

In the event the Contractor's methods do not provide results which satisfy requirements stated in the Specification, the Contractor will be obliged to change
them and to use techniques and procedures either agreed between the engineer and the Contractor or as indicated by the Engineer. Such changes will not warrant any extra payment to the Contractor.

2.2 Location and Shape of Excavation

The Contractor shall locate the excavations for structures and all other work as shown on the drawings and in accordance with the benchmarks provided to him by the Engineer.

The Contractor shall be responsible for correct location, and all extra work caused by his negligence in this matter will be at his expense and shall be corrected at the Engineer's request.

If local survey points or bench marks have been removed or are insufficient, the setting-out shall be related back to other established survey points or bench marks. Excavation shall be to the lines, grades and dimensions shown on the drawings or as established by the Engineer. During the progress of any open excavation work, it may be found necessary or desirable to vary the slopes or the dimensions of the excavations from those shown on the drawings or established by the Engineer. Such adjustment or trimming of the final excavated surface is considered to be a separate operation as defined hereafter.

Any and all over-excavation performed by the Contractor for any purpose or reason, except as may be directed by the Engineer, shall be at the expense of the Contractor. All such over-excavation shall be backfilled with approved material from excavations or concrete as directed by the Engineer, and the cost of furnishing and placing this backfill or concrete shall be at the expense of the Contractor.

The Engineer may direct alternative measures of backfilling, and the cost of such measures shall be at the expense of the Contractor.

Any other excavation performed at the option of the Contractor to secure access to required work, for disposal of material excavated, or for any other purpose, shall be at the expense of the Contractor.

2.3 Measurement of Excavated Volumes

The Contractor shall submit to the Engineer for approval the proposed surveying method for the measurement of excavated volumes not less than seven (7) days before commencing any such work. The proposed method shall take one of the following forms:

a) Contour Line Method

Maps defining the ground surface before the commencement of excavation works shall be prepared. Immediately after a change of type of work or classification of material and after completion of any excavation, the Contractor shall take survey measurements to define the dimensions and elevations of the corresponding excavated surface. Measurements shall be taken with a tacheometer with a minimum density of points of one per $20m^2$. From these measurements, sets of contour lines shall be prepared for each successive surface, e.g. original ground, rock final and excavated surfaces, and all sets shall be presented on a single plan. From this plan, the measurement of excavated volumes shall be calculated by an analytical method and checked by means of a planimeter.

b) Average Section Method

Profiles shall be taken by the Contractor of the ground surface before commencement of excavation, immediately after a change of type of work or classification of material and after completion of any excavation. Measurements shall be taken by means of a tacheometer or leveling instrument in order that vertical

sections may be prepared at intervals of 3.0m or as directed by the Engineer. The volumes of excavated material shall be calculated between adjoining sections by considering the average area of the two sections over the intermediate distance. In the case of a curvilinear area, the profiles shall be measured radially. Volumes of excavated material shall be calculated for the cross-sectional area of each profile. The distance over which this area shall be considered is the length of the arc, passing through the centre of gravity of the section, subtended by the angle between the radial sections. Measurements, which are to be the basis of quantities for payment, shall be taken in the presence of the Engineer.

The Contractor shall give notice of his intention to take such measurements not less than twenty four (24) hours beforehand.

2.4 Classification of Excavated Materials

Separate measurements shall be made for bulk and trench excavation classified either as "common excavation" or "rock excavation". At the commencement of any excavation operations at each location of each section of the Works, the Contractor shall establish and agree with the Engineer the separate classification and their limits.

Subsequent modifications to these limits may be made during the progress of the Works in accordance with actual conditions as encountered, but such modifications will only be agreed when the materials are exposed.

Whenever an agreement is not possible on the classification of the material exposed in a certain area, a ripping test, in the form described below, shall be performed by the Contractor at his own expense at the area considered, in the presence of the Engineer.

The ripping test shall comprise:

(a) a survey, on a 1.0 m grid, to establish cross-sections over a test area of not less than 10 x 4 m within the area to be classified;

(b) provision of a Caterpillar Model D8K tractor or equivalent machine, equipped with a single straight ripper tooth 110 m penetration, hydraulically operated and approved by the manufacturer for use with the D8K;

(c) Ripping of test area with two passes per meter of width, with the full load applied to ripper tooth;

(d) After ripping, removal of ripped material by loading machine of approved type; (e) Re-survey of the cross-sections and calculation of the volume and equivalent depth of excavation.

Common excavation for the purposes of measurement and payment shall be defined as:

(a) All materials excavated without prior visual inspection and classification by the Engineer;

(b) All material that gives an equivalent depth of excavation equal to or more than 0.25 meters in the ripping test;

(c) All non-rippable boulders, or detached pieces of solid rock, embedded in common excavation material, but each having a volume of less than one cubic meter or a weight of less than two tonnes.

Rock excavation for the purposes of measurement and payment shall be defined as: (a) All material so classified by visual inspection and agreed with the Engineer.

(b) All material that gives an equivalent depth of excavation less than 0.25 meters in the ripping test;

(c) All non-rippable boulders, or detached pieces of solid rock embedded in common excavation, each having a volume of more than one cubic meter or a weight of more than two tonnes.

2.5 Dewatering

The Contractor shall be responsible for the protection of all sections of the Works from effects of surface water run-off and ground water.

Such protection shall include pipes, channels, embankments and pumping arrangements to keep the Works free from any water which may damage the finished quality or impede progress or inspection during construction.

Where local streams or natural drainage channels intersect the Site of the Works, these streams and channels shall be diverted outside the limits of the Works, at the expense of the Contractor.

The Contractor shall be responsible for the design of all such temporary dewatering works, and shall on request, provide the Engineer with drawings, calculations, explanatory reports and any other evidence that their performance will be adequate for their purpose.

Where some part of the Permanent Works can be adopted for such dewatering, the Engineer will instruct the Contractor on any limitations he requires with respect to their temporary use for dewatering during the construction of the Works.

3. TYPES OF EXCAVATION

3.1 General Clearing

General clearing comprises the removal and disposal of all trees, shrubs, buildings, fences and similar matter from the areas shown on the drawings or as directed by the Engineer.

The areas to be cleared shall include the foundation areas to all parts of the Works.

The limits of general clearing shall extend 5m beyond the toe of the fills and the limits of excavation, except where otherwise directed or indicated on the drawings.

Timber may be retained and used on Site by the Contractor. Unsuitable material shall be removed directly to an approved disposal area.

3.2 Stripping

Stripping shall consist of the removal from the surface and disposal of all humus, stumps, roots, brush, rubbish, other vegetation matter, and perishable and undesirable materials generally to a depth of 0.5m or as otherwise directed by the Engineer.

Stripping work shall include the transporting and disposal of stripped material.

The limits of stripping shall extend at least 3 m beyond the toe of fills and limits of excavation, except where otherwise directed or shown on the drawings.

3.3 Bulk Excavation

Bulk excavation comprises the open cut excavation to be performed to lines, grades and dimensions shown on drawings or as directed by the Engineer.

The method adopted shall be suitable for the types of material encountered, to provide for the work to progress in an orderly manner and to restrict over-excavation to a minimum.

Within 3 m of the levels shown on the drawings, the Engineer may direct the excavation in successive stages until a suitable foundation or surface, as determined by the Engineer, is reached.

The Contractor shall not be entitled to any additional payment above the unit prices for the excavation by reason of such successive stages in the excavation procedure. Each successive stage shall include sufficient cleaning to enable the Engineer to inspect the foundation in order to direct further excavation if required.

Loose excavated material shall be removed from the excavation as the work proceeds and shall be transported to the disposal area or stockpile as directed.

For the final preparation of slopes and foundations, the Engineer may direct that the last 20 cm of the excavation, whether in common material or rock excavation, shall be excavated without the use of explosives or ripping, and such excavation methods will not be considered for separate payment, since they shall be deemed to have been already included in the unit prices for excavation work.

For the Emergency Spillway, excavation shall be carried out by such methods that shall not in any way disturb the condition of the adjacent existing spillway and dam.

3.4 Trench Excavation

Trench excavations shall be defined as those whose final width is less than 2 meters, or greater than 2 meters when depth is greater than width.

Excavation for trenches (including pits, footings, etc.) shall be performed by the use of hand tools and approved mechanical equipment in such a manner as to prevent shattering of the sides and bottom of the excavation. At the option of the Contractor, and with the approval of the Engineer, blasting may be carried out in accordance with Sub-section 3 hereafter. All planking, strutting and supports necessary to retain the sides of the excavation shall be provided, erected and maintained in a safe condition by the Contractor.

3.5 Slope Adjustment and Trimming

If, during the progress or after completion of bulk or trench excavations in common material, the Engineer instructs the Contractor to modify or extend the slopes or dimensions of the excavation by a horizontal width of less than 5 m, such modifications or extensions will be considered as separate excavation operations defined as "slope adjustment" or "trimming".

Modifications or extensions of more than 5 m will be considered and paid for as bulk excavation. - Slope adjustment shall apply where the modification or extension involves the adjustment of the limits of the bulk excavation by additional excavation of a horizontal width of more than 1 m up to 5 m. - Trimming shall apply where the adjustment to the bulk excavation limits is required by a thickness of additional excavation of less than 1m.

3.11 Seams and Cavities

The assumed lines of excavation shown on the drawings shall not be interpreted as indicating accurately the final or actual excavation lines.

There may be depressions, fissures, faults, seams and bands of soft disintegrating material running in various directions in the materials to be excavated and in the foundations, slopes and other areas.

Where defects occur they shall be made safe by supports or corrected by local excavation below the general surface of excavation to the lines, depths and dimensions directed by the Engineer.

4. DISPOSAL AND STOCKPILING AREAS

The Contractor shall maintain appropriate disposal areas in the locations shown on the drawings, or as otherwise approved, for materials unsuitable for fill or aggregate production, surplus material from excavation and other approved waste.

All debris, bush, roots and other combustible material shall be burned or buried. All non-combustible waste shall be buried. Disposal by burying shall be done in such a manner that the material disposed of is buried with a minimum cover of 50 cm of excavation spoil or stripped material. The Contractor shall at no time leave a fire unattended and shall be responsible for any fire damage resulting from his operations.

Should the Contractor wish to form spoil dumps for his own convenience, other than those described, he shall obtain the Engineer's approval before any dumping is started.

Where excavated materials are suitable and are required for use in subsequent work, the Engineer may direct that these are separately stockpiled and will designate the location for such stockpiles within the disposal areas or in separate locations adjacent to the sites of the Works.

Adequate road access to the disposal and stockpile areas shall be established and maintained by the Contractor. Disposal and stockpile areas shall be cleared in accordance with Sub-section 2.1, and drainage channels shall be formed to remove surface water.

The tipping of materials in disposal or stockpile areas shall be controlled to provide a uniform and progressive use of the area, and tipped material shall be spread and graded to form layers of not more than 1 m thickness.

On completion of the Works, the disposal and stockpile areas shall be left in a tidy and safe condition to the satisfaction of the Engineer.

5. BACKFILL

The Contractor shall supply, place and compact backfill or selected material in trenches and around concrete structures as shown on the drawings or as directed by the Engineer.

No backfilling shall commence until the foundation and Permanent Works have been inspected and approved by the Engineer.

Backfill shall be placed and compacted in successive layers not exceeding 25 cm in thickness. Compaction of cohesive soils shall continue until the dry density of the material reaches a value of 90% of the AASHTO maximum dry density, as determined in accordance with BS 1377.

The compaction of granular soils shall continue until the dry density of the material reaches a value of not less than 80% of the relative density as determined in accordance with Test 12 of U.S. Bureau of Reclamation Earth Manual (Section Edition, 1974).

In the event of any damage to any structure as a result of the placing or compaction of backfill, the Contractor shall repair the structure at his own expense, to the satisfaction of the Engineer.

11. RIP-RAP

The rock for rip-rap shall be of compact, firmly bound, uniformly grain texture and absolutely weather-resistant and shall not have cracks, holes, laminations or detrimental materials.

The materials shall be sound, un-weathered and with a low water absorption capacity in order to avoid cracking, bursting and decomposition as a result of exposure to rain, flowing water, abrasion and other elements. The rock shall mainly consist of large pieces of rock such that when placed and compacted, the height should not exceed
300mm and smaller pieces to secure the boulders against sliding and to form a mechanically interlocked uniform surface protection against the action of flowing water, waves, heavy rainfall, washouts, etc., and to provide stability to the fill structure.

The rock blocks shall be of natural irregular shape and of the size as specified hereunder. Thin-sliced blocks shall not be accepted. Any blocks covered by impurities shall be cleaned thoroughly before being used.

Unless it is indicated otherwise, the Contractor shall submit rock samples to be used in the slopes to the approval of the Engineer. Furthermore he shall send the samples at his own cost to the place assigned by the Engineer for the performance of all required tests and at least 110 days before the beginning of the riprap placement.

Unless otherwise specified in the Bill of Quantities and Rates, the following grading shall apply for riprap:

-The largest individual block shall not exceed 500 mm all directions. -The smallest individual block shall not be less than 150 mm all directions.

Placing of Rip-Rap

The rock blocks in rip-rap shall be dumped and graded in a manner to ensure that the larger blocks are uniformly distributed and the smaller rock blocks serve to fill the interstices between the larger rocks in a manner that will result in compact uniform layers of rip-rap of the specified thickness.

No pockets of small rocks or clusters of large blocks will be permitted.

7. EMBANKMENT SPECIFICATIONS

7.1 GENERAL

The embankment works shall be executed generally in accordance with the drawings and this Specification or as the Engineer may direct.

The Engineer reserves the right to modify, during the progress of the Works, any other features as he may consider necessary for the proper performance of the Works.

7.2 FOUNDATION PREPARATION

7. 2.1 General

The foundation for the embankments shall be excavated generally in accordance with the requirements of Section 3 - Excavation;

All overhanging rock shall be detached by barring or wedging and all loose or semi- detached blocks shall be removed from foundation surfaces.

Preparation of foundations shall include adequate drainage and dewatering systems to obtain sufficiently dry working conditions.

The placing of fill to form the embankments may proceed only with the approval of the Engineer, based on the conditions of the foundations determined by inspection after completion of all foundation preparation works.

The Contractor shall be responsible for maintaining foundation surfaces in the approved condition until they have been covered by fill material.

Where erodible material is exposed in the foundations, specially selected and graded stone shall be placed over the area as directed by the Engineer to provide inverse filler.

7.2.2 Placing

Thickness of compacted layers shall not exceed 25 cm; optimum placing thickness shall be determined by trial embankments, to the approval of the Engineer.

Material which is too dry shall be spread in a layer, sprinkled with water and remixed with equipment approved by the Engineer. On the other hand, material brought to Site which is too moist shall be removed and taken away, or, subject to specific approval by the Engineer and provided such material has not already been compacted, it may
be left to dry out to the required moisture content level prior to being compacted.

Emplacement of materials shall be carried out using all means necessary to obtain maximum homogeneity in each zone of the embankment; lenses, pockets, bands and layers of material markedly different from that surrounding it shall not be allowed.

Where an emplacement surface is too moist, it shall be left to dry out sufficiently, to the Engineer's approval, prior to emplacement of the next layer.

Where, in the opinion of the Engineer, a surface is too dry or too smooth, it shall be appropriately moistened and harrowed prior to emplacement of the next layer.

Emplacement operations shall be suspended in the event of threat or actual occurrence of rain. In the latter instance, work shall not be resumed until all excess moisture in
the soil has evaporated. Where moisture levels are too high, the Engineer may require removal of emplaced material to an appropriate depth.

Whereas placing of core materials during the rainy season is not envisaged in the construction program approved by the Engineer, the Contractor may

construct the embankment dam and place such core materials during the rainy season, provided however that any extra cost arising therefrom as may be necessary to meet the requirements of the Specification shall be borne exclusively by the Contractor.

Emplacement surfaces shall at all times be flat and slightly inclined to upstream and downstream, in order to avoid the possibility of stagnant water collecting (even in small pockets).

Prior to any suspension of work, emplacement surfaces shall be leveled and rolled to eliminate subsequent stagnation of water; upon resumption of laying operations, they shall be re-set and harrowed.

7.2.3 Compaction

Compaction of materials shall be carried out in layers, using suitable plant, machinery and equipment.

In general, the use of static sheep-foot or vibrating rollers shall be preferred.

In the event that excessively smooth surfaces are obtained from the use of rubber- tyred rollers, the Engineer may require harrowing of the lower layer prior to emplacement of the upper layer.

Based on trial embankment results, the Engineer shall be entitled to reject the type of plant, machinery and equipment proposed by the Contractor if specified results cannot be obtained by the use of same and, at particular locations or zones, establish moisture content, number of passes, and speed and time of vibration, even if these vary from those applied to trial embankment.

All parts of the embankment which rests on or are in contact with steep or irregular lateral surfaces, or zones of difficult contact, or areas where compaction equipment is difficult to access, as well as those

parts of the embankment in contact with concrete structures or measurement and control equipment built into the embankment, shall be compacted in layers of not more than 15 cm, suitable means, such that their degree of compaction shall not be lower than that of other embankment zones. The thickness of the Embankment material layer shall have a tolerance of ± 15 cm at any specified level.

8. FINE FILTERS

8.1 General

Materials to be utilized for the construction of fine filters shall have the following characteristics:

Cu = D110/D10 < 12 Dmax< 20mm

not more than 5% of the material shall be finer than 0.074 mm (200 mesh); the granulometric curve shall be comprised within the zone defined by grading G and H of Table A; the grading curve shall be continuous; Permeability K > 5 x 10 -
3 cm/sec; In-situ dry density: 90% ± 3% of maximum density Obtainable by the Standard AASHTO test.

Filter material may be obtained from crushing rock on Site, or, preferably, washed, sieved, natural sand from the nearby Areas where they are available; if mixed, particular attention shall be given to obtaining uniformity. Utmost care shall be taken to avoid mixing of materials along their limiting planes and any filter material contaminated by other material shall be removed in its entirety. The Contractor shall propose and test a method of placement, which avoids any penetration of adjacent materials. If each penetration exceeds the permitted maximum of 10 cm, the Engineer shall require the use of appropriate separators, which shall be removed after emplacement but before compaction of the material.

No. 100 grading tests, 10 Standard AASHTO, 10 permeability and 10 transmissibility tests shall be carried out by the Contractor for the purpose of determining suitability
of quarries or borrow pits, mixes, coarse and fine filters and for control purposes.

9. DRAINAGE

Materials for drains shall be sound clean rock or stone, Dmax 80 mm, Dmin 10 mm, with not more than 5% of the material smaller than 10 mm; maximum size of the material may be varied at the discretion of the Engineer. Drain material shall be placed using light compaction and ensuring that the drainage zone is filled entirely.

10. CONCRETE WORKS

10.1 All materials and workmanship for concrete shall comply with BS 8110 and BS
8007 where applicable.

10.2 Materials and Tests.

10.2.1 Cement

Cement shall be ordinary Portland cement complying with BS 12. The cement shall be delivered in properly sealed, unbroken bags.

Rapid hardening Portland cement complying with BS 12 may be used with the approval of the Engineer.

Quantities in excess of one ton shall be stored in a water-proof shed with a raised floor. The cement shall be used in the order in which it has been received.

Quantities of less than one tonne for early use may be stored on a raised floor and covered by water-proof tarpaulin.

Any cement damaged by water or proving defective shall be removed from the site immediately.

10.2.2. Aggregates for Concrete

The aggregates shall comply in all respects with the requirements of BS 882.

The aggregates shall be free from dust, decomposed material, clay, earthly matter, and foreign substances or friable, then or laminated material. The fine aggregate shall be of approved river sand.

Coarse and fine aggregates shall be stored on the sites in separate heaps so that no possibility of any intermixing of the two shall occur. Any materials, which have become intermixed, shall be removed by the Contractor forthwith.

A sample of all aggregates shall be delivered to the site for the approval of the Engineer, and it shall remain on the site until all concrete work is finished.

Should the Engineer so require, the Contractor shall furnish a certificate from an approved testing laboratory in connection with each source of fine and coarse aggregate showing that materials comply with the specification. All such testing shall be carried out at the Contractor's expenses.

10.2.3 Water

All water to be used for concrete, motor and curing shall be of good drinkable quality, free from humus acid, chemicals, salts or other matters that in any way whatsoever may be harmful to the concrete either by diminishing the strength or causing a discoloration of the concrete.

Generally, water from Public mains shall be used, but if this is not possible, the contractor shall obtain water from other sources approved by the Engineer. The Contractor may be requested to provide test analysis according to BS 3148 from an approved laboratory.

10.2.4 Admixture

Admixture of any kind of accelerating the setting of cement, plasticizers, water proofers, etc. shall not be used except by written permission of the Engineer. The Contractor must request supply all details of any admixture.

10.2.5 Concrete Mixture

Concrete shall be "Designed Mixes" for reinforced concrete and "Nominal Mixes for mass Concrete" to BS 8110 and used as shown on the drawings and in the Bills of Quantities. The concrete mixes, maximum aggregate sizes, maximum water/cement ratio and minimum cement content shall be in accordance with the following table.

Concrete Grade	Maximum size of Coarse Aggregate	Minimum Cement Content kg/m³	Maximum Water/Cement Ratio
10	40	210	0.5
15	40	250	0.5
20	20	350	0.5
25	14	390	0.5

10.2.11 Trial Mixes

The actual concrete mixes shall be determined prior to starting of concrete works according to BS 8110.

For each grade of concrete three separate batches shall be made using the actual aggregates

The workability of each of the trial batches should be determined and two times three cubes made from each batch for test at 7 days and 28 days.

The average strength of the nine cubes shall exceed the following values

Concrete grade	Minimum average of 9 cubes At 7 days	Minimum average of 9 cubes at 28 days
20	21 N/mm²	31.5N/mm^2
25	24.5N/mm²	311.5 N/mm^2

For the trial mixes the mix proportions shall be specified under clause 11.3 of BS 8110.

10.2.7. Testing of concrete shall comply with BS 8110

All test cubes shall be manufactured, cured and tested as detailed in BS 1881.

The Contractor shall provide at his own expense all the necessary labour, equipment, moulds, transport, etc., required for manufacture of the test cubes. All test cubes requested by the Engineer shall be tested by Ministry of Works, Materials Branch,
and the contractor shall allow in his rates for concrete for all costs in relation with the test cubes.

Should the Contractor require independent tests, he shall make them at his own expense, and the results of such tests shall not be valid unless test cubes are manufactured in the presence of the Engineer and tested by an approved agency and to the requirements in all details of the BS mentioned above.

Sufficient moulds and equipment shall be provided to enable a minimum of six test cubes to be prepared on each day when concrete is being mixed or such other number as the Engineer may direct. The Contractor shall be responsible for delivery of the test cubes to the Ministry of Works, materials Branch, or other approved testing laboratory.

The precise location of the concrete, which the test cubes represent and the time of
Placing, shall be noted on the drawings or elsewhere.

Where the concrete in the work is compacted by mechanical vibration, the test cubes shall be compacted by mechanical vibration, and where the concrete in the work is compacted by hand, the test cubes shall also be compacted by hand as specified in BS
1881.

The Engineer may in the Laboratory make test cubes for any purpose from site materials, and the contractor shall supply such materials as required free of charge.

The test cubes shall be store at the site of construction at a place free from vibration under damp sacks for 24 hours after which time they shall be removed from their moulds, marked and buried in damp sand or under water until the time for delivery to the testing laboratory.

The cubes shall then be placed in damp sand or another suitable damp material and sent to the testing laboratory, where they shall be similarly stored until the date of test. Test cubes shall be kept on the site for as long as practicable but for at least three- fourths of the period before testing, except for tests at ages less than seven days.

10.28 Standards for Acceptance of Cube Tests.

The results of all cubes shall be accepted by the contractor and Engineer as true results of the crushing strength of the cubes. The cube strength shall be calculated from the maximum load sustained by the cube at failure.

The appropriate strength required may be considered to be satisfied if the requirements in BS5328 : Part 4, clause 3.111, are fulfilled.

If the tests fail to give the required strength, further testing of the concrete shall be carried out. If these tests fail to prove the strength of the concrete used, the contractor shall at his own expense remove and replace all such concrete as directed by the Employer.

10.2.9 Slump Tests

Concrete consistency shall be determined by a test carried out in accordance with BS 1881 and at the Contractor's expense. Unless otherwise specified by the Engineer, the following are the slumps for the particular class of work.

	Compaction by vibrator	Compaction by hand
Reinforced concrete		30 to 110mm
Mass concrete	0 to 30 mm	30 to 80mm

Concrete having a slump test value exceeding the values here-in specified may be rejected by the Engineer.

10.2.10 Steel Reinforcement

Steel for reinforced concrete shall be store under cover clear of ground and shall comply with BS 4449, BS 44111 and BS 4483

All steel reinforcement shall be supplied by and approved manufacturer, and the Contractor may be required to obtain a manufacturer's test certificate in respect of steel reinforcement supplied. In the absence of such a test certificate, the Contractor may be required to submit samples to be tested at the Contractors expense in such a manner as the Engineer may determine.

10.3 Precast Concrete Units

Precast concrete shall be cast in properly made strong moulds true to the shape required. For work described "Finished Fair" the moulds shall be lined hardboard, sheet metal or other approved material.

The Concrete shall be thoroughly tamped in the moulds and shall not be removed from then until 7 days after placing the concrete, but the sides may be removed after 3 days, provided the moulds are such that the sides are easily removable without damaging the concrete.

The precast work shall be cast under sheds and shall remain under same for 7 days in the moulds and further 7 days after removal from the moulds. During the whole of this period the concrete shall be shielded by sacking or other approved materials kept wet. It shall then be removed from the sheds and stacked in the open for at least 7 days to season.

All precast work shall be cast in lengths convenient for handling unless otherwise described.

Prices are to include for handling reinforcement, hoisting, fixing and bedding in cement mortar, and for finishing exposed surface fair where described.

10.4 Workmanship

10.4.1. Inspection of Reinforcement and Formwork

No concreting shall commence until the reinforcement and formwork have been inspected and approved by the Engineer, Reinforcement in walls and columns shall be inspected and approved before being enclosed in the formwork. Before concreting
any part of the Work, the Contractor shall give at least 24 hours notice in writing to the Engineer and obtain his approval.

10.4.2 Mixing of Concrete

Concrete for grade 20 and grade 25 shall be mixed by weight batching only, unless approval has been obtained from the Engineer for the concrete materials to be mixed by volume. Concrete for grade 10 and 15 can be mixed by volume.

The weight of coarse and fine aggregates in each batch shall be so computed that each batch contains one or more full 50 kg bags of cement.

All concrete is to be mechanically mixed in a batch mixer of an approved type. The dry materials for concrete shall be mixed in the mixer until a uniform colour is obtained after which the gauged quantity of water shall be gradually added. After all the water has been added, the mixer shall continue to mix for a period of not less than two minutes.

The mixers shall be equipped with an adjustable device capable of supplying a predetermined amount of water.

On the completion of each mixed batch of concrete, the mixer drum shall be completely emptied before a fresh batch is placed therin. On the cessation of work,
the mixer add all handling plant shall be washed out and shall always be left clean and free from hardened concrete.

Any mix considered to be unsatisfactory by the Engineer for any reason, will be discharged to waste at the Contractor‟s expense, as and where directed by the Engineer, well clear of all mixed and placing operations in such a manner as to avoid the risk of defective concrete being incorporated in the Works.

The mixer shall be maintained in a first class condition throughout the Contract and any mixer or plant, which is faulty in any respect, shall not be used. The drums of all mixers shall revolve at the speed recommended by the makers. A mixer which has been out of use for more than 20 minutes shall be thoroughly cleaned out before any fresh concrete is mixed.

The Contractor shall always have one spare mixer ready on the site to avoid interruption in the mixing a casting of concrete.

10.4.3 Transport and Placing of Concrete

Concrete shall be transported in a manner which will avoid a segregation of the constituent material, and placing in the forms shall be completed before the concrete has taken its initial set. In no case shall concrete be place dint he Works more than 30 minutes after mixing. Concrete shall not be dropped through a height greater than
1.2m. Chutes may be used if they are constantly kept free from coatings of hardened concrete or other obstructions. Pumping of concrete through delivery pipes may be used, but only with the prior approval of the Engineer.

Concrete of any unit or section of the work shall be carried out in one continuous operation, and no interruption of the concreting will be allowed without the approval of the Engineer

The concrete shall be paced in layers as directed by the Engineer over the whole area to be concreted and the second layer shall not be commenced until the first is completed. Sloping beds will not be allowed when placing concrete. Should any accidental segregation occur, the affected area shall be thoroughly turned over by hand until a homogeneous mix has been obtained.

When concreting walls and columns, the mix proportions of the first 250mm depth of concrete placed in contact with the horizontal joint should be adjusted by reducing the amount of coarse aggregate.

10.4.4 Compaction

After the concrete has been placed in a position it shall be compacted by vibration with a rigid poker type with internal vibrator approved by the Engineer. The Concrete shall be worked well up against the form, joints and around the reinforcement and be free form voids and other imperfections. Under no circumstances shall the concrete be shifted or transported inside the form with vibrator.

The Contractor shall always have one spare vibrator ready on the site to avoid interruption in the mixing, casting and vibrating of concrete.

In the case of reinforced concrete, a competent steel fixer shall be in constant attendance during the placing of concrete to adjust and correct the position of the reinforcement, if so required, immediately before the concrete is placed. In no case shall the vibrators be attached to or be allowed to come into contact with the reinforcement.

Each freshly placed layer of concrete must be thoroughly compacted and worked into the preceding one but care shall be taken that no damage is done to previous work that has already set. Excessive compaction of concrete shall be avoided.

The upper surface of slabs shall be compacted cy an approved external vibrator.

10.4.5 Placing of Concrete under Water

Concrete shall only be placed under water with the prior approval of the Engineer who shall likewise approve the method to be used and the precautions necessary to prevent loss of material. In no circumstances shall concrete be dropped or placed in water in a loss condition or be placed in flowing water. In all cases the cement content shall be increased by 25 per cent for each class of concrete at the Contractor‟s Expense.

10.4.11 Placing of Concrete on Earth Surfaces

Earth surfaces on which concrete is to be placed shall be clean, firm and free from standing or flowing water. After the excavation has been completed to the approved lines levels and

10.4.7 Construction and Expansion Joints

The position and arrangement of construction and expansion joints shall be as shown on the drawings. Where additional joints are requested, the positions must be approved by the Engineer.

All construction joints shall be rebated to form a key with subsequent work. Concreting of any unit or section of the work shall be carried out in one continuous operation up to construction joints and no interruption of the concreting will be allowed without approval.

Where shown on the drawings construction and expansion joints shall be provided with water bars of P.V.C. or other approved material. The widths and shapes of the water bars shall be as specified on the drawings and all joints shall be sued. The trade mark of the water bars shall be approved by the Engineer before commencement of work, and fixing and jointing of water bars shall be approved by the Engineer before commencement of work, and fixing and jointing of water bars shall be approved by the Engineer before casting.

The fusing of water bars shall be performed in a way so as to secure that the two bars joined over the entire width. The fused joint shall be able to withstand tension and shall be intact after 10 consecutive bending. The Engineer may request that the fusing is carried out by specialists.

Where shown on the drawings, joints shall be provided with a joint sealing compound. The sealing compound shall be a two component polysulphide rubber sealing compound complying with BS 4254, and the trade mark shall be approved by the Engineer. The compound shall be placed in a chase made by a fillet strip in the formwork. The concrete shall be dry and suitable primer shall be applied to the joint before applying the sealant. The procedure for the workmanship shall be approved by the Engineer before commencement of work, but the contractor shall have the full responsibility for the water tightness of the joints.

It should be noted that the lower part of the concrete walls shall be cast together with the floor slab and no joint directly on the slab will be permitted.

Before depositing fresh concrete against concrete which has already set, the face of the latter shall be roughened to expose the coarse aggregate, all cement latency removed whilst the concrete is still green and the surface thoroughly wetted with water and cleared of foreign matter. Cement mortar grout mixed in the proportion of one part of cement to two parts of sand shall be spread to a thickness of 5 mm over the face of the set concrete before the fresh concrete is deposited.

10.4.8 Curing and Protection of Concrete

Curing shall begin as soon as the surface of the concrete has hardened sufficiently. All exposed concrete surfaces shall be cured for a period of seven days by covering them with a layer of sand, hessian canvas or other approved materials kept damp. Concrete shall be protected from sun, wind, heavy rains and flowing water for at least three days after placing.

10.4.9 Finishes of Horizontal Surfaces

Concrete surfaces for floors shall be true to level and falls as shown on the drawings. Water coming to the surface when vibrating shall be removed. After casting the surface shall be smoothened with a wooden flat. After some hours, when the surface has dried up, the surface shall be trowelled smooth with a steel trowel.

All other horizontal surfaces shall have the same surface finish except for the final trowelling with steel trowel.

10.4.10 Finishes of Vertical Surfaces

The shuttering for exposed concrete faces shall be so constructed that the latter shall be true to line and surface. The concrete shall be consolidated as specified against the shuttering to keep the face of the work free from honeycombing and other blemishes.

After removal of the shattering, no concrete surfaces shall be treated in any way until they have been inspected by the Engineer.

If upon removal of the shuttering, the line or surface of the work is, in the opinion of the Engineer, unsightly and not in accordance with the requirements of the Contract, the Contractor shall at his own expense cut out and make good such portions of the work as the Engineer directs.

Rendering over defective surfaces shall not be permitted. Areas of honeycombing shall with the approval of the Engineer be made good immediately upon removal of the shuttering, and isolated superficial air and water holes shall be filled. Care shall be taken not to leave mortar or cement on parts of the surface which have been cast smooth and without pores.

Unless otherwise instructed, the face of exposed concrete placed against shuttering shall after removal of the shuttering be rubbed down with a carborundum stone or in other approved manner to remove fins and other irregularities, and washed perfectly clean.

Concealed concrete faces shall be left as from the shuttering, except that surfaces with honeycombing shall be made good.

10.4.11 Accuracy of Finish

The arrangement of all formwork shall be made in such a way that all dimensions shall comply as exactly as possible with those given on the drawings. The following tolerances shall be respected:

Foundations	50mm
Position of columns and Walls	5mm
Thickness of walls	5mm
Lateral dimensions of columns	5mm
Level of slabs,	5mm
Slab thickness	5mm
Lateral dimension of beams	5mm
Plumb of columns and walls	3 mm in each
Window and door opening sizes 5 mm	5mm

Surfaces and edges must not show any noticeable warping. On a length of less than 10 m the deviation may be 10 mm at the most.

The Contractor shall be responsible for the cost of all corrective measures required by the Engineer to rectify work which is not constructed within the tolerance set out above.

10.4.12 Construction of Formwork.

All formwork shall be substantially and rigidly constructed of timber or steel or pre- cast concrete or other approved material and shall be true to the shape, line, level and dimensions shown on the Drawings.

Timber shall be well seasoned, free from loose knots and or Formwork of exposed concrete faces be planned to thickness. Faces in contact with concrete shall be free from adhering grout, projecting nails, splits, or other defects that will make the concrete surface. Formwork for foundations and other concealed work may be undresses or rough timber.

All joints shall be sufficiently tight to prevent leakage of cement grout and to avoid the formation of fins or other blemishes, and all faulty joints shall be caulked.

All formwork shall be thoroughly cleaned and coated with an approved type of oil before it is fixed in position. Immediately before concreting the formwork shall be watered thoroughly and washed out to remove sawdust, shav or other rubbish. Where the appearance of the concrete face is important, the position and direction of the joints shall be as directed.

Fillet strips shall be fixed in the formwork to form a chamfer 20 mm by 20 mm on all external corners of the concrete.

Openings for inspection of the inside of the formwork for walls, beams and similar work and for the escape of wash water shall be formed in such a way that they can be conveniently closed before starting to place the concrete.

Connections between formwork elements shall be constructed to allow for easy removal of the formwork, and shall be either nailed, screwed, bolted, clamped, braced or otherwise fixed securing a sufficient strength to retain the correct shape and line during compaction of the concrete.

Bracing members placed in the formwork to keep two sides of formwork in exact position shall be approved by the Engineer. Holes in the concrete after bracing arrangement shall be made good by plugging with approved material.

Top Formwork shall be provided to concrete faces where the slope exceeds 1 vertical to 2½ horizontal. Such formwork shall be counterweighed or otherwise anchored against floating.

The formwork shall be so designed that the formwork for soffits of slabs and for sides of beams, columns and walls may be removed first leaving the formwork for the soffits of beams and their supports in position. Wedging or other suitable ways of

adjustment shall be provided to allow accurate adjustments of the formwork and to allow a gradual removal of the same without jarring the concrete.

On demand the Contractor shall provide such drawings and calculations as necessary for determination of the structural strength of the formwork. The Engineer‟s approval of such drawings and calculations will not relieve the Contractor of his
responsibilities under the Contract.

Formwork shall be erected true to line and braced and strutted to prevent deformation under the weight and pressure of the wet concrete, soffits shall be erected with an upward camber as shown on the Drawings or as directed by the Engineer or of 2 mm for each 1 m of horizontal span.

Re-propping of beams will not be approved except when props are reinstated to relieve the beams of loads in excess of the design load. Vertical props shall be supported on folding wedges on sole-plates, or other measures shall be taken whereby the props can be gently lowered vertically when commencing to remove the
formwork.

If, in the opinion of the Engineer, the formwork is faulty, inadequate or does not comply with the specifications, then the Contractor shall at his own cost modify the formwork until it meets the approval of the Engineer.

10.4.13 Mould Oil

All faces of formwork that will come in contact with wet concrete shall be treated with approved mould oil or other coating to prevent adherence to the concrete. Such coatings shall be insoluble in water, non-staining, nor injurious to the concrete, shall not become flaky and shall not be removable by rain or wash-water. Liquids that retard the setting of cement shall only be applied to the shuttering when applied to the shuttering when approved. Mould oils and similar coatings shall be kept free from contact with the reinforcement.

10.4.14 Holes for Pipes, Cast-in Items etc., General

The Contractor shall be responsible for the co-ordination with the SubContractors for the setting out and fixing of all pipes and holes, pockets and chases for pipes. Sleeves provided by the sub-contractors are to be accurately set out and cast in and cutting away in completed concrete work is to be minimized.

Details of all holes etc. required in a structural work for services must be submitted to the Engineer who will assess the necessity for extra trimming reinforcement.

No openings, holes, chases, etc., are to be formed in the concrete without the approval of the Engineer and details of fixtures or fixings to be cast in must be approved.

10.4.15 Pipes through Water Retaining Walls

Pipes passing through water retaining walls and floors shall, wherever possible, be built into the structure in-situ. Shuttering shall be formed closely to the outside of the pipe, and concrete shall be placed and compacted thoroughly round the pipe.

Pipes, bolts or other steel items cast into the concrete in water retaining structures must not in a

When not possible to build in place, pipes shall pass through preformed holes. Holes shall be formed with formwork which shall be stripped cleanly and without shock to the concrete. As soon as the shuttering is stripped, the hole shall be thoroughly wire brushed to expose the aggregate. The hole shall be as neat as possible to allow the pipe to be passed through the wall, while the corners shall be chamfered or rounded.

The pipe shall be set and the hole filled up as soon as possible. Immediately before filling, the hole shall be continuously soaked so as jto saturate the concrete, and the surface coated with a stiff mix of 1:1 sand grout. Shutters shall be fixed true to the faces of the wall, and a stiff mix of concrete packed in until the hold is completely filled, particular care to be taken to ensure that the spaces beneath the invert of the pipe and beneath the slopping soffit of the hole are completely filled. Shuttering shall be stripped as soon as possible and the filling rubbed smooth. The filling and the surrounding concrete shall be kept wet for 7 days after filling.

10.4.111 Removal of Formwork

Formwork shall be left in position until the concrete has attained sufficient strength to be self-supporting. The Contractor shall be responsible for the safe removal of the formwork without shock or vibration – which would damage the concrete.

Any work showing sign of damage through premature removal of formwork or though premature loading shall be entirely reconstructed at the Contractor's expense. The Engineer may delay the time of removal of formwork if necessary. Subject to the above, the minimum period for removal of formwork shall generally be as follows:

Slabs	Soffits (props left under	7 days
) " "	Props	21 days
Beams	Sides	3 days
" "	Soffits	21 days
Walls and Columns	s (unloaded)	2day

When formwork is removed after 3 days, it will be necessary o ensure that the exposed surfaces of the concrete are kept thoroughly wet for the period of curing.

10.4.17 Reinforcement

All bending, cutting and fixing to comply with BS 8110 and BS 441111. Normally Bending schedules are incorporated into the Contract Drawings, but the Contractor shall satisfy himself about their accuracy and about their complete coverage of the

work involved. Any omission, inaccuracy or other errors observed by the Contractor shall be reported to the Engineer before commencement of the work.

In case of errors in Bending Schedules, no extra payment will be approved, provided the reinforcement is shown correctly on the Contract Drawings.

The number, size, shape and position of all the reinforcement shall, unless otherwise directed or permitted by the Engineer, be strictly in accordance with the drawings.

Bars shall be of the shown lengths, and lapping, except where indicated on the Drawings, is not permitted unless approved by the Engineer.

Spacing between bars shall not differ more than 5 mm from the required spacing. Any inaccuracy in the total length of a bar as cut shall be compensated for in the end hooks or other approved parts of the bar.

The internal radius of a bend shall neither be less than allowed by BS 441111 nor less the radius given in the Bending Schedule. The steel reinforcement shall be assembled and fixed in the form of a rigid case. To prevent displacement before or during concreting the bars shall be secured one to the other with approved binding wire at each intersection. In slabs and walls binding at every second intersection is sufficient.

Concrete cover blocks (mix 1:3) shall unless otherwise directed be used between the reinforcement, the bottoms and sides of the forms to ensure the specified concrete cover to the bars. Variations of cover shall be kept within plus/minus 3 mm from the specified cover.

The minimum clear horizontal distance between adjacent bars shall be of 25 mm or the diameter of the bars whichever is the biggest, and 25 mm vertically. Space bars shall be inserted at such intervals that the bars so not perceptibly sag. Projecting bars shall be adequately protected against displacement both during and after concreting.

At the time of fixing and when concrete is being placed, all reinforcement shall be free from oil, painting, grease, dust and scale or any other coating which would destroy and bond with the concrete. The Contractor must obtain the Engineer's approval of the reinforcement when places, before any concreting is commenced.

11.0 MASONRY AND BLOCKWORK

11.1 General

All masonry work shall be constructed from building stone or approved concrete blockwork for walls, facing and other exposed works the stone shall, unless otherwise specified, be medium chisel-dressed.

11.2 Workmanship

All masonry work is to be constructed in compliance with BS 5.
The Contractor shall provide and use proper setting-out rods for all work.
Stones and blocks shall be well soaked before use and the tops of walls shall be kept wet as the work proceeds. The stones and blocks shall be properly bonded so that no vertical joint in a course is within 115mm of a joint in the previous course. Alternate

courses of walling at angles and intersections shall be carried through the full thickness of the adjoining walls. All perpends, reveals and other angles of the walling shall be built strictly true and square.
The stones and blocks shall be bedded, jointed and pointed in mortar (1:3) with beds and joints 9mm thick flushed up and grouted solid as the work proceeds.

11.2 Cement

Cement used for making mortar shall be as described in the Engineering specifications for “Materials”.

11.3 Lime

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

11.3 Sand

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

11.4 Water

Shall be as described in "Concrete Work"
.

11.5 Concrete Blocks

Concrete blocks shall comply with the requirements of BS 2028, 1384 except where amended or extended by the following clause. Blocks shall have square arises and corners. For fairfaced work damage to arises and corners shall not exceed the removal of 11 mm of the blocks depth or thickness.
Concrete blocks shall have a minimum crushing strength of 3.5 N/mm2 except when below the damp course level or in contact with soil when they shall have a minimum crushing strength of 7 N/mm2, unless noted otherwise on drawings. Hollow concrete blocks shall not be used below the damp course level or in contact with soil.
Concrete blocks used for external walls shall be Class 'A' and for internal load bearing walls they shall be at least Class `B'. Class `C' blocks shall only be used for non-load bearing partitions.
No precast blocks shall be incorporated into the works unless approved by the Engineer. The delivery of present blocks from which samples tested do not comply with this specification shall be deemed defective. Any work constructed with blocks

from which samples tested do not comply with this specification shall be deemed to be defective.
From every 1,000 precast concrete blocks delivered to site ten blocks samples shall be provided for testing. The precast block samples shall be selected in accordance with BS 2028, 13114. Samples of precast concrete blocks for testing shall be tested for the following properties in accordance with the methods given in BS 2028, 13114 and the test results shall comply with the requirements of BS 2018, 13114 except where amended by this specification:-
(a) Drying shrinkage (b) Compressive strength or transverse breaking load (as applicable) (c) Wetting expansion * (d) Density (e) Dimensional Tolerance (f) Cavity size
*Test only applicable for concrete blocks made with clinker aggregate.
Blocks shall also be tested to determine the suction rate. The test shall consist of weighing the block, placing in a tray of water such that only 3 mm of the block side is immersed for a period of sixty seconds +/- 2 seconds; quickly wiping off excess water and reweighing. The suction rate is the increase in weight due to water absorbed and shall not exceed 2kg/m2/minute. Blocks which have a suction rate exceeding
2kg/m2/minute may be used if the Contractor uses an approved water reactive additive in the mortar or can show that the blocks are wetted such that the blocks will have a suction rate not exceeding 2kg/m2/minute for a period of 24 hours from being laid and provided the blocks comply with all other requirements.
Concrete blocks shall be stacked on prepared dry areas free of clinker, ashes and sulphate bearing strata. Blocks of different strengths shall be stacked separately and clearly marked to differentiate the strengths.
Blocks shall not be used for a minimum of 7 days after manufacture and shall not be loaded for at least 14 days after laying. For the first 7 days after manufacture, blocks shall be cured by maintaining in a damp condition, e.g. covering with polythene sheeting after wetting blocks.

11.11 Stone

All stone shall comply with the requirements of CP 121.202 for masonry and rubble walls respectively except where amended or extended by the following clauses. Unless otherwise noted, all masonry walls shall be coursed squared rubble walling with mortar joints.
The size of stones for rubble walling shall be such that the length of stone does not exceed three times its height. For coursed squared rubble walls blocks shall not exceed 300 mm in height and shall be not less than 150 mm in height.
Where snecked rubble walls are specified, the snecks shall not be less than 100 mm square on the exposed face.
Stone for masonry shall have a minimum compressive strength of 10 N/mm2. (Stone shall not be required to be tested to failure). The density of stone for masonry shall be not less than 2300 kg/m3. The drying shrinkage of stone shall not exceed 0.05% Samples of stone provided for testing shall be tested for the following in accordance with the methods given in BS 2028, 13114 and the test results shall comply with the requirements of this specification.
(a) Compressive strength (b) Density (c) Drying shrinkage
The colour and texture of stone shall be uniform and consistent. Prior to delivering any stone to site, the Contractor shall supply the Engineer with a sample of stone in order that he may approve the colour and texture. The Contractor shall ensure that

sufficient suitable stone is available for the whole of the project prior to ordering the stone.
Where cast stone including stone described as artificial stone, reconstructed stone, etc., is specified the stone shall comply with the requirements of BS 1217. Masonry shall be of stone, having no irregular faces and only the back face if not visible shall be left as from the saw.
Prior to ordering dry stone the Contractor shall demonstrate that the stone is durable. This may be done by supplying details of buildings constructed with stone from the same quarry and which has been exposed to the same environmental condition for at least ten years.
The maximum projection from the face of stone for rubble walls shall be 20 mm beyond the specified face of the wall.
The Contractor shall provide six samples of stone measuring 150 mm x 150 mm for testing prior to delivering any stone to site. As work proceeds the Contractor shall provide six samples 150 x 150 x 150 mm for testing from every 300 m2 of work.
All stone shall be stacked on prepared dry areas free of clinker, ashes and sulphate bearing strata.

11.7 Wall Reinforcement

100mm Thick walls and where described other walls and partitions shall be reinforced with a 25 mm wide strip of No. 20 S.W.G. hoop iron built into alternate horizontal joints in the wall centre. The reinforcement shall be lapped and hooked at running joints, angles and intersections and carried at least 115 mm into abutting walls at junctions.
5.8 Cement Mortar
Mortar described as cement mortar 1:4 shall be composed of 1 cubic metre (1498 Kgs.) of Portland cement and 4 cubic metres of sand. Other mixes such as 1:3, 1:5 etc. shall be similarly construed.

11.9 Mixing of Mortar

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

11.10 General Construction

(a) Setting out The Contractor shall provide proper setting out rods and set out all work on same for course, openings, heights etc., and shall build the walls, piers etc., to the widths, depths and heights indicated on the Drawings and as directed by the Engineer.
(b) Building in Wood Frames Openings for doors, ventilators etc., are to be set out and left unbuilt until the wooden frames have been fixed in position.
(c) Building in Metal Windows and Doors Openings for metal frames are to be wide enough for the frames to fit without being forced into position. Build the lugs into the joints of the walling and fill in the space between the walling and frame with cement mortar well tamped into the channel of the frames and point all round externally.
All frames must be set plum and level and free from twist.

(d) Walls to Receive Plaster & Similar Finishes All faces of walls to be plastered etc., to have all projections dressed off and joints raked out as key.

11.11 Building Walling

(a) Laying and Jointing All blocks shall be well wetted before being laid and the top of walling where left off shall be well wetted before commencing building. Walls to be kept wet three days after building. All walls throughout the works shall be carried up evenly in 200 mm courses except where courses of less depth are required to bring walling up to level of floors, windows and the like and where otherwise described, no part being allowed to be carried up more than one metre higher at one time than any other part and in such cases the joining shall be made in long steps so as to prevent cracks arising and all walls shall be levelled round at each stage. Not more than 3 metre height of wall shall be laid in any one day.
(b) Bonding the blocks shall be properly bonded together and in such manner that no vertical joint in any one course shall be within 115 mm of a similar joint in the courses immediately above or below. All walling of 300 mm thickness or less shall be built in single thickness of blocks. Walling exceeding 300 mm in thickness shall
be built with through bonders not more than 1070 mm apart in each course as directed by the Engineer. Alternate courses of walling at all angles and intersections shall be carried through the full thickness of the adjoining wall. All perpends, reveals and other angles of the walling shall be built strictly true and square.
(c) Tolerances All courses of walls shall be level with a maximum deviation of +/- 3 mm in any one metre length and a maximum overall deviation of 10 mm for lengths of wall exceeding 3 metres. Walls shall be plumb with a maximum deviation of +/- 3 mm in any metre height of wall with a maximum deviation of +/- 10 mm in the total height of the wall or any storey.
All corners of walls which are shown as being at right angles shall be square with a maximum deviation of 3 in 1000. All walls shall be straight with a maximum deviation of +/- 3 mm in any one metre length and a maximum overall deviation of 10 mm in any length exceeding 3 metres. All bed and vertical joints shall be an average of 10 mm thick with a maximum deviation of +/- 3 mm of blockwork, and stone rubble walls. Joints for stone masonry walls shall be 11 mm +/- 1 mm thick.
(d) Curing
All walls shall be maintained in a damp condition for at least 24 hours after laying. Walls under construction shall be dampened by applying water with a brush and no hosing directly on to the wall shall be permitted. When work ceases on any section of wall polythene or hessian shall be draped over the wall, for at least 24 hours. If hessian is used, it shall be maintained continuously wet.
(e) Backfilling
Earth backfilling against walls shall be carried out such that the level of the backfill is always equal on each side of the wall.
When a wall has filling material on one side only to a fill width of more than three times the wall thickness, the wall shall be continuously supported during backfilling. Backfilling shall not be carried out until at least seven days have elapsed since the laying of the blocks or stone.

11.12 Reinforced Walls

Steel reinforcing bars in walls shall be carefully placed and spacers used to ensure that a minimum of 20 mm cover is given to the reinforcement unless otherwise specified. Horizontal reinforcement in mortar joints shall be laid such that the reinforcement is not in contact with the blocks or stone.

11.13 Wall Ties

Wall ties shall be provided to connect walls to steel or concrete columns and beams to connect two unbounded leaves of wall.
Wall ties shall be provided at 450 mm centres both vertically and 900 mm centres horizontally and shall be staggered when used to connect two leaves of unbonded wall. Wall ties shall be embedded into each material by a minimum of 50 mm.

11.14 Fair Face

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

11.15 Pointing

Pointing of walls shall be carried out as the work proceeds wherever possible. When coloured mortar is specified for pointing only the pointing shall be carried out after work has been completed.
Existing walls shall be prepared for pointing by raking out all loose friable material to a minimum depth of 15 mm to form a square recess. The joints shall then be wetted and new mortar shall be forced into the joints and finished as directed.

11.16 Holes, Cutting and Chasing

(a) All putlog holes shall be not less than one course deep and carefully filled with a block cut to fit size of opening with beds and joints filled with mortar well tamped in after scaffolding is removed, and if in faced walls to match facing.
(b) Where walling is cut, holed or chased for conduits, pipes and the like all such cuttings etc., shall be filled in solid with cement mortar (1:4) prior to the application of finishes.

12.0 FINISHINGS

12.1 Samples

The Contractor shall prepare at his own cost sample areas of the paving, plastering and rendering as directed until the quality, texture and finish required is obtained and approved by the Engineer after which all work executed shall conform with the respective approved samples.

12.2 Finished thicknesses

The thicknesses of floor finishes quoted in this section of the specification shall be the minimum requirements.
The finished floor surface will equally have a constant level and any adjustment needed to achieve this effect with the varying floor finish materials is to be made in the screeds beneath the same.

Slabs bearing on the ground may be cast to varying levels, and be of constant thickness with varying formation levels, or have varying thicknesses at the option of the Contractor. This stipulation in no way relieves the Contractor of the requirements of the specification for structural work.

12.3 Materials generally

All materials shall be of high quality, obtained from manufacturer's to be approved by the Engineer. Cement, sand and water shall be as described under Concrete Work and Blockwork.

12.4 Bonding

Bonding compounds, etc., for use in applying plaster and similar finishes direct to surfaces without the use of backings or screeds are only to be used if approved by the Engineer and are to be used strictly in accordance with the manufacturer's printed instructions.

12.5 Chases, openings and holes

All chases, holes and the like which were not formed in the concrete or walling shall be cut, and all service pipes shall be fixed and all holes and chases filled with mortar before paving and plaster work is commenced. In no circumstances will the Contractor be permitted to cut chases, holes and the like in finished paving or plasterwork.

12.6 In situ finishing

12.6.1 General

The term plastering refers to the operation internally and rendering to the same operation externally but for ease of reference the term plastering has generally been used in this specification to describe both operations.

12.6.2 Mixes

The methods of measuring and mixing plaster shall be as laid down under Concrete Work and the proportions and minimum thickness of finished plaster shall be in accordance with drawing or bill of quantities. The following:-

To obtain greater plasticity a small quantity of lime may be added to the mixes for external plastering at the Engineer's discretion but in any case this is not to exceed
1/4 part lime to 1 part cement.
With regard to the lime mortars gauged with cement, the addition just before use, of the cement to small quantities of the lime/sand mix shall preferably take place in a mechanical mixer and mixing shall continue for such time as will ensure uniform distribution of materials and uniform colour and consistency.
It is important to note that the quantity of water used shall be carefully controlled. Plaster may be mixed either in a mechanical mixing machine or by hand.
Hand mixed plaster shall first be mixed in the dry state being turned over at least three times. The required amount of water should then be added and the mix again turned over three times or until such time as the mass is uniform in colour and homogeneous.

The plaster shall be completely used within thirty minutes of mixing and hardened plaster shall not be remixed but removed from the site.

12.6.3 Preparation of surfaces for plaster etc.

Irregularities in the surfaces to be plastered or rendered shall be filled with mortar, without lime, twenty four hours before plastering is commenced. Joints in blockwork, etc., are to be well raked out before plastering to form a good key. Smooth concrete surfaces to be plastered shall be treated with an approved proprietary bonding agent or hacked to provide an adequate key for the plaster.
All surfaces to be plastered or rendered shall be clean and free from dust, loose mortar and all traces of salts.
All surfaces shall be thoroughly sprayed with water and all free water allowed to disappear before plaster is applied.
As far as practical, plastering shall not be commenced until all mechanical and electrical services, conduits, pipes and fixtures have been installed.
Before plastering is commenced all junctions between differing materials shall be reinforced. This shall apply where walls join columns and beams, particularly where flush, and similar situations where cracks are likely to develop and as directed by the Engineer. The reinforcement shall consist of a strip of galvanised wire mesh
'Expamet' or equal approved 15 cm wide which shall be plugged, nailed or stapled as required at intervals not exceeding 45 mm at both edges. The surfaces to which such mesh shall be applied shall be painted with one coat bituminous paint prior to fixing the mesh.

12.6.4 Application of plaster and render

After preparation of the surfaces a key coat of cement slurry shall be applied to the wetted surface to be plastered. When this coat is dry the plaster coat shall be applied, by means of a trowel, between screeds laid, ruled and plumbed as necessary. This coat which shall be to the required thickness shall be allowed to dry and then cured as described. Surfaces are to be finished with a wood or steel float to a smooth flat surface free from all marks.
All plastering and rendering shall be executed in a neat workmanlike manner. All faces except circular work shall be true and flat and angles shall be straight and level or plumb. Plastering shall be neatly made good around pipes or fittings. Angles shall be rounded to 11 mm radius.
All tools, implements, vessels and surfaces shall be at all times kept scrupulously clean and strict precautions shall be taken to prevent the plaster or other materials from being contaminated by pieces of partially set material which would tend to retard or accelerate the setting time.

12.6.5 Curing of plaster

Each coat of plaster is to be maintained in a moist condition for at least three days after it has developed enough strength not to be damaged by water.

12.6.11 Angle beads

Where required by the Engineer, salient external angles of plastered walls shall be protected with galvanized mild steel angle beads complying with BS 12411 Fig. 7
Profile C3.
They shall be securely plugged, nailed or stapled as required at intervals not exceeding 450 mm at both edges.

12.6.7 Plaster stops

Where shown on details, plasterwork shall be stopped against "Expamet" galvanized steel plaster stop, reference 5115 which shall be securely nailed to walls in the positions indicated on the drawings.

12.6.8 Cement and sand screeds
Cement screed shall consist of cement and sand mix 1:2 laid in panels and finished with a steel trowel if not otherwise specified.

Where specified as waterproof "Puddlo" or similar waterproofing compound shall be added to the cement paving or screed strictly in accordance with the Manufacturer's instructions.

Where practicable, screed is to be laid while the concrete is still green. When this is not practicable, the concrete is to be well washed and brushed perfectly clean with a steel wire brush, to remove laitance and to give a roughened face as a key and then kept wet for at least seven days before the screed is laid. On the day of laying the surface is to be only damp with all surplus water removed and has to be painted with cement and sand mix 1:1 grout immediately before commencing laying of the screed. The grout is to be applied continuously in front of the screed, and not in large areas that will dry out before the screed is applied.

Screed shall be protected during the first stage of hardening from the harmful effects of sunshine, drying winds, rain or water. In exposed positions, the screed shall be covered with a well wetted layer of sawdust, hessian or other approved material, and this layer shall be damp for at least seven days, during which period no traffic is to be allowed over the screed.
Screeds shall be mixed and formed as described.

13. PIPEWORK General

All pipes, couplings gaskets lubricants seals, coupling machinery etc; necessary for the proper construction of the pipe work as detailed in the Bill of Quantities and drawings shall be supplied by the contractor.

The contractor shall be responsible for ensuring that the pipes, couplings and other fittings laid or installed on each section of the work are of the standard and pressure classifications specified as appropriate to the circumstances, and are manufactured of the specified materials.

The Engineer reserves his right to refuse any materials that in his opinion is inferior.

The Engineer has the right to test any material upon delivery and materials found defective shall be replaced forthwith by the contractor.

If the contractor procures materials of different specifications in respect of flanges and threads etc, he shall at his own cost provide all adaptors and other fittings necessary to make connections to the satisfaction of the Engineer.

All materials shall be marked as specified in the relevant current British or ISO standards for easy identification.

13.1 Handling and Storing of Pipes and Fittings

The method of transportation, handling and storing of pipes and fittings shall be in accordance with the manufacturer's recommendations.

Pipes valves and other fittings shall be handled, moved, lifted or lowered with the least possible impact. Handling equipment shall be of approved type. In slinging pipes, only flat slings shall be used and the use of chain slings hooks or other devices working on scissors or grab principles shall not be permitted. Pipes shall be slung from two or more points as the Engineer may direct and the slinging, lifting and lowering shall be in the hands of a competent and experienced man.

Pipes storage shall be supported clear of the ground on approved supports adequately braced to prevent rolling. They shall not be stacked more than four tiers high without the approval of the Engineer. Materials of different classification shall be stored separately. All pipes and associated materials shall at all times be protected from sun and dirt to the satisfaction of the Engineer.

No valves shall be lifted by the spindle. Valves and other fittings shall not be stacked more than one tier high without the permission of the Engineer and they shall not be stored in a dirty place or condition.

Shortly before laying or fixing any valve, pipes or fitting the contractor shall in the presence of the Engineer or his representative carefully examine each valve, pipe and fitting to ascertain damage or defect occasioned to the valves, pipes and fittings during loading, unloading, handling, storage and transportation. All damage and all
defects revealed by this examination shall be repaired and remedied by the contractor.

13.2 Laying and Jointing of Pipes

All laying and jointing of pipes except jointing of PVC and polythene pipes shall be in conformity with BS 13700 and BS 8010.

The bottom of the trench or surface of the bed shall be finished to a smooth even surface at the correct level to permit the barrel of the pipe to rest on the surface throughout its whole length between joint and sling holes. If considered necessary by the Engineer, fine-screened material shall be placed and consolidated in the trench bottom to provide such a bed. In general the preparation of the trench bottom and bed shall be completed for a length of one pipe in advance of the pipe-laying.

The bottom of the trench and pipe bed shall be inspected by the Engineer, and only when passed as satisfactory shall pipe-laying commence.

Each pipe shall be laid accurately to line, level and gradient so that, except where otherwise directed, the finished pipeline shall be in a straight line both in horizontal and vertical plans. The levels and gradients shown on the drawings shall be rigidly adhered to unless otherwise ordered by the Engineer.

Notwithstanding any flexibility provided in pipe joints, pipes must be securely positioned to prevent movement during and after the making of a joint. On screw and socket joints, threads shall be coated with an approved tape to ensure water tightness. The contractor shall take care that all pipes and couplings are clean and free of foreign matter before subsequent sections are jointed.

The contractor shall obtain from the manufacturer or other approved supplier the necessary tackle required for the proper jointing of the pipes. The contractor shall make himself and his employers acquainted with and comply with instructions issued by the manufacturers of the various types of proprietary joints and couplings for incorporation on the works. The contractor shall be responsible for obtaining copies of such instructions.

No person shall be employed on the jointing of pipes that is not thoroughly experienced and skilled in the particular work in hand.

Pipes shall not be cut without the permission of the Engineer. The cut shall be made with an approved mechanical pipe cutter and the edges of the cut shall be clean, true and square. Threading of steel pipes shall be done with an approved device.

Subject to the permission of the Engineer, pipes shall be covered over with approved fill material upon successful completion of laying and jointing. Joints shall be left exposed until completion of the test. The fill for surrounding and cushioning shall consist of uniformly readily compatible material free from tree roots, vegetable matter, building rubbish and excluding clay lumps retained on 75 mm sieve and stone retained on a 25 mm sieve.

The materials for bedding shall, where ordered, consist of suitable selected materials obtained from the excavations or from approved borrow pits and transported to the location where they are required. Upon successful completion of the pressure test the pipeline shall be back-filled as specified.

The contractor shall provide concrete indicator posts at every place where the change in class of pipe occurs with engraved marking on the post indicating class of pipe and direction.

The rate for pipework shall include for supplying, storing, handling, laying and jointing of pipes and is measured in linear metres. The rates shall also include for leveling of the trench bottom, compacting the foundation, and embedding the pipe together with the materials used for bedding all to the satisfaction of the Engineer.

13.3 Valves and Fittings

Unless otherwise directed all valves and other fittings and specials shall be individually supported and their weight shall not be borne by the pipeline joints or couplings etc. All supports for valves and fittings shall be of concrete grade 20.

Air valves shall be installed at high points in the pipeline as shown on the drawings. Before the valves are installed all the air nozzles shall be probed to see that they are clear. No air valves shall be stored before erection in the open in sunlight, or upside down to expose the balls and air cavities.

Scour valves shall be installed at low points in the pipelines as shown on the drawings. The contractor shall be in agreement with the Engineer on the exact position of scour valves in particular situations. Scour valves shall, where possible, discharge in the direction of natural drainage and at such a distance from the works as to preclude erosional effects.

Unless otherwise directed the controlling valve for a scour shall be installed not more than 1.5m from the main pipeline.

Ends of all scours shall be protected from intrusion of animals and other foreign matter by suitable screening securely fixed to the pipe end.

Valve penstocks and other fittings shall be securely fixed and where required extension spindles and headstocks shall be properly aligned and fixed in a vertical position unless otherwise directed.

Before each valve is put into service all gears bearings and spindles shall be oiled with approved oil as recommended by the valve manufacturers. All valves, fittings specials shall be fixed with proper sealing tape, gaskets, washers etc as necessary to the satisfaction of the Engineer. The valves shall be with non-rising spindle and shall if not otherwise stated be supplied with hand wheels.

The rates in the Bill of Quantities shall cover for the supply, storing, handling, installation and jointing, together with all bolts, washers, gaskets and lubricants, painting of all fittings with 2 coats of approved oil paints etc.

13.4 Flanges

Where flanged joints are used flanges shall be in accordance with the requirements of BS 4504: Part 1 or BS 4772. Where crewed joints are used, thread shall comply with BS 21.

The minimum pressure rating shall be for a working pressure of 1.0 N/mm2 (approximately 100 metres head) corresponding to NP 10 flanges. The hydraulic test pressure shall not exceed 1.13 N/mm2. Flanges in pipelines with higher-pressure rating shall be for the ratings specified in the Bill of Quantities.

Bolts nuts and washers shall comply with the requirements of BS 4190 and BS 4320. Gaskets shall fulfill the requirements of BS 2494 and shall have a minimum thickness of 2mm. The names of manufacturers and specifications of the products offered shall be provided at the time of tender.

13.5 Ductile Iron

Ductile iron pipes and fittings shall comply with BS 4772 or ISO 2531. The pressure rating of the pipes shall be for a minimum working pressure of 2.5 N/mm2. Care should be taken when testing, not to exceed the permissible test pressure for the fittings installed.

Joints shall be either “Viking Johnson” or flanged joints as specified in the drawings and the bill of quantities.

Before any other joint is used written approval of the Engineer must be obtained. Pipes and fittings shall be coated inside and outside with a hot material complying with the requirements of BS 41134 or with cold applied material complying with BS
34113 type II material.

13.6 Grey Iron or Cast-Iron

Grey iron or cast iron pipes and fittings shall comply with BS 41322 or ISO/R13. The pressure rating of the pipes shall be for a minimum working pressure of 1.0 N/mm2 (approximately 100 metres head) and a hydraulic test pressure of 1.13N/mm2.

Joints, internal and external coatings to be as specified in clause 505, Ductile Iron.

13.7 Steel

Steel pipes and fittings shall comply with BS 534, BS 1387 or BS 361.Pipes complying with BS 1387 shall be of "Medium" or "Heavy" classes as specified in the Bills of Quantities and Drawings.

13.8 Unplasticised Polyvinyl Chloride Pipes

All uPVC pipes and fittings shall comply with KS ISO 1452-2:2009,

Pipes indicated with a pressure class shall conform to the following minimum working pressures:

PN 6 – 0.6 N/mm2

PN 8 – 0.8 N/mm2

PN 10 – 1.0 N/mm2

PN 12.5 – 1.25 N/mm2

PN 16 – 1.60 N/mm2

All fittings shall be of pressure class “PN 113” and be manufactured of cast iron, PVC or steel. Joints to be plain sockets for gluing with solvent cement for nominal sizes equal to or smaller than – 50mm and mechanical joints (Rubber ring) for nominal
sizes equal to or bigger than – 90 mm.

For both types of joints the manufacturer’s jointing instructions must be strictly adhered to. PVC pipes and fittings shall be stored under cover, which fully protects the material from sunlight.

13.9 Precast Concrete

Precast concrete pipes and fittings shall comply with BS 5513: Part 2.

Minimum crushing test loads shall be as specified in Table 2, standard pipes. The laying and jointing of the pipes shall comply with BS 8301.

The contractor shall adopt such measure as may be approved by the Engineer to ensure that every newly laid pipe is concentric with previously laid pipes with which it joins.

Unless otherwise approved by the Engineer pipes shall be laid in an upstream direction and the socket ends shall point upstream.

13.10 Protection of Pipes

The concrete used for bedding, haunching and surrounding the pipes shall be concrete "Grade 10" unless otherwise ordered by the engineer. The concrete protection shall have total dimensions not less than given below:

(i) Bedding concrete shall have a width of at least 300mm bigger than the external diameter of the pipe and shall support at least the bottom quarter of the pipe circumference. It shall have a minimum depth of 150 mm measured under the pipe throughout.

(ii) Bedding and hunching shall comprise a concrete bed with a minimum width of 300 mm more than the external diameter of the pipe and a minimum thickness of 150 mm below the pipe, and haunching with a minimum thickness of 150 mm on both sides of the pipe. The top of the hunching is to be flush with the top of the pipe.

(iii) Surrounding concrete shall comprise a concrete be as described above together with 150 mm concrete on both sides and on top of the pipe, giving a pipe protection of at least 150 mm concrete everywhere around the pipe.

Concreting of bedding, haunching or surround shall not be done until the pipes have been jointed, inspected and tested.

PVC pipes shall be protected with polythene or roofing felt wrapping before concreting.

13.11 Testing of Pressure Mains

Pressure pipelines (together with all fittings and valves incorporated in the mains) shall, before being covered, be tested with water as specified in BS 13700.

At least two days notice must be given in writing to the Engineer before pressure testing is commenced.

13.12 Water Pressure Test

The water test pressure to be applied will be 1.5 times the nominal working pressure for the class of pipe being tested. The Engineer, however, reserves the right to alter this figure.

Main work shall be filled and tested in sections of convenient length which must not exceed 500 metres where pipes are laid with steep gradients the length of pipes tested at any time shall be as directed by the Engineer.

The ends of pipes under test shall be closed by means of caps or blank flanges provided by the contractor. Gate valves must not be used for this purpose. All scour valves and air valves shall be replaced by blank flanges before commencement of the test.

After laying, jointing and anchoring, the main should be slowly and carefully charged with water so that all air is expelled, allowed to stand full for several days and then tested under pressure. The test pressure shall be applied by means of a manually- operated test pump connected to the main and to two parallel installed pressure
gauges calibrated at an approved testing laboratory. The test pressure shall be maintained for 24 hours, and if there is any leakage or any other defects, the contractor should rectify as directed by the Engineer at his own cost. Water drained from the pipes shall be discharged in a way that does not affect the stability of the works or adjacent structures. The contractor shall provide all necessary equipment, water and labour to test the pipes to the approval of the Engineer.

The contractor shall allow for all expenses in connection with testing in the Bill of Quantities for the appropriate item.

13.13 Cleaning and Sterilization of Water Supply Pipes

The contractor shall before handing over and during the maintenance period clean pipeline, chambers and manholes for all dirt and rubbish.

All pipes shall be thoroughly cleaned and washed out to remove all contamination, and all water from these operations shall be removed and drained away. Sterilization should be carried out in accordance with BS 13700.

Following the satisfactory cleaning the contractor shall with the use of a portable dosage system or by some other approved method introduce a solution of a sterilizing chemical containing chlorine into the pipeline. The solution shall be introduced at a very slow rate and shall be of such strength as to give a chlorine concentration of not less than 50 parts per million throughout the length of the pipelines. The whole system shall then remain charged for 24 hours, after which a test shall be made for residual chlorine. If no residual chlorine is found, the sterilization process will have to be carried out again, until a satisfactory result is obtained.

Finally, the pipes shall be thoroughly flushed out and recharged with supply water. On completion of the sterilization process the pipes shall be left full of water.

The contractor shall in his rates for pipeline sterilization include for all costs of labour, transport, materials, equipment, chemicals and water necessary for the satisfactory completion of the cleansing and sterilization operations.

13.14 Auxiliary Works

(a) Valve Chamber

Unless otherwise directed or detailed all valves, meters and other mechanical fittings shall be housed in chambers with lockable covers. Valve work shall be so placed in chambers as to facilitate operation, meter reading etc. through the cover opening. Chambers are measured in numbers and shall be priced as lump sum items covering

all composite work to completion as specified on the drawings or as instructed by the Engineer inclusive of excavations in excess of trench excavation, concrete supports for valves and backfilling around the chambers.

(b) Thrust Blocks and Anchors

The contractor shall provide thrust blocks at all bends, tees and whenever else instructed by the Engineer or indicated in the drawing.

Enlargements shall be excavated in sides and bottom of the trench to accommodate anchorages and thrust blocks.

Concrete thrust and anchor blocks shall be formed in accordance with the typical sections shown on the drawings or as directed by the Engineer. Additional excavation shall be made after the bends etc. Have been jointed and the concrete shall be placed immediately after the completion of the excavation.

The concrete used for thrust and anchor blocks shall be grade 15 and shall after placing be kept in view for not less than six hours. No pressure shall be applied in any section of mains until the concrete has cured at least three days.

All PVC material shall be wrapped with two layers of bituminous felt for the entire length in contact with concrete. Thrust blocks are measured in numbers and shall be priced as lump sum items covering all necessary works and materials together with excavation, backfilling and formwork.

(c) Road Crossings

When the contractor encounters a road where a "Road Crossing" is indicated on the drawings or where to his opinion, such a crossing is required, he shall immediately inform the Engineer. On the receipt of the above information, the Engineer will issue appropriate instructions. The contractor shall include in his rates any royalty/fees to be paid to the Ministry of Transport and Communication or Local authorities.

(d) Painting

Painting and other protection of the external and internal pipe surfaces shall be in accordance with manufacturer's recommendations. Painting on all other works especially in buildings will be as specified in the Bill of Quantities or as directed by the Engineer.

(e) Indicator Posts

Indicator posts should be erected on the pipeline as per the Engineer's instructions.

All indicator posts for sluice valves, air valves, change in directions for pipeline, change in class of pipes, washouts etc should be painted with blue gloss paint (2 coats).

PREAMBLE TO BILL OF QUANTITIES

1. The Bills of Quantities forms part of the Contract Documents and are to be read in conjunction with the Instructions to Bidders, Conditions of Contract Parts I and II, Specifications and Drawings.

2. The brief description of the items in the Bills of Quantities is purely for the purpose of identification, and in no way modifies or supersedes the detailed descriptions given in the conditions of Contract and Specifications for the full direction and description of work and materials.

3. The Quantities set forth in the Bills of Quantities are estimated, representing substantially the work to be carried out, and are given to provide a common basis for bidding and comparing of Bids. There is no guarantee to the Contractor that he will be required to carry out all the quantities of work indicated under any one particular item or group of items in the Bill of Quantities. The basis of payment shall be the Contractor's rates and the quantities of work actually done in fulfilment of his obligation under the Contract.

4. Payments will be made on completed milestones
5. Payments for emergency and/or instructed works will be paid as and when they occur using submitted rates and/or day works and shall require prior approval of the Employer.

6. The prices and rates inserted in the Bills of Quantities will be used for valuing the work executed, and the Engineer will only measure the whole of the works executed in accordance with this Contract.

7. A price or rate shall be entered in ink against every item in the Bills of Quantities with the exception of items that already have Provisional sums affixed thereto. The bidders are reminded that no “nil” or “included” rates or “lump-sum” discounts will be accepted. The rates for various items should include discounts if any. Bidders who fail to comply will be disqualified.

8. Provisional sums (including Day-works) in the Bills of Quantities shall be expended in whole or in part at the discretion of the Engineer.

9. The price and rates entered in the Bills of Quantities shall, except in-so-far as it is otherwise provided under the Contract, include all Constructional plant to be used, labour, insurance, supervision, compliance testing, materials, erection, maintenance of works, overheads and profits, taxes and duties together with all general risks, liabilities and obligations set out or implied in the Contract, transport, electricity and telephones, water, use and replenishment of all consumables, including those required under the contract by the Engineer and his staff.

10. Unless otherwise stated, all measurements shall be net taken on the finished work carried out in accordance with the details shown on the drawings or instructed, with no allowance for extra cuts or fills, waste or additional thickness necessary to obtain the minimum finished thickness or dimensions required in this Contract. Any work performed in excess or the requirements of the plans and specifications will not be paid for, unless ordered in writing by the Engineer.

11. Unbalanced tenders and/or unrealistic rates shall lead to the tenderer being subjected to enhanced Perfomance Security requirements pursuant to Instruction to Tnderers section 38.2 (b) of Tender Data Sheets.

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No. 1 Substructures (All Provisional)					
	Site Preparation					
A.	Clear site of shrubs, grass small trees of girth not exceeding 600mm and grub roots and remove debris from site as directed by the engineer	SM	103			
B.	Cut down trees of girth 600-900mm; cut the tree into logs and grub up all roots and remove the arising materials from site; set the logs aside for future use by the client.	No.	3			
C.	Excavate vegetable soil 150 mm (average) Deep: spread on site as directed	SM	103			
D.	Excavate to reduce levels n.e 1.5metres deep from stripped levels (cut and fill)	CM	51			
E.	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	59			
F.	Excavate pits for column bases not exceeding 1.50 metres deep from reduced level	CM	2			
G.	Extra over all excavations for excavating in rock	CM	3			
	Disposal of excavated materials					
H.	Backfill and compact selected excavated materials	CM	41			
I.	Spread surplus excavated materials on site as may be directed by the project manager	CM	18			
	Planking and strutting					
J.	Planking and strutting to sides of excavations		Item			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Disposal of water:					
A	Keep trenches free from all water Keep excavations free from all fallen materials		Item			
	Hardcore fillings					
B	300mm Thick well compacted Hardcore Fillings: levelled and compacted in 150 mm layers	SM	87			
C	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	87			
	Murram blinding					
D	50 mm fillings as blinding to hardcore : levelled and compacted	SM	87			
	Insitu concrete : Mix 1:3:6					
E	50 mm blinding : under strip foundations	SM	49			
F	Column bases	SM	6			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
G	Foundations in trenches	CM	10			
H	Stanchion bases	CM	2			
I	100 mm Thick beds	SM	103			
	High tensile reinforcement to BS 4461 incl. Cutting to lengths,bending,twisting and fixing.include all necessary wires and spacing blocks					
J	Y10	Kg.	665			
K	Y12	Kg.	12			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
L	In beds : 200 mm laps	SM	103			
M	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	46			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Formwork : to					
A	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	46			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
B	200 mm Walls	SM	106			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
C	Horizontal : 200 mm wide	LM	56			
	Labours and sundries					
D	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	103			
	12 mm cement and sand (1:4) render: on concrete or blockwork to:					
E	Plinths	SM	14			
	Prepare and apply two coats bituminous paint : on render : to					
F	Plinths	SM	14			
	Paving slab surround					
G	Pre-cast concrete (1:2:4) in paving slabs size 600x600x50mm thick laid on consolidated sand bed jointed in cement sand mortar (1:4)	SM	38			
	Carried to Collection					
	Collection					
	From page 123					
	From page 124					
	From page 125 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	4			
	High yield square twisted reinforcement including cutting to lengths, bending twisting and fixing, including all necessary tying wires and spacing blocks, mild steel bars to B.S. 4449:-					
C.	Y8	Kg	87			
D	Y12	Kg	568			
	Formwork to:					
D.	Sides and soffits : beams	SM	58			
	200mm thick machine cut stone walling laid in cement sand mortar (1:4): including hoop iron reinforcement in every alternate course					
E	200 mm Walls	SM	118			
	Labours and sundries					
F	Labour and materials for eaves filling 300mm high to 200mm thick walls	LM	34			
G	Fair raking	LM	25			
	Vents					
H	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends: coffee tray wire reinforced	NO	12			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Rolled Hollow Steel Columns					
A	12mm diameter 'T' shaped mild steel bolt overall length 250mm. Vertically and 100mm horizontally complete with nuts and washers and embedded into concrete base	No.	36			
B	4mm thick steel plate overall size 200x200mm including welding onto base of steel column with and including 6m thick fillet weld all round steel column and making 4 No. holes for bolts	No.	9			
C	6mm thick 'U' shaped plate overall size 350mm long by 100mm wide x 100mm deepwelded onto top of steel column including making holes for fixing timber beam including necessary fixing bolts	No.	9			
D	100mmx3mm thick diameter rolled hollow steel pipe 3000mm long welded at its lower plate (m/s)embedded into concrete base (m/s) end into 300x300mm (m/s) with 12mm bolts(m/s) and its upper end fixed into 'U' shaped plate (m/s)	No.	9			
E	prepare and apply touch up red oxide primer and three coats of gloss paint to general surfaces of the metal surface externally girth 300-400mm	LM	7			
	Carried to Collection					
	Collection					
	From page 126					
	From page 127 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No.3 Roof					
	Roof coverings					
A.	28 gauge prepainted corrugated iron sheets with one corrugation side lap and 75mm wide end lap fixed onto purlins (M/S) with and including approved nails and washers	SM	135			
B.	Ditto 28 gauge roof cap fixed with and including roofing nails to match roof	LM	18			
C	25mm thick sisalation foam overlaid on trusses prior to fixing roof cover including 5mm High tensile wire spaced at 600mm c/c anti sag	SM	135			
	Roof Construction: ***NB timber planed smooth***					
	The following in WROT cell cured treated cypress roof trusses; hoisting and placing 3.0 metres above the the ground level: Roof trusses fixing to include approved plates; making holes and fixing bolts and nuts as per Engineers detail					
D.	100x50 mm Main Rafters	LM	75			
E.	100x50 mm Tie beam	LM	42			
F.	100x50 mm Struts and ties	LM	42			
G.	150x50 mm Ridge board	LM	32			
H.	75x50 mm Purlins	LM	143			
I.	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	34			
J.	150x50 mm verandah beam	LM	18			
K.	100x25mm splices	LM	120			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Wrot Cypress, Selected and kept clean fascias and barge boards					
A	200x25 mm Fascia or barge board with splayed wading joints	LM	51			
	Rainwater goods					
	24 Gauge galvanised mild steel sheet rainwater goods with lapped, rivetted and soldered joints or seams including all labours					
B	150 mm Diameter half round eaves gutter: 25x6 mm: M.S brackets screwed to fascia at 600 mm centres	LM	38			
C	Extra for stopped end	NO	4			
D	Extra for 100 mm drop nozzle	NO	4			
E	100 mm Diameter rainwater down pipe : fixed with M.S brackets to concrete or block work and including 225x150x25 mm hardwood blocks chamfered all round and plugged and screwed to walling generally at 1.50 metre centres	LM	12			
F	Extra for bend	NO	4			
G	Extra swan neck projections	NO	4			
H	Extra for shoe	NO	4			
	Painting generally					
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
	Externally on					
I	Fascia and barge board: Girth 200-300 mm	LM	51			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint on metalwork					
A	Large pipes	SM	10			
B	150 mm diameter half round gutter	SM	14			
	Plastic Tank					
C	Supply and install 5000 litres capacity cylindical vertical ROTO TANK 1930mm diameter 1960mm height: As or any other equal and approved model inluding fixing inlet and lockable outlet taps as instructed by project manager	No.	2			
	Circular tank platform: 150mm concrete class 15 strip foundation: 150mm solid concrete blockwork walling 500mm high above existing ground level enclosure to all sides rendered externally: 350 mm thick compacted hardcore infill: 100mm thick concrete class 15 base slab : laid on 50mm thick murram blinding: BRC A-142 reinforcement					
D	2500mm diameter tank platform	No.	2			
	Carried to collection					
	Collection					
	From page 128					
	From page 129					
	From page 130 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No.4 Windows					
	Burnt clay window cill					
A.	150x150x10mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	13			
	Supply and fix the following:100x50x3mm RHS windows ***window frame Comprising 100x50X3mm main frames ; 50X3mm vertical transomes; compartments left open for openable louvre blades (ms) and aluminium frames (ms):bedding frame to blockwork ; plugged: ironmongery: bedding and pointing in mastic all round R-12 bars at 150mm c/c burglar proofing welded to metal frames; Architects details***					
B	Window size 1500x1500 mm high overall : divided into 3No. equal compartments to detail	NO	8			
C	Window size 500x900 mm high overall :	NO	4			
	Sets adjustable aluminium louvre frames with carriages for 150mm blades and annodised finish secured to metal frames with self tapping screws					
D	10 blades frames (units)	sets	48			
	Window claddings: mosquito gauze					
E	Galvanised green mosquito netting fixed to window surfaces with timber beads Mounted on coffee tray wire backing (measured separately)	SM	36			
F	Coffee tray wire fixed to window surfaces	SM	36			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Curtain Rod					
A	25mm diameter lightweight steel (furniture tube.) in curtain rods including matching end brackets	LM	15			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
B	Windows: general surfaces	SM	36			
C	Ditto curtain rods girth n.e 100mm	LM	15			
	Amout carried to collection					
	Collection					
	From page 131					
	From page 132 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No. 5 Doors					
	Mild steel: K.S. 02-18					
	Panel doors: 50x50x4mm hollow section framing and intermediate rails, ends welded and angles cut, mitred and welded: 1.5mm thick metal sheet cladding welded to both faces: all welding ground to smooth finish: Puropse made hinges per leaf 3-lever mortice locks: locking cleats and bolt: guides: padlock eye: All as per Engineers detail's:					
A	Door size 900 x 2400 mm high overall	NO	2			
	Flush doors: solid cored					
B	45 mm thick door size 850x2050 mm high: faced both sides with premium grade plywood: hardwood lipped all edges	NO	7			
	Frames and linings : softwood : selected and kept clean					
C	100x50 mm frame : plugged	LM	42			
D	Ditto mullions: 4 labours	LM	7			
E	20x20 mm Architrave : ditto	LM	42			
F	Ditto quadrant	LM	42			
	Glazing					
	3 mm clear sheet glass and glazing: to metal with approved putty					
G	In panes: over 0.1 but not exceeding 0.50 square metres	SM	1			
H	Ditto but with timber glazing beads	SM	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Ironmongery					
	Supply and fix the following to wood with matching screws					
A.	100 mm pressed steel butt hinges	Prs	10.5			
B	3-lever mortice lock with lever handles	NO	9			
C	Rubber door stop : rawl bolted to concrete	NO	9			
	Prepare and prime before fixing on wood					
D	Frames : not exceeding 100 mm girth	LM	42			
E	Architraves : ditto	LM	42			
F	Ditto quadrant	LM	42			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
G	Doors general surfaces	SM	8			
	Knot, prime, stop and apply one coat universal undercoat, two coats premium grade gloss paint: on timber					
H	Doors general surfaces	SM	28			
I	Frames : over 100 but not exceeding 200 mm girth	LM	42			
J	Ditto Mullions	LM	7			
K	Architraves : not exceeding 100 mm girth	LM	42			
L	Ditto quadrant	LM	42			
	Amount carried to collection					
	Collection					
	From page 133					
	From page 134 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No.06 External Finishes					
	Wall finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A.	Beams	SM	13			
B	Gable end walling	SM	6			
	Painting					
C	Beams	SM	13			
D	Gable end walling	SM	6			
	Key pointing					
E	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	103			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Cement and sand (1:4) screed: steel trowelled on concrete to: red oxide admixture.					
A	50 mm floors	SM	90			
B	skirting	LM	132			
	Prepare surfaces and apply "Ronseal" floor wax or equal and approved floor wax					
C	wax to floors	SM	90			
D	Ditto skirting girth n.e 125mm	LM	132			
	12 mm cement and sand (1:4) plaster : steel trowelled : on blockwork to					
E	Walls: internally	SM	177			
	Prepare and apply one undercoat and two finishing coats silk vinyl paint : on plaster to					
F	Walls	SM	177			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No.08 Fixtures and Fittings					
	Concrete worktop					
A	2400mm long x600mm long x50mm thick reinforced concrete (Y-10) worktop : mounted at 880mm above finished floor level level on 100mm thick concrete (1:3:6) benching, including all necessary formwork: steel trowelled finish:ceramic tiles top and exposed edges.	NO	1			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No.09 Sanitary fittings					
A.	Wash hand basin as "Twyfords" cat. ref no. AL4812WH or any other equal and approved : complete with all accessories, including rubber stopper, plated bottle trap.Basin pillar tap as "Twyfords" CAT No. PE 5205CCP	NO	3			
B.	W.C suite complete with, pan,seat cover and cistern as "Twyfords" cat. ref no. AD1145WH or any other equal and approved: Including all other accessories.	NO	5			
	Accessories					
E	Toilet toilet roll holder as "Twyfords" Cat: no. VC9806WH or any other equal and approved.	NO	5			
F	Soapdish as "Twyfords" Cat: no. VC9312WH or any other equal and approved.	NO	3			
A.	6 mm Float plate silver coated mirror size 600x450mm high with bevelled edges, complete with dome headed screws to match: plugged: on foam backings	NO	2			
C	Allow a provisional sum ksh 12000,000. for plumbing and drainage				120,000	
D	Allow kshs 150,000 for construction of biodigester				150,000	
	Total carried to Summary			**Kshs.**		

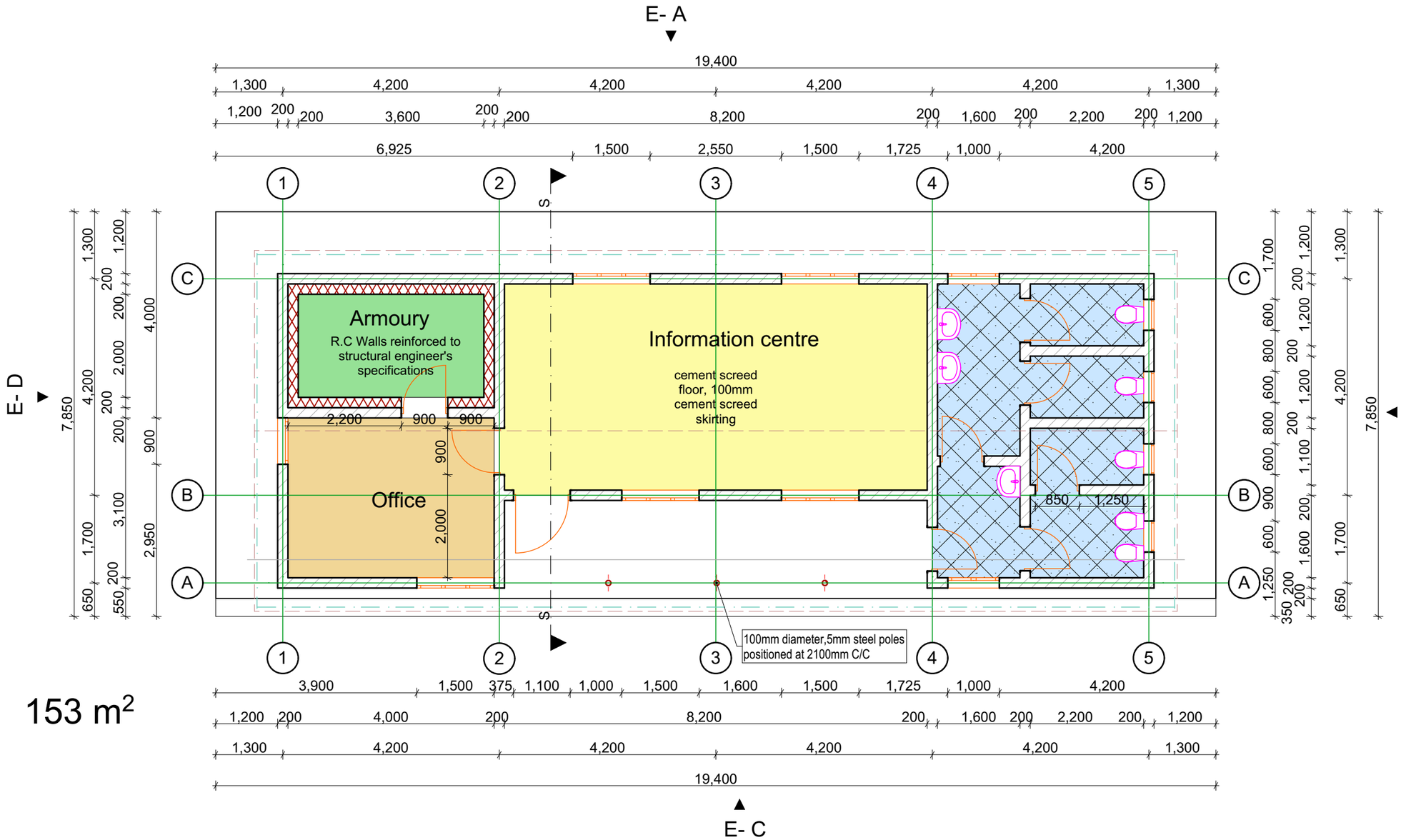
Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**					
	Element No. 10 Electrical Works					
	Rates quoted shall be inclusive of supply and installation includinfg builders work incidental thereto.					
	Lighting point wired in 3X1.5mm2 single core PVC cables drawn in 20mm diameter heavy gauge PVC conduits including all conduit accessories and switch boxes for:-					
A.	One way swithching	No.	4			
B.	Two way swithching	No.	4			
C.	Pendant light fitting comprising ceilling rose,code and lampholder as volex complete with bulb	No.	5			
D	100W bulkhead fittting as microlite	No.	6			
	13A power point wired in 3x2.5mm2 single core PVC copper cables drawn in 20mm diameter heavy gauge PVC conduits incl. All conduit accessories for:					
E	Single	No.	4			
F	13A single flush mounted socket outlets as volex	No.	6			
G	Wall bracket lights complete with holder and bulb.	No.	8			
H	4Ways consumer unit as crabtree complete with cicuit breakers	No.	1			
I	3x16mm2 single core copper cables as sub-main and drawn in 50mm diameter heavy gauge PVC conduits including all conduit accessories.	Lm.	10			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Standard cable looping box		Item			
B	Allow for the Testing of the complete electrical installations to the satisfaction of the engineer		Item			
	Carried to collection					
	<u>Collection</u>					
	From page 139					
	From page 140 (Above)					
	Total carried to Summary			**Kshs.**		

elemen No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK-HEADQUARTERS** **TSAVO CONSERVATION AREA**			
	Summary	From page		
1	Substructures	125		
2	Walling	127		
3	Roof	130		
4	Windows	132		
5	Doors	134		
6	External wall finish	135		
7	Internal finishes	136		
8	Fixtures and fittings	137		
9	sanitary fittings	138		
10	Electrical Works	140		
	total office block **Carried to Grand Summary**	**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED NEW FACILITIES - KASIGAU** **TSAVO CONSERVATION AREA**					
	P.C. and Provisional sums					
	The contractor shall include in his tender for the following amounts to be deducted either in whole or in part as directed by the project manager					
A	Provide the prime cost sum of Kenya shillings ninety thousand for connection to electricity mains and incidental works related thereto				90,000	
B	Provide a provisional sum of Kenya shillings one hundred thousand for water reticulation				100,000	
C	Allow kenya shillings seven hundred and fifty six thousand, project supervision costs				756,000	
	Total PC and Provisional sums carried to Grand Summary			**Kshs.**	**946,000**	

Item No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK** **TCA HEADQUARTERS** **TSAVO CONSERVATION ARAES**			
	GRAND SUMMARY	**From page**		
A	**office Block**	142		
B	**PC and provisional sums**	143		
C	**Subtotal (1)**			
D	**Add 10% Contigencies**			
E	**Subtotal (2)**			
F	**ADD 16% VAT**			
	SUB TOTAL CARRIED TO SUMMARY	**Kshs.**		



OFFICE BLOCK (TCA HQ Voi)

NOTES

RANGER ACCOMODATION

SCHEDULE OF FACILITIES

TCA HQ in VOI

Drawing title :

OFFICE PLAN

Client : KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

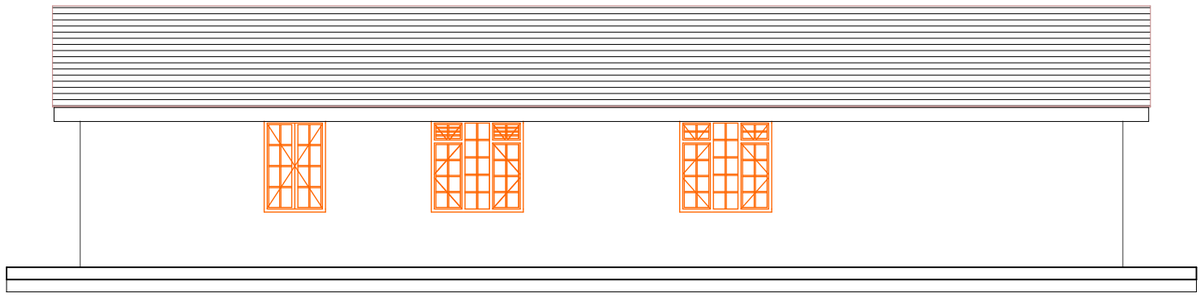
Drawn by : Kathuli P.F

Architect : PATRICK KATHULI .F.

Nos :

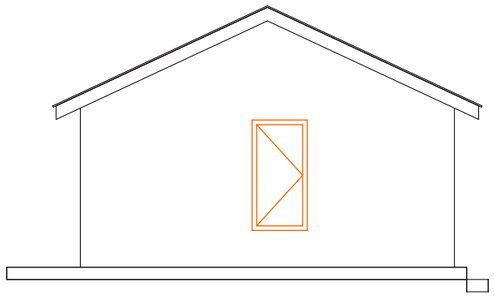
Date : AUG - 2021

Ag HBFD :

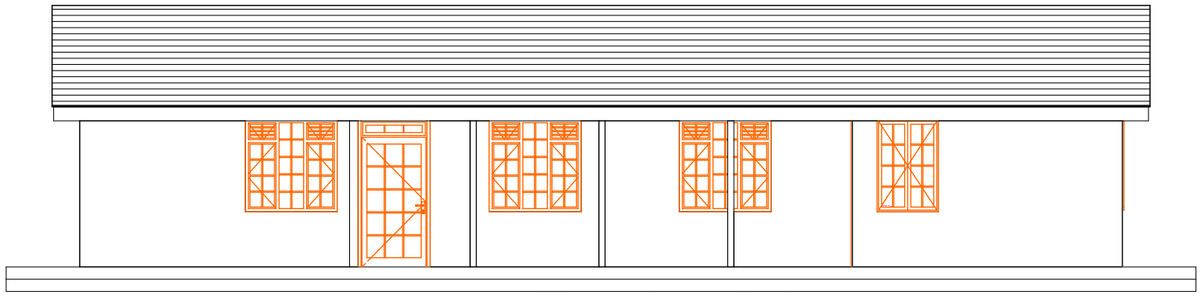


Elevation (E-A)

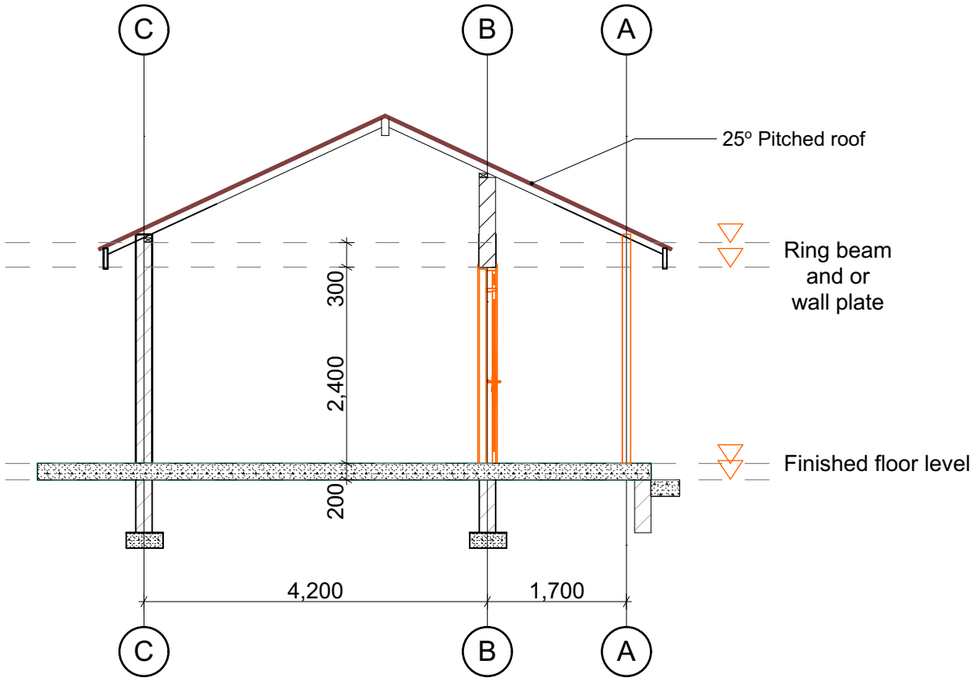
Elevation (E-B)



Elevation (E-D)



Elevation (E-C)



Building Section S-S

NOTES

RANGER ACCOMODATION

SCHEDULE OF FACILITIES

TCA HQ IN VOI

Drawing title :

SECTION AND ELEVATION

Client : KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

Drawn by : Kathuli P.F

Architect : PATRICK KATHULI .F.

Nos :

Date : AUG - 2021

Ag HBFD :

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMMODATION** **KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 1 Substructures (All Provisional)					
	Site Preparation					
A.	Clear site of shrubs, grass small trees of girth not exceeding 600mm and grub roots and remove debris from site as directed by the engineer	SM	129			
B.	Cut down trees of girth 600-900mm; cut the tree into logs and grub up all roots and remove the arising materials from site; set the logs aside for future use by the client.	No.	4			
C.	Excavate vegetable soil 150 mm (average) Deep: spread on site as directed	SM	129			
D.	Excavate to reduce levels n.e 1.5metres deep from stripped levels (cut and fill)	CM	64			
E.	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	74			
F.	Excavate pits for column bases not exceeding 1.50 metres deep from reduced level	CM	3			
G.	Extra over all excavations for excavating in rock	CM	4			
	Disposal of excavated materials					
H.	Backfill and compact selected excavated materials	CM	52			
I.	Spread surplus excavated materials on site as may be directed by the project manager	CM	23			
	Planking and strutting					
J.	Planking and strutting to sides of excavations		Item			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	***Disposal of water:*** Keep trenches free from all water Keep excavations free from all fallen materials		Item			
	Hardcore fillings					
B	300mm Thick well compacted Hardcore Fillings: levelled and compacted in 150 mm layers	SM	109			
C	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	109			
	Murram blinding					
D	50 mm fillings as blinding to hardcore : levelled and compacted	SM	109			
	Insitu concrete : Mix 1:3:6					
E	50 mm blinding : under strip foundations	SM	62			
F	Column bases	SM	8			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
G	Foundations in trenches	CM	13			
H	Stanchion bases	CM	3			
I	100 mm Thick beds	SM	129			
	High tensile reinforcement to BS 4461 incl. Cutting to lengths,bending,twisting and fixing.include all necessary wires and spacing blocks					
J	Y10	Kg.	831			
K	Y12	Kg.	15			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
L	In beds : 200 mm laps	SM	129			
M	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	58			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Formwork : to					
A	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	58			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
B	200 mm Walls	SM	133			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
C	Horizontal : 200 mm wide	LM	70			
	Labours and sundries					
D	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	129			
	12 mm cement and sand (1:4) render: on concrete or blockwork to:					
E	Plinths	SM	18			
	Prepare and apply two coats bituminous paint : on render : to					
F	Plinths	SM	18			
	Paving slab surround					
G	Pre-cast concrete (1:2:4) in paving slabs size 600x600x50mm thick laid on consolidated sand bed jointed in cement sand mortar (1:4)	SM	48			
	Carried to Collection					
	Collection					
	From page 146					
	From page 147					
	From page 148 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMMODATION** **KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	5			
	High yield square twisted reinforcement including cutting to lengths, bending twisting and fixing, including all necessary tying wires and spacing blocks, mild steel bars to B.S. 4449:-					
C.	Y8	Kg	108			
D	Y12	Kg	710			
	Formwork to:					
D.	Sides and soffits : beams	SM	73			
	200mm thick machine cut stone walling laid in cement sand mortar (1:4): including hoop iron reinforcement in every alternate course					
E	200 mm Walls	SM	148			
	Labours and sundries					
F	Labour and materials for eaves filling 300mm high to 200mm thick walls	LM	43			
G	Fair raking	LM	31			
	Vents					
H	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends: coffee tray wire reinforced	NO	15			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Rolled Hollow Steel Columns					
A	12mm diameter 'T' shaped mild steel bolt overall length 250mm. Vertically and 100mm horizontally complete with nuts and washers and embedded into concrete base	No.	48			
B	4mm thick steel plate overall size 200x200mm including welding onto base of steel column with and including 6m thick fillet weld all round steel column and making 4 No. holes for bolts	No.	12			
C	6mm thick 'U' shaped plate overall size 350mm long by 100mm wide x 100mm deepwelded onto top of steel column including making holes for fixing timber beam including necessary fixing bolts	No.	12			
D	100mmx3mm thick diameter rolled hollow steel pipe 3000mm long welded at its lower plate (m/s)embedded into concrete base (m/s) end into 300x300mm (m/s) with 12mm bolts(m/s) and its upper end fixed into 'U' shaped plate (m/s)	No.	12			
E	prepare and apply touch up red oxide primer and three coats of gloss paint to general surfaces of the metal surface externally girth 300-400mm	LM	9			
	Carried to Collection					
	Collection					
	From page 149					
	From page 150 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMMODATION** **KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No.3 Roof					
	Roof coverings					
A.	28 gauge prepainted corrugated iron sheets with one corrugation side lap and 75mm wide end lap fixed onto purlins (M/S) with and including approved nails and washers	SM	169			
B.	Ditto 28 gauge roof cap fixed with and including roofing nails to match roof	LM	23			
C	25mm sisalation foam overlaid on trusses prior to fixing roof cover including 5mm High tensile wire spaced at 600mm c/c anti sag	SM	169			
	Roof Construction: ***NB timber planed smooth***					
	The following in WROT cell cured treated cypress roof trusses; hoisting and placing 3.0 metres above the the ground level: Roof trusses fixing to include approved plates; making holes and fixing bolts and nuts as per Engineers detail					
D.	100x50 mm Main Rafters	LM	94			
E.	100x50 mm Tie beam	LM	53			
F.	100x50 mm Struts and ties	LM	53			
G.	150x50 mm Ridge board	LM	40			
H.	75x50 mm Purlins	LM	179			
I.	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	43			
J.	150x50 mm verandah beam	LM	23			
K.	100x25mm splices	LM	150			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Wrot Cypress, Selected and kept clean fascias and barge boards					
A	200x25 mm Fascia or barge board with splayed wading joints	LM	64			
	Rainwater goods					
	24 Gauge galvanised mild steel sheet rainwater goods with lapped, rivetted and soldered joints or seams including all labours					
B	150 mm Diameter half round eaves gutter: 25x6 mm: M.S brackets screwed to fascia at 600 mm centres	LM	47			
C	Extra for stopped end	NO	4			
D	Extra for 100 mm drop nozzle	NO	4			
E	100 mm Diameter rainwater down pipe : fixed with M.S brackets to concrete or block work and including 225x150x25 mm hardwood blocks chamfered all round and plugged and screwed to walling generally at 1.50 metre centres	LM	12			
F	Extra for bend	NO	4			
G	Extra swan neck projections	NO	4			
H	Extra for shoe	NO	4			
	Painting generally					
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
	Externally on					
I	Fascia and barge board: Girth 200-300 mm	LM	64			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint on metalwork					
A	Large pipes	SM	13			
B	150 mm diameter half round gutter	SM	18			
	Plastic Tank					
C	Supply and install 5000 litres capacity cylindical vertical ROTO TANK 1930mm diameter 1960mm height: As or any other equal and approved model inluding fixing inlet and lockable outlet taps as instructed by project manager	No.	2			
	Circular tank platform: ***150mm concrete class 15 strip foundation:*** ***150mm solid concrete blockwork walling 500mm high above existing ground level enclosure to all sides rendered externally:*** ***350 mm thick compacted hardcore infill: 100mm thick concrete class 15 base slab : laid on 50mm thick murram blinding: BRC A-142 reinforcement***					
D	2500mm diameter tank platform	No.	2			
	Carried to collection					
	Collection					
	From page 151					
	From page 152					
	From page 153 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMMODATION** **KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No.4 Windows					
	Burnt clay window cill					
A.	150x150x10mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	17			
	Supply and fix the following:100x50x3mm RHS windows ***window frame Comprising 100x50X3mm main frames ; 50X3mm vertical transomes; compartments left open for openable louvre blades (ms) and aluminium frames (ms):bedding frame to blockwork ; plugged: ironmongery: bedding and pointing in mastic all round R-12 bars at 150mm c/c burglar proofing welded to metal frames; Architects details***					
B	Window size 1500x1500 mm high overall : divided into 3No. equal compartments to detail	NO	10			
	Sets adjustable aluminium louvre frames with carriages for 150mm blades and annodised finish secured to metal frames with self tapping screws					
C	10 blades frames (units)	sets	30			
	Window claddings: mosquito gauze					
D	Galvanised green mosquito netting fixed to window surfaces with timber beads Mounted on coffee tray wire backing (measured separately)	SM	23			
E	Coffee tray wire fixed to window surfaces	SM	23			
	Curtain Rod					
F	25mm diameter lightweight steel (furniture tube.) in curtain rods including matching end brackets	LM	19			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
A	Windows: general surfaces	SM	45			
B	Ditto curtain rods girth n.e 100mm	LM	19			
	Amout carried to collection					
	Collection					
	From page 154					
	From page 155 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMMODATION** **KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 5 Doors					
	Mild steel: K.S. 02-18					
	Panel doors: 50x50x4mm hollow section framing and intermediate rails, ends welded and angles cut, mitred and welded: 1.5mm thick metal sheet cladding welded to both faces: all welding ground to smooth finish: Puropse made hinges per leaf 3-lever mortice locks: locking cleats and bolt: guides: padlock eye: All as per Engineers detail's:					
A	Door size 900 x 2400 mm high overall	NO	5			
	Flush doors: solid cored					
B	45 mm thick door size 850x2050 mm high: faced both sides with premium grade plywood: hardwood lipped all edges	NO	2			
	Frames and linings : softwood : selected and kept clean					
C	100x50 mm frame : plugged	LM	12			
D	Ditto mullions: 4 labours	LM	2			
E	20x20 mm Architrave : ditto	LM	12			
F	Ditto quadrant	LM	12			
	Glazing					
	3 mm clear sheet glass and glazing: to metal with approved putty					
G	In panes: over 0.1 but not exceeding 0.50 square metres	SM	2			
H	Ditto but with timber glazing beads	SM	2			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Ironmongery					
	Supply and fix the following to wood with matching screws					
A.	100 mm pressed steel butt hinges	Prs	3			
B	3-lever mortice lock with lever handles	NO	7			
C	Rubber door stop : rawl bolted to concrete	NO	7			
	Prepare and prime before fixing on wood					
D	Frames : not exceeding 100 mm girth	LM	12			
E	Architraves : ditto	LM	12			
F	Ditto quadrant	LM	12			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
G	Doors general surfaces	SM	18			
	Knot, prime, stop and apply one coat universal undercoat, two coats premium grade gloss paint: on timber					
H	Doors general surfaces	SM	12			
I	Frames : over 100 but not exceeding 200 mm girth	LM	12			
J	Ditto Mullions	LM	2			
K	Architraves : not exceeding 100 mm girth	LM	12			
L	Ditto quadrant	LM	12			
	Amount carried to collection					
	Collection					
	From page 156					
	From page 157 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMMODATION** **KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No.06 External Finishes					
	Wall finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A.	Beams	SM	17			
B	Gable end walling	SM	8			
	Painting					
C	Beams	SM	17			
D	Gable end walling	SM	8			
	Key pointing					
E	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	129			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMMODATION** **KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Cement and sand (1:4) screed: steel trowelled on concrete to: red oxide admixture.					
A	50 mm floors	SM	113			
B	skirting	LM	165			
	Prepare surfaces and apply "Ronseal" floor wax or equal and approved floor wax					
C	wax to floors	SM	113			
D	Ditto skirting girth n.e 125mm	LM	165			
	12 mm cement and sand (1:4) plaster : steel trowelled : on blockwork to					
E	Walls: internally	SM	221			
	Prepare and apply one undercoat and two finishing coats silk vinyl paint : on plaster to					
F	Walls	SM	221			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMMODATION** **KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 08 Electrical Works					
	Rates quoted shall be inclusive of supply and installation includinfg builders work incidental thereto.					
	Lighting point wired in 3X1.5mm2 single core PVC cables drawn in 20mm diameter heavy gauge PVC conduits including all conduit accessories and switch boxes for:-					
A.	One way swithching	No.	5			
B.	Two way swithching	No.	5			
C.	Pendant light fitting comprising ceilling rose,code and lampholder as volex complete with bulb	No.	7			
D	100W bulkhead fittting as microlite	No.	8			
	13A power point wired in 3x2.5mm2 single core PVC copper cables drawn in 20mm diameter heavy gauge PVC conduits incl. All conduit accessories for:					
E	Single	No.	5			
F	13A single flush mounted socket outlets as volex	No.	8			
G	Wall bracket lights complete with holder and bulb.	No.	10			
H	4Ways consumer unit as crabtree complete with cicuit breakers	No.	2			
I	3x16mm2 single core copper cables as sub-main and drawn in 50mm diameter heavy gauge PVC conduits including all conduit accessories.	Lm.	12			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Standard cable looping box		Item			
B	Allow for the Testing of the complete electrical installations to the satisfaction of the engineer		Item			
	Carried to collection					
	<u>Collection</u>					
	From page 160					
	From page 161 (Above)					
	Total carried to Summary			**Kshs.**		

elemen No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMMODATION** **KASIGAU** **TSAVO CONSERVATION AREA**			
	Summary	From page		
1	Substructures	148		
2	Walling	150		
3	Roof	153		
4	Windows	155		
5	Doors	157		
6	External wall finish	158		
7	Internal finishes	159		
8	Electrical Works	161		
	Subtotal			
	Multiplied by 4 Blocks		**x4**	
	Total Rangers accomodation carried to grand summary	**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **OUTDOOR KITCHEN- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No. 1 Substructures (All Provisional)					
	Site Preparation					
A.	Clear site of shrubs, grass small trees of girth not exceeding 600mm and grub roots and remove debris from site as directed by the engineer	SM	34			
B.	Cut down trees of girth 600-900mm; cut the tree into logs and grub up all roots and remove the arising materials from site; set the logs aside for future use by the client.	No.	3			
C.	Excavate vegetable soil 150 mm (average) Deep: spread on site as directed	SM	34			
D	Excavate to reduce levels n.e 1.5metres deep from stripped levels (cut and fill)	CM	17			
E	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	26			
F	Excavate pits for column bases not exceeding 1.50 metres deep from reduced level	CM	1			
G	Extra over all excavations for excavating in rock	CM	1			
	Disposal of excavated materials					
H	Backfill and compact selected excavated materials	CM	18			
I	Spread surplus excavated materials on site as may be directed by the project manager	CM	8			
	Planking and strutting					
J	Planking and strutting to sides of excavations		Item			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Disposal of water:					
A	Keep trenches free from all water Keep excavations free from all fallen materials		Item			
	Hardcore fillings					
B	300mm Thick well compacted Hardcore Fillings: levelled and compacted in 150 mm layers	SM	28			
C	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	28			
	Murram blinding					
D	50 mm fillings as blinding to hardcore : levelled and compacted	SM	28			
	Insitu concrete : Mix 1:3:6					
E	50 mm blinding : under strip foundations	SM	22			
F	Column bases	SM	2			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
G	Foundations in trenches	CM	5			
H	Column bases	CM	1			
I	100 mm Thick beds	SM	34			
	High tensile reinforcement to BS 4461 incl. Cutting to lengths,bending,twisting and fixing.include all necessary wires and spacing blocks					
J	Y10	Kg.	665			
K	Y12	Kg.	120			
	Total carried to collection			**Kshs.**		

-

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
A	In beds : 200 mm laps	SM	34			
	Formwork : to					
B	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	23			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
C	200 mm Walls	SM	48			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
D	Horizontal : 200 mm wide	LM	35			
	Labours and sundries					
E	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	34			
	12 mm cement and sand (1:4) render: on concrete or blockwork to:					
F	Plinths	SM	7			
	Prepare and apply two coats bituminous paint : on render : to					
G	Plinths	SM	7			
	Paving slab surround					
H	Pre-cast concrete (1:2:4) in paving slabs size 600x600x50mm thick laid on consolidated sand bed jointed in cement sand mortar (1:4)	SM	28			
	Total carried to collection			**Kshs.**		

-

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Collection					
	From page 163					
	From page 164					
	From page 165					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE OUTDOOR KITCHEN- KASIGAGAU TSAVO CONSERVATION AREA					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	2			
	High yield square twisted reinforcement including cutting to lengths, bending twisting and fixing, including all necessary tying wires and spacing blocks, mild steel bars to B.S. 4449:-					
B	Y8	Kg	153			
C	Y12	Kg	815			
	Formwork to:					
D.	Sides and soffits : beams	SM	23			
	200mm thick machine cut stone walling laid in cement sand mortar (1:4): including hoop iron reinforcement in every alternate course					
E	200 mm Walls	SM	74			
	Labours and sundries					
F	Labour and materials for eaves filling 300mm high to 200mm thick walls	LM	14			
G	Fair raking	LM	12			
	Vents					
H	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends: coffee tray wire reinforced	NO	10			
	Total Carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Masonry in chimney construction	SM	22			
B	concrete horizontal surfaces inclding formwork	SM	1			
C	insitu cast chimney pier cap	N0.	2			
D	fire bricks	SM	6			
	Rolled Hollow Steel Columns					
E	12mm diameter 'T' shaped mild steel bolt overall length 250mm. Vertically and 100mm horizontally complete with nuts and washers and embedded into concrete base	No.	8			
F	4mm thick steel plate overall size 200x200mm including welding onto base of steel column with and including 6m thick fillet weld all round steel column and making 4 No. holes for bolts	No.	2			
G	6mm thick 'U' shaped plate overall size 350mm long by 100mm wide x 100mm deepwelded onto top of steel column including making holes for fixing timber beam including necessary fixing bolts	No.	2			
H	100mmx3mm thick diameter rolled hollow steel pipe 3000mm long welded at its lower plate (m/s)embedded into concrete base (m/s) end into 300x300mm (m/s) with 12mm bolts(m/s) and its upper end fixed into 'U' shaped plate (m/s)	No.	2			
I	prepare and apply touch up red oxide primer and three coats of gloss paint to general surfaces of the metal surface externally girth 300-400mm	LM	2			
	Carried to Collection					
	Collection					
	From page 167					
	From page 168 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **OUTDOOR KITCHEN- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No.3 Roof					
	Roof coverings					
A.	28 gauge prepainted corrugated iron sheets with one corrugation side lap and 75mm wide end lap fixed onto purlins (M/S) with and including approved nails and washers	SM	55			
B.	Ditto 28 gauge roof cap fixed with and including roofing nails to match roof	LM	8			
C	25mm thick sisalation foam overlaid on trusses prior to fixing roof cover including 5mm High tensile wire spaced at 600mm c/c anti sag	SM	55			
	Roof Construction: ***NB timber planed smooth***					
	The following in WROT cell cured treated cypress roof trusses; hoisting and placing 3.0 metres above the the ground level: Roof trusses fixing to include approved plates; making holes and fixing bolts and nuts as per Engineers detail					
D	100x50 mm Main Rafters	LM	29			
E	100x50 mm Tie beam	LM	20			
F	100x50 mm Struts and ties	LM	29			
G	150x50 mm Ridge board	LM	15			
H	75x50 mm Purlins	LM	45			
I	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	19			
J	150x50 mm verandah beam	LM	8			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Wrot Cypress, Selected and kept clean					
	fascias and barge boards					
A.	300x25 mm Fascia or barge board with splayed wading joints	LM	30			
	Painting generally					
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
	Externally on					
B	Fascia and barge board: Girth 200-300 mm	LM	30			
	Carried to collection					
	Collection					
	From page 169					
	From page 170 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **OUTDOOR KITCHEN- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No.4 Windows					
	Burnt clay window cill					
A.	150x150x10mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	4			
	Supply and fix the following; ***Mild steel : one coat red oxide primer before erection***					
	Composite purpose made steel casement windows : fixed to concrete or blockwork with lugs plugged: brass ironmongery: bedded and pointed all round in mastic: burglar proofing: as per Engineers detail's:					
B.	Window size 1500x1500 mm high overall	NO	2			
	Glazing					
	3 mm clear sheet glass and glazing: to metal with approved putty					
C.	In panes: over 0.1 but not exceeding 0.50 square metres	SM	5			
	Curtain Rod					
D	25mm diameter lightweight steel (furniture tube.) in curtain rods including matching end brackets	LM	4			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
E	Windows: general surfaces	SM	9			
F	Ditto curtain rods girth n.e 100mm	LM	4			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **OUTDOOR KITCHEN- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No. 5 Doors					
	Mild steel: K.S. 02-18					
	Panel doors: 50x50x4mm hollow section framing and intermediate rails, ends welded and angles cut, mitred and welded: 1.5mm thick metal sheet cladding welded to both faces: all welding ground to smooth finish: Puropse made hinges per leaf 3-lever mortice locks: locking cleats and bolt: guides: padlock eye: All as per Engineers detail's:					
A	Door size 900 x 2400 mm high overall	NO	2			
	Glazing					
	3 mm clear sheet glass and glazing: to metal with approved putty					
B	In panes: over 0.1 but not exceeding 0.50 square metres	SM	1			
C	3-lever mortice lock with lever handles	NO	2			
D	Rubber door stop : rawl bolted to concrete	NO	2			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
E	Doors general surfaces	SM	18			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **OUTDOOR KITCHEN- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No.06 External Finishes					
	Wall finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A.	Beams	SM	7			
B	Gable end walling	SM	14			
	Painting					
C	Beams	SM	7			
D	Gable end walling	SM	14			
	Key pointing					
E	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	60			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **OUTDOOR KITCHEN- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Cement and sand (1:4) screed: steel trowelled on concrete to: red oxide admixture.					
A	50 mm floors	SM	29			
B	Skirting	LM	26			
	Prepare surfaces and apply "Ronseal" floor wax or equal and approved floor wax					
C	wax to floors	SM	29			
D	Ditto skirting girth n.e 125mm	LM	26			
	12 mm cement and sand (1:4) plaster : steel trowelled : on blockwork to					
E	Walls: internally	SM	103			
	Prepare and apply one undercoat and two finishing coats silk vinyl paint : on plaster to					
F	Walls	SM	103			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **OUTDOOR KITCHEN- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No.08 Fixtures and Fittings					
	Concrete worktop					
A	1200mm long x70mm thick reinforced concrete (Y-10) worktop : mounted at 900mm above finished floor level level on 100mm thick concrete (1:3:6) benching, including all necessary formwork: steel trowelled finish:ceramic tiles top and exposed edges.	NO	3			
	Kitchen Undersink Cupboard					
B	Cupboard size 1200x600x850 mm	NO	3			
	kitchen over head shelving:					
C	Overhead shelving size 1200 mm long x 300 mm deep x 700 mm high :	NO	3			
	Dhobi Sink					
D	410x510x610mm grano dhobi sink comlete with accessories	NO.	2			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **OUTDOOR KITCHEN- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No. 09 Electrical Works					
	Rates quoted shall be inclusive of supply and installation includinfg builders work incidental thereto.					
	Lighting point wired in 3X1.5mm2 single core PVC cables drawn in 20mm diameter heavy gauge PVC conduits including all conduit accessories and switch boxes for:-					
A.	One way swithching	No.	2			
B.	Two way swithching	No.	2			
C.	Pendant light fitting comprising ceilling rose,code and lampholder as volex complete with bulb	No.	3			
D	100W bulkhead fittting as microlite	No.	4			
	13A power point wired in 3x2.5mm2 single core PVC copper cables drawn in 20mm diameter heavy gauge PVC conduits incl. All conduit accessories for:					
E	Single	No.	4			
F	13A single flush mounted socket outlets as volex	No.	4			
G	4Ways consumer unit as crabtree complete with cicuit breakers	No.	1			
H	3x16mm2 single core copper cables as sub-main and drawn in 50mm diameter heavy gauge PVC conduits including all conduit accessories.	Lm.	10			
I	Standard cable looping box		Item			
J	Allow for the Testing of the complete electrical installations to the satisfaction of the engineer		Item			
	Total carried to Summary			**Kshs.**		

elemen No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **OUTDOOR KITCHEN- KASIGAGAU** **TSAVO CONSERVATION AREA**			
	Summary	From page		
1	Substrucures	166		
2	Walling	168		
3	Roof	170		
4	Windows	171		
5	Doors	172		
6	External wall finish	173		
7	Internal finishes	174		
8	Fixtures and Fittings	175		
9	Electrical Works	176		
	Subtotal			
	Multiplied by 2 Blocks		**x2**	
	Total Kitchen block Carried to Grand Summary	**Kshs.**		

Item No.	Description	Unit	Amount	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**					
A.	Clear site of shrubs, grass small trees of girth not exceeding 600mm and grub roots and remove debris from site as directed by the engineer	SM	29			
B.	Cut down trees of girth 600-900mm; cut the tree into logs and grub up all roots and remove the arising materials from site; set the logs aside for future use by the client.	No.	3			
C.	Excavate vegetable soil 150 mm (average) Deep: spread on site as directed	SM	29			
D	Excavate to reduce levels n.e 1.5metres deep from stripped levels (cut and fill)	CM	15			
E	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	25			
F	Excavate pits for column bases not exceeding 1.50 metres deep from reduced level	CM	1			
G	Extra over all excavations for excavating in rock	CM	1			
	Disposal of excavated materials					
H	Backfill and compact selected excavated materials	CM	18			
I	Spread surplus excavated materials on site as may be directed by the project manager	CM	8			
	Planking and strutting					
J	Planking and strutting to sides of excavations		Item			
	Disposal of water:					
L	Keep trenches free from all water Keep excavations free from all fallen materials		Item			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Hardcore fillings					
A	650mm Thick well compacted Hardcore Fillings: levelled and compacted in 150 mm layers	CM	13			
B	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	21			
	Murram blinding					
C	50 mm fillings as blinding to hardcore : levelled and compacted	SM	21			
	Insitu concrete : Mix 1:3:6					
D	50 mm blinding : under strip foundations	SM	21			
E	Column bases	SM	2			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
F	Foundations in trenches	CM	4			
H	Column bases	CM	1			
G	100 mm Thick beds	SM	29			
	High tensile reinforcement to BS 4461 incl. Cutting to lengths,bending,twisting and fixing.include all necessary wires and spacing blocks					
H	**Y10**	Kg.	1235			
I	**Y12**	Kg.	97			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
J	In beds : 200 mm laps	SM	29			
	Total carried to collection			**Kshs.**		

-

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Formwork : to					
A	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	22			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
B	200 mm Walls	SM	44			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
C	Horizontal : 200 mm wide	LM	28			
	Labours and sundries					
D	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	29			
	12 mm cement and sand (1:4) render: on concrete or blockwork to:					
E	Plinths	SM	10			
	Prepare and apply two coats bituminous paint : on render : to					
F	Plinths	SM	10			
	Paving slab surround					
G	Pre-cast concrete (1:2:4) in paving slabs size 600x600x50mm thick laid on consolidated sand bed jointed in cement sand mortar (1:4)	SM	26			
	Carried to Collection					
	Collection					
	From page 178					
	From page 179					
	From page 180 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	2			
	High yield square twisted reinforcement including cutting to lengths, bending twisting and fixing, including all necessary tying wires and spacing blocks, mild steel bars to B.S. 4449:-					
B	Y8	Kg	1248			
C	Y12	Kg	550			
	Formwork to:					
D.	Sides and soffits : beams	SM	21			
	200mm thick machine cut stone walling laid in cement sand mortar (1:4): including hoop iron reinforcement in every alternate course					
E	200 mm Walls	SM	65			
	Labours and sundries					
F	Labour and materials for eaves filling 300mm high to 200mm thick walls	LM	78			
G	Fair raking	LM	6			
	Vents					
I	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends: coffee tray wire reinforced	NO	5			
	Total Carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Rolled Hollow Steel Columns					
A	12mm diameter 'T' shaped mild steel bolt overall length 250mm. Vertically and 100mm horizontally complete with nuts and washers and embedded into concrete base	No.	8			
B	4mm thick steel plate overall size 200x200mm including welding onto base of steel column with and including 6m thick fillet weld all round steel column and making 4 No. holes for bolts	No.	2			
C	6mm thick 'U' shaped plate overall size 350mm long by 100mm wide x 100mm deepwelded onto top of steel column including making holes for fixing timber beam including necessary fixing bolts	No.	2			
D	100mmx3mm thick diameter rolled hollow steel pipe 3900mm long welded at its lower plate (m/s)embedded into concrete base (m/s) end into 300x300mm (m/s) with 12mm bolts(m/s) and its upper end fixed into 'U' shaped plate (m/s)	No.	2			
E	prepare and apply touch up red oxide primer and three coats of gloss paint to general surfaces of the metal surface externally girth 300-400mm	LM	2			
	Carried to Collection					
	Collection					
	From page 181					
	From page 182 (above)					
	Total Carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No.3 Roof					
	Roof coverings					
A	28 gauge prepainted corrugated iron sheets with one corrugation side lap and 75mm wide end lap fixed onto purlins (M/S) with and including approved nails and washers	SM	44			
B	Ditto 28 gauge roof cap fixed with and including roofing nails to match roof	LM	6			
	Roof Construction:					
	The following in sawn cell cured treated cypress roof trusses; hoisting and placing 3.0 metres above the the ground level: Roof trusses fixing to include approved plates; making holes and fixing bolts and nuts as per Engineers detail					
C.	100x50 mm Main Rafters	LM	32			
D	100x50 mm Tie beam	LM	25			
E	100x50 mm Struts and ties	LM	36			
F	150x50 mm Ridge board	LM	11			
G	75x50 mm Purlins	LM	44			
H	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	19			
I	150x50 mm verandah beam	LM	9			
	Wrot Cypress, Selected and kept clean					
	fascias and barge boards					
J	300x25 mm Fascia or barge board with splayed wading joints	LM	27			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Painting generally					
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
	Externally on					
A	Fascia and barge board: Girth 200-300 mm	LM	27			
	Carried to collection					
	Collection					
	From page 183					
	From page 184 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No.4 Doors					
	Precast concrete units : mix 1:2:4 (20 mm aggregate) : vibrated : 4No. Y8 reinforcement					
A	50 mm thick framed ledged and braced prime grade softwood selected and kept clean door size 900x2100 mm high overall: Comprising of 100x50mm stiles and top rail, 150x50mm bottom rail:100x25mm middle rail and filled in with 100x25mm T&G boarding	No.	5			
	Frames and linings : softwood : selected and kept clean					
B	100x50 mm frame : plugged	LM	30			
C	40x20 mm Architrave	LM	30			
D	Ditto moulded quadrants	LM	30			
	Ironmongery					
	Supply and fix the following to wood with matching screws					
E	100 mm pressed steel butt hinges	Prs	7.5			
F	3 -lever mortice lock with handles as union or any other equal and approved	NO	5			
G	Rubber door stop : rawl bolted to concrete	NO	5			
H	mild steel holdfast door frame lugs: plugged	NO	30			
	Prepare and prime before fixing on wood					
I	Frames : not exceeding 100 mm girth	LM	30			
J	Architraves : ditto	LM	30			
K	Ditto: Quadrants	LM	30			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Amount	Rate	Kshs.	Cts.
	Prepare and knot coated surfaces: prime and apply one undercoat and two finishing hard gloss paint on wood:					
A	Doors general surfaces	SM	20			
B	Frames : over 100 but not exceeding 200 mm girth	LM	30			
C	Architraves : not exceeding 100 mm girth	LM	30			
D	Ditto: Quadrants	LM	30			
	Carried to collection					
	Collection					
	From page 185					
	From page 186 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No.5 Windows					
	Burnt clay window cill					
A.	150x150x10mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	5			
	Supply and fix the following; ***Mild steel : one coat red oxide primer before erection***					
	Composite purpose made steel casement windows : fixed to concrete or blockwork with lugs plugged: brass ironmongery: bedded and pointed all round in mastic: burglar proofing: as per Engineers detail's:					
B.	Window size 1500x1500 mm high overall	NO	2			
C	Window size 600x600 mm high overall	NO	4			
	Glazing					
	3 mm clear sheet glass and glazing: to metal with approved putty					
D	In panes: over 0.1 but not exceeding 0.50 square metres	SM	5			
E	Ditto obscure glass	SM	2			
	Curtain Rod					
F	25mm diameter lightweight steel (furniture tube.) in curtain rods including matching end brackets	LM	7			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
G	Windows: general surfaces	SM	12			
H	Ditto curtain rods girth n.e 100mm	LM	7			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No.06 External Finishes					
	Wall finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A.	Beams	SM	8			
B	Gable end walling	SM	14			
	Painting					
C	Beams	SM	8			
D	Gable end walling	SM	14			
	Key pointing					
E	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	65			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Terrazo paving :					
	Insitu polished Terrazo paving : washed : on concrete to					
A.	50 mm floors	SM	29			
B.	100x25mm skirting : coved junction: rounded edges	LM	36			
C.	25x6 mm plastic division strips : set into insitu pavings	LM	30			
	Wall finishes					
	300x200x6 mm white glazed tiles: on cement and sand backing(m/s) : bedded in cement mortar (1:4) : pointed in white cement					
D	Walls	SM	24			
E	matching plastic edge trims	LM	10			
	15 mm cement and sand (1:4) backing trowelled: on stonework to					
F	Walls : finished to receive tiles (m/s)	SM	24			
	12 mm cement and sand (1:4) plaster : steel trowelled : on stonework to					
G	Walls	SM	70			
	Prepare and apply one undercoat,and three coats silk vinyl paint : on plaster to					
H	Walls	SM	70			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No.08 Sanitary fittings					
	Supply and fix the following complete with all requisite accessories.					
A.	Wash hand basin as "Twyfords" cat. ref no. AL4812WH or any other equal and approved : complete with all accessories, including rubber stopper, plated bottle trap.Basin pillar tap as "Twyfords" CAT No. PE 5205CCP	NO	2			
B.	W.C suite complete with, pan,seat cover and cistern as "Twyfords" cat. ref no. AD1145WH or any other equal and approved: Including all other accessories.	NO	2			
C	Allow a provisional sum ksh 40,000. for plumbing and drainage				40,000	
D	Allow kshs 150,000 for construction of biodigester				150,000	
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**					
	Element No. 09 Electrical Works					
	Rates quoted shall be inclusive of supply and installation includinfg builders work incidental thereto.					
	Lighting point wired in 3X1.5mm2 single core PVC cables drawn in 20mm diameter heavy gauge PVC conduits including all conduit accessories and switch boxes for:-					
A.	One way swithching	No.	2			
B.	Two way swithching	No.	2			
C.	Pendant light fitting comprising ceilling rose,code and lampholder as volex complete with bulb	No.	5			
D	100W bulkhead fittting as microlite	No.	4			
	13A power point wired in 3x2.5mm2 single core PVC copper cables drawn in 20mm diameter heavy gauge PVC conduits incl. All conduit accessories for:					
E	Single	No.	4			
F	13A single flush mounted socket outlets as volex	No.	4			
G	4Ways consumer unit as crabtree complete with cicuit breakers	No.	1			
H	3x16mm2 single core copper cables as sub-main and drawn in 50mm diameter heavy gauge PVC conduits including all conduit accessories.	Lm.	10			
I	Standard cable looping box		Item			
J	Allow for the Testing of the complete electrical installations to the satisfaction of the engineer		Item			
	Total carried to Summary			**Kshs.**		

elemen No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **ABLUTION BLOCK- KASIGAGAU** **TSAVO CONSERVATION AREA**			
	Summary	From page		
1	Substrucures	180		
2	Walling	182		
3	Roof	184		
4	Doors	186		
5	Windows	187		
6	External wall finish	188		
7	Internal finishes	189		
8	Fixtures and Fittings	190		
9	Electrical Works	191		
	Subtotal			
	Multiplied by 2 Blocks		**x2**	
	Total ablution Blocks Carried to Grand Summary	**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No. 1 Substructures (All Provisional)					
	Site Preparation					
A.	Clear site of shrubs, grass small trees of girth not exceeding 600mm and grub roots and remove debris from site as directed by the engineer	SM	141			
B.	Cut down trees of girth 600-900mm; cut the tree into logs and grub up all roots and remove the arising materials from site; set the logs aside for future use by the client.	No.	3			
C.	Excavate vegetable soil 300 mm (average) Deep: spread on site as directed	SM	116			
D.	Excavate to reduce levels av. 300mm deep from stripped levels	SM	116			
E.	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	121			
F.	Excavate pits for column bases not exceeding 1.50 metres deep from reduced level	CM	78			
G.	Extra over all excavations for excavating in rock	CM	10			
	Disposal of excavated materials					
H.	Backfill and compact selected excavated materials	CM	150			
I.	Spread surplus excavated materials on site as may be directed by the project manager	CM	59			
	Planking and strutting					
J.	Planking and strutting to sides of excavations		Item			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Disposal of water:					
A	Keep trenches free from all water Keep excavations free from all fallen materials		Item			
	Hardcore fillings					
B	600mm Thick well compacted Hardcore Fillings: levelled and compacted in 150 mm layers	CM	60			
C	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	100			
	Murram blinding					
D	50 mm fillings as blinding to hardcore : levelled and compacted	SM	100			
	Insitu concrete : Mix 1:3:6					
E	50 mm blinding : under strip foundations	SM	48			
F	Column bases	SM	13			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
G	Foundations in trenches	CM	10			
H	Column bases	CM	5			
I	Stub Columns	CM	1			
J	Ground beams	CM	7			
K	100 mm Thick beds	SM	116			
	High tensile reinforcement to BS 4461 incl. Cutting to lengths,bending,twisting and fixing.include all necessary wires and spacing blocks					
L	Assorted bars	Kg.	2310			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
A	In beds : 200 mm laps	SM	116			
	Formwork : to					
B	Vertical : sides of foundations	SM	32			
C	Ditto:Column bases	SM	21			
D	Ditto: stub columns	SM	16			
E	Ditto: ground beam	SM	64			
F	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	54			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
G	200 mm Walls	SM	121			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
H	Horizontal : 200 mm wide	LM	73			
I	Ditto : 100 mm wide	LM	6			
	Labours and sundries					
J	Single layer 1000 gauge damp proof membrane : 200 mm laps	SM	116			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	12 mm cement and sand (1:4) render: on concrete or blockwork to:					
A	Plinths	SM	17			
	Prepare and apply two coats bituminous paint : on render : to					
B	Plinths	SM	17			
	Carried to Collection					
	Collection					
	From page 193					
	From page 194					
	From page 195					
	From page 196 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	5			
B.	Columns	CM	1			
	High yield square twisted reinforcement including cutting to lengths, bending twisting and fixing, including all necessary tying wires and spacing blocks, mild steel bars to B.S. 4449:-					
C.	Assorted	Kg	550			
	Formwork to:					
D.	Sides and soffits : beams	SM	64			
E	Ditto columns	SM	20			
	Machine dressed masonry wall: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
F	200 mm Walls	SM	175			
G	100mm Ditto	SM	15			
	Labours and sundries					
H	Labour and materials for eaves filling 300mm high to 200mm thick walls	LM	34			
I	Fair raking	LM	30			
	Total Carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Vents					
A.	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends: coffee tray wire reinforced	NO	28			
	Carried to Collection					
	Collection					
	From page 197					
	From page 198 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No.3 Roof					
	Roof coverings					
A.	28 gauge prepainted (forest green colour) corrugated iron sheets with one corrugation side lap and 75mm wide end lap fixed onto purlins (M/S) with and including approved nails and washers	SM	207			
B.	Pre-painted gauge 28 roof cap fixed with and including roofing nails to match roof	LM	27			
	Roof Construction:					
	The following in sawn cell cured treated cypress roof trusses; hoisting and placing 3.0 metres above the the ground level: Roof trusses fixing to include approved plates; making holes and fixing bolts and nuts as per Engineers detail					
C	100x50 mm Main Rafters	LM	143			
D	100x50 mm Tie beam	LM	128			
E	100x50 mm Struts and ties	LM	218			
F	150x50 mm Ridge board	LM	36			
G	75x50 mm Purlins	LM	440			
H	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	80			
	Wrot Cypress, Selected and kept clean					
	fascias and barge boards					
I	300x25 mm Fascia or barge board with splayed wading joints	LM	81			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Eaves and gable lining					
	wrot cypress					
A	50x25 mm T&g eaves boading at 50mm c/c nailed to rafters	SM	32			
	Metalwork					
B	Galvanised coffee tray mesh bat proofing at eaves fixed with galvanised clout nails at 450 mm centres	SM	32			
	Rainwater goods					
	24 Gauge galvanised mild steel sheet rainwater goods with lapped, rivetted and soldered joints or seams including all labours					
C	150 mm Diameter half round eaves gutter: 25x6 mm: M.S brackets screwed to fascia at 600 mm centres	LM	54			
D	Extra for stopped end	NO	8			
E	Extra for 100 mm drop nozzle	NO	6			
F	100 mm Diameter rainwater down pipe : fixed with M.S brackets to concrete or block work and including 225x150x25 mm hardwood blocks chamfered all round and plugged and screwed to walling generally at 1.50 metre centres	LM	16			
G	Extra for bend	NO	6			
H	Extra swan neck projections	NO	8			
I	Extra for shoe	NO	8			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Painting generally					
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
	Externally on					
A.	Fascia and barge board: Girth 200-300 mm	LM	81			
B.	Sloping soffits of eaves boarding	SM	32			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint on metalwork					
C.	Large pipes	SM	10			
D.	150 mm diameter half round gutter	SM	14			
	Carried to collection					
	Collection					
	From page 198					
	From page 199					
	From page 200					
	From page 201 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No.4 Windows					
	Burnt clay window cill					
A.	150x150x10mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	18			
	Supply and fix the following; ***Mild steel : one coat red oxide primer before erection***					
	Composite purpose made steel windows : fixed to concrete or blockwork with lugs plugged: brass ironmongery: bedded and pointed all round in mastic: burglar proofing: as per Engineers detail's:					
B	Window size 750x900 mm high	NO	2			
C	Window size1500x1350 mm high	NO	2			
D	Window size1500x1500 mm high	NO	4			
E	Window size 500x1500 mm high	NO	2			
	Glazing					
	5 mm clear sheet glass and glazing: to metal with approved putty					
F	In panes: over 0.1 but not exceeding 0.50 square metres	SM	16			
G	Ditto obscure Sheet glass	SM	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Pelmet boxes: softwood: selected and kept clean					
A	150x25 mm top	LM	18			
B	150x25 mm fascia : two labours	LM	18			
C	Extra for stopped ends	NO	12			
	General joinery: cypress or equal approved: selected and kept clean					
D	50x20 mm bearers : plugged	LM	18			
	Curtain tracks					
E	Brass "I" section track screwed to pelmets (measured seperately): rollers: end stops: laps	LM	18			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
F	Windows: general surfaces	SM	29			
	Prepare and prime before fixing on wood					
G.	Bearers : not exceeding 100 mm girth	LM	18			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss finishng paint : on wood					
H.	pelmets : general surfaces	SM	9			
	Carried to collection					
	Collection					
	From page 202					
	From page 203 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No. 5 Doors					
	Precast concrete units : mix 1:2:4 ***(20 mm aggregate) : vibrated :*** ***4No. Y10 reinforcement***					
A.	200x215 mm lintol	LM	18			
	Mild steel: K.S. 02-18					
	Panel doors: 50x50x4mm hollow section ***framing and intermediate rails,*** ***ends welded and angles cut, mitred and*** ***welded: part 1.5mm thick metal sheet*** ***cladding welded to both faces:*** ***part glazed permanenent vent. All*** ***welding ground to smooth finish:*** ***Puropse made hinges per leaf*** ***3-lever mortice locks: locking cleats and*** ***bolt: guides: padlock eye: buglar proofing*** ***All as per Engineers detail's:***					
B.	Door size 1200 x 2400 mm high overall in two equal leaves	NO	2			
C	Ditto single leaf size 900x2400	NO	2			
	Flush doors: solid cored					
D	45 mm thick door size 850x2050 mm high: faced both sides with imported quality veneer : hardwood lipped all edges	NO	4			
	Frames and linings : treated softwood : ***selected and kept clean***					
E	100x50 mm frame : plugged	LM	25			
F	100x50 mm Mullion	LM	4			
G	20x20 mm Architrave : ditto	LM	25			
H	Ditto quadrant	LM	25			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Ironmongery					
	Supply and fix the following to wood with matching screws					
A.	100 mm pressed steel butt hinges	Prs	6			
B.	5-lever mortice lock with lever handles	NO	4			
C.	3-lever mortice lock with lever handles	NO	4			
D.	Rubber door stop : rawl bolted to concrete	NO	12			
	Prepare and prime before fixing on wood					
E	Frames : not exceeding 100 mm girth	LM	25			
F	mullions: not exceeding 100 mm girth	LM	4			
G	Architraves : ditto	LM	25			
H	Ditto quadrant	LM	25			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
I	Doors general surfaces	SM	20			
	Knot, prime, stop and apply three coats crown alkyd clear polyurethane varnish wood:					
J	Doors general surfaces	SM	15			
K	Frames : over 100 but not exceeding 200 mm girth	LM	25			
L	mullions: not exceeding 100 mm girth	LM	4			
M	Architraves : not exceeding 100 mm girth	LM	25			
N	Ditto quadrant	LM	25			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Amount carried to collection					
	<u>Collection</u>					
	From page 204					
	From page 205					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No.06 External Finishes					
	Wall finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A	external wall surfaces generally	SM	193			
	Painting					
B	selected external wall surfaces	SM	30			
	Prepare and apply rough-cast finish to rendered surfaces:					
C	External wallings	SM	163			
	Wrot prime grade cypress: selected and kept clean: pressure impregnated					
D	100x25mm thick T&G boarding nailed to External verandahs	SM	6			
	Knot, prime, stop and apply three coat crown alkyd varnish on woodwork.					
E	T&g ceiling linings	SM	6			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Cement and sand (1:4) screed: steel trowelled on concrete to: red oxide admixture.					
A	50 mm floors	SM	105			
B	Ditto 100x25 mm skirting	LM	118			
	Prepare surfaces and apply "Ronseal" floor wax or equal and approved floor wax					
C	wax to floors	SM	105			
D	Ditto skirting girth n.e 125mm	LM	118			
	Cement and sand (1:4) screed: steel trowelled on concrete to					
E	40 mm thick: to receive floor tiles: (m/s)	SM	8			
	300x300x7.5 mm glazed ceramic floor tiles: on cement and sand backing(m/s) : bedded and jointed in cement mortar (1:4) : pointed in matching cement					
F	Floors	SM	8			
G	Extra for fair edges	LM	24			
	Wall finishes					
	150x150x6 mm white glazed tiles: on cement and sand backing (m/s) : bedded in cement mortar (1:4) : pointed in white cement					
H	Walls	SM	30			
I	Extra for fair edges	LM	72			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	12 mm cement and sand (1:4) backing steel trowelled: on block work to:					
A	Walls : finished to receive tiles	SM	30			
B	Matching plastic edge trims	LM	60			
	12 mm cement and sand (1:4) plaster : steel trowelled : on blockwork to					
C	Walls: internally	SM	354			
	Prepare and apply one undercoat and two finishing coats hard gloss paint : on plaster to					
D	Walls	SM	354			
	Ceiling finishes					
	General joinery : cypress: pressure impregnated with tanalith "C" or equal					
E	Skeleton framework to ceilings: 50x50 mm one direction at 600 mm centres and 50x100 mm other direction at 1200 mm centres	SM	115			
	Chipboard : nailed to branderings (Measured seperately)					
F	9mm ceiling linings	SM	115			
G	Extra over for access trap door size 800x800 mm overall : framing all round	NO	2			
H	75x20 mm Cornice : plugged	LM	118			
	Knot, prime, prepare and Prepare one undercoat and two finishing coats plastic emulsion paint to					
I	Celotex linings	SM	115			
J	Cornice: not exceeding 100 mm girth	LM	118			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Collection					
	From page 208					
	From page 209					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No.08 Fixtures and Fittings					
	25mm thick blockboard with first quality mahogany veneer facing on both faces: hardwood lipping on all exposed edges					
A.	Wardrobe size 1425 mm long x 600 mm deep x 2700 mm high overall : comprising 3No. Doors each size 500x2700 1 No. vertical division at 1100/550: 4 No. drawers on either side of division each size 800x600x300mm high overall: hanging rails: ironmongery: 1No. mirrors size 1500x600x6mm screwed to wood work with dome head screws on foam backing: shoe-rack: painting: All as per Architects details	NO	2			
	Concrete worktop					
B.	3000mm long x50mm thick reinforced concrete (Y-10) worktop : mounted at 1000mm above finished floor level level on 100mm thick concrete (1:3:6) benching, including all necessary formwork: steel trowelled finish:ceramic tiles top and exposed edges.	NO	2			
	Kitchen Undersink Cupboard					
C	Cupboard size 3000x600x900 mm high overall: comprising 6No. doors size 500x600 mm 6No. drawers size 600x500x 150 mm deep: shelvings: Ceramic tiles worktop: ironmongery : painting 100mm mass concrete benching	NO	2			
	kitchen over head shelving:					
D	Overhead shelving size 2100 mm long x 450 mm deep x 600 mm high : comprising 4 No. vertical divisions at 525mm c/c and one No. horizontal division at 300mm c/c complete with all bearer plugs and painting	NO	2			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No.09 Sanitary fittings					
	All Sanitary fittings to match "Twyfords brand" or any other equal and approved.					
	Supply and fix the following complete with all requisite accessories.					
A.	Wash hand basin as "Twyfords" cat. ref no. AL4812WH or any other equal and approved : complete with all accessories, including rubber stopper, chain and chromium plated bottle trap.Basin pillar tap as "Twyfords" CAT No. PE 5205CCP	NO	2			
B.	W.C suite complete with, pan,seat cover and cistern as "Twyfords" cat. ref no. AD1145WH or any other equal and approved: Including all other accessories.	NO	2			
C	"Lorenzetti" or equal and approved Automatic Shower heater with energy saver selector.	NO	2			
D	Stainless steel Single bowl single drainer sink size 1200x600 mm : complete	NO	2			
	Accessories					
E.	Toilet toilet roll holder as "Twyfords" Cat: no. VC9806WH or any other equal and approved.	NO	2			
F.	Soapdish as "Twyfords" Cat: no. VC9312WH or any other equal and approved.	NO	2			
G.	6 mm Float plate silver coated mirror size 600x450mm high with bevelled edges, complete with dome headed screws to match: plugged: on foam backings	NO	2			
H.	20mm diameter x 700mm long chromium plated towel rail including end brackets to match: Plugged to blockwork or masonry.	NO	2			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Tumbler and tooth brush holder as "Twyfords" Cat: no.VC9805WH or any other equal and approved	NO	2			
	Carried to collection					
	<u>Collection</u> From page 212 From page 213 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No. 10 Drainage					
	Prices for pipework shall include for the cost of couplings; connectors and jointing to fittings, appliances etc and fixing brackets all as required in the pipework installation together with marking pipe routes on walls and floors: and builders work incidental thereto					
	All upvc couplings, branches, tees etc to be formed strictly in accordance with manufactures instructions:					
	UPVC soil, waste, and ventilating pipes anf fittings to BS 5255					
A.	32mm diameter in wall chase:	LM	30			
B.	50mm diameter in wall chase:	LM	15			
C	100 mm diameter Golden brown pipe heavy gauge	LM	45			
D	80mm diameter vent pipe fixed to wall including metal holder bats	No.	2			
E	*Extra over for pipes* 32mm bend	NO	15			
F	*Extra over for pipes* 32mm plug	NO	10			
G	32mm access plug	NO	10			
H	50mm ditto	NO	5			
I	50mm inspection bend	NO	10			
J	100mm ditto	NO	2			
K	50mm sweep tee	NO	2			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	80mm plain bends.	NO	2			
B	100mm ditto	NO	8			
C	32mm equal tee	NO	10			
D	Galvanised steel balloon grating and setting on head of 100mm pvc pipe	NO	2			
E	100mm weathering apron	NO	2			
F	100mm diameter floor trap complete with cover grating	NO	2			
G	50mm ditto	NO	1			
	Gulley traps					
H	Gulley trap chamber size 250x250, approximately 400mm deep in 150mm blockwork with cement mortar joints on 150mm thick mass concrete slab, and plastered inside: for 100mm diameter trap and hopper 40mm thick, 250x250mm precasr concrete cover to gulley trap chamber and provide with 40mm ventilating hole.	NO	2			
	Manholes/inspection chambers					
I	Inspection chamber 900x600x600mm deep comprising 150mm thick (1:3:6) bed, 150mm thick concrete block walls: 100mm concrete (1:2:4) slab reinforced with 8mm mild steel bars at 100mm centres both ways, concrete (1:3:6) benching to form 300mm diameter channel: 600x450mm medium duty manhole cover complete with frame including plastering walls internally and steel troewelled screed to benching, all excavations formwork and disposal	N0.	2			
J	ditto: 1000mm deep	N0.	2			
K	ditto 1500mm deep	N0.	2			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	septic tank					
A.	***Septic tank, excavating:disposing of surplus soil by spreading on site: compacting on site compacted hardcore filling, in making up levels: 50mm concrete class 15 blinding: concrete class 25 in 150mm thick beds and cover slabs: 200mm thick natural stone walling and 100mm thick dividers: reinforcement: formwork: rendered internally with water-proof render : light duty manhole covers and frames to BS 497: holes in sides for pipes;internal size***					
	REF drawing No. (50)5342: Capacity 6000 litres: Twenty persons: 2 Years desludging interval					
B.	6000x1800x2200mm overall	No.	1			
	Soakpit					
	1200mm diameter soak pit 6000mm deep, excavation and disposal 200mm diameter backfill , 1050mm reinforced concrete cover, on 60mm mm deep msonry wall on mass concrete 1:3:6 stip footing					
	Ref drawing No. (50) 5345					
C	1200mm Diameter by 6000mm deep	No.	3			
D	Excavate pipe trenches for small pipes girth n:e 100mm . Average depth n.e 0.6 metres deep part return fill in and ram part spread on site as directed	LM	45			
	UPVC soil, waste, and ventilating pipes anf fittings to BS 5255					
E	100mm diameter pipe in trenches	LM	45			
F	Allow for testing the whole of the drainage installations during the progress and completion of the works to approval		item			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Collection					
	From page 214					
	From page 715					
	From page 216					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No. 11 Plumbing					
	Prices for pipework shall include for the cost of couplings; connectors and jointing to fittings, appliances etc and fixing brackets all as required in the pipework installation together with marking pipe routes on walls and floors: and builders work incidental thereto					
	Supply and fix the following galvanised steel pipes: medium thickness jointed and fixed as described					
A.	15mm diameter	LM	40			
B.	20mm ditto	LM	18			
C.	25mm ditto	LM	100			
D	15mm bend	No.	20			
E	20mm ditto	No.	4			
F	15mm equal tee	No.	5			
	high pressure brass valves and jointing to pipes					
G	15mm ditto	No.	6			
H	20mm ditto	No.	6			
I	32mm. Ball valve with plastic float, brass stem and connecting to tank with union and backnut including perforation					
J	20mm ditto	No.	2			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Excavate trenches for small pipes not exceeding 100 mm daimeter, not exceeding 1.50 metres deep: part backfill and compact excavated materials : remove surplus spoil: grade and compact bottoms including planking and strutting for upvc pipes					
A	Average 500 mm deep	LM	10			
	Valve chamber					
B	Chamber size 300x300x600 mm deep internally: 100 mm thick conctrete (1:3:6) bed : 150 mm solid concrete blockwalls: 75 mm thick precast conctrete cover slab with 1No. grip: excavation and backfill: disposal	NO	1			
	Roof Water storage tank					
C	Plastic water storage tank 900 litres (200 gallons) rectangular tank in roof space approximate dimensions 1270x1270x580mm including overflow pipes	NO	2			
	Plastic Tank					
D	Supply and install 2300 litres capacity cylindical vertical "Kentank" model CV -232c: 1550mm diameter 1520mm height: As manufactured by Kentainers ltd, of P.O BOX 42168 NRB. TEL: (02) 823513-6: Including fixing inlet and lockable outlet taps in accordance with manufacturers instructions	No.	2			
	Circular tank platform: 150mm concrete class 15 strip foundation: 150mm solid concrete blockwork walling 500mm high above existing ground level enclosure to all sides rendered externally: 350 mm thick compacted hardcore infill: 100mm thick concrete class 15 base slab : laid on 50mm thick murram blinding: BRC A-142 reinforcement					
E	2000mm diameter tank platform	No.	2			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
B	***Testing*** Allow for testing of the complete internal plumbing installation to the satisfaction of the Engineer and the local Authority Representative	item	1			
	Carried to collection					
	Collection From page 217 From page 218 From page 219 From page 220 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**					
	Element No. 12 Electrical Works					
	Rates quoted shall be inclusive of supply and installation includinfg builders work incidental thereto.					
	Lighting point wired in 3X1.5mm2 single core PVC cables drawn in 20mm diameter heavy gauge PVC conduits including all conduit accessories and switch boxes for:-					
A	Lighting point completely wired in 3x1.5mm2 single core PVC insulated copper cables drawn into 20mm diameter heavy gauge PVC conduits for one way switching including all accessories but excuding the switch.	No	14			
B	As item (A) but wired for two-way switching.	No	2			
C	6A two-gang, two-way, white moulded plate switch as Crabtree list No. 4172.	No	2			
D	As item (C) but three-gang, two-way switch.	No	1			
E	Pendant comprising white ceiling rose with back plate, lamp holder, 0.75 mm² twin core circular cord and 11W PL lamp as Crabtree Cat. No. 5855/9.	No	8			
F	Cast aluminium bulkhead with polycarbonate bowl retained by tamper-resistant fixings, IP65 with 11W PL lamp as Thorn Cat. No. OLV 1100BC	No	4			
G	13A socket outlet point completely wired in 3x2.5mm2 single core PVC insulated copper cables drawn into 20mm diameter heavy gauge PVC conduit including white moulded 13A one-gang SP switched socket outlet as Crabtree Cat. No. 4306.	No	3			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Flush mounted, metal cased, 4Way 100A SP&N Consumer Unit complete with 100A DP integral main switch and hinged protective cover as Crabtree	No	1			
B	5A SP MCB as Crabtree	No	1			
C	20A SP MCB as Crabtree	No	1			
D	Blanking plates for the Consumer Unit.	No	2			
E	Sub-mains circuit completely wired in 3 x 6 mm² PVC single core cables drawn into 25 mm diameter heavy gauge PVC conduit from the DC/AC Inverter to the Consumer Unit.	M	6			
F	TV outlet point complete with draw wire in 20mm diameter heavy gauge PVC conduit to roof level including white moulded TV/FM socket outlet as Crabtree Cat. No. 7266.	No	1			
G	Earthing comprising of 3 x 6 mm² PVC single core cable drawn into 20mm diameter heavy gauge PVC conduit, 1500mm long by 12mm diameter copper earth rod with clamp and inspection manhole with cover.	No	1			
	Carried to collection					
	<u>Collection</u>					
	From page 221					
	From page 222 (Above)					
	Total carried to Summary			**Kshs.**		

elemen No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED BLOCK COMPRISNG OF** **2 UNITS OF SINGLE BEDROOM - HOUSE** **KASIGAU TSAVO CONSERVATION AREA**			
	Summary- **single bedroom house**	From page		
1	Substrucures	196		
2	Walling	198		
3	Roof	201		
4	Windows	203		
5	Doors	206		
6	External wall finish	207		
7	Internal finishes	210		
8	Fixtures and fittings	211		
9	sanitary fittings	213		
10	Drainage	217		
11	Plumbing	220		
12	Electrical Works	222		
	Total one block 2 units one bedroom house carried to Grand Summary	**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 1 Substructures (All Provisional)					
	Site Preparation					
A.	Clear site of shrubs, grass small trees of girth not exceeding 600mm and grub roots and remove debris from site as directed by the engineer	SM	103			
B.	Cut down trees of girth 600-900mm; cut the tree into logs and grub up all roots and remove the arising materials from site; set the logs aside for future use by the client.	No.	3			
C.	Excavate vegetable soil 150 mm (average) Deep: spread on site as directed	SM	103			
D.	Excavate to reduce levels n.e 1.5metres deep from stripped levels (cut and fill)	CM	51			
E.	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	59			
F.	Excavate pits for column bases not exceeding 1.50 metres deep from reduced level	CM	2			
G.	Extra over all excavations for excavating in rock	CM	3			
	Disposal of excavated materials					
H.	Backfill and compact selected excavated materials	CM	41			
I.	Spread surplus excavated materials on site as may be directed by the project manager	CM	18			
	Planking and strutting					
J.	Planking and strutting to sides of excavations		Item			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Disposal of water:					
A	Keep trenches free from all water Keep excavations free from all fallen materials		Item			
	Hardcore fillings					
B	300mm Thick well compacted Hardcore Fillings: levelled and compacted in 150 mm layers	SM	87			
C	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	87			
	Murram blinding					
D	50 mm fillings as blinding to hardcore : levelled and compacted	SM	87			
	Insitu concrete : Mix 1:3:6					
E	50 mm blinding : under strip foundations	SM	49			
F	Column bases	SM	6			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
G	Foundations in trenches	CM	10			
H	Stanchion bases	CM	2			
I	100 mm Thick beds	SM	103			
	High tensile reinforcement to BS 4461 incl. Cutting to lengths,bending,twisting and fixing.include all necessary wires and spacing blocks					
J	Y10	Kg.	665			
K	Y12	Kg.	12			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
L	In beds : 200 mm laps	SM	103			
M	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	46			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Formwork : to					
A	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	46			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
B	200 mm Walls	SM	106			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
C	Horizontal : 200 mm wide	LM	56			
	Labours and sundries					
D	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	103			
	12 mm cement and sand (1:4) render: on concrete or blockwork to:					
E	Plinths	SM	14			
	Prepare and apply two coats bituminous paint : on render : to					
F	Plinths	SM	14			
	Paving slab surround					
G	Pre-cast concrete (1:2:4) in paving slabs size 600x600x50mm thick laid on consolidated sand bed jointed in cement sand mortar (1:4)	SM	38			
	Carried to Collection					
	Collection					
	From page 224					
	From page 225					
	From page 226 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	4			
	High yield square twisted reinforcement including cutting to lengths, bending twisting and fixing, including all necessary tying wires and spacing blocks, mild steel bars to B.S. 4449:-					
C.	Y8	Kg	87			
D	Y12	Kg	568			
	Formwork to:					
D.	Sides and soffits : beams	SM	58			
	200mm thick machine cut stone walling laid in cement sand mortar (1:4): including hoop iron reinforcement in every alternate course					
E	200 mm Walls	SM	118			
	Labours and sundries					
F	Labour and materials for eaves filling 300mm high to 200mm thick walls	LM	34			
G	Fair raking	LM	25			
	Vents					
H	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends: coffee tray wire reinforced	NO	12			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Rolled Hollow Steel Columns					
A	12mm diameter 'T' shaped mild steel bolt overall length 250mm. Vertically and 100mm horizontally complete with nuts and washers and embedded into concrete base	No.	36			
B	4mm thick steel plate overall size 200x200mm including welding onto base of steel column with and including 6m thick fillet weld all round steel column and making 4 No. holes for bolts	No.	9			
C	6mm thick 'U' shaped plate overall size 350mm long by 100mm wide x 100mm deepwelded onto top of steel column including making holes for fixing timber beam including necessary fixing bolts	No.	9			
D	100mmx3mm thick diameter rolled hollow steel pipe 3000mm long welded at its lower plate (m/s)embedded into concrete base (m/s) end into 300x300mm (m/s) with 12mm bolts(m/s) and its upper end fixed into 'U' shaped plate (m/s)	No.	9			
E	prepare and apply touch up red oxide primer and three coats of gloss paint to general surfaces of the metal surface externally girth 300-400mm	LM	7			
	Carried to Collection					
	Collection					
	From page 227					
	From page 228 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No.3 Roof					
	Roof coverings					
A.	28 gauge prepainted corrugated iron sheets with one corrugation side lap and 75mm wide end lap fixed onto purlins (M/S) with and including approved nails and washers	SM	135			
B.	Ditto 28 gauge roof cap fixed with and including roofing nails to match roof	LM	18			
C	25mm thick sisalation foam overlaid on trusses prior to fixing roof cover including 5mm High tensile wire spaced at 600mm c/c anti sag	SM	135			
	Roof Construction: ***NB timber planed smooth***					
	The following in WROT cell cured treated cypress roof trusses; hoisting and placing 3.0 metres above the the ground level: Roof trusses fixing to include approved plates; making holes and fixing bolts and nuts as per Engineers detail					
D.	100x50 mm Main Rafters	LM	75			
E.	100x50 mm Tie beam	LM	42			
F.	100x50 mm Struts and ties	LM	42			
G.	150x50 mm Ridge board	LM	32			
H.	75x50 mm Purlins	LM	143			
I.	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	34			
J.	150x50 mm verandah beam	LM	18			
K.	100x25mm splices	LM	120			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Wrot Cypress, Selected and kept clean fascias and barge boards					
A	200x25 mm Fascia or barge board with splayed wading joints	LM	51			
	Rainwater goods					
	24 Gauge galvanised mild steel sheet rainwater goods with lapped, rivetted and soldered joints or seams including all labours					
B	150 mm Diameter half round eaves gutter: 25x6 mm: M.S brackets screwed to fascia at 600 mm centres	LM	38			
C	Extra for stopped end	NO	4			
D	Extra for 100 mm drop nozzle	NO	4			
E	100 mm Diameter rainwater down pipe : fixed with M.S brackets to concrete or block work and including 225x150x25 mm hardwood blocks chamfered all round and plugged and screwed to walling generally at 1.50 metre centres	LM	12			
F	Extra for bend	NO	4			
G	Extra swan neck projections	NO	4			
H	Extra for shoe	NO	4			
	Painting generally					
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
	Externally on					
I	Fascia and barge board: Girth 200-300 mm	LM	51			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint on metalwork					
A	Large pipes	SM	10			
B	150 mm diameter half round gutter	SM	14			
	Plastic Tank					
C	Supply and install 5000 litres capacity cylindical vertical ROTO TANK 1930mm diameter 1960mm height: As or any other equal and approved model inluding fixing inlet and lockable outlet taps as instructed by project manager	No.	2			
	Circular tank platform: 150mm concrete class 15 strip foundation: 150mm solid concrete blockwork walling 500mm high above existing ground level enclosure to all sides rendered externally: 350 mm thick compacted hardcore infill: 100mm thick concrete class 15 base slab : laid on 50mm thick murram blinding: BRC A-142 reinforcement					
D	2500mm diameter tank platform	No.	2			
	Carried to collection					
	Collection					
	From page 229					
	From page 230					
	From page 231 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No.4 Windows					
	Burnt clay window cill					
A.	150x150x10mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	13			
	Supply and fix the following:100x50x3mm RHS windows					
	window frame Comprising 100x50X3mm main frames ; 50X3mm vertical transomes; compartments left open for openable louvre blades (ms) and aluminium frames (ms):bedding frame to blockwork ; plugged: ironmongery: bedding and pointing in mastic all round R-12 bars at 150mm c/c burglar proofing welded to metal frames; Architects details					
B	Window size 1500x1500 mm high overall : divided into 3No. equal compartments to detail	NO	8			
C	Window size 500x900 mm high overall :	NO	4			
	Sets adjustable aluminium louvre frames with carriages for 150mm blades and annodised finish secured to metal frames with self tapping screws					
D	10 blades frames (units)	sets	48			
	Window claddings: mosquito gauze					
E	Galvanised green mosquito netting fixed to window surfaces with timber beads Mounted on coffee tray wire backing (measured separately)	SM	36			
F	Coffee tray wire fixed to window surfaces	SM	36			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Curtain Rod					
A	25mm diameter lightweight steel (furniture tube.) in curtain rods including matching end brackets	LM	15			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
B	Windows: general surfaces	SM	36			
C	Ditto curtain rods girth n.e 100mm	LM	15			
	Amout carried to collection					
	Collection					
	From page 232					
	From page 233 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 5 Doors					
	Mild steel: K.S. 02-18					
	Panel doors: 50x50x4mm hollow section framing and intermediate rails, ends welded and angles cut, mitred and welded: 1.5mm thick metal sheet cladding welded to both faces: all welding ground to smooth finish: Puropse made hinges per leaf 3-lever mortice locks: locking cleats and bolt: guides: padlock eye: All as per Engineers detail's:					
A	Door size 900 x 2400 mm high overall	NO	2			
	Flush doors: solid cored					
B	45 mm thick door size 850x2050 mm high: faced both sides with premium grade plywood: hardwood lipped all edges	NO	7			
	Frames and linings : softwood : selected and kept clean					
C	100x50 mm frame : plugged	LM	42			
D	Ditto mullions: 4 labours	LM	7			
E	20x20 mm Architrave : ditto	LM	42			
F	Ditto quadrant	LM	42			
	Glazing					
	3 mm clear sheet glass and glazing: to metal with approved putty					
G	In panes: over 0.1 but not exceeding 0.50 square metres	SM	1			
H	Ditto but with timber glazing beads	SM	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Ironmongery					
	Supply and fix the following to wood with matching screws					
A.	100 mm pressed steel butt hinges	Prs	10.5			
B	3-lever mortice lock with lever handles	NO	9			
C	Rubber door stop : rawl bolted to concrete	NO	9			
	Prepare and prime before fixing on wood					
D	Frames : not exceeding 100 mm girth	LM	42			
E	Architraves : ditto	LM	42			
F	Ditto quadrant	LM	42			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
G	Doors general surfaces	SM	8			
	Knot, prime, stop and apply one coat universal undercoat, two coats premium grade gloss paint: on timber					
H	Doors general surfaces	SM	28			
I	Frames : over 100 but not exceeding 200 mm girth	LM	42			
J	Ditto Mullions	LM	7			
K	Architraves : not exceeding 100 mm girth	LM	42			
L	Ditto quadrant	LM	42			
	Amount carried to collection					
	Collection					
	From page 234					
	From page 235 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No.06 External Finishes					
	Wall finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A.	Beams	SM	13			
B	Gable end walling	SM	6			
	Painting					
C	Beams	SM	13			
D	Gable end walling	SM	6			
	Key pointing					
E	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	103			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Cement and sand (1:4) screed: steel trowelled on concrete to: red oxide admixture.					
A	50 mm floors	SM	90			
B	skirting	LM	132			
	Prepare surfaces and apply "Ronseal" floor wax or equal and approved floor wax					
C	wax to floors	SM	90			
D	Ditto skirting girth n.e 125mm	LM	132			
	12 mm cement and sand (1:4) plaster : steel trowelled : on blockwork to					
E	Walls: internally	SM	177			
	Prepare and apply one undercoat and two finishing coats silk vinyl paint : on plaster to					
F	Walls	SM	177			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No.08 Fixtures and Fittings					
	Concrete worktop					
A	2400mm long x600mm long x50mm thick reinforced concrete (Y-10) worktop : mounted at 880mm above finished floor level level on 100mm thick concrete (1:3:6) benching, including all necessary formwork: steel trowelled finish:ceramic tiles top and exposed edges.	NO	1			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No.09 Sanitary fittings					
A.	Wash hand basin as "Twyfords" cat. ref no. AL4812WH or any other equal and approved : complete with all accessories, including rubber stopper, plated bottle trap.Basin pillar tap as "Twyfords" CAT No. PE 5205CCP	NO	3			
B.	W.C suite complete with, pan,seat cover and cistern as "Twyfords" cat. ref no. AD1145WH or any other equal and approved: Including all other accessories.	NO	5			
	Accessories					
E	Toilet toilet roll holder as "Twyfords" Cat: no. VC9806WH or any other equal and approved.	NO	5			
F	Soapdish as "Twyfords" Cat: no. VC9312WH or any other equal and approved.	NO	3			
A.	6 mm Float plate silver coated mirror size 600x450mm high with bevelled edges, complete with dome headed screws to match: plugged: on foam backings	NO	2			
C	Allow a provisional sum ksh 12000,000. for plumbing and drainage				120,000	
D	Allow kshs 150,000 for construction of biodigester				150,000	
	Total carried to Summary			**Kshs.**		

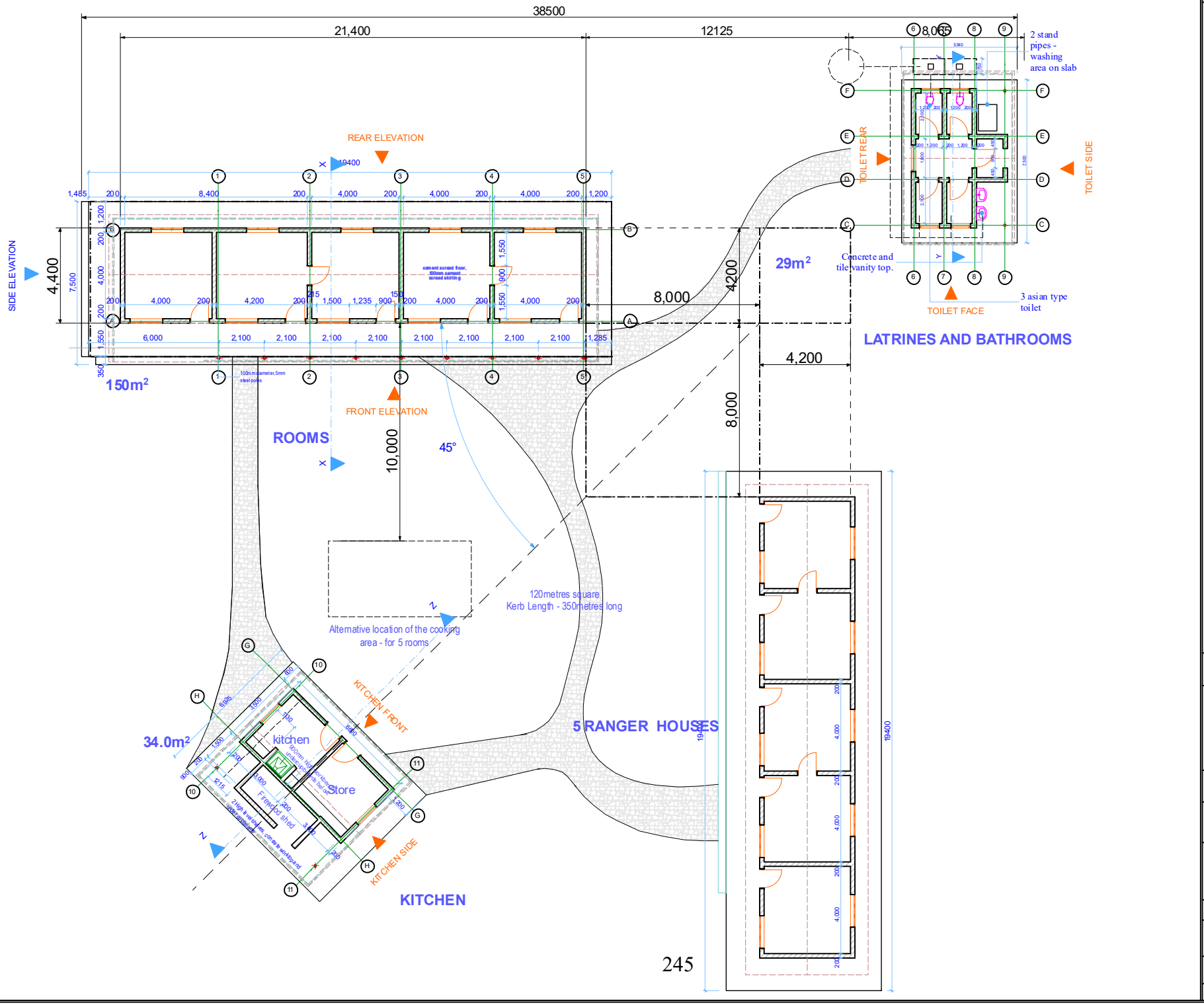
Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**					
	Element No. 10 Electrical Works					
	Rates quoted shall be inclusive of supply and installation includinfg builders work incidental thereto.					
	Lighting point wired in 3X1.5mm2 single core PVC cables drawn in 20mm diameter heavy gauge PVC conduits including all conduit accessories and switch boxes for:-					
A.	One way swithching	No.	4			
B.	Two way swithching	No.	4			
C.	Pendant light fitting comprising ceilling rose,code and lampholder as volex complete with bulb	No.	5			
D	100W bulkhead fittting as microlite	No.	6			
	13A power point wired in 3x2.5mm2 single core PVC copper cables drawn in 20mm diameter heavy gauge PVC conduits incl. All conduit accessories for:					
E	Single	No.	4			
F	13A single flush mounted socket outlets as volex	No.	6			
G	Wall bracket lights complete with holder and bulb.	No.	8			
H	4Ways consumer unit as crabtree complete with cicuit breakers	No.	1			
I	3x16mm2 single core copper cables as sub-main and drawn in 50mm diameter heavy gauge PVC conduits including all conduit accessories.	Lm.	10			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Standard cable looping box		Item			
B	Allow for the Testing of the complete electrical installations to the satisfaction of the engineer		Item			
	Carried to collection					
	<u>Collection</u>					
	From page 240					
	From page 241 (Above)					
	Total carried to Summary			**Kshs.**		

elemen No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED OFFICE BLOCK- KASIGAU** **TSAVO CONSERVATION AREA**			
	Summary	From page		
1	Substructures	226		
2	Walling	228		
3	Roof	231		
4	Windows	233		
5	Doors	235		
6	External wall finish	236		
7	Internal finishes	237		
8	Fixtures and fittings	238		
9	sanitary fittings	239		
10	Electrical Works	241		
	total office block **Carried to Grand Summary**	**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED NEW FACILITIES - KASIGAU** **TSAVO CONSERVATION AREA**					
	P.C. and Provisional sums					
	The contractor shall include in his tender for the following amounts to be deducted either in whole or in part as directed by the project manager					
A	Provide the prime cost sum of Kenya shillings two million kenya shillings for establishment of solar garden to provide power to newly constructed facilities				2,000,000	
B	Provide a provisional sum of Kenya shillings one million Eight hundred thousand for provision of hoisted water stoarage tanks: Tower Height and tank capacity to be provided by project manager				1,800,000	
C	Allow kenya shillings one Million, five hundred and fifteen thousand, project supervision costs				1,515,000	
	Total PC and Provisional sums carried to Grand Summary			**Kshs.**	**5,315,000**	

Item No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED NEW FACILITIES** **AT KASIGAU** **TSAVO CONSERVATION ARAES**			
	GRAND SUMMARY	**From page**		
A	**Rangers accomodation**	162		
B	**Outdoor kitchens**	177		
C	**Ablution Blocks**	192		
D	**One Bedroom house**	223		
E	**office Block**	242		
F	**PC and provisional sums**	243		
G	**Subtotal (1)**			
H	**Add 10% Contigencies**			
I	**Subtotal (2)**			
J	**ADD 16% VAT**			
	SUB TOTAL CARRIED TO SUMMARY	**Kshs.**		



NOTES

RANGER ACCOMODATION

SCHEDULE OF FACILITIES

TSAVO CONSERVATION AREA

20 Number, 1 roomed units (4 blocks).
Kitchen - 2 blocks
Ablution block - 2 blocks

Drawing title :

TYPICAL SITE LAYOUT

Client : KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

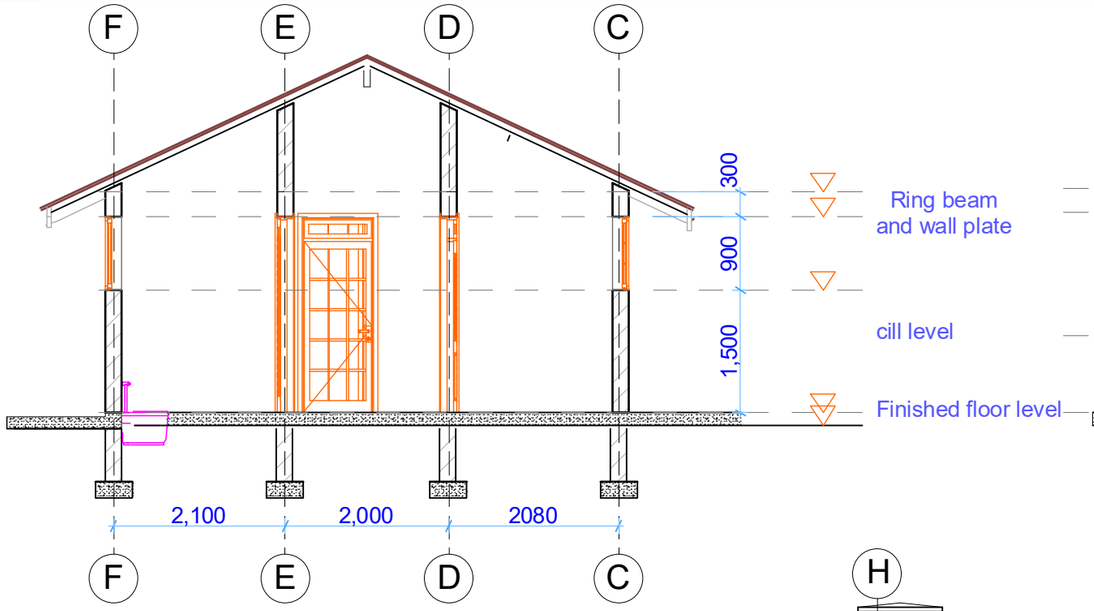
Drawn by : Kathuli P.F

Architect : PATRICK KATHULI .F.

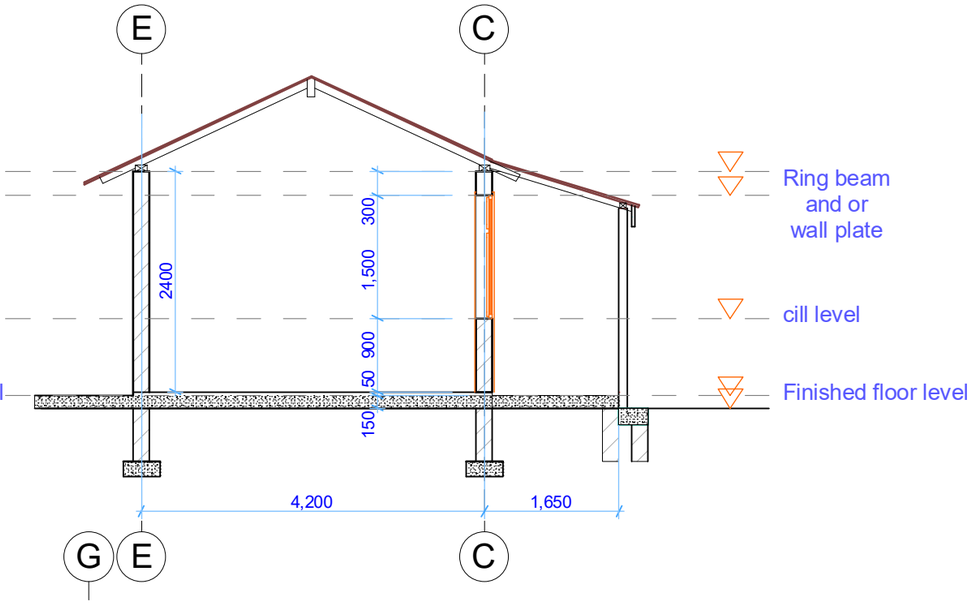
Nos :

Date : AUG - 2021

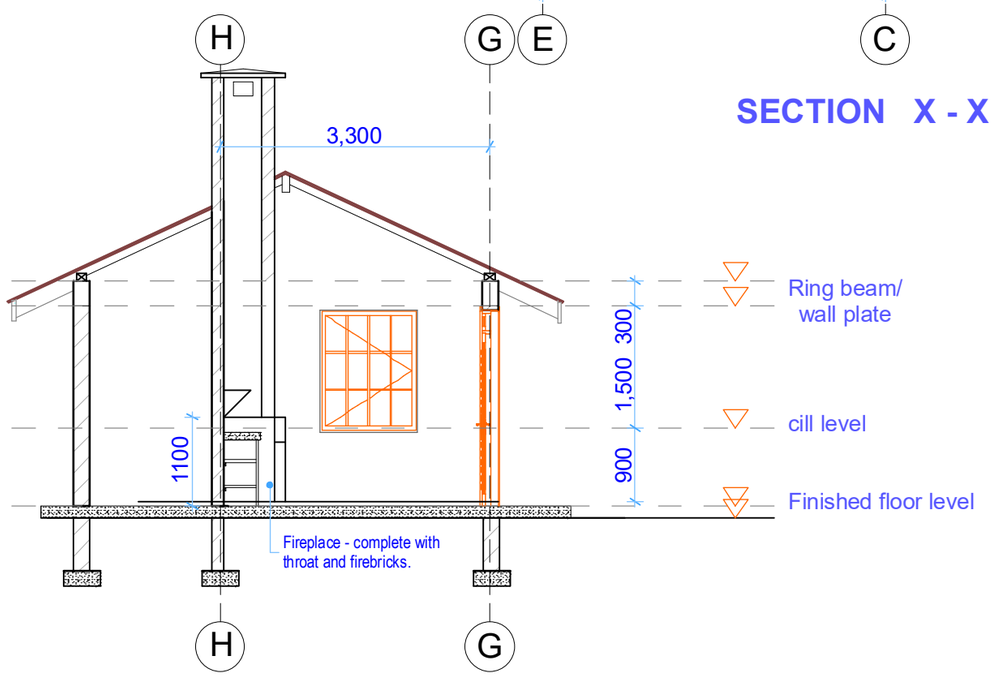
Ag HBFD :



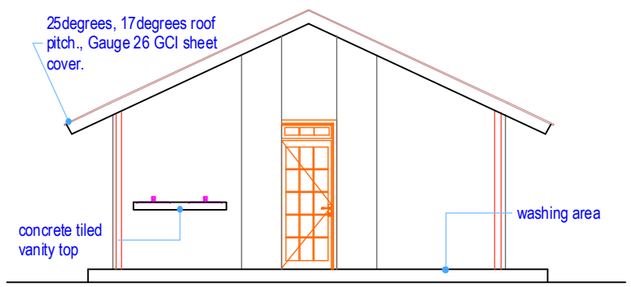
SECTION Y - Y



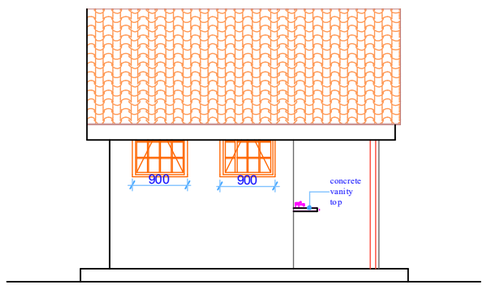
SECTION X - X



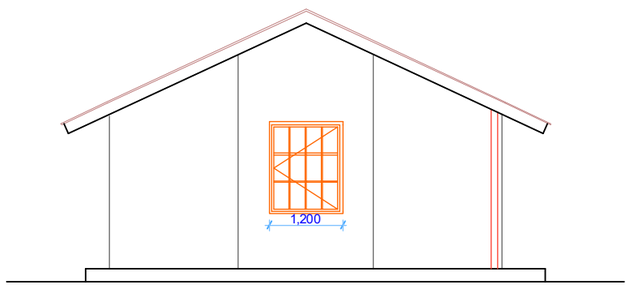
SECTION Z - Z



TOILET SIDE



TOILET FACE



TOILET REAR

NOTES

RANGER ACCOMODATION

SCHEDULE OF FACILITIES

TCA - KASIGAU

20 Number, 2 roomed units (4 blocks).
Kitchen - 2 blocks
Ablution block - 2 blocks

Drawing title :

SECTION AND ELEVATIONS

Client : KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

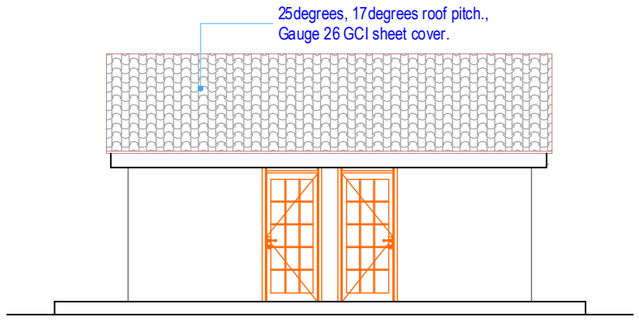
Drawn by : Kathuli P.F

Architect : PATRICK KATHULI .F.

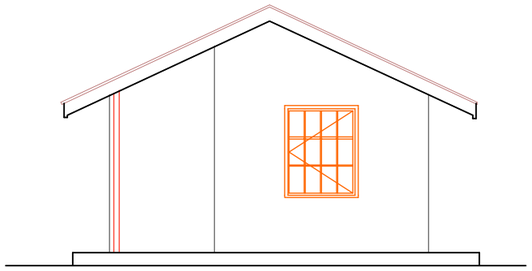
Nos :

Date : OCT - 2021

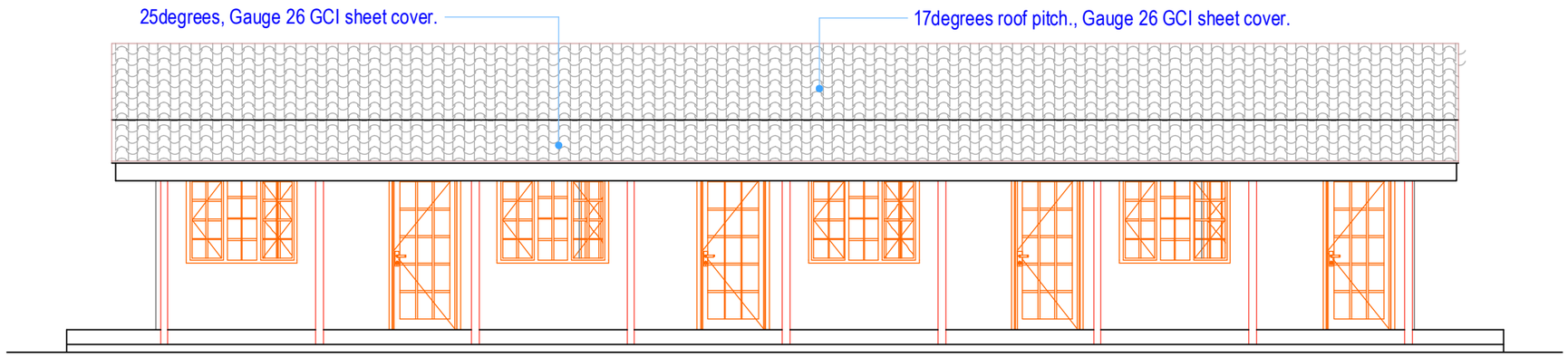
Ag HBFD :



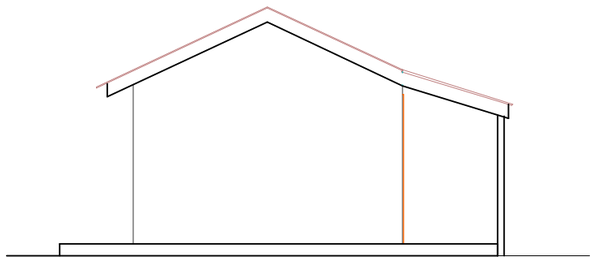
KITCHEN FRONT



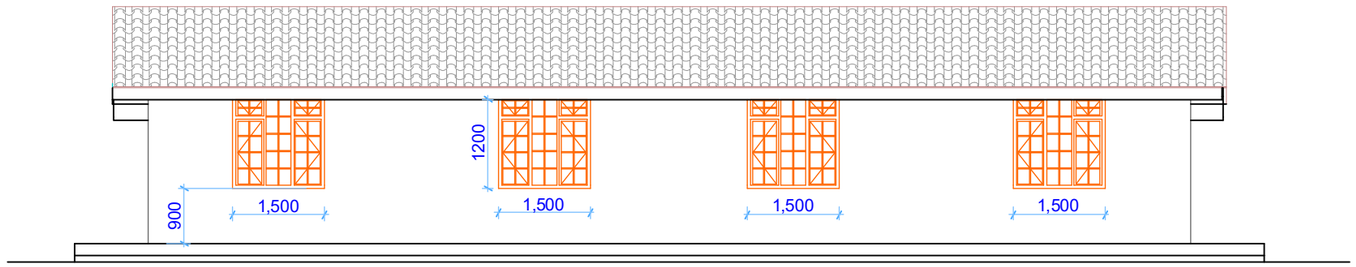
KITCHEN SIDE



MAIN ELEVATION



SIDE ELEVATION



REAR ELEVATION

NOTES

RANGER ACCOMODATION

SCHEDULE OF FACILITIES

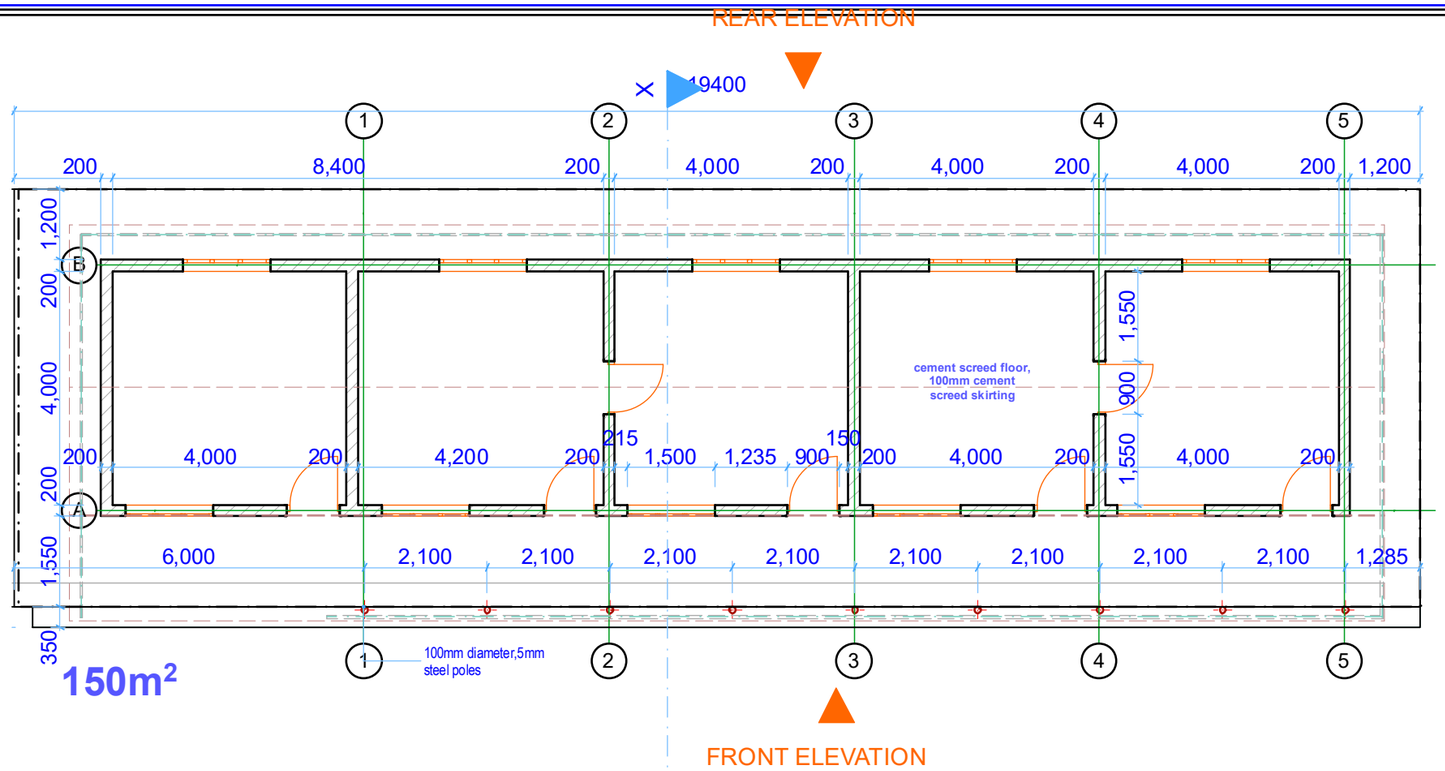
TCA - KASIGAU

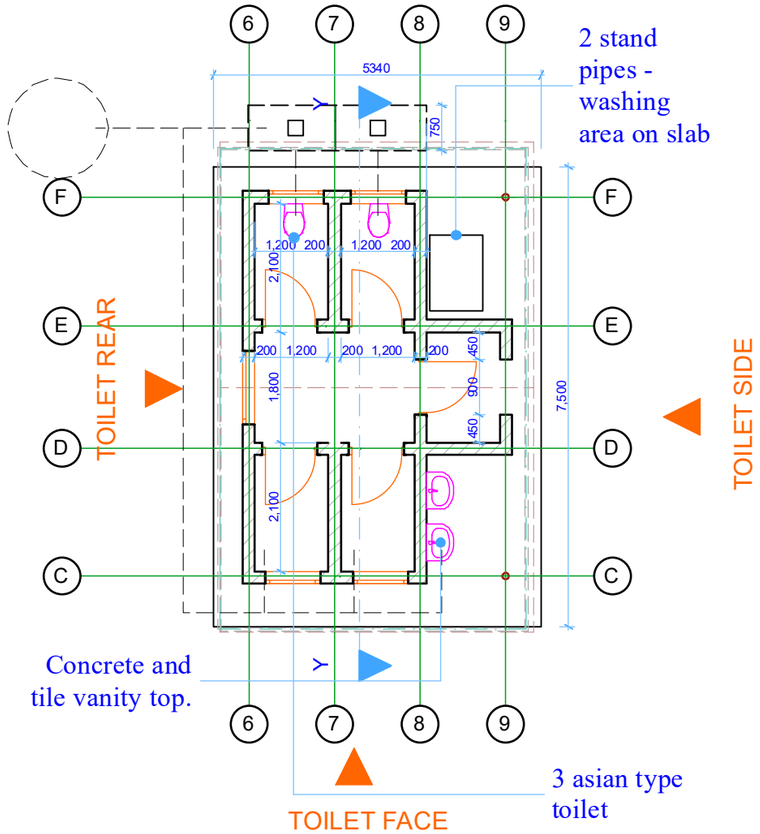
20 Number, 2 roomed units (4 blocks).
Kitchen - 2 blocks
Ablution block - 2 blocks

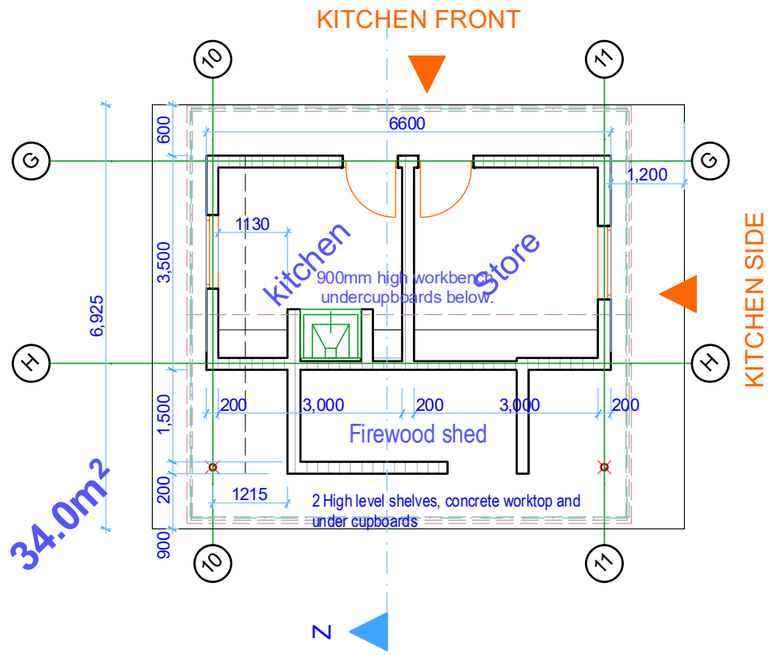
Drawing title :
ELEVATIONS

Client :
KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

Drawn by :	**Kathuli P.F**
Architect : **PATRICK KATHULI .F.**	Nos :
Date : **OCT - 2021**	
Ag HBFD :	







LATRINES AND BATHROOMS

NOTES

RANGER ACCOMODATION

SCHEDULE OF FACILITIES

TCA - KASIGAU

20 Number, 2 roomed units (4 blocks).
Kitchen - 2 blocks
Ablution block - 2 blocks

Drawing title :
DETAIL LAYOUT

Client : KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

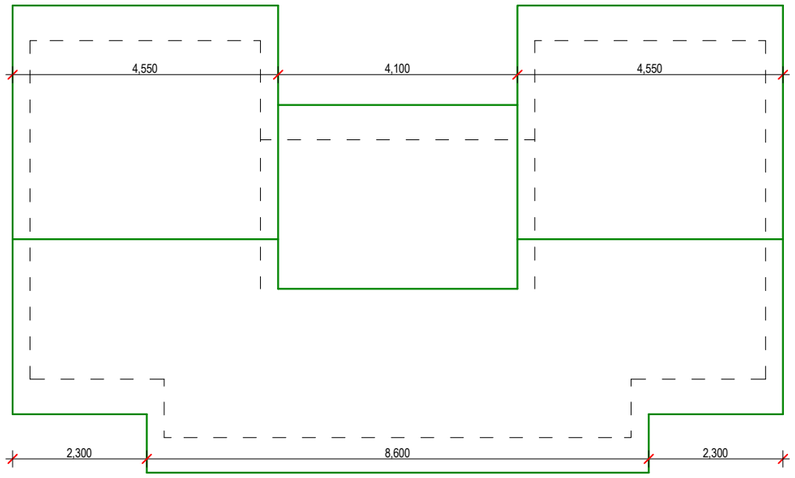
Drawn by : Kathuli P.F

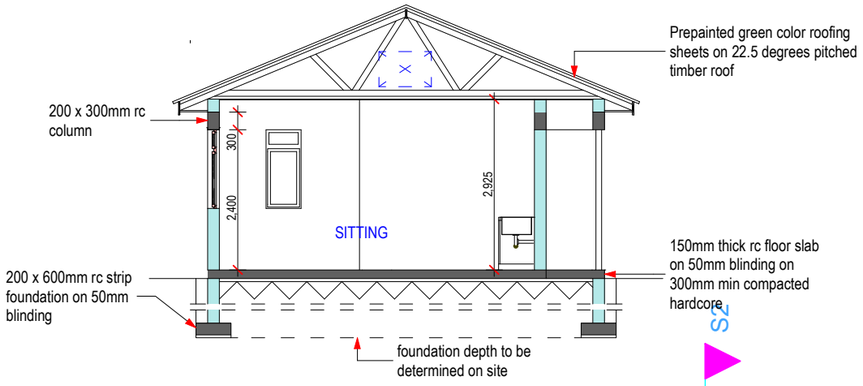
Architect : PATRICK KATHULI .F.

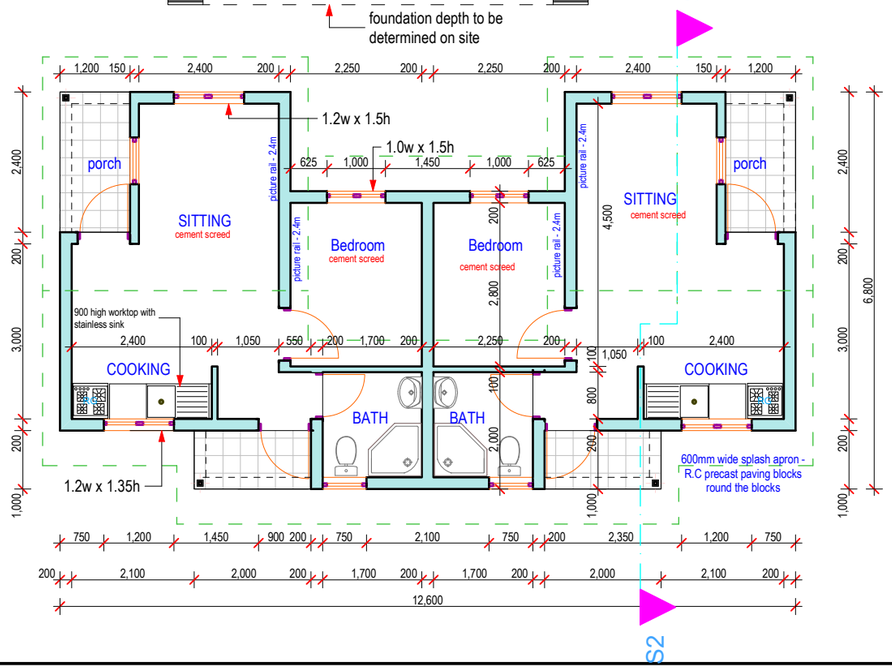
Nos :

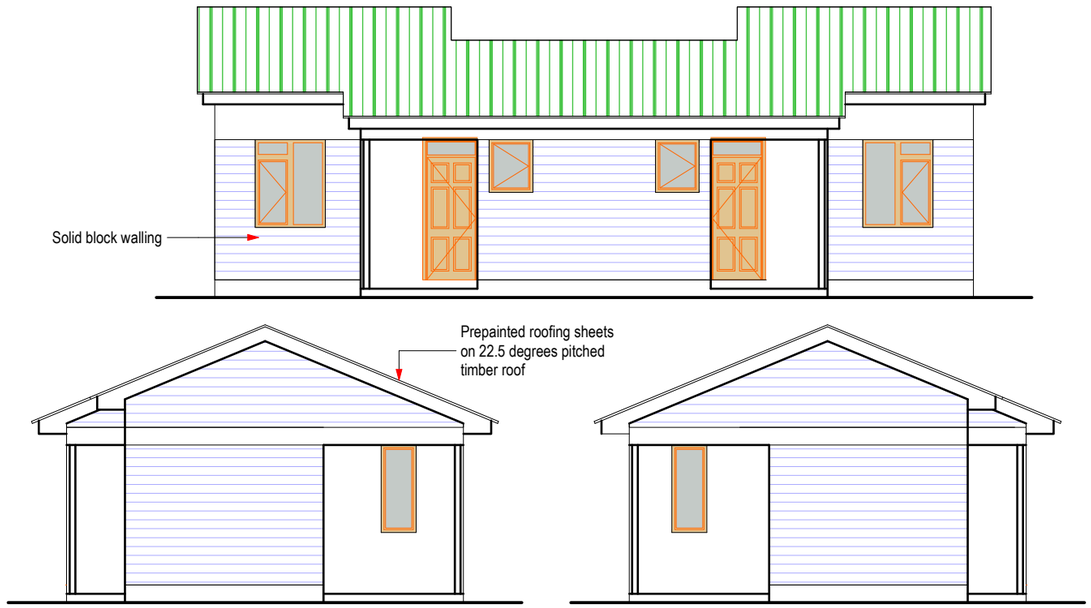
Date : AUG - 2021

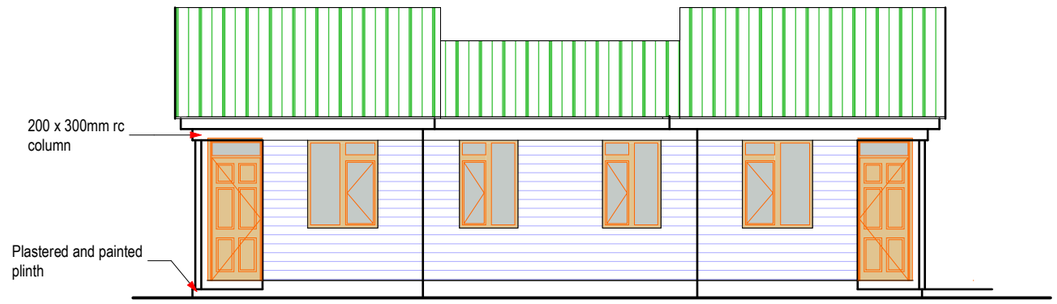
Ag HBFD :

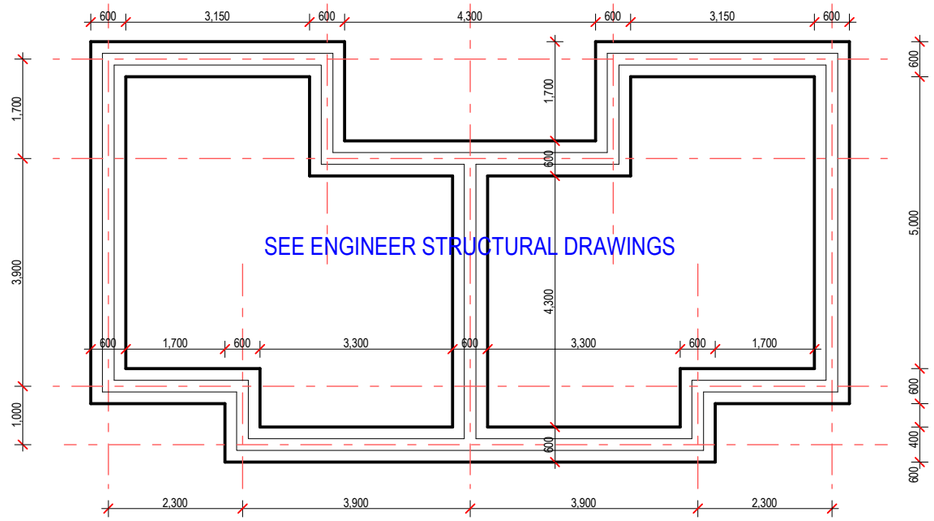












NOTES

1. All dimensions in millimeters unless otherwise specified.
2. All dimensions should be checked on site and any discrepancies reported to the architect.
3. All works should be carried out in accordance with ALL other regulations particularly NEMA.
4. Use figured dimensions only - do not scale from the drawing.
5. All walls are to be reinforced with hoop iron at every alternate course.
6. DPC to be laid under walls and to be 150 mm above finished ground level.
7. All the drainage pipes passing under building and driveway to be encased in 150mm thick concrete surround.
8. 500mm gauge polythene DPM and anti termite to be provided under slab.
9. Concrete shall be of class 1:2:4 unless otherwise stated.
10. Mortar for plastering shall be in the ratio of 1:4.
11. These drawings do not constitute engineering drawings .They should be used together with Structural Engineer's drawings.

REVISIONS

No.	DATE.	DESCRIPTION

TCA - KASIGAU.

Drawing title :
House Layout

Client :
KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

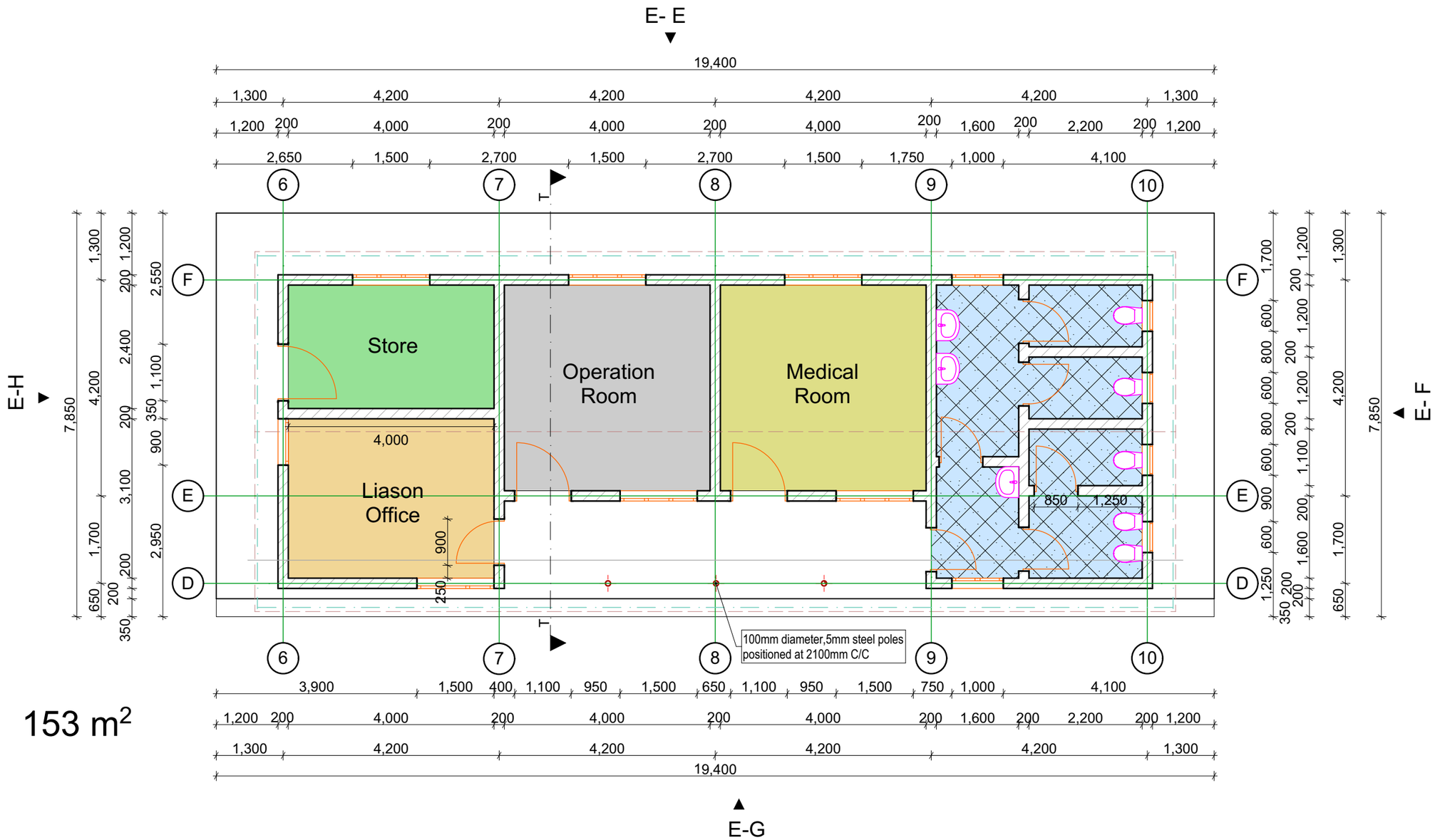
Drawn by : **Kathuli P.F**

Architect :
PATRICK KATHULI .F.

Date :
NOV - 2018

PROPOSED RANGERS HOUSES

KASIGAU



OFFICE BLOCK (KASIGAU)

NOTES

RANGER ACCOMODATION

SCHEDULE OF FACILITIES

KASIGAU

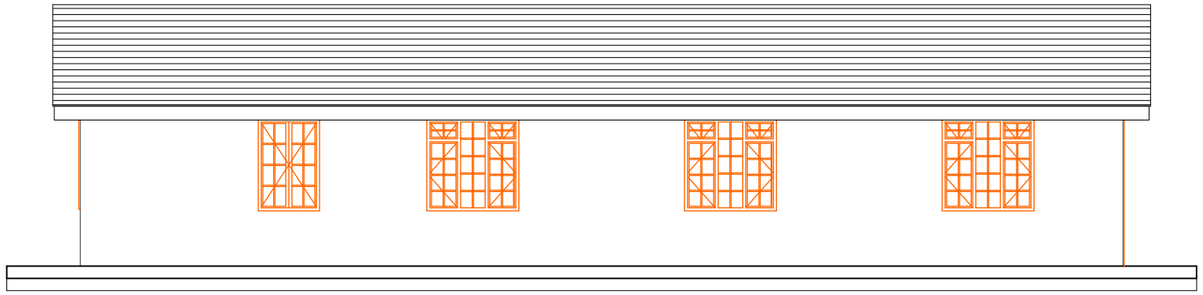
Drawing title :

OFFICE PLAN

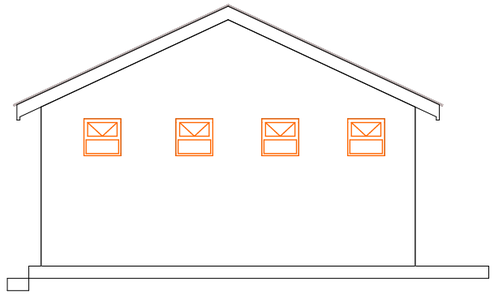
Client :

KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

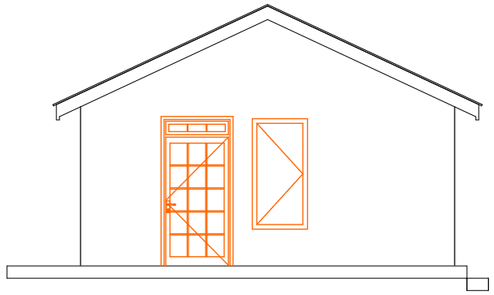
Drawn by :	Kathuli P.F
Architect : PATRICK KATHULI .F.	Nos :
Date : AUG - 2021	
Ag HBFD :	



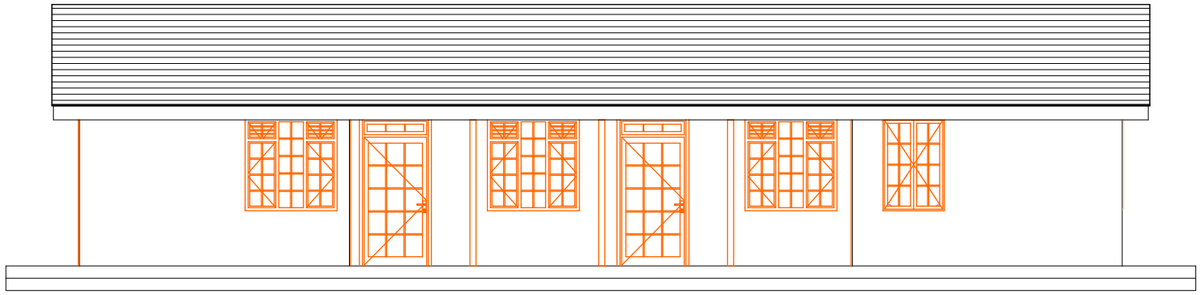
Elevation (E- E)



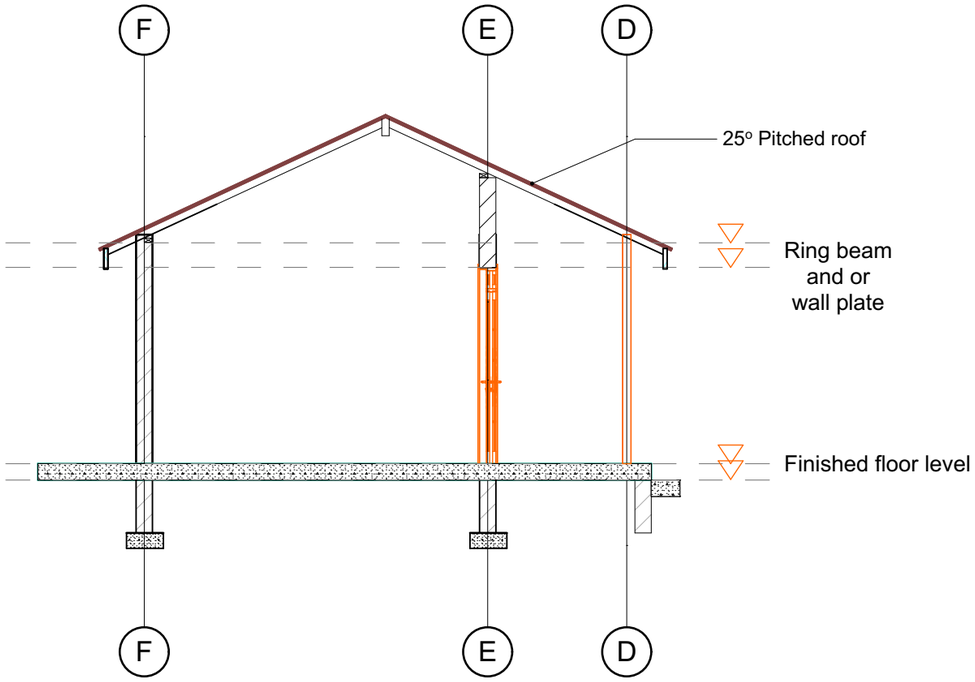
Elevation (E- F)



Elevation (E- H)



Elevation (E- G)



Building Section T-T

NOTES

RANGER ACCOMODATION

SCHEDULE OF FACILITIES

KASIGAU

Drawing title :

SECTION AND ELEVATION

Client : KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

Drawn by : Kathuli P.F

Architect : PATRICK KATHULI .F.

Nos :

Date : AUG - 2021

Ag HBFD :

COLLECTION SUMMARY

ITEM	DESCRIPTION	Kshs	Cts
1	Proposed Office Block for TCA Headquarters		
2	Proposed New facilities at Kasigau		
	GRAND TOTAL CARRIED TO FORM OF TENDER		

S/no	Description	Total (KSHS)
Bill 1	Kenya wildlife service proposed office block TCA headquarters Tsavo conservation areas	
Bill 2	Kenya wildlife service proposed new facilities at Kasigau Tsavo conservation areas	
Grand Total Carried to form of tender		

Amount in words

……

……

……

……

Authorized Signature:_____

Name and Title of Signatory: _____

Name of Tenderer: _____

Address: _____

A. Form of Tender

[date]

To: *[name and address of Procuring Entity*]

We offer to execute the [*name and identification number of contract]* in accordance with the Conditions of Contract accompanying this Tender for the Contract Price of *[amount in numbers], [amount in words] [name of currency].*

The Contract shall be paid in the following currencies:

Currency	**Percentage payable in currency**	**Rate of exchange: one foreign equals [*insert local]***	**Inputs for which foreign currency is required**
(a)			
(b)			

The advance payment required is:-

Amount	**Currency**
(a)	
(b)	

We accept the appointment of [*name proposed in Tender Data Sheet] as the* adjudicator.
or
We do not accept the appointment of [*name proposed in* Tender Data Sheet*]* as the Adjudicator, and propose instead that [*name*] be appointed as Adjudicator, whose daily fees and biographical
data are attached.

We are not participating, as Tenders, in more than one Tender in this Tendering process other than alternative Tenders in accordance with the Tendering documents.

Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the contract has not been declared ineligible by the Kenya Government under Kenya's laws or any other official regulations.

This Tender and your written acceptance of it shall constitute a binding Contract between us. We understand that

you are not bound to accept the lowest or any Tender you receive.

We hereby confirm that this Tender complies with the Tender validity and Tender Security required by the Tendering documents and specified in the Tender Data Sheet.

Authorized Signature:_____

Name and Title of Signatory: _____

Name of Tenderer: _____

Address: _____

Appendix to Tender

Schedule of Adjustment Data

[In Tables A, B, and C, below, the Tenderer shall (a) indicate its amount of local currency payment, (b) indicate its proposed source and base values of indices for the different foreign currency elements of cost, (c) derive its proposed weightings for local and foreign currency payment, and (d) list the exchange rates used in the currency conversion. In the case of very large and/or complex works contracts, it may be necessary to specify several families of price adjustment formulae corresponding to the different works involved.]

Table A. Local Currency

Index code	Index description	Source of index	Base value and date	Tenderer's related currency amount	Range of weighting Proposed by the Procuring Entity	Tenderer's proposed weighting
	Nonadju-stable	—	—	—	**a: _____*** **b: ------ to -------- *** **c: ------- to ------- *** **d: ------- to ------- *** **e: ------- to ------- *** **etc.**	**a: _____*** **b: _____** **c: _____** **d: _____** **e: _____** **etc.**
				Total		**1.00**

Table B. Foreign Currency

State type: ..... [If the Tenderer wishes to quote in more than one foreign currency, this table should be repeated for each foreign currency.]

Index code	Index description	Source of index	Base value and date	Tenderer's related source currency in type/ amount	Equivalent in Foreign Currency 1	Range of weighting Proposed by the Procuring Entity	Tenderer's proposed weighting
	Nonadju-stable	—	—	—		**a: _____*** **b: ------ to ------*** **c: ------- to ------*** **d: ------- to ------*** **e: ------- to ------*** **etc.**	**a: _____*** **b: _____** **c: _____** **d: _____** **e: _____** **etc.**
				Total			**1.00**

Table C. Summary of Payment Currencies

For ……..[insert name of Section of the Works]

[Separate tables may be required if the various sections of the Works (or of the Bill of Quantities) will have substantially different foreign and local currency requirements. The Procuring Entity should insert the names of each Section of the Works.]

Name of payment currency	**A Amount of currency**	**B Rate of exchange (local currency per unit of foreign)**	**C Local currency equivalent C = A x B**	**D Percentage of Net Tender Price (NBP) $\frac{100xC}{NBP}$**
Local currency		**1.00**		
Foreign currency #1				
Foreign currency #2				
Foreign currency #				
Net Tender Price				**100.00**
Provisional sums expressed in local currency	*	*	*	
TENDER PRICE				

Authorized Signature:_____

Name and Title of Signatory:_____

Name of Tenderer:_____

Address: _____

B. Tender-Securing Declaration (Mandatory)

Date: *[insert **date** (as day, month and year)]*

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

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

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

We, the undersigned, declare that:

We understand that, according to your conditions, Tenders must be supported by a Tender- Securing Declaration.

We accept that we will automatically be suspended from being eligible for Tendering in any contract with the Procuring Entity 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 Tender conditions, because we;

a) Have withdrawn our Tender during the period of Tender validity specified in the Form of Tender; or

b) Having been notified of the acceptance of our Tender by the Procuring Entity during the period of Tender 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 ITT. We understand this

Tender Securing Declaration shall expire if we are not the successful Tenderer, upon the earlier of;

1) Our receipt of your notification to us of the name of the successful Tenderer; or

2) Thirty days after the expiration of our Tender.

Signed: *[insert signature of person whose name and capacity are shown]* In the capacity of *[insert legal capacity of person signing the Tender Securing Declaration]*

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

Duly authorized to sign the Tender for and on behalf of: *[insert **complete name of Tenderer**]*
Dated on _____ day of _____, _____ *[insert **date of signing**]*

Corporate Seal (where appropriate)

C. Confidential Business Questionnaire

1 **Individual Tenderer or Individual Members of joint Ventures**

1.1 Constitution or legal status of Tenderer:……[***attach copy***]

Place of registration:…….. [***insert]***

Principal place of business: ……..*[**insert***]

Power of attorney of signatory of Tender: ……[***attach***]

Registration certificate [attach] current Business License:……***attach]***

1.2 Total annual volume of construction work performed in two years, in Kenyan shillings as specified in the Tender Data Sheet;……. *[insert*]

No.	**Year**	**Total**
1		
2		
3		

1.3Work performed as prime Contractor on works of a similar nature and volume over the last two years or as specified in the Tender Data Sheet in Kenyan Shillings. Also list details of work under way or committed, including expected completion dates.

Project name and country	**Name of client and contact person**	**Contractors Participation**	**Type of work performed and year of completion**	**Value of contract**
(a)				
(b)				
(c)				
(d)				

1.4 Major items of Contractor's Equipment proposed for carrying out the works. List all information requested below. Refer also to sub-Clause 12.3 of the Instructions to Tenderers. ***(Bidders are required to dully fill the table below and attach evidence under Plant and equipement schedule)***

Item of equipment	**Description, make, and age (years)**	**Condition (new, good, Poor) and number available**	**Owned, leased (from whom?) or to be purchased (from whom?)**
(a)			
(b)			
(c)			
(d)			

1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data. Refer also to sub-Clause 12.3 of the Instructions to Tenderers and Sub- Clause 10.1 of the General Conditions of Contract. ***(Bidders are required to dully fill the table below and attach evidence under Schedule of personnel)***

Position	**Name**	**Years of Experience (general)**	**Years of experience in proposed position**
(a)			
(b)			
(c)			
(d)			

1.6 Proposed sub-contractor and firms involved. Refer to Clause 7 of General Conditions of Contract.

Sections of the Works	**Value of subcontract**	**Subcontractor (name and address)**	**Experience in similar work**
(a)			
(b)			

1.7 Financial reports for the number of years specified in the Tender Data Sheet.(**Attach**)

1.8 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List below and attach copies of support documents. (**attach**)

1.9 Name, address, and telephone, e-mail address, and facsimile numbers of banks that may provide references if contracted by the Procuring Entity.

1.10 Information on current litigation in which the Tenderer is involved. (**Attach**)

Other party(ies)		Cause of dispute	Amount involved
(a)			
(b)		1.11	Statement of compliance with the requirements of sub- Clause 3.2 of the Instructions to Tenderers.
		1.12	Proposed Program (work method and schedule). Descriptions, drawings, and charts, as necessary, to comply with the requirements of the Tendering documents. (**Attach**)
2.	**Joint Ventures**	2.1	**The information listed in 1.1 – 1.11 above shall be provided for each partner of the joint venture.**
		2.2	The information in 1.12 above shall be provided for the joint venture.
		2.3	**Attach the power of attorney of the signatory (ies) of the Tender authorizing signature of the Tender on behalf of the joint venture.**
		2.4	Attach the Agreement among all partners of the joint venture (and which is legally binding on all partners), which shows that:

(a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;

(b) one of the partners will be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all partners of the joint venture; and

(c) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

3. **Additional Requirements**

3.1 Tenderers should provide any additional information required in the **Tender Data Sheet** or to fulfil the requirements of sub-Clauses 12.1 of the Instructions to Tenderers, if applicable.

Authorized Signature:_____

Name and Title of Signatory: _____

Name of Tenderer: _____

Address: _: _____

Integrity Declaration

UNDERTAKING BY TENDERER ON ANTI – BRIBERY POLICY / CODE OF CONDUCT AND COMPLIANCE PROGRAMME

1. Each Tenderer must submit a statement, as part of the Tender documents, in either of the two given formats which must be signed personally by the Principal Secretary or other appropriate senior corporate officer of the Tendering company and, where relevant, of its subsidiary in the Kenya. If a Tender is submitted by a subsidiary, a statement to this effect will also be required of the parent company, signed by its Principal Secretary or other appropriate senior corporate officer.

2. Tenderers will also be required to submit similar No-bribery commitments from their subcontractors and consortium partners; the Tenderer may cover the subcontractors and consortium partners in its own statement, provided the Tenderer assumes full responsibility.

3.
   a) Payment to agents and other third parties shall be limited to appropriate compensation for legitimate services.

   b) Each Tenderer will make full disclosure in the Tender documentation of the beneficiaries and amounts of all payments made, or intended to be made, to agents or other third parties (including political parties or electoral candidates) relating to the Tender and, if successful, the implementation of the contract.

   c) The successful Tenderer will also make full disclosure [quarterly or semi- annually] of all payments to agents and other third parties during the execution of the contract.

   d) Within six months of the completion of the performance of the contract, the successful Tenderer will formally certify that no bribes or other illicit commissions have been paid. The final accounting shall include brief details of the goods and services provided that they are sufficient to establish the legitimacy of the payments made.

   e) Statements required according to subparagraphs (b) and (d) of this paragraph will have to be certified by the company's Principal Secretary, or other appropriate senior corporate officer.

4. Tenders which do not conform to these requirements shall not be considered.

5. If the successful Tenderer fails to comply with its No-bribery commitment, significant sanctions will apply. The sanctions may include all or any of the following:

   a) Cancellation of the contract;

   b) Liability for damages to the public authority and/or the unsuccessful competitors in the Tendering possibly in the form of a lump sum representing a pre-set percentage of the contract value (liquidated).

6. Tenderers shall make available, as part of their Tender, copies of their anti-Bribery Policy/Code of Conduct, if any, and of their-general or project - specific - Compliance Program.

7. The Government of Kenya has made special arrangements for adequate oversight of the procurement process and the execution of the contract, and has invited civil society and other competent Government Departments to participate in the oversight. Those charged with the oversight responsibility will have full access to all documentation submitted by Tenderers for this contract, and to which in turn all Tenderers and other parties involved or affected by the project shall have full access (provided, however, that no proprietary information concerning a Tenderer may be disclosed to another Tenderer or to the public).

ANTI-CORRUPTION DECLARATION COMITMENT/ PLEDGE

(*Sections39, 40,41,42,43 & of the PPD Act, 2005)*

I/We/Messrs……. of Street, Building,

P O Box……

……..

Contact/Phone/E mail……..

declare that Public Procurement is based on a free and fair competitive Tendering process which should not be open to abuse.

I/We ..……..

declare that I/We will not offer or facilitate, directly or indirectly, any inducement or reward to any public officer, their relations or business associates, in connection with

Tender/Tender No ……..…….

for or in the subsequent performance of the contract if I/We am/are successful.

Authorized Signature.....

Name and Title of Signatory……

D. Letter of Acceptance

[Letter head 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 Sheet*] for the Contract Price of the equivalent of [*amount in numbers and works*] [*name of currency*], as corrected and modified in accordance with the Instructions to Tenderers is hereby accepted by us.

We confirm that [*insert name proposed by the procuring entity]* to be the Adjudicator. We accept that

[*name proposed by Tenderer*] be appointed as Adjudicator.

Or

We do not accept that [*name proposed by Tenderer*] be appointed as adjudicator, and by sending a copy of this letter of acceptance to [*insert the name of the Appointing Authority*], we are hereby requesting [*name*], the Appointing Authority, to appoint the adjudicator in accordance with Clause 44.1 of the Instructions to Tenderers.

You are hereby instructed to proceed with the execution of the said works in accordance with the Contract documents.

Please return the contract dully signed.

Authorized Signature: _____

Name and Title of Signatory:_____

Name of Agency:_____

Attachment: Form of Contract

E. Form of Contract Agreement

This Agreement, made the [*day*] day of [*month*], [*year*] between [*name and address of Procuring Entity*] (hereinafter called "the Procuring Entity") and [*name and address of Contractor*] (hereinafter called "the Contractor") of the other part.

Whereas the Procuring Entity is desirous that the Contractor execute [*name and identification number of contract*] (hereinafter called "the Works") with the objectives of *[insert functional objectives of the works]* and the Procuring Entity has accepted the Tender by the Contractor for the execution and completion of such works and the remedying of any defects therein in the sum of *[contract price in words and figures]* (hereinafter called "Contract Price").

NOW THIS AGREEMENT WITNESSES AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement;

2. In consideration of the payments to be made by the Procuring Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Procuring Entity to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract;

3. The Procuring Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects wherein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

In Witness whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of _____

Was hereunto affixed in the presence of:_____

Signed, Sealed, and Delivered by the said _____

In the presence of: _____

Tendering Signature of Procuring Entity_____

Binding Signature of Contractor _____

A. Tender Security (Bank or Insurance Guarantee) (Optional)

*[If required, the **Bank or Insurance Company/Tenderer** shall fill in this Guarantee form in accordance with the instructions indicated in brackets.]*

[insert bank's or insurance company's name, and address of issuing branch or office]

Beneficiary: *[insert name and address of Procuring Entity]*

Date: *[insert date]*

TENDER GUARANTEE No.: *[insert number]*

We have been informed that *[insert name of the Tenderer; if a joint venture, list complete legal names of partners]* (hereinafter called "the Tenderer") has submitted to you its Tender dated *[insert date]* (hereinafter called "the Tender") for the execution of *[insert name of Contract]* under Invitation for Tenders No. *[insert IFT number]* ("the IFT").

Furthermore, we understand that, according to your conditions, Tenders must be supported by a Tender Guarantee.

At the request of the Tenderer, we *[insert name of bank or insurance company]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in figures expressed in the currency of the Purchaser's Country or the equivalent amount in an international freely convertible currency]* (*[insert amount in words]*) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Tenderer is in breach of its obligation(s) under the Tender conditions, because the Tenderer;

a) Has withdrawn its Tender during the period of Tender validity specified by the Tenderer in the Form of Tender; or

b) Does not accept the correction of errors in accordance with the Instructions to Tenderers (hereinafter "the ITT") of the IFT; or

c) Having been notified of the acceptance of its Tender by the Procuring Entity during the period of Tender validity;

   (i). Fails or refuses to execute the Contract Form, if required, or

   (ii). Fails or refuses to furnish the Performance Security, in accordance with the ITT.

This Guarantee shall expire;

a) If the Tenderer is the successful Tenderer, upon our receipt of copies of the Contract signed by the Tenderer and of the Performance Security issued to you by the Tenderer; or

b) If the Tenderer is not the successful Tenderer, upon the earlier of;

(i) Our receipt of a copy of your notification to the Tenderer that the Tenderer was unsuccessful, or

(ii) Thirty days after the expiration of the Tenderer's Tender. Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date.

_____

[signature(s) of authorized representative(s)]

B. Performance Bank or Insurance Guarantee [Unconditional]

[The **Bank or Insurance Company/successful tenderer** providing the Guarantee shall fill in this form in accordance with the instructions indicated in brackets, if the Procuring Entity requires this type of security.]

[insert bank's or insurance company's name, and address of issuing branch or office]

Beneficiary: *[insert name and address of Procuring Entity]*

Date: *[insert date]*

PERFORMANCE GUARANTEE No.: *[insert Performance Guarantee number]*

We have been informed that *[insert name of Contractor]* (hereinafter called "the Contractor") has entered into Contract No. *[insert reference number of the Contract]* dated with you, for the execution of *[insert name of Contract and brief description of Works]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a Performance Guarantee is required.

At the request of the Contractor, we *[insert name of Bank or Insurance Company]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in figures]* (*[insert amount in words])*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change, addition or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any change, addition, or modification.

This guarantee shall expirenot later than thirty days from the date of issuance of the Taking- Over Certificate.

[signature(s) of an authorized representative(s) of the Bank or Insurance Company]

C. Bank or Insurance Guarantee for Advance Payment

[Bank's or Insurance Company's Name and Address of Issuing Branch or Office]

Beneficiary: _____ *[Name and Address of Procuring Entity]*
Date: _____

ADVANCE PAYMENT GUARANTEE No.: _____

We have been informed that *[name of Contractor]* (hereinafter called "the Contractor") has entered into Contract No. *[reference number of the contract]* dated _____ with you, for the execution of [*name of contract and brief description of Works]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum *[amount in figures]* (_____) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Contractor, we *[name of Bank or Insurance Company]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[amount in figures]* (_____) *[amount in words]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between _____ [*name of Procuring Entity*] and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

No drawing may be made by you under this guarantee until we have received notice in writing from you that an advance payment of the amount listed above has been paid to the Contractor pursuant to the Contract.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated 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 eighty (80) percent of the Contract Price has been certified for payment, or on the ___ day of _____, 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.

Yours truly,
Signature and seal: _____ Name of Bank or
Insurance Company: _____ Address: _____ Date:
_____

REPUBLIC OF KENYA

FORM RB 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…

REQUEST FOR REVIEW

I/We……,the above named Applicant(s), of address: Physical address…….Fax 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. etc.

By this memorandum, the Applicant requests the Board for an order/orders that: -

1.

2. etc

SIGNED ……. (Applicant)

Dated on…….day of ……/…20…

FOR OFFICIAL USE ONLY

Lodged with the Secretary Public Procurement Administrative Review Board on …… day of ……....20….……

SIGNED

Board Secretary