KENYA WILDLIFE SERVICE

KENYA WILDLIFE SERVICE BUILDINGS AND FENCES DEPARTMENT IN ASSOCIATION WITH MARSABIT NATIONAL RESERVE.

PACKAGE 7

PROPOSED CONSTRUCTION BUILDING FACILITIES-VARIOUS SITES AT MARSABIT NATIONAL RESERVE

Bid No. KWS/OT/B&F/63/2018-2019

RE-ADVERTISEMENT

CLOSING DATE AND TIME:

Wednesday 17th July, 2019 AT 1200 NOON

THE DIRECTOR GENERAL
KENYA WILDLIFE SERVICE
PO. BOX 40241
NAIROBI

June 2019

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SECTION I: INSTRUCTIONS TOBIDDERS

Kenya Wildlife Service wishes to invite interested and eligible national candidates to tender for the proposed Construction of building facilities-various sites marsabit national reserve PACKAGE 7 Tender No. KWS/OT/B&F/63/2018-2019

Interested and eligible candidates may download the tender documents and obtain further information from the KWS website www.kws.go.ke.

Communication in regard to any tender must be in writing through email address: hps@kws.go.ke. All clarifications and/or amendments will be published in KWS website www.kws.go.ke and tenderers are required to check for any addendums or amendments in the course of the bidding period prior to the closing date.

A **MANDATORY** pre-bid site visit will be on **Tuesday 9th July, 2019 at 10.00am,** Bidders assemble at marsabit national reserve headquarters for organized procession to site *(However all the bidders who had attended the previous scheduled pre-tender site visit on Tuesday 5th March are exempted from this requirement)***.**

The completed bids in plain sealed envelope clearly marked with tender reference number and tender description, shall be addressed to the Director General, KWS and deposited into the Tender Box located at the entrance of KWS Headquarters Main Reception not later than 12:00 Noon on **Wednesday 17th July ,2019**. Tenders will be opened immediately thereafter in the presence of tenderers who choose to attend at KWS Vet Board Room.

Further information is available at www.kws.go.ke.

Head of Supply Chain Management

June 2019

Instructions to Bidders

A. GENERAL

1. Scope of Bid

1.1 The Employer, as defined in the Appendix to Bid hereinafter "the Employer" wishes to receive bids for the construction of Works, as described in sections 2.1, and hereinafter referred to as "the Works".

1.2 The successful bidder will be expected to complete the Works within the period inserted in the Appendix to Bid from the date of commencement of the Works.

1.3 Throughout these bidding documents, the terms bid and tender and their derivatives (bidder / tenderer, bid / tendered, bidding / tendering, etc) are synonymous. A day means calendar day.

2. Description of Works.

2.1 The project is located within Marsabit National park situated in Marsabit County. Approximately 600 kilometres North of Nairobi, The Administrative headquarters of the Northern Conservation area.

2.2 The works will involve Construction of building facilities- Various sites- at marsabit national Reserve.

2.3 In brief, the works under the Contract comprise, but are not limited to, the following:

1. Gate house - Ahmed gate
2. Gate house - Ajamako gate
3. rangers accomodation Ajamako
4. Gate house - Bongole Kituruni
5. Fence Guardpost House- Badasa
6. Fence Guardpost House- Karantina
7. ADS office

2.4 The Contractor shall ensure minimum disturbance to the ecosystem of the Conservation area during construction.

2.5 The Contractor shall be responsible for the security of his staff.

3. Source of Funds

3.1 The employer has received funds from the Agence Francaise De Development (AFD), and the Fonds Francais Pour I'Environnement Mondial (FFEM) and intends to apply a part of these funds to eligible payments under the contract for which these bidding documents are issued.

4. Eligibility and Qualification Requirements.

4.1 The invitation of Bid is open to all eligible bidders

4.2 The origin of goods and services is distinct from the nationality of the Bidder.

4.3 Any Bidder wishing to participate in this Bid will be under the obligation to prove to the satisfaction of the Employer the eligibility of goods or contractual services offered, or both, as the case may be.

4.4 To be eligible for award of Contract, the Bidder shall provide evidence satisfactory to the Employer for their eligibility under Sub-Clause 4.1 above, and of their capability and adequacy of resources to effectively carry out the subject Contract. To this end, the Bidder shall be required to provide the following information for evaluation purposes or as may be amended or complemented in the appendix to instruction to bidders.

a. Details of the experience and past performance of the Bidder on works of a similar nature within the past five years and details of current work on hand and other contractual commitments in the format prescribed in Schedules 5 and 6, supported by copies of agreement , acceptance letters or certificates, works completed but not supported by requisite documents shall not considered for scoring

b. The qualifications and experience of key personnel proposed for administrations and execution of the Contract (a minimum of five key personnel 3- technical site staff 2- office staff , in the format prescribed in Schedule 4. The minimum qualifications for key personnel set out must be observed strictly, supported by signed curriculum vitae and certificates,

c. Major items of construction plant and equipment proposed for use in carrying out the Contract in the format described in Schedule 7. Only reliable plant in good working order and suitable for the work required of it shall be shown on this Schedule. .The Bidder will also indicate on this Schedule when each item will be available at the site of the Works. The following list of minimum available number of equipments shall constitute qualification criteria.., 7 ton lorry 1 No. I ton Pick up truck 1 No. Assorted tools and equipment eg. Ladder, wheelbarrows. Vibrator, etc if owned then copies of logbooks or ownership documents Must be attached, for lease or hire, to be supported by lease/hire agreement,

d. Audited accounts for the last two years:

e. Liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than 4 months of the estimated payment flow under this Contract

f. Authority to seek reference from tenderers bankers clearly stating Name, address, and telephone, telex and fax numbers of the Bidder's bankers who may provide reference if contacted by the Contracting Authority.

g. annual volume of construction work of at least 2.5 times the estimated annual cashflow for the Contract;

h. Litigation Information for the last three years in which the bidder was involved(attorney authenticated)

4.5 Bids submitted by a joint venture of two or more firms, as partners shall comply with the following requirements:

a) The Bid, and in case of a successful Bid, the Form of Agreement, shall be signed so as to be legally binding on all partners.

b) One of the partners shall be nominated as being in charge. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners. The authorization shall state clearly that decisions made by the nominated partner shall be binding jointly and severally during the execution of the Contract.

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

d) All partners of the joint venture shall be liable jointly severally for the execution of the Contract in accordance with the Contract terms, and a relevant statement to this effect shall be included in the authorization mentioned under Sub-Clause 4.5 (b), (c) and (d) above as well as in the Form of Bid and the Form of Agreement (in case of a successful Bid).

e) A copy of the agreement entered into by the joint venture partners, which will state and meet, inter alia, the requirements of Sub-Clauses 4.5 (a) to 4.5(d) above shall be submitted with the Bid.

f) The Bid shall include all the information listed in Sub-Clauses 4.1 to 4.5(a) above, for each partner of the joint venture.

g) Any subsequent alteration in the composition of a qualified joint venture/consortium after submission of the Bid may disqualify the Bidder.

4.6 The qualification data for each of the partners of a joint venture shall be added together to determine the Bidder's compliance with the minimum qualification criteria. However, for a joint venture to qualify for the award of Contract, each of its partners must meet at least 25% of the minimum criteria for an individual Bidder, and the lead partner must meet at least 40% of those minimum criteria. Failure to comply with this requirement will result in rejection of the joint ventures Bid. Subcontractors experience and resources shall not be taken into account in determining the Bidder's compliance with the qualifying criteria.

5. Cost of Bidding.

5.1 The Bidder shall bear all costs associated with the preparation and submission of his Bids and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

6. Site Visit

6.1.1 A **MANDATORY** pre-bid site visit will be on **Tuesday 9th July, 2019** at 10.00am**.** *(However all the bidders who had attended the previous scheduled pre-tender site visit on Tuesday 5th March are exempted from this requirement)***.**bidders to congregate at marsabit n. reserve hqs, for organised procession to the site The bidder is advised to attend and examine the site of works and its surroundings and obtain for himself, at his own expense, all information that may be necessary for preparing the Bid and entering into a Contract. The Bidder shall be fully responsible for the reliability and accuracy of all information so obtained. Non attendance to pre-bid site visit shall lead to disqualification

out non compliance to mandatory requirements.

6.2 The Bidder and any of his personnel or agents will be granted permission by the Employer to enter premises and lands for the purpose of such inspection, but only upon the express condition that the Bidder, his personnel or agents, will release and indemnify for Employer and his personnel and agents from and against all liability in respect of, and will be responsible for, personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused, which but for the exercise of such permission, would not have arisen.

6.3 Each Bidder shall complete the Certificate of Bidder's Site Inspection, which **must be signed by kws representative presiding the pre bid visit** as a proof of attendance on the day of pre-bid site visit*(However all the bidders who had attended the previous scheduled pre-tender site visit on Tuesday 5th March* 2019 *are exempted from this requirement)***.**

B. BID DOCUMENTS.

7. Clarification of Bid Documents.

7.1 A Prospective Bidder requiring any clarification or proposing any modifications of the Bid Documents may notify the Employer in writing or by cable (which is deemed to include telex or facsimile transmission) at the Employer's address indicated in the Invitation to Bid. The Employer will respond in writing or by cable to any request for clarification, which he receives earlier than 7 days prior to the deadline for the submission of Bids. Written copies of the Employer's response (including a description of the inquiry but without identifying its source) will be sent to all prospective Bidders who have received the Bid Documents and have complied with Clause 4, provided that information of a commercial nature relating to the acceptability of variant solutions shall not be issued to the other Bidders.

8. Amendments to Bid Documents.

8.1 Not later than 7 days before the deadline for submission of Bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification or modification requested by a prospective Bidder, modify the bid Documents by the issuance of an Addendum.

8.2 The Addendum will be sent in writing or by cable to all prospective Bidders who have obtained the Bid Documents, and have completed the Bid Questionnaire in Questionnaire and forms section B.1 and submitted a copy to the Engineer. This Addendum will be binding upon them. Prospective Bidders shall promptly acknowledge receipt thereof to the Employer.

Documents and receipt thereof must be acknowledged by returning to the Employer the acknowledgment form issued with each Addendum and by insertion of the numbers thereof in the space provided in the Form of Bid.

8.3 In order to afford prospective Bidders reasonable time in which to take an Addendum into account in preparing their Bids, the Employer may, at his discretion, extend the deadline for the submission of Bids in accordance with Clause 19.

8.4 The Bid Addenda shall form part of the Contract and it will be assumed that the Bidder has taken account of them in preparing his Bid.

C. PREPARATION OF BIDS.

9. Language of Bid.

9.1 The Bid prepared by the Bidder and all correspondence relating to the Bid exchanged by the Bidder and the Employer shall be in the English language. Supporting documents and printed literature furnished by the Bidder with the Bid may be in another language provided they are accompanied by an appropriate translation of pertinent passages in the English language. For the purpose of interpretation of the Bid, the English language shall prevail.

10.Documents Comprising the Bid.

10.1 The Bid to be prepared and submitted by the bidder shall comprise the following:

:

(i). Instructions to tenderers
(ii). Tender forms and shedules
(iii). Specifications
(iv). Conditions of contract
(v). preliminaries
(vi). Bills of quantities
(vii). Drawings

The forms, the schedules, the bills of quantities, Bid security and documentation for bid provided in this bid Document shall be used without exception (subject to extensions of the Schedules in the same format).

10.2 All documents issued for the purposes of Bidding as described in Clause 10.1 and Sub-Clause 8.4 shall be deemed incorporated in the Bid except as stated contrary in the said Clauses.

11. Bid Prices.

11.1 All the insertions made by the Bidder shall be made in indelible INK and the Bidder shall clearly form the figures. The relevant space in the Bid Form and Bills of Quantities shall be completed accordingly without interlineations or erasures except those necessary to correct errors made by the Bidder, in which case the erasures and interlineations shall be initialed by the person or persons signing the Bid.

11.2 A price or rate shall be inserted by the Bidder for every item in the Bills of Quantities whether the Quantities are stated or not. If the Bidder leaves the space against both the rate and extensions of a particular item blank or offers a discount then his Bid shall be rejected for failure to comply with this clause.

The prices and unit rates in the Bills of Quantities are to be the full, inclusive value of the work described under the items, including all costs and expenses which may be necessary and all general risks, liabilities and obligations set forth or implied in the Documents on which the Bid is based.

Each price or unit rate inserted in the Bills of Quantities should be a realistic estimate for completing the activity or activities described under that particular item and the Bidder is advised against inserting a price or rate against any item contrary to this instruction.

Every rate entered in the Bills of Quantities, whether or not such rate be associated with a quantity be carried to the Bid Summary and incorporated in the sum named in the Bid, shall form part of the Bid and in the event of acceptance of the Bid, shall form part of the Contract.

The Employer shall have the right to call for any item of work contained in the Bills of Quantities, and such items of work to be paid for at the rate entered by the bidder. It is the intention of the Employer to take full advantage of unbalanced low rates.

11.3 The Bidder must enter the amounts representing 15% of the Sub Total of the summary of the Bills of Quantities, for price variations and contingencies in the Summary Sheet and add them to the Sub Total to arrive at the Total Bid Amount, if the bidder offers a discount then his bid shall be rejected entirely for failure to comply with this clause.

11.4 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other causes prevailing, shall be included in the rates, prices and total bid price submitted by the Bidder, and the evaluation and comparison of Bids by the Employer shall be made accordingly.

11.5 Prices must correspond to the relative value for each item in relation to the amount of the Bid. Prices should not be of such a nature as to distort the comparison of Bids or to result in interim payments, which are disproportionate to the value of the work done.

12 Currencies of Bid

12.1 Bids shall be expressed in the National Currency of the Republic of Kenya (Shilling).

13. Bid Validity

13.1 Bids shall remain valid for a period of 90 days after the date of bid opening specified in Clause 22.

13.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for the period of the extension, and in compliance with Clause 14 in all respects.

13.3 In the case of contracts in which the Contract Price is fixed (not subject to price adjustment), if the period of bid validity is extended beyond eight weeks, the amounts payable in local and foreign currency to the bidder selected for award, shall be increased by applying to both the local and the foreign currency component of the payments, respectively, the factors specified in the bidding data or in the request for extension, for the period of delay beyond eight weeks after the expiry of the initial bid validity, up to the

award. Bid evaluation will be based on the bid prices without taking into consideration the above correction.

14 Bid Security.

14.1 The bidder shall furnish, as part of its bid, a bid security in the amount equivalent to **ksh, 200,000/=** in the currency of the Employer's country, or the equivalent amount in a freely convertible currency, valid for 120 days.

14.2 The bid security shall, at the bidder's option, be in the form of a certified cheque, insurance bid bond, letter of credit, or a bank guarantee from a reputable bank located in the Employer's country, insurance bid bond. The format of the bid guarantee shall be in accordance with form of bid security included in the forms: Tender security, in this document; other formats may be permitted, subject to the prior approval of the Employer. Bid security shall remain valid for a period of 30 days beyond the original validity period for the bid, and beyond any period of extension subsequently requested under Sub-Clause 13.2.

14.3 Any bid not accompanied by an acceptable bid security shall be rejected by the Employer as non-responsive. The bid security of a joint venture must be in the name of the joint venture submitting the bid.

14.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but not later than 28 days after the expiration of the period of bid validity.

14.5 The bid security of the successful bidder will be returned when the bidder has signed the Agreement and furnished the required performance security.

14.6 The bid security may be forfeited

(a) if the bidder withdrawal its bid, except as provided in Sub-Clause 21.2
(b) if the bidder does not accept the correction of its Bid Price, pursuant to Sub-Clause 26.2 or

(c) In the case of a successful bidder, if he fails within the specified time limit to

(i) Sign the Agreement, or

(ii) Furnish the required performance security.

15. No Alternative Offers.

15.1 Bidders shall not be allowed to offer technical alternatives to the requirements of the bidding documents. They are only required to price the Employer's bills of quantities and designs as described in the bidding documents.

16. Pre-Bid Meeting and Site Inspection.

16.1 The bidder's designated representative is invited to attend a pre-bid site meeting, which will take place on site **on site** on **Tuesday 9th July 2019** at 10.00am

16.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage, besides bidders aquinting themselves to the nature and scope of works and incidental factors arising therefrom that may influence their pricing.

16.3 The bidder is requested, as much as possible, to submit any questions in writing or by cable, to reach the Employer not later than one week after the meeting. It may not be practicable at the meeting to answer questions received late, but questions and responses will be transmitted in accordance with the following Sub-Clause.

16.4 Minutes of the meeting, including the text of the questions raised and the responses given together with any responses prepared after the meeting, will be transmitted without delay to all bidders: for this purpose all bidders are requested to register their Particulars and contact details including email address with head supply chain manager KWS-HQS-Nairobi for ease of transmission of such comummination. Any modification of the bidding documents listed in Sub-Clause 10.1, which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 8 and not through the minutes of the pre-bid meeting.

16.5 Non-attendance at the pre-bid meeting **WILL BE** cause for disqualification of a bidder,except for exemptions.

17. Format and Signing of Bids.

17.1 The bidder shall prepare **one original** of the documents comprising the bid as described in Clause 10 of these instructions of Bidders, bound with the section containing the Form of Bid and Appendix to Bid, and clearly marked "ORIGINAL" . In addition, the bidder shall submit **NIL Copies** of the bid, and clearly marked "COPY". In the event of discrepancy between them, the original shall prevail.

17.2 The original and copy of the bid shall be typed or written in indelible ink (in the case of copies, photocopies are also acceptable) and shall be signed by a person or persons duly authorized to bind the Bidder to the contract. Proof of authorization shall be furnished in the form of a written Power-of-Attorney, which shall accompany the Bid. All pages of bid where entries or amendments have been made shall be initialed by the person or persons signing the bid.

17.3 The bid shall contain no alterations, omissions, or conditions, unless such corrections are initialed by the person or persons signing the bid.

17.4 The bidder shall furnish information as described in paragraph 7 of the Form of Bid on commissions or gratuities, if any, paid to or to be paid to agents relating to this Bid, and to contract execution if the bidder is awarded the contract.

D. SUBMISSION OF BIDS

18. Sealing and Marking of Bids

18.1 The bidder shall seal the original and a copy of the bid in an envelope, duly marking the

envelopes as"ORIGINAL" and "COPY". The envelopes shall then be sealed in an outer envelop.

18.2 The inner and outer envelopes shall (a) be addressed to the Employer at the address provided in the Bidding Data; (b) bear the name and identification number of the contract as defined in the Bidding Data; and (c) provide a warning not to open before the time and date for bid opening, as specified in the Bidding Data.

18.3 In addition to the identification required in Sub-Clause 18.2, the inner envelopes shall indicate the name and address of the bidder to enable the bid to be returned in case it is declared "late" pursuant to Clause 20, and for matching purpose under Clause 21.

18.4 If the outer envelop is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the bid. If the outer envelop discloses the bidder's identity the Employer will not guarantee the anonymity of the bid submission, but this shall not constitute grounds for rejection of the bid.

19. Deadline for Submission of Bids

19.1 Bids must be received by the Employer at the address specified in Sub clause 18.2 no later than **Wednesday 17th July 2019 at 12:00 Noon** as stipulated in the bidding data

19.2 The Employer may, in exceptional circumstances and at its discretion, extend the deadline for submission of bids by issuing an Addendum in accordance with Clause 8, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

20. Late Bids

20.1 Any bid received by the Employer after the deadline for submission of bids prescribed in Clause 19 will be returned unopened to the bidder.

21. Modification, Substitution and Withdrawal of Bids

21.1 The bidder may modify, substitute, or withdraw his bid submission, provided that written notice of the modification or withdrawal is received by the Employer prior to the deadline for submission of bids.

21.2 The bidder's modifications, substitution, or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with the provisions of Clause 18, with the outer and inner envelops additionally marked "MODIFICATION" OR "WITHDRAWAL", as appropriate.

21.3 No bid may be modified by the bidder after the deadline for submission of bids, except in accordance with Sub-Clause 21.2 and 26.2.

21.4 Except as provided in Sub-Clause 21.2, withdrawal of a bid during the interval between the deadline for submission of bids and expiration of the period of bid validity specified in Clause 17 may result in the forfeiture of the bid security pursuant to Sub-Clause 14.6.

E. BID OPENING AND EVALUATION.

22. Bid Opening

22.1 The Employer will open the bids, including withdrawals and modifications made pursuant to Clause 21, in the presence of bidders' designated representatives who choose to attend, at the time, date, and location stipulated in the Bidding Data. The bidders' representatives who are present shall sign a register evidencing their attendance.

22.2 Envelopes marked "WITHDRAWAL" and "SUBSTITUTION" shall be opened first and the name of the bidder shall be read out. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Claus 21 shall not be opened.

22.3 The bidder's name, the Bid Prices, including any alternative Bid Price, or deviation, any discounts, bid modifications and withdrawals, the presence (or absence) of bid security, and any such other details as the Employer may consider appropriate, will be announced by the Employer at the opening. Subsequently, all envelopes marked "MODIFICATION" shall be opened and the submissions therein read out in appropriate detail. No bid shall be rejected at bid opening except for late bids pursuant to Clause 20.

22.4 The Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with Sub-Clause 22.3

22.5 Bids **not** opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.

23. Process to be Confidential

23.1 Information relating to the examination, evaluation and comparison of bids, and recommendations for the award of contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful bidder has been announced. Any effort by a bidder to influence the Employer's processing of bids or award decisions may result in the rejection of the bidder's bid.

24. Clarification of Bids

24.1 To assist in the examination, evaluation, and comparison of bids, the Employer may, at his discretion, ask any bidder for clarification of his bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with Clause 26.

24.2 Subject to Sub-clause 24.1, no bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.

24.3 Any effort by the bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the bidder's bid.

25. Determination of Responsiveness

25.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid (a) meets the eligibility criteria of the Bid; (b) has been properly signed; (c) is accompanied by the required securities; (d) is substantially responsive to the requirements of the bidding documents; including eligibility criterion set out in appendix to instruction to bidders and (e) provides any clarification and/or substantiation that the Employer may require to determine responsiveness pursuant to Sub-Clause 25.2.

25.2 A substantially responsive bid is one that conforms to all the terms, conditions, and specifications of the bidding documents without material deviation or reservation. A material deviation or reservations are (a) which affects in any substantial way the scope, quality, or performance of the works;(b) which limits in any substantial way, inconsistent with the bidding documents, the Employer's rights or the bidder's obligations under the contract; or(c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids

25.3 If a bid is not substantially responsive, it will be rejected by the Employer and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

26. Correction of Errors

26.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

(a) where there is a discrepancy between the amount in figures and the amount in words, the amount in words will prevail; and

(b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will prevail, unless in the opinion of the Employer, there is an obvious typographical error, in which case the adjustment will be made to the entry containing that error.

(c) In the event of a discrepancy between the tender amount as stated in the Form of Tender and the corrected tender figure in the main summary of the Bill of Quantities, the corrected bid sum shall prevail.

(d) The Error Correction Factor shall be computed by expressing the difference between the tender amount and the corrected tender sum as a percentage of the corrected Builder’s Work (i.e. Corrected tender sum less P.C. and Provisional Sums)

(e) The Error Correction Factor shall be applied to all Builder’s Work (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuation of variations.

26.2 The amount stated in the bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, its bid will be rejected, and the bid security may be forfeited in accordance with Sub-Clause 14.6

27. Evaluation and Comparison of Bids

27.1 The Employer will evaluate and compare only those bids determined to be substantially responsive in accordance with Clause 25. Evaluation shall be in accordance with criteria set out in the appendix to instruction to tenderers

27.2 In evaluating the bids, the Employer will determine for each bid the Evaluated Bid Price by adjusting the Bid Price as follows:

(a) Making any correction for errors pursuant to Clause 26

(b) Including provisional Sums and the provision, if any, for Contingencies in the Summary Bill of Quantities as well as Dayworks, where priced competitively.

(c) Making an appropriate adjustment on sound technical and /or financial grounds for any other quantifiable acceptable variations, or deviations.

27.3 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variation, deviations, alternative offers, and other factors that are in excess of the requirements of the bidding documents shall not be taken into account in bid evaluation.

27.4 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the contract shall not be taken into account in bid evaluation.

27.5 If the bid, which results in the lowest Evaluated Bid Price is seriously unbalanced or front loaded in relation to the Engineer's estimate of the items of work to be performed under the contract, the Employer may require the bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated contract payments, the Employer may require that the amount of the performance security set forth in Clause 32 be increased at the expense of the bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful bidder under the contract.

F. AWARD OF CONTRACT

28. Award Criteria

28.1 Subject to Clause 29, the Employer will award the contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest Evaluated Bid Price pursuant to Clauses 27, 26 and 25, provided that such bidder has been determined to be (a) eligible in accordance with the provisions of Sub-Clause 3.1, and (b) qualified in accordance with the provisions of Clause 4.

29. Employer's right to accept any Bid and to reject any or all Bids

29.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding

process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Employer's action.

30. Notification of Award

30.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder that its bid has been accepted. This notification letter (hereinafter and in the Condition of Contract called the "Letter of Acceptance") shall specify the sum which the Employer will pay the Contractor in consideration of the execution and completion of the Works and the remedying any defects therein by the Contractor as prescribed by the contract

30.2 (hereinafter and in the Condition of Contract called "the Contract Price").

30.3 The notification of award will constitute the formation of the contract.

31 Preparation of Contract Document

31.1 After communication of the result of the Bid procedure in accordance with Clause 30, the Contract document will be prepared by the Employer for submission to the Successful Bidder for signature.

This document shall include at least the following:

(a) a list of document comprising the Contract specifying the order of precedence of the document;

(b) any agreed additions to and derogation from the documents;

(c) the Contract price

(d) any corrections done by the Employer pursuant to Clause 26

32. Signing of Agreement

32.1 At the same time that the Employer notifies the successful bidder that its bid has been accepted, the Employer will send the bidder the Agreement in the form provided in the bidding documents, incorporating all agreements between the parties.

32.2 Within 28 days of receipt of the Agreement, the successful bidder shall sign the Agreement and return it to the Employer, together with the required performance security.

32.3 Upon fulfillment of Sub-Clause 33.2, the Employer will promptly notify the other bidders that their bids have been unsuccessful and their bid security will be returned as promptly as possible, in accordance with Clause 14.4.

33. Performance Security

33.1 Within 28 days from the date of receipt of the Letter of Acceptance from the Employer, the successful bidder shall furnish to the Employer a performance security in the form

stipulated in the Bidding Data and the Conditions of Contract. The form of performances security provided in section 9 of the bidding documents may be used or some other form acceptable to the Employer.

33.2 The performance security to be provided by the successful bidder shall be in the form of bank guarantee. The guarantee shall be by a bank located in the country of the Employer or by a foreign bank through a correspondent bank located in the country of the Employer and acceptable to the bank. For the purposes of this Sub-Clause a list of banks acceptable to the Employer is available at the employer's address on request.

33.3 Failure of the successful bidder to comply with the requirements of Clause 33 and 34 shall constitute a breach of contract, cause for annulment of the award, forfeiture of the bid security, and any such other remedy the Employer may take under the contract, and the Employer may resort to awarding the contract to the next ranked bidder.

G- OTHER REQUIREMENTS

34 Corrupt or Fraudulent Practices

34.1 The Employer requires that bidders/suppliers/contractors under its contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Employer:

(a) defines, for the purpose of this provision, the terms set forth below as follows:

(i) "corrupt practice" means the the promise, offer or giving, to a Public Official, directly orindirectly, of an undue advantage of any nature, for the Public Official himself or herself or another person or entity, in order hat the Public Official acts or refrains from acting in the exercise of his or her official duties;

(ii) "fraudulent practice" means any dishonest conduct (act or omission), whether or not it constitutes a criminal offence, deliberately intended to deceive others, to intentionally conceal items, to violate or vitiate consent, to circumvent legal or regulatory requirements and/or to violate internal rules in order to obtain illegitimate profit.

(b) will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(b) will declare a firm ineligible either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a previous contract.

(c) The bidders shall furnish the employer with a written undertaking declaring that have taken steps to ensure that neither them the directly nor a person acting on their behalf will engage in any type of fraud, corruption nor any form of collusion that fair competition.

34.2 Furthermore, Bidders shall be aware of the provision stated in Clause 26.2 and Clause 63.5 of the General Conditions of Contract, Part II Conditions of Particular Application.

35 Qualification Forms, questionnaires and Schedules

35.1 The Bidder shall supply forms, bid security, questionnaires and schedules required for qualification purposes, annexed to the bid document.

APPENDIX TO INSTRUCTION T0 TENDERERS

The following information for procurement of works shall complement or amend the provisions of the instruction to tenderers, wherever there is a conflict between the provisions of the instruction to tenderes and the provisions of the appendix the provisions of the appendix herein shall prevail

Particulars of appendix to instruction to tenderes

(a) Submission of bids

The tender submitted should comprise the following documents/requirements **PRESENTED IN THE ORDER GIVEN BELOW**- Marks to be awarded for presentation.

A. Bid document submitted must have Serialization of all pages and be properly bound.
B. Tender Security valid and adequate (as stipulated in advert or invitation to bid)
C. Duly filled and signed form of tender
D. Certificate of attendance to pre tender site visit
E. Signed and stamped declaration that the bidder will not engage in any corrupt or fraudulent practice.
F. **Certified copy** of Certificate of incorporation/business Registration Certificate
G. **Certified** copy of current CR12, not older than six months from date of tender clo
H. Duly Filled Confidential Business Questionnaire
I. copy Registration certificate with National Construction Authority as a general buildings contractor Category **NCA-6** or above, and a valid license
J. **Certified** current Power of attorney to sign tender documents, not older than six months from date of tender closing .
K. **Valid Tax** Compliance Certificate
L. **Certified valid** Single Business Permit from respective county government
M. **Tender specific** Authority to seek references from the tenderer's Bankers, detailing bank, branch and account number
N. **Certified** Litigation history For the past three years
O. Last two years audited accounts 2016/2017, 2017/2018 or **CERTIFIED** copies of bank statements covering a period of at least 24 months prior to the date of the tender closing. The copies should be certified by the Bank issuing the statements. Annual volume of construction work of kshs70 million per year borne from turnover in audited accounts for the past two years, or cumulative volume of transactions evidenced in bank statement
P. Program of works showing clearly the sequencing of project activities within pre determined contract period within which the works shall be carried out to completion and cash-flow projection showing clearly expected monthly cash disbursement over the contract duration based on tender sum quoted.
Q. Key staff competency profiles (project manager & Site agent, Foreman) Qualifications and experience of key site management and technical personnel proposed for the contract supported by academic and professional certificates in addition to signed curriculum vitae, Project manager, site agent and foreman
    - An project manager with a minimum of 5 years specific experience in building construction supervision or works of an equivalent nature and volume, with a

minimum of degree in - architecture/civil engineering/quantity surveying, field or equivalent from a recognised Institution

- A Site Agent with a minimum of 3 years specific experience in building construction works or works of an equivalent nature and volume, with a minimum of Higher National Diploma in buildings related course or equivalent from a recognized institution.

- A foreman with a minimum of 3 years specific experience in building (construction works or works of an equivalent nature and volume, with a minimum of An Ordinary Diploma in building related course or equivalent from a recognized institution

R. Details of experience as main contractor in the construction of at least two works of a nature and complexity equivalent to the Works (kshs 30 million) over the last 5 years (to comply with this requirement, works cited should be at least 70 percent complete); supported by copies of award letter, or extract form of Signed Agreement and At least recommendation letters per job from Qualified and registered engineer or architect who was been directly involved in supervision of the works. Recommendation by professional to be accompanied by copy of respective professional registration certificate or practicing license. The recommendation letter should highlight among other things the
   i. name of the project,
   ii. contract value,
   iii. client name, client physical addresses, client email/telephone number.
   iv. Status of completeness of the work or otherwise.
   Nb: recommendations not accompanied referees professional certificates/license and vice versa shall be disregarded for purposes of evaluation

S. Evidence of Liquid assets and or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than 3 months of the estimated payment flow under this Contract. Ie to mean Evidence of liquid assets or credit facilities, either from the bank credit facilities , credit facilities from major relevant materials suppliers, manufacturers or dealers all adding up to a minimum Cumulative facility of kshs 10.5 million

T. Adequate equipment for the specified type of Work giving details and evidence as to whether owned or leased, Proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment as required for the Works – if owned then copies of logbooks Must be attached, for lease or hire, to be supported by lease/hire agreement

Mandatory Requirements

Any tenderer who fails to submit and meet in full with no exceptions the mandatory requirements will be rejected and deemed non responsive and will therefore not be eligible to proceed to the technical and financial evaluation stages

A. Bid document submitted must have serially paginated and be properly bound.
B. Tender Security valid and adequate (as stipulated in advert or invitation to bid)
C. Duly filled and signed form of tender
D. Certificate of attendance to pre tender site visit

E. Signed and stamped declaration that the bidder will not engage in any corrupt or fraudulent practice.
F. **Certified copy** of Certificate of incorporation/business Registration Certificate
G. **Certified** copy of current CR12, not older than six months from date of tender closing
H. Completed Tender questionnaire/Confidential Business Questionnaire Ref: tender document pg 42&43
I. copy Registration certificate with National Construction Authority as a general buildings contractor Category **NCA-6** or above, and a valid license
J. **Certified** current Power of attorney to sign tender documents, not older than six months from date of tender closing .
K. **Valid Tax** Compliance Certificate
L. **Certified valid** Single Business Permit from respective county government
M. **Tender specific** Authority to seek references from the tenderer's Bankers, detailing bank, branch and account number
N. **Certified** Litigation history For the past three years
O. audited accounts 2016/2017, 2017/2018 or **CERTIFIED** copies of bank statements covering a period of at least 24 months preceding tender closing date

Technical evaluation requirements

A cut off point of **70%** score shall apply meaning that any firm scoring less than 70 points on the 100 points scale in technical evaluation shall be declared technically non responsive and therefore ineligible for the financial evaluation.

Preference where applicable shall be guided by Public procurement and disposal (preference and reservations) regulations 2011

Score sheet					**Marks**
1	**Document presentation** **Total Marks 3**	Presentation and response(this includes binding the document and neat and orderly presentation, separation and arrangement of requested information & general response to all requirements			**3**
2	**EQUIPMENT** **Total Marks 10**	Ownership list of required equipment and/or Current authorization letter of hiring from M&T or reputable hiring company	**No required**		
			7 ton truck	**1**	**4**
			I ton pick up truck	**1**	**3**
			Concrete mixer	**1**	**1.5**
			Porker vibrator	**1**	**1.5**
3	**KEY PERSONNEL** **Total Marks 20**	Provide List Key Site technical staff, their • CVs and resume. – • General Experience (CV), • -Certified Qualification Certificate,	Project manager	**Degree** in Civil Eng/architecture/quantity surveying	**3**
				Exp. 5 Yrs and above	**3**
				Signed CV	**2**
			Site Agent	**Higher national dip** in building related course	**2**
				Exp. 3 Yrs and above	**2**
				Signed CV	**2**

			Foreman	**ordinary dip** in building related course	**2**
				Exp. 3 Yrs and above	**2**
				Signed CV	**2**
4	**PAST RELEVANT WORK EPERIENCE** **Total marks 30 marks**	Details of experience as main contractor in the construction of at least two works of a nature and complexity equivalent to the Works (kshs 30 million) over the last 5 years (to comply with this requirement, works cited should be at least 70 percent complete);	Job (1) kshs 30million or above- copy award letter or signed agreement		**5**
			Recommendation letter from professional referee in respect to job (1) above		**5**
			Referees registration certificate or practicing license Job (1) above		**5**
			Job (1) kshs 30million or above- copy award letter or signed agreement		**5**
			Recommendation letter from professional referee in respect to job (2) above		**5**
			Referees registration certificate or practicing license Job (2) above		**5**
5	**LITIGATION HISTORY** **Total marks 3**	Record of litigation in the previous 3 years. Attach Authenticated litigation history		2016	**1**
				2017	**1**
				2018	**1**
6	**FINANCIAL CAPABILITY** **Total marks 22**	Certified audited accounts for the last Two (2) yrs , or bank statements last 24 months	Average construction turnover. 70 Million per financial year	2016-2017	**6**
				2017-2018	**6**
		Evidence of liquid assets or credit facilities, either from the bank credit facilities , credit facilities from major relevant materials suppliers, manufacturers or dealers all adding up to a minimum Cumulative facility of kshs 10.5 million		Kshs 10.5 million	**10**
7	**WORK EXECUTION PROGRAMME** **Total Marks 12**	Working Schedule and Projected Cash flow		Work Programme	**6**
				Cash flow plan	**6**
TOTAL SCORE					**100**

Financial Evaluation

To qualify for award the bidder must satisfy the following financial eligibility criteria

(a) The tender form must be duly signed by authorized person vide power of attorney .
(b) The bidder must concur to correction of errors in line with instruction to bidders clause 26
(c) Prices quoted must be valid for 90 days

SECTION II:

TENDER FORMS AND QUALIFICATIONS SCHEDULE

QUESTIONNAIRE AND FORMS

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FORMS

BID SECURITY

BID SECURITY

FORM OF TENDER SECURITY

WHEREAS …….. (hereinafter called "the Tenderer") has submitted his tender dated …… for the construction of ……
…… *(Name of Contract)*

KNOW ALL PEOPLE by these presents that We …… having our registered office at ……(hereinafter called "the Bank"), are bound unto ……(hereinafter called "the Employer") in the sum of Kshs.…… for which payment well and truly to be made to the said Employer, the Bank binds itself, its successors and assigns by these presents sealed with the Common Seal of the said Bank this ……. Day of ……20……

THE CONDITIONS of this obligation are:

1. If after tender opening the tenderer withdraws his tender during the period of tender validity specified in the instructions to tenderers

   Or

2. If the tenderer, having been notified of the acceptance of his tender by the Employer during the period of tender validity:

   (a) fails or refuses to execute the form of Agreement in accordance with the Instructions to Tenderers, if required; or

(b) fails or refuses to furnish the Performance Security, in accordance with the Instructions to Tenderers;

We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the said date.

[Date [	*[signature of the Bank]*
[Witness]	*[Seal]*

CERTIFICATE OFBIDDER'S SITE INSPECTION

CERTIFICATE OF BIDDER'S PRE-BID SITE INSPECTION

1. This is to certify that

   I..... *(Name of the Bidder's Authorised Representative),* being the Authorised Representative /Agents of .....*(Name of the Bidder)* has undertaken the inspection of the site in accordance with the Instructions to Tenderers, for purposes of bidding for proposed Building Facilities-Various Sites Marsabit N. Reserve. KWS/OT/AFD/63/2018-2019

2. Having studied the Tender Documents, I carefully examined the site to make myself familiar with the local conditions likely to influence the works and cost thereof.

3. I further certify that I am satisfied with the description of the works and that I understand perfectly the scope of the works as specified and implied in the performance of the Contract

Signed ……. Date ……

Bidder

Signed ……. Date ……

Kws representative presiding the pre-bid site visit

DECLARATION OF CORRUPT AND FRAUDULENT PRACTICES/DEBARMENT

Date: ……

To: DIRECTOR GENERAL
KENYA WILDLIFE SERVICE
P. O. BOX 40241-00100
NAIROBI

The Bidder (name and address)……..……..……
……
……
……
…
declares the following:

(a) Has not been debarred from participating in public procurement.

(b) Has not been involved in and will not be involved in corrupt and fraudulent practices regarding public procurement

(*Signature*) ……..(*Date*)……..

Official Stamp:……..

(To be signed by authorized representative and officially stamped)

FORM OF BID

FORM OF BID

TO: *Director Kenya Wildlife Service_ [Name of Employer)* _____*[Date]*
_____
_____
[Name of Contract]

Dear Sir,

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

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

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

4. Unless and until a formal Agreement is prepared and executed this tender together with your written notification/acceptance thereof, shall constitute a binding Contract between us.

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

Dated this _____ day of _____20_____

Signature _____in the capacity of_____

duly authorized to sign tenders for and on behalf of _____*[Name of contractor)* of_____ _____[*Address of contractor]*

Witness; Name_____

Address_____

Signature_____

duly authorized to sign bids for and on behalf of .....

.....

Address .....

APPENDIX TO FORM OF BID

(Conditions of Contract)

Item	Sub-Clause	Detailed description
Definitions	1.1 (a) (i)	The Employer is the Director, Kenya Wildlife Service PO Box 40241 Nairobi
	1.1 (a)(iv)	The Engineer is head buildings and fences department, Kenya wildlife service PO Box 40241 Nairobi
Engineer's authority to issue variations	2.1(d)(ii)	2.5% of the Contract Price
Language of Contract	5.1(a)	The language is English
Law governing the Contract	5.1(b)	The law in force is that of the Republic of Kenya
Performance Security	10.1	The performance security will be in the form of an Unconditional Guarantee in the amount of 10% percent of the Contract Price.
Inspection of Site	11.2	Bidders will satisfy themselves with additional data at the Employers offices along Langata Road, Nairobi
Programme to be Submitted	14.1	Twenty Eight (28) days
Cash-flow estimate	14.3	Twenty Eight (28) days
Minimum Amount of Insurance	23.2	5% per third party, with the number of occurrences unlimited
Time for Issue of Notice to commence	41.1	Twenty Eight (28) days
Time for Starting work after receiving commencement Order	41.1	Twenty Eight (28) days
Time for Completion	43.1	Six (6) months from date of commencement
Amount and Limit of Liquidated damages	47.1	0.05% of the Contract Value per day up to a total of 10% of the Contract Price

Defects Liability Period **Item**	49.1 **Sub-Clause**	Six (6) months **Detailed Description**
Gross Minimum Amount of Interim Payment Certificates	60.2	KSh,s 2,000,000.00 (Two Million)
Retention Money	60.3	10% of the Value of each Interim Payment Certificate
Maximum amount of Advance Payment	60.7	10% of the Contract Price
Start Repayment of Advance Payment	-	After Certification of 20% of the Contract Price
Rate of payment of Advance Payment	-	Repayment shall be spread out on 'prorata' basis between 20-80% of the interim Certification
Number of Copies of Payment Certificates	60.10	2 (two)
Number of Final Statement of Completion	60.10	2(two)
Appointment of Arbitrator	67.3	1. Employer 2. Contractor
Notice to the Employer and Engineer	68.2	The Employer's address is : Director, Kenya Wildlife Service P.O. Box 40241 Nairobi The Engineer's Address is: Head buildings and fences Department Kenya Wildlife Service P.O. Box 40241 Nairobi

_____
(Signatory of the Bid)

_____
(Date)

FORM OF AGREEMENT*

THIS AGREEMENT made the .....day of ..... 20… between KENYA WILDLIFE SERVICE, P.O. BOX 40241, NAIROBI (hereinafter called "the Employer") on the one part and.....……of …….....……(hereinafter called "the contractor") on the other part.

WHEREAS the Employer is desirous that the Contractor execute the **……**Tender No ---------- (hereinafter called "the Works") and has by a letter of acceptance dated …… accepted a tender by the Contractor of for the execution, completion and remedying the defects of the Works for a Contract Price of KShs …… *(amount in figures);*

NOW THIS AGREEMENT WITNESSETH as follows that it is hereby agreed and declared by and between the parties hereto 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.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

   (a) this Form of Agreement
   (b) the Letter of Acceptance
   (c) the said Bid and Appendix to Bid
   (d) the Specifications
   (e) the Conditions of Contract (part II)
   (f) the Conditions of Contract (part I)
   (g) the Drawings
   (h) the Priced Bill of Quantities; and
   (i) any other documents forming part of this contract

   The aforesaid documents shall be taken as complementary and mutually explanatory of each other, but in case of ambiguities, discrepancies or conflict, shall take precedence in the order set out above.

3. In consideration of the payments to be made by the Employer to the Contractor as provided in the Contract, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and remedying of defects therein the contract price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed the day and year first above written.

Signed for and on behalf of the said **KENYA WILDLIFE SERVICE** in the presence of:	)
Signed for and on behalf of the said …….. *(the Contractor)* in the presence of:	)

PERFORMANCE SECURITY

(See Clause 10 of the Conditions of Contract)

TO:

The Director General
Kenya Wildlife Service
P.O. Box 40241
Nairobi, Kenya

WHEREAS ..... (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No …….. dated ..... …to execute the ……. (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you, with a Bank Guarantee by a reputable bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of ..... (in figures) .....……(Amount in words), such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of ..... as aforesaid without your needing to prove or to show grounds or reasons for your demand for 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 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 you 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.

This guarantee shall be valid until a date 30 days from the date of issue of the Taking-Over Certificate.

SIGNATURE AND SEAL OF THE GUARANTOR

.....

Name of Bank .....

Address .....

Date .....

FORM OF ADVANCE PAYMENT GUARANTEE

FORM OF ADVANCE PAYMENT, GUARANTEE (BANK GUARANTEE)
(If applicable)

TO: The Director
Kenya Wildlife Service
P.O. Box 40241
Nairobi, Kenya

NAME OF CONTRACT:

……

Sir:

In accordance with the provisions of the Conditions of Particular Application of Contract, Sub-Clause 60 (Advance Payment) of the above-mentioned Contract, ...……..
(Contractor's Name & Address)
(hereinafter called "the Contractor")shall deposit with the Employer, the Director, Kenya Wildlife Service, Nairobi, Kenya, a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of KShs .....
(in figures)

KShs ……
(in words)

We, the .....
(Name of the bank or financial institution)
as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Director, Kenya Wildlife Service, Nairobi, Kenya, on his first demand without whatsoever right of objection on our part and without his first claim to the Contractor in the amount not exceeding KShs .....
(in figures)

.....……..
(in words)

We further agree that no additional to or other modification of the terms of the Contract or of Works to be performed thereunder or of any of the Contract documents which may be made between the Director, Kenya Wildlife Service, Nairobi, Kenya, 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 remain valid and in full effect from the date of the advance payment under the Contract until the Director, Kenya Wildlife Service, Nairobi, Kenya, receives full repayment of the same amount from the Contractor.
After the expiry this document shall be returned to us for cancellation.

Signature and Seal of Bank: .....

Name of Bank: .....
Address: .....
Date of Issue: .....

SCHEDULES OF SUPPLEMENTARY INFORMATION

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Schedule 1

SCHEDULE OF MAIN BASIC RATES

In accordance with Condition of Contract Part II, Clause 70 the Bidder shall schedule here below suppliers or manufactures rate for supply of the materials to which the variation of price clause applies. Written confirmation from the suppliers or manufacturer (not more than 28 days before the date of opening of Bid) in respect of each item shall be submitted with the bid.

Item No.	Description	Unit	Unit Rate (KShs)
2.	Cement	50kg bag	
3.	Timber 100 X 50mm	m	
3.	Timber 50 X 50mm	m	
4.	9mm Chip board ceiling (8x4)	pc	
5.	Silk vinyl paint	litres	
6.	Roof paint	litres	

Signature of the Bidder Date

Schedule 2

This Confidential Business Questionnaire shall be completed by the Bidder or by each member of a Joint venture if the Bidder is a Joint-venture.

CONFIDENTIAL BUSINESS QUESTIONNAIRE

You are requested to give the particulars indicated in Part 1 and either Part 2 (a). 2(b) or 2(c) whichever applies to your type of business.

You are advised that it is a serious offence to give false information on this Form.

***Part 1 - General*:**

Business name
.....

Location of business premises
.....

Plot No. .....Street/Road .....

Postal Address.....Tel No. .....

Email address . .....

Nature of business
.....

.....

Current Trade Licence No. .....Expiring date .....

Maximum value of business which you can handle at any one time:

Kshs.....

Name of your bankers .....
Branch.....

Part 2(a) - Sole Proprietor:

Your name in full
.....

Age.....

Nationality .....Country of origin .....
*Citizenship details .....

Part 2(b) - Partnership:

Give details of partners as follows:

Name Nationality Citizenship Details Shares

1. .....

2. .....

3. .....

4. .....

5. .....

Part 2(c) - Registered Company:

Private or public .....

State the nominal and issued capital of the company-

Nominal Kshs. .....

Issued Kshs. .....

Give details of all directors as follows:

Name Nationality Citizenship Details Shares

1. .....……..

2. .....……..

3. .....……..

4. .....……...

5. .....……

....
Date Signature of Bidder

Schedule 3

FORM OF WRITTEN POWER-OF-ATTORNEY
(Attorney authenticated)

The Bidder, including a joint venture, shall state here below the name(s) and address of his representative(s) who is/are authorized to receive on his behalf correspondence in connection with the Bid.

.....
(*Name of Bidder's Representative in block letters*)

.....
(*Address of Bidder's Representative*)

.....
(*Signature of Bidder's Representative*)

Alternate:

.....
(*Name of Bidder's Representative in block letters*)

.....
(*Address of Bidder's Representative*)

.....
(*Signature of Bidder's Representative*)

To be certified by an advocate

Schedule 4

KEY PERSONNEL

The qualifications and experience of key personnel proposed for administration and execution of the Contract, both on site (3)and from headquarters,(2) must be entered in the format prescribed in this Schedule. The minimum qualification for the proposed Project manager Site Agent and foreman must be a degree,Higher National Diploma (HND) and Diploma respectively in buildings related technical course from a recognized Institution of higher learning with five (5) years working experience in similar projects and fluent in the language stipulated in the appendix to bid. These minimum requirements shall constitute qualification criteria.headquarters staff, must possess relevant qualifications and skills in business related or management courses backed by minimum 5 years esperience. Attach Evidence Signed CV and Certificates. Failure to attach supporting evidence renders the propsed staff ineligible for scoring

Designation	**Name**	**Nationality**	**Summary of Qualifications, Experience and Occupation***

* Attach curricula signed vitae for above key personnel supported by relevant certificates

..... **.....**
Date **Signature of Bidder**

Schedule 5

SCHEDULE OF WORKS SATISFACTORILY CARRIED OUT BY THE BIDDER WITHIN LAST FIVE YEARS

The Bidder shall fill in the project **name, length, country** where located and the other required details for similar building works he has satisfactorily carried out within the last five years. The nature of works executed and their similarity to the works of this bid shall constitute critical qualification criteria. Works listed to be supported by copies of agreement acceptance letters or certificates *(works not supported by requisite documents of proof as stated herebefore shall not be considered for scoring)*

DESCRIPTION OF WORKS	*CLIENT*	*SUPERVISING AUTHORITY/ CONSULTANT*	*VALUE KSHS.*	*MONTH-YEAR OF START*	*MONTH-YEAR OF FINISH*

- Works listed to be supported by copies of agreement acceptance letters or certificates *(un supported works shall not be scored)*

I hereby certify that this Bidder has successfully carried out the above.-

....
Date Signature of Bidder

Schedule 6

SCHEDULE OF ON-GOING PROJECTS

The Bidder shall enter the project name, length, country where located and other required details for project(s) which he is currently involved in. Works listed must be atleast 70% complete and upported by copies of agreement acceptance letters or certificates *(un supported works shall not be scored)*

DESCRIPTION OF WORKS		COMMENCEMENT DATE	COMPLETION DATE	VALUE OF WORKS (KSH)	COMPLETED UP TO DATE (%)
					PHYSICAL

* Works listed must be atleast 70% complete and supported by copies of agreement acceptance letters or certificates *(un supported works shall not be scored)*

I hereby certify that the above information is correct.

....

Date **Signature of Bidder**

Schedule 7

MAJOR ITEMS OF CONSTRUCTION PLANT AND EQUIPMENT

The Bidder shall enter in this Schedule major items of Plant and Equipment which he proposes to bring to site, indicating the source i.e. owned, leased hired or to be imported for the purpose of the Contract, giving details of make, type, origin and CIF value as appropriate. Only reliable plant in good working order and suitable for the work required of it shall be shown on this Schedule. The Bidder will also indicate on this Schedule when each item will be available at the site of the Works. The following list of minimum available number of equipments shall constitute qualification criteria.., 7ton lorry 1 No. I ton Pick up truck 1 No.,concrete mixer, porker assorted tools and equipment eg. Ladder, wheelbarrows., etc if owned then copies of logbooks or ownership documents Must be attached, for lease or hire, to be supported by lease/hire agreement, items listed but not supported by evidence of either ownership or lease/hire shall not be scored

Description, Type, Model and Make	No. of each	Year of Manufacture	Source	Estimate C.I.F. Mombasa Value (if to import)	Power Rating and/or Capacity of equipment

* Items listed but not supported by evidence of either ownership or lease/hire shall not be scored

..... **.....…….**
Date **Signature of Bidder**

Schedule 8

LOCAL LABOUR: BASIC RATES

(Reference: Clause 70 of Conditions of Contract)

The rates inserted in this Schedule will be those used in determining changes in costs of local labour as provided in Clause 70.1 (a) of the Conditions of Contract Part 2.

LABOUR CATEGORY*	MONTH/SHIFT/HOUR	UNIT	RATE (KSHS)

- Categories to be generally in accordance with those used by the Kenya Building Construction and Engineering and Allied Trade Workers' Union or other relevant sources and authorities.

....
Date **Signature of Bidder**

Schedule 9

OTHER SUPPLEMENTARY INFORMATION

1. Audited accounts for the last two years: balance sheets, profit and loss statements, auditors' reports, etc. List them below and attach copies.

.....……
…

.....……
…

.....……
…

.....……
…

2. Evidence of access to financial resources to meet the qualification requirements: Cash in hand, lines of credit, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than 4 months of the estimated payment flow under this Contract etc. List below and attach copies of current and authorised support documents eg. Bank statements, letters of credit from bank, letters of credit from material suppliers etc

.....……
…

.....……
…

.....……
…

.....……
…

3. Authority to seek refrence from your bankers clearly stating Name, address, and telephone, telex and fax numbers of the Bidder's bankers who may provide reference if contacted by the Contracting Authority, state account name, account number and branch.

.....……
…

.....……
…

.....……
…

4. Litigation Information for the last three years in which the bidder was involved(attorney authenticated)

DESCRIPTION	CLIENT	SUPERVISING AUTHORITY/ CONSULTANT	AMOUNT INVOLVED KSHS	CAUSE OF DISPUTE	OUTCOME OF DISPUTE

Note:
The information listed in 1 - 4 above shall be provided for each partner of a joint venture, where applicable.
The information provided in 4 above *must* be attorney authenticated/certified both in case of litigation or none litigation.

SECTION III:

SPECIFICATIONS

GENERAL DESCRIPTION OF MATERIALS AND WORKMANSHIP

The following apply to all sections hereafter.

1 **ALTERATIONS, ADDITIONS AND EXTENSIONS**

In alterations or extensions to existing works, buildings and/or external works, new work is to match up in all respects to the existing work unless otherwise specified, shown on the Drawings or approved before-hand by the Engineer

QUALITY, SAMPLES, TESTING AND APPROVAL

2 **MATERIALS**

All materials, commodities, components and equipment are to be new and unused unless otherwise specified or approved by the Engineer. Handle, store, fix and protect all commodities with care to ensure that they are in perfect condition when incorporated into the works and handed over on completion.

3 **MANUFACTURER'S RECOMMENDATIONS**

Handling, storage and fixing of every commodity shall be in accordance with the printed or written recommendations of the manufacturer and/or supplier. Supply the Engineer with copies of manufacturer's recommendations. Inform the Engineer if the manufacturer's recommendations conflict with any other specified requirements, and obtain his instructions before proceeding.

4 **STANDARDS**

Where commodities or workmanship are specified by reference to British Standard (B.S) or codes of practice (C.P.) or International (I.S.O) or Kenyan Standard or other Standards, such standards are deemed to be the latest published at the time of tendering. The Contractor will be deemed to have read and understood the standards specified, and no claim for want of knowledge will be allowed. The substitution of commodities or standards of workmanship complying with other standards may be well allowed at the discretion of the Engineer, but application for permission for such substitution must be made in writing in sufficient time to allow adequate investigation. Obtain Certificate of Compliance with standards and supply to the Engineer on request.

5 **LOCAL CONDITIONS**

All materials, commodities, components and equipment must be suitable for use in tropical climates.

6 **SAMPLES**

Where samples of commodities or specimens of finished work are specified submit samples or specimens to the Engineer and obtain his approval before confirming orders or carrying out the work. Retain approved samples and specimens on Site for comparison with the finished work. Finished work must conform in all respects with the samples or specimens approved. Remove samples and specimens when no longer required. The cost of supplying samples and specimens may form part of the finished work where approved by the Engineer.

The following apply to all sections hereinafter.

DEMOLITIONS AND ALTERATIONS

1 GENERALLY

The Contractor is required to visit the existing buildings and ascertain for himself the nature of the Works and no claim arising from want of knowledge in this respect will be allowed. The dimensions and quantities given in this section are approximate given for guidance only and the Contractor is referred to the Site to ascertain the exact nature of the works.

The items of pulling down and alterations are to include for both labour and materials and for any shoring, needling and strutting and temporary works in connection therewith. The Contractor must allow in his pricing for making good all works disturbed in all trades and for carting away all debris arising.

The Contractor must give all the necessary notices and must exercise due care in the demolitions. He must not collapse large sections of walls, floors, etc., and must provide all necessary shoring and supports during the demolitions.

During demolition works the Contractor shall keep the debris constantly watered to minimise the dust arising and this shall be included in his prices.

The Contractor is to erect dust-proof screens to the approval of the Engineer where deemed necessary and to remove them on completion of the work, all to the Engineer's satisfaction.

All materials arising from the demolitions, unless specifically stated otherwise, are to become the property of the Contractor and any credit allowed for the value of such materials shall be shown in the space provided.

All materials, including rubbish shall be removed from the Site as soon as possible.

2 INTERPRETATION OF TERMS

Demolish' shall be deemed to mean cutting away, breaking up, demolishing, pulling down, taking down, removing, etc., as the context requires and shall include in all cases temporarily strutting and supporting and making good remaining work as necessary, and clearing away and removing from Site all debris, etc

Remove' shall mean taking down, hacking up, breaking down, removing etc., and clearing away from Site and all other expenses thereby entailed.

Make good' shall be deemed to mean , all making good, fitting, facing, plastering, paving, repairing and painting to match and jointing to remaining existing work.

To 'match' shall mean to be all equal to relevant existing work in design, workmanship and all other aspects.

Re-fix' shall apply to existing materials arising from the Works and shall mean take from store and fix in new position, including making good, repairing and adjusting as necessary.

EXCAVATIONS

1 EXAMINE THE SITE

The Contractor is assumed to have visited and examined the Site carefully and ascertained for himself its nature and the kind of materials to be excavated.

2 EXCAVATIONS

Excavations shall be to the widths and depths indicated on the Drawings or to such lesser or greater depths as the Engineer may deem necessary and so instruct the Contractor in order to obtain satisfactory foundations. The Contractor shall allow for working space in his rates for excavations.

Any difference in the quantity of work actually executed under such instructions and that provided in the Bills of Quantities shall be measured and valued by the Engineer as a Variation under the relevant Conditions of Contract.

If, however, the Contractor excavates to any greater depths or widths than are shown on the Drawings or directed, then the Contractor shall at his own expense, fill in such extra depth and width with concrete similar to that described for foundations to the Engineer's satisfaction.

3 BOTTOMS OF EXCAVATIONS TO RECEIVE FOUNDATIONS

The Contractor shall report to the Engineer when secure bottoms to the excavations have been obtained. Any concrete or other work executed before the excavations have been inspected and approved shall, if so directed, be removed and new work substituted after the excavations have been approved, all at the Contractor's expense.

The Surface of the bottoms of excavations to receive foundations shall be leveled or graded to falls as required.

4 SIDES OF EXCAVATIONS

Sides of excavations shall be maintained vertical by means approved by the Engineer, and the Contractor shall also allow for keeping same free from fallen materials in his rates for excavations.

The Contractor shall also allow for keeping excavations free from, water and mud by baling, pumping or otherwise, in his rates for excavations.

5 ROCK

Excavation in rock shall exclude all materials which can be removed by hand and does not necessarily require the use of compressors or other mechanical

equipment although the Contractor may use such equipment to loosen the material for ease of its removal. All top soils, black cotton and other clay soils, murram, stone and other fill and all similar materials will NOT be classified as rock.

Rock has been measured hereafter as extra over excavation for excavating in soft or hard rock.

Soft rock shall be deemed to mean any material which cannot reasonably be removed without the use of mechanical plant such as rippers, compressors, traxcavators, but which does not require drilling, wedging or blasting. Local tuffs, magadi highly-consolidated literate, weather, lavas, boulders or outcrops of harder rock not exceeding one cubic metre in volume, Nairobi building stone and similar materials shall be classified as soft rock.

Hard rock shall be classified as material which is massive and geologically homogeneous and which requires the use of drilling, wedging or blasting for its removal such as blacktrap or similar material.

The Engineer's decision shall be final with regard to the classification of excavated materials.

6 STARTING LEVEL

Unless otherwise described the starting level of all excavations has been measured from the level remaining after completion of reduced level excavation. However, the Contractor's prices should include for carrying out the excavation work in any alternative sequence that he may require.

7 BLASTING

No blasting will be permitted without the prior approval of Local Authorities and the Engineer.

8 CART AWAY

All surplus excavated materials where so directed and all rubbish are to be removed from the Site and the Contractor is to find his own dump and shall pay all charges.

9 BORROW PITS

No borrow pits will be allowed to be opened on the Site.

10 FILLING OBTAINED FROM THE EXCAVATIONS

Filling obtained from surplus excavation materials will only be incorporated if suitable material arises and it is to be free from all weeds, roots, vegetable soil or other unstable materials and is to be filled in layers each of not more than 250mm finished thickness. Each layer to be wetted and consolidated as described hereafter.

11 HARDCORE FILLING

Hardcore for filling under floors, etc., shall be good hard stone, ballast or quarry waste to the approval of the Engineer broken to pass not greater than 150mm ring or to be 75% of the finished thickness of the layers being compacted, whichever is the lesser. Hardcore shall be free from all weeds, roots, vegetable soil, clay, black cotton soil or other unstable materials.
It shall be well graded with smaller stones and fine materials to give a dense compact mass after consolidation. Sufficient fine material shall be added to each layer to give gradation of materials as necessary to obtain a solid compact mass after rolling. Hardcore filling is to be laid in layers each of consolidated thickness not exceeding 250mm. Each layer shall be compacted by at least 8 passes of 10 tonne smooth-wheeled roller or a 2 tonne vibrating roller until all movement ceases. Sufficient water is to be added to obtain maximum compaction to the Engineer's approval. To each layer a 25mm thick layer of sand complying with the specification for fine aggregate for concrete shall be spread over the surface and forced into the hardcore by the use of a vibrating roller weighing not less than 2 tonnes. This operation should be carried out when the materials are dry and repeated whilst the sand is well watered. Should all the sand be absorbed the Engineer may require a further layer to be applied and the process repeated.

The top surface of the hardcore shall be leveled or graded to falls as required, and shall then be blinded with a layer of similar materials broken to 25mm gauge and finished with a 10 ton smooth-wheeled roller. The surfaces so obtained shall be to the Engineer's approval.

12 MATERIALS FOUND IN EXCAVATIONS

No sand, aggregate, murram or other materials found in the excavations is to be used in the Works without the written permission of the Engineer.

13 RATES FOR EXCAVATIONS

The rates for excavation, including excavation in rock, shall include for trimming, leveling and preparing bottoms and all faces to receive concrete, etc., and for any extra excavation required for planking and strutting.

Prices shall include for excavating in any material encountered unless specifically otherwise described, handling, etc., of extra bulk after excavating, or before consolidating, any extra excavation required for formwork or planking and strutting, circular work, grubbing up any old drains, roots etc., that may be encountered, for trimming sides and leveling and ramming bottoms, forming steppings and trimming excavation or filling to embarkments and batters as required.

RATES FOR EXCAVATIONS(Continued)

In the prices for the item 'allow for keeping the whole of the excavations free from water' the Contractor shall allow and make provision for keeping the whole of the Works thoroughly drained and clear of water below the lowest level of any part of them so long as may be required if considered necessary by the Engineer, continuously day and night by petrol or hand pumps or other mechanical appliances, pipes, chutes, dams, manholes, sumps, diversions or any other means necessary for that purpose. Water pumped from the trenches shall not be allowed to run down the road channels but shall be conveyed to the nearest surface water sewer, ditch or river through troughs, chutes or pipes.

14 RATES FOR DISPOSAL

Rates for disposal of excavated material are to include for the selection of spoil as it arises and for all double handling and re-excavation from spoil heaps not specifically ordered by the Engineer.

15 DIOTHENE SHEETING

Diothene sheeting shall be 500 gauge or 1000 gauge as shown and as produced by Plastics Africa Limited, or other equal and approved. Joints in sheeting shall be treble folded with 150mm fold and taped at 300mm intervals with 50mm wide black plastic adhesive taps as manufactured by Cellotape Limited. The sheeting shall not be stretched but shall be laid loose with sufficient wrinkles to permit shrinkage up to 15%.

16 CUTTING DOWN TREES

The Contractor must consult the Engineer before cutting down or pruning any trees or shrubs encountered on the Site.

CONCRETE WORK

1 ARCHITECT/ENGINEER

For the purposes of the concrete structure the Structural Engineer, hereafter referred to as 'the Engineer', shall be deemed invested with all the duties.

2 CODE OF PRACTICE

All materials, workmanship, tests and performances in connection with reinforced work are to be in conformity with the latest edition of the British Standard Code of practice B.S. (8110 for 'The Structural Use of Concrete') where not inconsistent with these Preambles.

3 SUPERVISION

A competent person approved by the Engineer shall be employed by the Contractor whose duty shall be to supervise all stages in the preparation and placing of the concrete. All cubes shall be made and Site tests carried out under his direct supervision, in consultation with the Engineer.

4 CONTRACTOR'S PLANT, EQUIPMENT AND CONSTRUCTION PROCEDURES

Not less than 30 days prior to the installation of Contractor's plant and equipment for processing, handling, transporting, storing and proportioning ingredients, and for mixing, transporting and placing concrete, the Contractor shall submit drawings for approval by the Engineer, showing proposed general plant arrangements, together with a general description of the equipment he proposes to use.

After completion of installation, the operation of the plant and equipments shall be subject to the approval of the Engineer.

Where these Preambles, the Bills of Quantities or the Drawings require specific procedures to be followed, such requirements are not to be construed as prohibiting use by the Contractor, of alternative procedures if it can be demonstrated to the satisfaction of the Engineer that equal results will be obtained by the use of such alternatives.

Approval of plant and equipment or their operation, or of any construction procedure, shall not operate to waive or modify any provision or requirements contained in these preambles governing the quality of the Materials or of the finished work.

CONTRACTOR'S PLANT, EQUIPMENT AND CONSTRUCTION PROCEDURES(continued)

Where suspended floor slabs are to be constructed without expansion joints, concreting is to be in panels of sizes and positions to the approval of the Engineer. To permit setting shrinkages to occur, some panels will be left unconcreted until 7 days or more after main areas have been concreted. The Contractor must include for this method of construction in his pricing.

5 TOLERANCE

On all setting out dimensions of 5 metres and over a maximum non-accumulative tolerance of plus or minus 5 millimetres will be allowed. On all setting out dimensions under 5 metres, a maximum non-accumulative tolerance of plus or minus 3 millimetres will be allowed. On the cross-sectional dimensions of structural members, unless otherwise required by the Drawings, a maximum tolerance of plus or minus 3 millimetres will be permitted.

The top surface of concrete floor slabs and beams shall be within 6 millimetres of the normal level and line shown on the Drawings. Columns shall be truly plumb and non-accumulative tolerance of 3 millimetres in each storey and not more than 6 millimetres out of plumb in their full height will be permitted. 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 tolerances set out above.

6 MATERIALS GENERALLY

All materials which have been damaged, contaminated or have deteriorated or do not comply in any way with the requirements of these Preambles shall be rejected and shall be removed immediately from the Site at the Contractor's expense. No materials shall be stored or stacked on floors without the Engineer's prior approval.

The sources of supply for all materials used for concrete work shall be approved by the Engineer before these materials are delivered on the Site. All materials shall comply with the requirements of the latest appropriate British Standard unless otherwise agreed with the Engineer whose approval shall be obtained in writing.

The suppliers of materials shall give the Engineer access to their Premises when directed for the purpose of obtaining samples of the materials for testing.

7 SAMPLES

Samples of materials shall be submitted as soon as possible after the Contract is let. No deliveries in bulk shall be made until the samples are approved by the Engineer. All condemned materials shall be removed from the Site within 24 hours.

Every facility shall be provided to enable the Engineer to obtain samples and carry out tests on the materials and construction. If these tests show that any of the materials or construction do not comply with the requirements of this Specification, the Contractor will be responsible for the cost of the tests and the replacement of defective materials and/or construction.

Samples of all materials proposed to be used shall be submitted to the Engineer and shall be tested, where required, by the Materials Branch of the Ministry of Works or other approved testing place, and receive his approval prior to being delivered in bulk upon the Works.

The Contractor's attention is drawn to the fact that the testing of samples of aggregate, sand and cement, takes time and it is of the utmost importance that the samples should be submitted for testing as soon as possible after the letting of the Contract. The Engineer will not accept any responsibility whatsoever for delay in the commencement of the Contractor in submitting samples.

8 CEMENT

Cement, unless otherwise specified, shall be Portland cement of a brand approved by the Engineer and shall comply with the requirements of B.S. 12 with the exceptions that it may contain reactive volcanic ash (of not more than 10% of the total weight) and the quantity of insoluble residue permitted in B.S. 12 may be exceeded. A manufacturer's Certificate of Test in accordance with B.S. 12 shall be supplied for each consignment delivered to the Site.

Should the Contractor require to use cement of the rapid hardening variety, he shall obtain the approval of the Engineer and also obtain any instructions regarding modifications to these Preambles caused thereby. Any additional cost that may be caused by the use of rapid hardening cement shall be at the Contractor's expense.

Cement may be delivered to the Site either in bags or in bulk.

If delivered in bags, each bag shall be properly sealed and be marked with the manufacturer's name and on the Site is to be stored in weather-proof shed of adequate dimensions with a raised floor. Each consignment shall be kept separate and marked so that it may be used in the sequence in which it is received. Any bag found to contain cement which has set or partly set, shall be completely discarded and not used in the Works. Bags shall not be stored more than 1,500mm in height.

If delivered in bulk the cement shall be stored in a water-proof silo either provided by the cement supplier or by the Contractor, but in either case the silo shall be to the approval of the Engineer.

9 AGGREGATES

The aggregates shall conform with the requirements of B.S. 882 and the sources and types of all aggregates are to be approved in all respects by the Engineer before work commences.

The grading of aggregates shall be one within the limits set out in B.S. 882 and as later specified and the grading, once approved, shall be adhered to throughout the Works and not varied without the approval of the Engineer. Fine aggregate shall be clean, coarse, siliceous sand of good, sharp, hard quality and shall be free from lumps of stone, earth, loam, dust, salt, organic matter and any other deleterious substances. It shall be graded within the limits of Zone 1 or 2 Table 2 of B.S. 882

Coarse aggregate shall be good, hard, clean approved blacktrap or similar

stone, free from dust, decomposed stone, clay, earthy matter, foreign substances or friable thin elongated or laminated pieces. It shall be graded within the limits of Table 1 of B.S. 882 for its respective nominal size.

If in the opinion of the Engineer the aggregate meets with the above requirements but it is dirty or adulterated in any manner it shall be screened and/or washed with clean water if he so directs at the Contractor's expense.

Aggregates shall be delivered to the Site in their prescribed sizes or gradings and shall be stockpiled on paved areas or boarded platforms in separate units to avoid intermixing. On no account shall aggregates be stockpiled on the ground.

10 WATER

The water used for mixing concrete shall be from an approved source, clean, fresh and free from harmful matter and comply with the requirements of B.S. 3148

11 READY-MIXED CONCRETE

Ready-mixed concrete may only be used with the prior permission of the Engineer, subject to special additional conditions laid down by the Engineer.

12 CONCRETE MIXES

Concrete mixes have been described either by the volumetric proportions or by the 28-day cube strength.

13 CONCRETE STRENGTHS

Concrete mixes shall have the following minimum strengths as given by the Works Cube Test: -

	Minimum crushing Strength at 28 Days
Class 40	
Class 30	
Class 25	
Class 20	

Class 15

The average strength obtained from cube tests shall be 10% higher than the minimum strength shown above.

Works Cube Test will not be required for class 15 blinding concrete which shall comprise 1:3:6 by weight.

Volumetric mixes shall comprise the following: -

	Cement/Kg	Fine Aggregate/CM
1:1.5:3	50	0.05
1:2:4	50	0.07
1:3:6	50	0.10
1:4:8	50	0.13

14 MEASURED PROPORTIONS OF CONCRETE

14.1 Cement

The quantity of cement shall be measured by weight. When delivered in bags, each batch of concrete is to use one or more whole bags of cement.

14.2 Aggregates

Concrete aggregates shall be measured by weight in a weigh batching machine.

Weigh batching machines shall be of an approved type and shall be properly maintained and checked for accuracy at regular intervals.

15 CONCRETE CLASSES 15,20, 25, 30 & 40

The weights of fine and coarse aggregate to be used in concrete Classes 15 to 40 shall be limited in accordance with the table below. The proportions of fine to coarse aggregate and cement which the Contractor proposes to use for each of the mixes specified shall first be approved by the Engineer. The Contractor will then be required to prepare Preliminary Test Cubes and have these cubes tested as described for Work Cube Tests. The test results should be submitted to the Engineer in sufficient time for further tests to be carried out should they prove unsatisfactory. Cube strengths in the preliminary tests must show

crushing strengths at least 25% higher than the strengths specified for Works Cube Test. If the Contractor is unable to produce specified cube strengths he will be required at his own cost to increase the cement content of the mix until satisfactory results are produced.

The Engineer may require at any time during the Contract the proportions of fine to coarse aggregate to be altered in order to produce a mix of greater strength or improved workability and providing that the total proportions of aggregate to cement remain unchanged, no claim for additional cost will be considered.

17 MINIMUM CEMENT CONTENT

Concrete Class

Class 40
Class 30
Class 25
Class 20
Class 15

18 WATERPROOF CONCRETE

Where waterproof concrete is specified, "Sealopruf Integral Water-proofing Compound" and "Sealoplaz Plasticiser" as manufactured by Sealocrete Group Sales Ltd., Atlantic Works, Hythe Road, London NW10 5RD, England, are to be added to the mixing water strictly in accordance with the manufacturer's instructions and at the rate of 0.50 litres and 0.25 litres respectively to each 50 Kg. bag of cement to which the aggregates have already been added and mixed. Not more than 25 litres of water per 50 Kg. bag of cement are to be used unless otherwise approved by the Engineer

19 EXPANSION JOINTING

Expansion joint filler shall be "Flexcell" as manufactured by Expandite Ltd., or "Resilex" as manufactured by Evomastics Ltd., or other equal and approved.

20 JOINT SEALER

Sealers shall be either hot or cold applied. Hot applied sealers shall comply with B.S. 2499. Cold mastics shall be applied by gun and where more than 12mm deep shall include filling with loose packing yarn to within 2 mm from the outer face. All joint sealers are to be approved by the Engineer prior to their use.

21 WATERBAR

Waterbar shall be as shown on the drawings or as described in the Bills of Quantities. PVC waterbar shall be as manufactured by Expandite Limited, or other approved type and shall be provided in the positions indicated on the Drawings. Joints shall be heat welded in accordance with the manufacturer's instructions and where the waterbar is to be fixed vertically, metal clips as manufactured by the supplier of the waterbar or of other approved design shall be provided to suspend the waterbar from the reinforcement.

Where waterproof concrete is used the Contractor shall adhere strictly to the position and type of construction joints as detailed on the Drawings. Any deviation from this procedure or the provision of additional construction joints will require the prior approval of the Engineer and any additional waterbar so required will be at the Contractor's expense.

WATERBAR(Continued)

Formwork shall be designed with sufficient timber formers and blocking pieces to support the waterbar and to ensure that it is not displaced during concreting. In the case of horizontal joints in vertical walling and similar members the formwork shall be so constructed as to permit the starter or upstand of concrete surrounding the lower half of the waterbar to be poured in the same operation as the slab or other concrete from which it springs. Formwork to walls or similar members where the waterbar is positioned at the base of the lift shall have sufficient temporary openings not less than 300mm square at approximately 200mm above the level of the waterbar to permit checking that

the waterbar is correctly positioned and is not displaced during concreting.

No concreting will be permitted to portions where upstand starters form an integral part until the formwork to the starter has been fixed and approved.

22 TESTING EQUIPMENT

The Contractor shall provide the following equipment for carrying out control tests on the Site:

a) Straight edges 3 metres and 1 metre long for testing the accuracy of the finished concrete;

b) A glass graduated cylinder for use in the silt test for organic impurities in the sand;

c) Slump test apparatus;

d) Four 150mm steel cube moulds with base plates and tampering rods to B.S. 1881

23 WORKS CUBE TESTS

Works cubes are to be made at intervals as required by the Engineer in accordance with B.S 8110 and the Contractor shall provide a continuous record of the concrete work. The cubes shall be made in approved 150mm moulds in strict accordance with the Code of Practice.

Four cubes shall be made on each occasion.

Each cube shall be marked with a distinguishing number (numbers) to run consecutively and the date, and a record shall be kept on Site giving the following particulars: -

a) Cube No.

b) Date Made

c) Location in work

d) 7-day Test

Date

Strength

e) 28-day Test

Date

Strength

Cubes shall be forwarded, carriage paid, to an approved Testing Authority, in time to be tested one at 7 days and the remaining three twenty eight days. No cube shall be dispatched within 3 days of casting.

Copies of all Works Cube Tests shall be forwarded directly to the Engineer by the testing laboratory.

If the strengths required above are not attained, and maintained throughout the carrying out of the contract, the Contractor will be required to increase the proportion of cement and/or substitute better aggregates so as to give concrete which does comply with the requirements of the Contract. The Contractor may be required to remove and replace at his own cost any concrete which fails to attain the required strength as ascertained by Works Cube Tests.

24 MIXING AND PLACING OF CONCRETE

The concrete shall be mixed only in approved power-driven mixers of a type and capacity suitable for the work, and in any event not smaller than 0.40/0.28 cu.m. capacity.

The mixer shall be equipped with an accurate water measuring device. All materials shall be thoroughly mixed dry before the water is added and the mixing of each batch shall continue for a period of not less than two minutes after the water has been added and until there is a uniform distribution of the materials and the mass is uniform in colour.

The entire contents of the mixed drum shall be discharged before recharging. The volume of mixed materials shall not exceed the rated capacity of the mixer. Whenever the mixer is started, 10% extra cement shall be added to the first batch and no extra payment will be made on this account.

As a check on concrete consistency, slump tests shall be carried out and shall be in accordance with B.S. 1881. The Contractor shall provide the necessary apparatus and carry out such tests as are required. The slump of the concrete made with the specified water content, using dry materials shall be determined and the water be added under wet conditions shall be so reduced as to give approximately the same slump.

The concrete shall be mixed as near to the place where it is required as is practicable, and only as much as is required for a specified section of the work shall be mixed at one time, such sections being commenced and finished in one operation without delay. All concrete must be efficiently handled and used in the Works within twenty (20) minutes of mixing. It shall be discharged from the mixer direct either into receptacles or barrows and shall be distributed by approved means which do not cause separation or otherwise impair the quality of the concrete. Approved mechanical means of handling will be encouraged, but the use of chutes for placing concrete is subject to prior approval of the Engineer.

Concrete shall be placed from a height not exceeding 1,500mm directly into its permanent position and shall not be worked along the shutters to that position. Unless otherwise approved, concrete shall be placed in a single operation to the full thickness of slabs, beams, and similar members, and shall be placed in horizontal layers not exceeding 1,500mm deep in walls and similar members.

Concrete in columns may be placed to a height of 4 metres with careful placing and vibration and satisfactory results. Where the height of the column exceeds 4 metres suitable openings must be left in the shutters so that this maximum lift is not exceeded.

MIXING AND PLACING OF CONCRETE (C0NTINUED)

Concrete shall be placed continuously until completion of the part of the work between construction joints as specified hereinafter or of a part of approved extent. At the completion of a specified or approved part a construction joint of the form and in the positions hereinafter specified shall be made. If stopping of concreting be unavoidable elsewhere, a construction joint shall be made where the work is stopped. A record of all such joints shall be made by the Contractor and a copy supplied to the Engineer.

Any accumulation of set concrete on the reinforcement shall be removed by wire brushing before further concrete is placed.

The Contractor shall provide runaways for concreting to the satisfaction of the Engineer. Under no circumstances will the runaways be allowed to rest on the reinforcement.

Care shall be taken that the concrete is not disturbed or subjected to vibrations and shocks during the setting period.

Mixing machines, platforms and barrrows shall be clean before commencing mixing and be cleaned on every cessation of work.

Where concrete is laid on hardcore or other absorbent materials, the base shall be suitable and sufficiently wetted before the concrete is deposited.

26 COMPACTION

At all times during which concrete is being placed the Contractor shall provide adequate trained and experienced labour to ensure that the concrete is compacted in the forms to the satisfaction of the Engineer.

Concrete shall not be placed at a rate greater than will permit satisfactory compaction nor to a depth greater than 400mm before it is compacted.

During and immediately after placing, the concrete shall be thoroughly compacted by means of continuous tamping, spading, slicing and vibration. Vibration is required for all concrete of Classes 40, 35, 25 and 20.

Care shall be taken to fill every part of the forms, to work the concrete under and around the reinforcement without displacing it and to avoid disturbing recently placed concrete which has began to set.

Any water accumulating on the surface of newly placed concrete shall be removed and no further concrete shall be placed thereon until such water is removed.

Internal vibrators shall be of frequency of not less than 7,000 cycles per minute and shall have a rotating eccentric weight of at least 0.50 Kg, with an eccentricity of not more than 12mm. Such vibrators shall visibly affect the concrete within a radius of 250mm from the vibrator.

Internal vibrators shall not be inserted between layers of reinforcement less than one and one half times the diameter of the vibrators apart. Contact between vibrators and reinforcement and vibrators and formwork shall be avoided.

Internal vibrators shall be inserted vertically into the concrete wherever possible at not more than 500mm centres and shall constantly be moved from place to place. No internal vibrator shall be permitted to remain in any one position for more than ten seconds and it shall be withdrawn very slowly from the concrete.

In consolidating each layer of concrete the vibrating head shall be allowed to penetrate and re-vibrate the concrete in the upper portion of the underlying layer. In the area where newly placed concrete in each layer joins previously placed concrete more than usual vibration shall be performed, the vibrator penetrating deeply at close intervals along these contacts. Layers of concrete shall not be placed until layers previously placed have been vibrated thoroughly as specified.

Vibrators shall not be used to move concrete from place to place in the formwork.

At least one internal vibrator shall be operated for every 1.5 cubic metres of concrete placed per hour and at least one spare vibrator shall be maintained on Site in case of breakdown during concreting operations.

External formwork vibrators shall be of the high frequency low amptitude type applied with the principal direction of vibration in the horizontal plane. They shall be attached directly to the forms at not more than 1,200mm centres.

In addition to internal and external vibration the upper surface of suspended floor slabs shall be levelled by tamping or vibrating to receive finishes. Vibrating elements shall be of the low frequency high amptitude type operating at a speed of not less than 3,000 r.p.m.

27 CONSTRUCTION JOINTS

Construction joints shall be permitted only at the positions pre-determined on the drawings or as instructed on the Site by the Engineer. In general they shall be perpendicular to the lines of principal stress and shall be located at points of minimum shear, viz., vertically at, or near, mid-spans of slabs, ribs and beams. Suspended concrete slabs are generally to be cast using alternate bay construction in bays not exceeding 20 metres in length. No two adjacent bays

are to be cast within a minimum period of 48 hours of each other. The joints between adjacent bays are to be in positions agreed with the Engineer.

Under no circumstances shall concrete be allowed to tail off, but it shall be deposited against stopping-off boards.

Before placing new concrete against concrete already hardened, the face of the old concrete shall be thoroughly hacked roughened and cleaned, and laitance and loose material removed therefrom, and immediately before placing the new concrete the surface shall be saturated with water and covered with a coat of mortar at least 25mm in thickness composed of cement and fine aggregate in the proportions used in the concrete.

28 CURING AND PROTECTION

Care must be taken that no concrete is allowed to become prematurely dry and the fresh concrete must be carefully protected within two hours of placing from rain, sun and wind by means of hessian sacking, polythene sheeting, or other approved means. This protective layer and the concrete itself must be kept continuously damp for at least seven days after the concrete has been placed. The Contractor will be required to provide complete coverage of all fresh concrete for a period of 7 days. Hessian or polythene sheeting shall be in the maximum widths obtainable and shall be secured against wind. The Contractor will not be permitted to use old cement bags, hessian or other material in small pieces.

Concrete in foundations and other underground work shall be protected from admixture with falling earth during and after placing.

Traffic or loading must not be allowed on the concrete until the concrete is sufficiently matured, and in no case shall traffic or loading be of such magnitude as to cause deflection or other movement in the formwork or damage to the concrete members. Where directed by the Engineer props may be required to be left in position under slabs and other members for greater periods than those specified hereafter.

29 FAULTY CONCRETE

Any concrete which fails to comply with these Preambles, or which shows signs of setting before it is placed shall be taken out and removed from the Site. Where concrete is found to be defective after it has set, the concrete shall be

cut out and replaced in accordance with the Engineer's instructions. On no account shall any faulty, honeycombed or otherwise defective concrete be repaired or patched until the Engineer has made an inspection and issued instructions for the repair. The whole of the cost whatsoever, which may be occasioned by the need to remove faulty concrete, shall be borne by the Contractor.

30 ROD REINFORCEMENT

The steel reinforcement shall comply with the latest requirements of the following British Standards: -

Hot rolled bars for the reinforcement of concrete	to B.S 4449 (metric units)
Cold worked steel for the reinforcement of concrete	to B.S. 4461 (metric units)

The Contractor will be required to submit a test certificate of the rollings. Reinforcement shall be stored on racks above ground level. All reinforcement shall be free from loose mill scale or rust, grease, paint or other substances likely to reduce the bond between the steel and concrete.

31 FABRIC REINFORCEMENT

To be electrically cross-welded steel wire mesh reinforcement to B.S 4483, 1969 and of the size and weight specified.

32 FIXING ROD REINFORCEMENT

Reinforcement shall be accurately bent to the shapes and dimensions shown on the Drawings and Schedules and in accordance with B.S. 4466 (1969). Reinforcement must be cut and bent cold and no welded joints will be permitted unless so detailed.
Reinforcement shall be accurately placed in position as shown on the drawings, and before and during concreting, shall be secured against displacement by using No. 18 S.W.G. annealed binding wire or suitable clips at intersections, and shall be supported by concrete or metal supports, spacers or metal hangers to ensure the correct position and cover.

No concreting shall be commenced until the Engineer has inspected the

reinforcement in position and until his approval has been obtained and the Contractor shall give two clear days' notice of his intention to concrete.

The Contractor is responsible for maintaining the reinforcement in its correct position, according to the Drawings, before and during concreting. During concreting a competent steel fixer must be in attendance to adjust and correct the position of any reinforcement which may be displaced. The vibrators are not to come into contact with the reinforcement.

33 POSITION AND CORRECTNESS OF REINFORCEMENT

Irrespective of whether any inspection and/or approval of the fixing of the reinforcement has been carried out as above, it shall be the Contractor's sole responsibility to ensure that the reinforcement complies with the details on the Drawings or Schedules and is fixed exactly in the positions shown therein and in the positions to give the prescribed cover. The Contractor will be held entirely responsible for any failure or defect in any portion of the reinforced concrete structure and including any consequent delay, claims, third party claims, etc., where it is shown that the reinforcement has been incorrectly positioned or is incorrect in size or quantity with respect to the detailed Drawings or Schedules.

34 SPACER BLOCKS

Spacer blocks of approved size and shape made of concrete similar to that used in the surrounding construction and fixed to the reinforcement or formwork by No. 18 S.W.G. wires set into the spacer blocks or other approved means shall be provided where necessary to ensure that the requisite cover is obtained. Where hollow concrete block construction is used, spacer blocks are to be provided as shown on the Drawings. These will consist of concrete blocks as described above made to fit the width of the rib less 3mm tolerance and with single or double grooves (depending on the number of reinforcement bars used per rib) in the top surface with wire ties at each groove.

35 CONCRETE COVER TO REINFORCEMENT

Unless otherwise directed the concrete cover to rod reinforcement over main bars in any face shall be: -

Foundations against earth face
Foundations against Building
Columns

Beams
Slabs

36 FIXING FABRIC REINFORCEMENT

The fabric shall be free from scale, rust, grease or other substance likely to reduce the bond between the steel and the concrete and shall be laid minimum 300mm laps and bound with No. 18 S.W.G. annealed iron wire.

37 PROJECTING REINFORCEMENT

Where reinforcement projects from a concrete section of the structure and this reinforcement is expected to remain exposed for some time, it is to be coated with a cement grout to prevent rust staining on the finished concrete. This grout is to be brushed off the reinforcement prior to the continuation of concreting.

38 CHASES, HOLES, ETC. IN CONCRETE

The Contractor shall be responsible for the co-ordination with the Electrical and other Sub-Contractors for incorporating electrical conduits, pipes, fixing blocks, chases, holes and the like in concrete members as required and must ensure that adequate notice is given to such Sub-Contractors informing them when concrete members incorporating the above are to be poured. The Contractor shall submit full details of these items to the Engineer for approval before the work is put in hand. All fixing blocks, chases, holes, etc., to be left in the concrete shall be accurately set out and cast with the concrete.

39 POSITION OF ELECTRICAL CONDUITS

Unless otherwise instructed by the Engineer all electrical conduits to be positioned within the reinforced concrete shall be fixed inside the steel cages of beams and columns and between the top and bottom steel layers in slabs and similar members.
The proposed position of all electrical conduits 25mm and over in diameter which are to be enclosed in the concrete shall be shown accurately on a plan to be submitted to the Engineer, whose approval shall be obtained before any such conduit is placed. The dimensions and positions of all holes, sleeves, or ducts required in the structure for electrical cables or conduits shall be advised to the

Engineer in sufficient time for them to be approved and shown on the structural Drawings. No other holes or sleeves shall be cut on site without the Engineer's prior approval.

40 FORMWORK

The method and system of formwork which the Contractor proposes to use shall be approved by the Engineer before construction commences. Formwork shall be substantially and rigidly constructed of timber or steel or precast concrete or other approved material.

All timber for formwork shall be good, sound, clean, sawn well-seasoned timber, free from warps and loose knots and of scantlings sufficiently strong for their purpose.

41 CONSTRUCTION OF FORMWORK

All formwork shall be of sufficient thickness and with joints close enough to prevent undue leakage of liquid from the concrete and fixed to proper alignment, level and plumb and supported on sufficiently strong bearers, shores, braces, plates, etc., properly held together by bolts or other fastenings to prevent displacement, vibration or movement by the weight of materials, men and plant on same and so wedged and clamped as to permit f easing of and removal of the formwork without jarring the concrete. Where formwork is supported on previously constructed portions of the reinforced concrete structural frame, the Contractor shall by consultation with the Engineer ensure that the supporting concrete structure is capable of carrying the load and/or sufficiently propped from lower floors or portions of the frame to permit the load to be temporarily carried during construction.

Soffits shall be erected with an upward camber of 5mm for each 5 metres of horizontal span or as directed by the Engineer.

Great care shall be taken to make and maintain all joints in the formwork as tight as possible, to prevent the leakage of grout during vibration. All faulty joints shall be caulked to the Engineer's approval before concreting.

The formwork shall be sufficiently rigid to ensure that no distortion or bulging occurs under the effects of vibration. If at any time the formwork is insufficiently rigid or in any way defective the Contractor shall strengthen or improve such formwork as the Engineer may direct.

The Contractor's attention is drawn to the various surface textures and applied finishes required and the faces of formwork next to the concrete must be of such material and construction and be sufficiently true to provide a concrete surface which will in each particular case permit the specified surface treatment or applied finish.

All surfaces which will be in contact with concrete shall be oiled or greased to prevent adhesion of mortar. Oil or grease shall be of a non-staining mineral type applied as a thin film before the reinforcement is placed. Surplus moisture shall be removed from the forms prior to placing of the concrete.

Temporary openings shall be provided at the base of columns, wall and beam forms and at any other points where necessary to facilitate cleaning and inspection immediately before the pouring of concrete. Before the concrete is placed the shuttering shall be trued-up and any water accumulated therein shall be removed. All sawdust, chips, nails and other debris shall be washed out or otherwise removed from within the formwork. The reinforcement shall then be inspected for accuracy of fixing. Immediately before placing the concrete the formwork shall be well wetted and inspection openings shall be closed. The erection, easing, striking and removing of all formwork must be done under the personal supervision of a competent foreman, and any damage occurring through faulty formwork or its incorrect removal shall be made good by the Contractor at his own expense.

After removal of formwork, all projections, fins, etc., on the concrete surface shall be chipped off, and made good to the requirements of the Engineer. Any voids or honeycombing shall be treated as described in "Faulty Concrete".

42 STRIPPING FORMWORK

All formwork shall be removed without undue vibration or shock and without damage to the concrete. No formwork shall be removed without the prior consent of the Engineer.

Removal of props (partly subject to 7 days concrete cube strength being satisfactory) to:-

Slabs

Beam soffits

Cantilevered beams and slabs

Beam sides, walls and columns

If the Contractor wishes to take advantage of the shorter stripping times permitted for beam and slab soffits when props are left in place, he must so design his formwork that sufficient props as agreed with the Engineer can remain in their original positions without being moved in any way until expiry of the minimum time for removal of props, stripping and re-propping will not be permitted.

The above times may be reduced in certain circumstances, at the discretion of the Engineer, provided an approved method is adopted at the Contractor's expense to ensure that the required concrete strength is attained before the forms are stripped.

Solid strips in composite slabs shall be considered as beams. The tops of retaining walls shall be adequately supported with stout raking props at intervals required by the Engineer. These props are not to be removed until 7 days after casting of the floor slab over.

43 SUPPORTING PROPS TO WALL AND BEAM SOFFITS

Where directed by the Engineer supporting props to wall and beam soffits are to be left in position until completion of the whole reinforced concrete structure.

The props are to be to the approval of the Engineer and the Contractor must submit the suggestion method of propping to the Engineer prior to removal of formwork to the relevant surfaces.

44 EXPOSED CONCRETE FINISHES

44.1 GENERAL

Contractors will be required at an early stage in the Contract, to prepare samples for the approval of the Engineer of the various concrete finishes specified hereafter. Samples are to be prepared using the same materials and the same methods of construction, compaction, curing,etc., as the Contractor proposes to use for executing the full quantity of the work.

A record of the mix, water content, method of compaction, any additives used, etc., is to be kept for each sample prepared. When the Engineer has approved a sample it will be kept on Site in an approved location. The finishes in construction will be expected to be up to a standard equal to the approved sample. The Contractor is to include for all costs in preparing samples in his rates for the respective finish.

Consistency in cement colour, grading and quality of aggregates must be maintained in all finished concrete work.

44.2 TAMPED FINISH

Areas so specified shall be finished at the time of casting with a tamped finish to the Engineer's approval, produced by an edge board. Board marks are to be made to a true pattern and will generally be at right angles to the traffic flow. Haphazard or diagonal tamping will not be accepted.

45 CHAMFERS AND REBATES TO EXPOSED CONCRETE

Wherever concrete surfaces are to remain exposed and otherwise where specified or shown on the Drawings, rebates and chamfers are to be provided at junctions, corners and changes in direction of concrete members.

Rebates will also be required to surrounds to chisel-dressed, brushed, or similar concrete finishes.

Rebates and chamfers are to have a fair face finish.

Unless otherwise instructed concrete pours to columns and to other members where applicable are to terminate only at the pre-determined rebate positions.

46 FAIR FACE

Fair face surfaces shall be clean, smooth, even, true to form, line and level , and free from all board marks, joint marks, honeycombing, pitting, and other blemishes. Forms are to be provided with a smooth lining of plywood, steel, or other approved material which will achieve the required finish without any general rubbing down. Rubbing down will only be permitted to remove any projecting fins at corners or joints.

47 FINE FACE

Fine face shall be as for fair face but to a higher standard obtained from forms provided with an impervious sheet lining of metal or plastics faced plywood in large panels arranged in an approved pattern.

Rubbing down shall only be permitted after inspection by the Engineer. The finished surface shall be capable of receiving paint.

48 BRUSHED CONCRETE FINISH

Brushed concrete finish shall be provided to precast concrete members where specified or shown on the Drawings.

The surface is to be sprayed with water and brushed within 2 hours of casting to expose the aggregate to an extent to be approved by the Architect.

The brushed face will generally be contained within a surround of fair face concrete and the Contractor is to allow for retaining the fair face forms or otherwise protecting the surround whilst achieving the brushed finish.

49 BOARD-MARKED FINISH

The required finish is to be a board-marked pattern and the boards are to be arranged vertically or horizontally to the patterns shown on the Drawings or as otherwise agreed by the Engineer.

Formwork shall be made from timber of sufficiently strong grain to the Engineer's approval in matching widths with straight sawn staggered joints. Short make-up lengths will not be permitted and boards shall generally be in the longest lengths practical. Construction joints shall be at predetermined positions and at recesses where so detailed.

50 CHISEL-DRESSED FINISH

Chisel-dressed finish is to be carried out on any grade of concrete but not until it is at least 30 days old.

The surfaces are to be fully chisel-dressed to remove a maximum of 12mm (average 9mm) of the surface by shearing and exposing the aggregate without excessive cracking of the surrounding matrix.

Arrises of columns, beams, etc., are pre-formed fair face with timber fillets (which have been measured separately) set in the formwork and care must be taken in working up to these to preserve a clean line.

For vertical surfaces of walls and columns particular care must be taken to remove all sharp projections. For beam soffits this requirement is not necessary.

All surfaces requiring this treatment are to have the margins chisel-dressed by hand for a minimum width of 75mm commencing from the fillet edge. Thereafter mechanical chisel-dressing may be used but the Contractor must ensure that a uniform texture and even plan surface is achieved.

The use of sharply pointed steel tools for both hand and mechanical chisel-dressing is essential.

Upon completion the surfaces are to be thoroughly wire brushed and washed down.

51 PROTECTION OF FINISHES

Wherever possible in-situ exposed concrete finishes should be commenced at the highest level and worked progressively down the building.

PROTECTION OF FINISHES(CONTINUED)

Precaution shall be taken to avoid staining or discoloration of previously finished concrete faces by leakage of grout from newly placed concrete. The Contractor shall during all stages of construction adequately protect all concrete finishes from damage by leaking grout, knocking, paint stains, falling plaster, etc. In cases of balustrade walls to staircases and members where damage is otherwise likely, concrete finishes shall be protected by cladding with timber, celotex, or other approved sheeting. All Sub-Contractors shall be informed accordingly on the precautions to be taken.

52 PRECAST CONCRETE

All precast concrete shall be of mix 1:2:4 unless otherwise specified.

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

The compaction of precast concrete shall conform with requirements given elsewhere in these preambles except for thin slabs where use of immersion type vibrations is not practicable. The concrete in these slabs may be consolidated on a vibrating table or by any other methods approved by the Engineer.

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

The precast work shall be made under cover and shall remain under the same for seven days. During this period and for a further seven days the concrete shall be shielded by sacking or other approved material kept constantly wet. It shall then be stacked in the open for at least a further seven days to season before being set in position. Where steam curing is used these times may be reduced subject to the approval of the Engineer.

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

Repair of damage to the precast concrete units, except for minor abrasions of the edges which will not impair the installation and/or appearance of the units will not be permitted and the damaged units shall be replaced by the Contractor at his own expense.

Except where precast work is described as "fair face" the moulds shall be made of suitably strong sawn timber true in form to the shapes required. Unless otherwise described faces are to be left rough from the sawn moulds.

Where precast work is described as "fair face" the moulds are to be made of metal or are to have metal or plywood linings or are to be other approved moulds which will produce a smooth dense fairface to the finished concrete suitable to receive a painted finish direct and free from all shutter marks, holes, pittances, etc.

The precast units shall be installed to the lines, gradients and dimensions shown on the Drawings or as directed by the Engineer.

53 CONCRETE SURFACE BEDS

The concrete shall be placed as soon as possible after being mixed. In transporting the concrete adequate precautions shall be taken to avoid damage to the prepared base. The concrete shall be spread to such a thickness that when compacted it shall have the finished thickness as specified or shown on the Drawings. A layer of concrete 50mm less than the finished thickness shall first be spread and struck off at the correct level to receive the top fabric reinforcement. The top layer shall then be added. Not more than 30 minutes shall elapse between spreading the bottom layer and the start of compaction of the top layer. The Contractor shall be responsible for maintaining the reinforcement in its correct position during the placing and compaction of the concrete.

The compacting and finishing of the concrete shall be effected by immersion vibrators and a hand mechanical tamper weighing not less than 10 Kg. per linear metre and having a tamping edge shod with a steel strip 75mm wide fixed to the tamper by countersunk screws. Immersion vibrators with "spade" attachments will be permitted. Compaction shall be continued until a dense, scaled surface finish is achieved. Over-compaction causing an excessive amount of fines to be brought to the surface shall be avoided.

The surface of the concrete shall be finished with a wood float finish to the levels, falls and crossfalls, as directed or shown on the Drawings and shall be subject to the following tolerances:-

1. The level shall be within + or - 6mm of the levels directed.

2. The falls shall be within 10% of the falls directed.

3. The smoothness shall be such that departures from a 3 metre straight edge laid in any direction shall not exceed 3mm.

Minor irregularities shall be made good by the use of a steel float but in no circumstances shall mortar be used to make good the surface. Before the concrete has finally set and after completion of the floating the concrete shall be brushed with a strong-headed broom to produce a grooved finish in parallel lines to the satisfaction of the Engineer.

As soon as the surface has been finished it shall be protected against too-rapid drying by means of damp hessian, polythene sheeting or other approved means placed carefully on the surface and kept damp and in position for 7 days and

the concrete shall be kept wet for a further 21 days. The most critical period is the first 24 hours after placing and curing during that time shall be very thorough. The Contractor is to obtain the Engineer's approval to the material and method he proposes to use for curing and no concreting will be permitted

Forms shall not be moved from freshly placed concrete until it is at least 24 hours old. Care shall be taken that in their removal no damage is done to the concrete, but should any damage occur the Contractor shall be responsible for making it good.

54 HOLLOW CLAY POTS

The hollow clay pots for suspended floor shall be manufactured by Messrs. Clayworks Ltd., P.O. Box 48202, Nairobi and shall be suspended floor units size 350mm x 300mm x 230mm deep. Care shall be taken in unloading, stacking and placing hollow pots in position. Damaged units shall not be incorporated in the works and shall be removed from the Site.

55 HOLLOW BLOCK SUSPENDED FLOORS

The hollow blocks shall be set out to the dimensions shown on the drawings. Slip tiles will not be required. Care shall be taken when placing and vibrating the concrete to avoid damage to or displacement of the pots. Any blocks damaged shall be replaced before concreting.

56 NOTES CONCERNING PRICING

The Contractor must allow for all costs incurred during the progress of the Contract for complying with the provisions concerning the preparation and use of graded mixes.
Prices for plain or reinforced concrete shall include for mixing, hoisting, depositing, compacting, curing and protection at the various levels required throughout the building, and shall also include for forming or hacking a satisfactory key for all faces receiving asphalt and plaster work. Prices for slabs shall include for forming construction joints at bay edges, including all necessary temporary formwork and supplying records of such joints to the Engineer.

Prices for steel rod reinforcement shall include for cutting to lengths and all labour in bending and cranking, forming hooked ends, handling, hoisting and fixing in position and for providing all necessary tying wire, spacer blocks and supports. Prices for fabric reinforcement shall include for all straight cutting

and waste, handling, hoisting and fixing in position, providing all necessary tying wire, and supports and all extra material in laps

The prices for formwork shall include for extra material at joints, extra labour and waste for narrow widths, small quantities, overlaps, passings, etc., and for fixing at the various levels including battens, struts, and supports and for bolting, wedging, easing striking and removal. Prices for linear items such as boxing shall include for angles and ends.

Prices of all precast concrete shall include for all moulds, finishing as described, handling, reinforcement, hoisting and fixing at the required levels and for casting or cutting to the exact lengths required and any waste resulting from such cutting.

Prices for expansion joints shall include for cutting to size and all temporary supports and prices for expansion joint sealers shall include for all temporary battens or fillets required to form the necessary grooves.

Prices for hollow concrete block suspended construction must be "all inclusive" to include for concrete hollow tiles, in-situ concrete ribs, concrete topping, concrete filling to open ends of hollow concrete tiles and solid concrete bearings and beams.

The Contractor is to allow in his prices for carrying out all tests as specified in this Section apart from work cube tests for which a provisional item is included in the preliminaries section of these Bills of Quantities.

The price for wrought formwork shall include for fair face finish either by rubbing down or by smooth lining all as described in these preambles.

WALLING

1 STONE

Stone for walling shall be hard, dense, stone from an approved quarry with accurately dressed faces on all sides.

Stone walling described as load-bearing shall have a minimum crushing strength of 14.00 Newtons per square millimetre and shall comply with B.S. 5628: Part 2.

2 CONCRETE BLOCKS

All hollow or solid concrete blocks for general use shall comply with B.S. 2028, Type 'A' and with C.P. III : Part 2., of minimum crushing strength of 3.5 Newtons per square millimetre, and must be obtained from an approved manufacturer, equal to samples deposited with and approved by the Architect.

Concrete block walling described as load-bearing shall have a minimum crushing strength of 7.0 Newtons per square millimetre.

All concrete blocks must be cured for a minimum period of four weeks before use and all testing of blocks is to be carried out by the Ministry of Works Materials Testing Laboratory or a Laboratory approved by the Structural Engineer.

3 WALL REINFORCEMENT

All walling described as reinforced shall be reinforced with hoop iron 25mm wide or similar reinforcement centrally in every alternate joint (vertically for the full length of the walls, lapped and crimped 300mm at running joints and full width of wall at angles and intersections).

4 WALL TIES

20 Gauge hoop iron ties 25mm wide x 450mm long to be provided for every alternate course at all connections between block walls and reinforced concrete columns or walls. One end to be cast into concrete and other end bent and built into mortar joint of walling.

E5 CHASING

Chasing in load-bearing walls for electrical conduits, pipes, etc., is to be kept

to a minimum size of cut and positions and runs of chases are to be approved by the Engineer before any cutting is commenced. Horizontal runs will not be permitted.

6 CEMENT

The cement shall be as described in "Concrete Work".

7 SAND

The sand for mortars shall be as described in "Concrete Work", except that it shall be fine sand.

8 LIME

The lime for plastering shall comply with B.S. 890, Class 'A' for non-hydraulic lime and shall be as rich as obtainable and to approval. It must be freshly burnt and shall be slaked at least one month before being used by drenching with water, well broken up and mixed and the wet mixture shall be passed through a sieve of sixty-four meshes to the square inch. Lime putty shall consist of freshly slaked lime as above described, saturated with water until semi-fluid and passed through a fine sieve; it shall then be allowed to stand until superfluous water has evaporated and it has become of the consistency of thick paste, in no case for a shorter period than one month before being used, during which it must be kept damp and clean and no portion of it allowed to become dry.

Alternatively, hydrated lime with 70% average calcium oxide content may be used and it must be protected from damp until required for use. It shall be soaked to a putty at least 24 hours before use.

9 MORTARS

Cement mortar shall consist of one part of portland cement, to three parts of sand by volume.

The cement/lime mortar shall consist of one part of Portland cement, one part of lime and six parts of sand of volume.

The ingredients of mortar shall be measured in proper gauge boxes on a boarded platform, the ingredients being thoroughly mixed dry, and again whilst

adding water. In the case of cement/lime mortar the sand and lime shall be mixed first and then the cement added.

All mortar is to be thoroughly mixed to a uniform consistency with only sufficient water to obtain a plastic condition suitable for trowelling. No mortar that has commenced to set is to be used or remixed for use.

10 SETTING OUT

The Contractor shall provide proper setting out rods and set out on the same all work showing openings, heights, sills and lintels and shall build the various walls and piers to the thicknesses, widths and heights shown upon the Drawings. No part of the walling shall be carried up more than one metre higher at one time than any other part and in such cases the jointing shall be made in long steps so as to prevent cracks arising and all walls shall be levelled round at floor and wall heads.

11 BONDING WALLING

All blocks shall be properly bonded together and in such a manner that no vertical joints in any one course shall be within 100mm of a similar joint in the courses immediately above and below. Alternative courses of walling at all angles and intersections shall be carried through the full thickness of the adjoining walls.

All perpends, reveals, quions and other angles and joints of the walls, etc., shall be built strictly true and square.

12 LAYING AND JOINING

All bricks and blocks are to be well wetted before laying and tops of walls where left off shall be well wetted before commencing building. All joints are to be 10mm thick and flush up and grouted in solid as the work proceeds.

All exposed faces of walls for plastering are to be left rough and the joints raked out while mortar is green to form adequate key.

All other faces shall be cleaned down on completion with a wire brush or as necessary and mortar droppings, smear marks, etc., removed and rates must include for this.

13 PUTLOG HOLES

All putlog holes shall be carefully, properly and completely filled up on completion of walling and before plastering is commenced.

14 FAIR FACE

Walling described as fair-faced shall be built with selected blocks and pointed with neat flush joints. Stone walling shall be fine chisel dressed.

15 BRICKS

All bricks shall be obtained from Clayworks Limited, P.O. Box 45154, Nairobi, of sizes as required and shall be hard, sound, square, well-burnt, uniform in shape and free from cracks, stones and other defects.

16 DAMP-PROOF COURSES

Damp-proof courses shall be bituminous felt to B.S 743 weighing 7 lbs.. per square yard, free from tears and holes, and be laid with 150mm minimum laps on and including a levelling screed of cement mortar.

17 PRICES TO INCLUDE

The rates for walling shall include for all reinforcement, all straight cutting, bonding, plumbing angles, forming reveals, pinning up to underside of concrete soffits and cutting up to sides of columns and building in ends of lintels and sills.

18 BRICK WORK

Brick work shall be build to a gauge of 4 courses to 340mm of wall height including 10mm bed joints.

Facing walls shall be built in stretcher bond and be tied to the blockworks or concrete backing walls with 10mm gauge galvanised wire wall ties 500mm girth, formed to a figure 8 and twisted together at the lap.

Three wall ties per square metre are to be used, wall ties for concrete backing walls shall be cast into the concrete including all temporary fixing to formwork.

Facing walls shall be pointed as the work proceeds. External walls shall have

recessed joints and internal walls shall have flush joints. Facing walls shall be kept perfectly clean and no rubbing down of brickwork will be allowed.

19 FAIR FACE

Walling described as fair faced shall be built with selected bricks and pointed with neat recesses joints.

ROOFING

1 PREPARATION OF SURFACES

All surfaces to receive roofing shall be clean, dry, free from fins or projections and loose materials, and with cracks or voids filled with cement mortar.

2 LIGHTWEIGHT ROOF SCREEDS

Roof screeds will be executed to the approval of the specialist Roofing Sub-Contractor and will consist of cement, sand and pumice (1:3:7) finished with 6mm layer of cement and sand (1:4) topping. Screeds shall not be laid in areas exceeding ten square metres during any period of 24 hours. As bays are formed batten strips must be used to retain the exposed edge of the screed. Screeds shall be finished to falls and currents to receive roofing.

3 ASPHALT ROOFING

Asphalt roofing will be executed by an approved specialist Roofing Sub-Contractor. Before any application of roofing, the Contractor is to ensure that all roof surfaces are thoroughly cleaned by sweeping.

Roofing asphalt to B.S. 988/1966 Table 3, Column III, Tropical Mastic asphalt laid in two coats to a total thickness of 20mm on and including black sheathing felt and finished with two coats aluminium paint to horizontal and vertical surfaces.

4 GALVANISED CORRUGATED STEEL SHEETING

The roof sheeting shall be of the gauge specified and comply with B.S. 3083. The roof sheeting shall be laid and fixed with steel hook bolts and nuts, steel roofing bolts and clips or steel roofing screws to B.S. 1494: Part 1.

5 GALVANISED LT5 LONG TROUGH STEEL SHEETS

Where specified the roof sheeting and fittings shall be 24 gauge LT5 galvanised steel long trough as manufactured by GALSHEET KENYA LTD P.O. Box 78162, Nairobi or other equal and approved manufacturer. The roof sheeting shall be laid and fixed with approved purpose made hook bolts, washers, etc. to 'z' purlins. Where so specified the roofing shall be prepainted with a RESINCOT FINISH.

6 GALVANISED IT4 LONG TROUGH STEEL SHEETS

Where specified, the roof sheeting and fittings shall be 24 gauge IT4 roofing as manufactured by GALSHEET KENYA LTD. P.O. BOX 78162, NAIROBI or other equal and approved manufacturer. The roof sheeting shall be laid and fixed with approved purpose made hook bolts, washers, etc, to 'z' purlins. The ridge flashing sheets shall be IT4 profiled sheeting curved to the radii shown on the Drawings. Where so specified the roofing shall be prepainted with a RESINCOT FINISH.

7 CORRUGATED ASBESTOS CEMENT ROOFING SHEETS

Where specified, the roof sheeting shall be as manufactured by Simbarite Ltd., P.O. Box 90662, Mombasa. The roof sheeting shall be laid and fixed with approved hook bolts or roofing screws, complete with washers and caps.

8 CONCRETE TILE ROOFING

Concrete single lap tiles and fittings shall be to B.S 473 & 550 Part 2, Group B of the colour, finish, type, size and manufacturer approved by the Architect. A full range of fittings must be available to match the tiles. Tiles shall be 380 x 230mm nominal unless otherwise specified. Tiles and fittings must be true to shape and of uniform structure. Surface coatings shall be firmly bonded. Fixing shall include nailing to battens at every third course, at eaves, verges, and at the top course under the ridge.
Ridges and hips shall be bedded in cement mortar and roofs shall be left watertight.

9 CONCRETE TILE ROOFING

Concrete single lap tiles and fittings shall be to B.S 473 & 550 Part 2, Group B of the colour, finish, type, size and manufacturer approved by the Architect.

A full range of fittings must be available to match the tiles. Tiles shall be 380 x 230mm nominal unless otherwise specified. Tiles and fittings must be true to shape and of uniform structure. Surface coatings shall be firmly bonded.

Fixing shall include nailing to battens at every third course, at eaves, verges, and at the top course under the ridge.

Ridges and hips shall be bedded in cement mortar and roofs shall be left watertight.

10 MANGALORE TILE ROOFING

Mangalore clay tiles shall be "best" or selected quality as manufactured by the Miritini Brick and Tile Works.

MANGALORE TILE ROOFING(CONTINUED)

Tiles shall be well wetted before use and all dropped or broken tiles shall be rejected before carrying.

Cutting of tiles, where necessary at hips or valleys, shall be carefully and neatly carried out with properly sharpened tools.

Tiling shall be executed to the Architect's satisfaction and roofs left watertight.

11 PROTECTION

All roof surfaces shall be kept clean and protected and handed over watertight at completion.

CARPENTRY, JOINERY AND IRONMONGERY

1 ALL TIMBER

All timber shall be in accordance with the latest approved Grading Rules issued by the Government of Kenya (Legal Notice No. 358). Timber for Carpentry shall be SECOND (OR SELECT) GRADE and timber for joinery shall be FIRST (OR PRIME) GRADE.

2 GENERALLY

All timber as it arrives on the Site shall be inspected by the Contractor, and any timber brought on the Site and not complying with the Specification or not approved, must be removed forthwith from the Site and only timber as approved shall be used in the Works.

The Contractor shall upon signing the Contract purchase sufficient supplies of specified hardwoods to avoid possible shortages at a later date.

3 SPECIES OF TIMBER

The following timber shall be used.

Standard Common Name

Cypress
Podocarpus
Cedar
E.A. Camphor wood
African Mahogany (Munyama)
Mninga
Mvule
Elgon Olive

4 TOLERANCE IN THICKNESS

Shall conform with the following extracts of Government of Kenya Grading Rules: -

1. Hardwood Grading: (First and Second Grades)

The following tolerances in thickness will be admitted:

a) 1.5mm oversize on pieces up to 25mm in thickness,

b) 3mm oversize on pieces over 25mm and up to 50mm in thickness,

TOLERANCE IN THICKNESS(CONTINUED)

c) 6mm oversize on pieces over 50mm in thickness.

Undersize will not be permitted.

2. Softwood Grading: Strength Grades (for Carpentry)

First and Second grades.

Undersize not allowed.

Oversize: All timber to be sawn oversize by 1.5mm for 25mm thickness and width. Not more than 3mm in thickness and not more than 6mm in width.

3. Softwood grading: Appearance Grades (for joinery)

First and Second Grades.

All as for Strength Grades above.

5 INSECT DAMAGE

All timber shall be free of live borer beetle or other insect attacks when brought upon the Site. The Contractor shall be responsible up to the end of the maintenance period for executing at his own cost all work necessary to eradicate insect attacks on timber which becomes evident, including the replacement of timber attacked or suspected of being attacked, notwithstanding that the timber concerned may have already been inspected and passed as fit for use.

6 SEASONING OF TIMBER

All timber shall be seasoned to a moisture content of not more than 22% Carpentry and 15% for Joinery.

7 PRESSURE IMPREGNATION PRESERVATIVE TREATMENT

All carpentry timbers, sawn joinery and timber grounds for fixing joinery shall be treated with pressure impregnated "Celcure" or Tanalith" solution with a minimum nett retention of 0.35 lbs. of dry salt per cubic foot. If so required "charge sheets" issued after treatment with"Celcure" or Tanalth" shall be submitted by the Contractor to the Architect for his retention. All cut ends and any other cut faces of timbers sawn after treatment shall be treated before fixing with "Celcure B" or "Wolmanol" solution brushed on.

PRESSURE IMPREGNATION PRESERVATIVE TREATMENT (CONTINUED)

The Contractor's prices for such timber hereinafter must allow for the above treatment.

8 INSPECTION AND TESTING

The Engineer shall be given facilities for inspection of all work in progress whether in workshop or on Site. The Contractor is to allow for testing of prototypes of special construction units and the Engineer shall be at liberty to select any samples he may require for the purpose of testing , i.e. for moisture content, or identification, species, strength, etc., such tests will be carried out by the Forestry Department.

9 CLEARING UP

The Contractor is to clear out and destroy or remove all cut ends, shavings and other wood waste from all parts of the buildings and the Site generally, as the work progresses and at the conclusion of the work.

This is to prevent accidental borer infestation and to discourage termites and decay.

10 WORKMANSHIP

All Carpenter's work shall be accurately set out in strict accordance with the Drawings and shall be framed together and securely fixed in the best possible manner with properly made joints; all brads, nails and screws, etc., shall be

provided as necessary, directed and approved, and the Contractor's prices shall allow for all the foregoing.

All workmanship shall be of the best quality.

All Carpenter's work shall be left with sawn surfaces except where particularly specified to be wrought.

11 DIMENSIONS

Dimensions of timber for Carpentry left with sawn faces shall comply with the previous Clause specifying tolerances in thickness. Dimensions for wrought members shall be as described in "Joinery".

12 JOINTING

All timber shall be as long as possible and practicable to eliminate joints. Where joints are unavoidable surfaces shall be in contact over the whole area of the joint before fastenings are applied.

JOINTING(CONTINUED)

No nails, screws, or bolts are to be fixed in any split end. If splitting is likely, or is encountered in the course of any work, holes for nails are to be prebored at diameter not exceeding 4/5th of the diameter of the nails. Clenched nails must be bent at right angles to the grain.

Lead holes are to be bored for all screws. When the use of bolts is specified the holes are to be bored from both sides of the timber and are to be of the diameter D + D/16, where D is the diameter of the bolt. Nut must be brought up tight but care is to be taken to avoid crushing of the timber under the washers.

13 JOINERY

13.1 GENERALLY

All joiner's work shall be accurately set out on boards to full size for the information and guidance of the artisans before commencing the respective works, with all joints, iron work and other works connected therewith fully delineated. Such setting out must be submitted to the Architect and approved before such respective works are commenced.

All joiner' s work shall be cut out and framed together as soon after the commencement of the building as is practicable, but not to wedged up or glued until the building is ready for fixing same. Any portions that warp, wind or develop shakes or other defects within six months after completion of the works shall be removed and new fixed in their place together with all other work which may be affected thereby, all at the Contractor's own expense.
All work shall be properly mortised, tenoned, housed, shouldered, dove-tailed, notched, pinned, branded, etc., as directed and to the satisfaction of the Architect and all properly glued up with the best quality glue. All horns to be cut off neat and square with back of jambs before incorporating into the walls. The feet of all door jambs are to be cut off square with the floor finish and are to be dowelled to the structure with steel dowels.

Joints in joinery must be as specified or detailed, and so designed and secured as to resist or compensate for any stresses to which they may be subjected. All nails, springs, etc., are to be punched and puttied. Loose joints are to be made where provision must be made for shrinkage, glued joints where shrinkage need not be considered and where sealed joints are required. Glued for load-bearing joints or where conditions may be damp must be of the resin type. For non-load-bearing joints to where dry conditions may be guaranteed casein or organic glues may be used.

JOINERY(CONTINUED)

GENERAL(CONTINUED)

All exposed surfaces of joinery work shall be wrought and all arrises "eased off" by planing and sandpapering to an approved finish suitable to the specified treatment.

14 DIMENSIONS

All joinery has been described by nominal sizes and a 3mm reduction off specified sizes will be allowed for each wrought face except where described as finished sizes in which case joinery shall hold up full dimensions.

15 FIXING JOINERY

All beads, fillets and small members shall be fixed with round or oval brads or nails well punched in and stopped. All large members shall be fixed with screws. Brass screws shall be used for fixing of all hardwoods, the heads let in and pelleted over with wood pellets to match the grain.

16 BEDDING FRAMES, ETC.

The Contractor's rates must include for bedding frames, sills, etc., in mortar or dressing surfaces of walls, etc., in lieu.

17 PLUGGING CONCRETE AND WALLS

Round wood plugs shall not be used. All work described as plugged shall be fixed with screws to plugs formed by drilling concrete, walls etc., with a masonry twist drill of suitable size at 750mm spacing and filling the holes completely with "Philplug" rawl plastic or plastic wall plugs as manufactured by Sumaria Industries, P.O. Box 42565, Nairobi, (or equal and approved) in accordance with the manufacturer's instructions.

All holes in masonry to take fixings should be drilled using the appropriate size masonry twist drill and shall not be cut by chisels or punches.

18 FIBREBOARD

Fbireboard shall be 12mm "Celotex", or other equal and approved termite-proofed softboard, cut to panels with V-edges.

19 PLYWOOD

Plywood for general purposes shall be manufactured to comply with KS. 02-301. Marine plywood shall comply with B.S. 1088.

20 BLOCKBOARD

Blockboard shall be laminated board to approval, and exposed edges shall be lipped with 20mm hardwood.

21 CHIPBOARD

Chipboard shall be manufactured to comply with B.S 5669.

22 PLASTIC SHEETING

Plastic sheeting shall be "Formica" sheeting 1.5mm thick and securely fixed with approved type waterproof adhesive, and the colours approved by the Architect.

23 SELECTED FOR CLEAR FINISH

All timber and joinery work described as selected for clear finish shall be executed by a specialised joinery firm. The name of the firm shall be submitted to the Architect before any works commence.

24 PROTECT JOINERY

Any fixed joinery which in the opinion of the Engineer is liable to become bruised or damaged in any way, shall be completely cased and protected by the Contractor until the completion of the Works. The casing shall consist of two layers of polythene sheeting or plywood coverings.

25 FLUSH DOORS

Semi-solid flush doors shall be manufactured to the thicknesses specified and consist of 100mm wide framing all round with minimum 25 thick horizontal core battens at not more than 75mm centres, pressure-impregnated as described and bored with 15mm diameter ventilation holes at 300mm centres. Doors shall have two lock blocks and be faced both sides with 6mm plywood and have 25mm mahogany twice rebated lipping all round and otherwise be equal to the requirements of B.S. 459 Part 2A, and equal to an approved sample.

26 BOTTOM EDGES

Bottom edges of doors shall be painted with one coat of approved primer before fixing.

27 IRONMONGERY

All locks and ironmongery shall be fixed with screws, etc., to match. Before the woodwork is painted, handles shall be removed, carefully stored and refixed after completion of painting and locks oiled and left in perfect working order. All keys shall be labelled with the door reference marked on labels before handing to the Architect on completion.

28 PRICES TO INCLUDE

Prices of items hereafter shall include for the foregoing labours, etc., and in addition the prices for linear items are to include all internal and external angles, either mitred or tongued, all fair, fitted, stopped, notched or returned ends, all similar incidental labours and all short lengths.

METAL WORK

1 ALL MATERIALS

All materials shall be of the best quality, free from defects. The materials in all stages of transportation, handling and piling shall be kept clean and damage from breaking, bending and distortion prevented.

2 STRUCTURAL STEELWORK

Materials and workmanship shall conform with the requirements of B.S. 449. Steel frames, trusses and purlins shall be carried out by a Nominated Sub-Contractor.

3 NAILS, SCREWS AND BOLTS

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

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

4 WORKMANSHIP

All work shall be carried out in the most workmanlike manner and strictly as directed by the Architect.

Welding shall be neatly cleaned off and units shall be prefabricated in the workshop wherever possible, the minimum of site welding being employed.

All screw work shall have full internal and external threads and holes shall have been cleaned off. Countersinking must be concentric.

5 RAINWATER GOODS

Prices shall include for building in, casting in or cutting mortices for fastenings, all making good, jointing, short lengths and all extra joints in the case of fittings.

6 METAL WINDOWS AND DOORS

Metal windows and doors shall be manufactured to B.S. 990 from hot rolled mild steel sections produced by reputable mills and to be of dimensions and weights laid down in B.S. 990. Where specified all casements and doors are to be made from heavy sections. Corners of frames are to be mitred and welded, and glazing bars, etc., either tenon riveted or welded into frames. Top-hinge casements are to be hung on projecting hinges and fitted with bronze single point handle and cabin hook with concealed sliding stays. Window stays and fasteners shall be to the approval of the Engineer.

7 FIXING METAL WINDOWS, DOORS, ETC.

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

8 QUALITY OF MATERIALS AND WORKMANSHIP

The quality of materialsand workmanship used in this contract shall conform to the requirements of the following British Standards: -

B.S. 15	Mild steel for general structural purposes.
B.S. 449	The use of structural steel in building.
B.S. 4 p.2	Hot Rolled Hollow Sections.
B.S. 994	Cold Rolled Steel Sections.
B.S 938	General requirements for the metal Arc Welding or Structural Steel Tubes to B.S. 1775.
B.S. 1856	General requirements for the Metal Arc Welding of Mild Steel.

B.S. 639 Covering Electrocodes for the Metal Arc Welding of Mild Steel.

Materials may be required at any time to be tested in accordance with the British Standards listed above.

The cost of successful tests will be borne by the Client, but the Sub-Contractor shall supply at his own expense test specimens when required. The cost of tests which do not comply with the standard will be borne by the Sub-Contractor.

9 STRUCTURAL HOLLOW SECTIONS

All hollow sections are to be connected by electrical welding.

For butt welds, the fusion surface of each member must be properly aligned and prepared.

10 ELECTRICAL WELDING

All welding is to be in accordance with the requirements of B.S. 1856 and 938 and the electrodes shall comply with B.S. 639.

Fusion faces shall be free from irregularities which could interfere with the welding material. These faces shall also be free from any deleterious material such as rust, grease and paint.

All welds shall be of the specified finished sizes and the sequence of the welding shall be carried out in a manner that will give minimum distortion to the welded parts.

Edges for welding shall be prepared by planing or machine flame cutting.

During welding all parts will be maintained in their correct position.

Welds shall be carried out with each run closely following the one prior with sufficient time between to allow for removal of slag.

Each run of weld is to be inspected and the Sub-Contractor shall ensure that unsatisfactory welds are cut out or remade to the required standard.

The minimum size of fillet weld shall be 6mm.

All completed welds shall have a regular and smooth surface. The weld material shall be solid with complete fusion throughout the weld and to the farecut metals.

Any defects shall be cut or made good to approval.

External faces of butt welds to be ground smooth.

11 PAINTING

All steel is to be wire brushed and any loose scale, dirt or grease shall be removed before any painting is commenced. One coat of red oxide primer Type A to B.S. 2523 shall be applied at the shop.

Any damage to the priming paint shall be made good to the Architect's satisfaction.

PLASTERWORK AND OTHER FINISHES

MATERIALS

1 CEMENT

The cement shall be as previously described in "Concrete Work".

2 SAND

The sand shall be as described for fine aggregate but that for plastering shall be light in colour and well graded to a suitable fineness in accordance with the nature of the work in order to obtain the finish directed.

3 LIME

The lime for plastering shall comply with B.S. 890 Class "A" for non-hydraulic lime and shall be as rich as obtainable and to approval. It must be freshly burnt and shall be slaked at least one month before being used by drenching with water, well broken up and mixed and the wet mixture shall be passed through a sieve of sixty-four meshes to the square inch. Lime putty shall consist of four freshly slaked lime as above described, saturated with water until semi-fluid and passes through a fine sieve; it shall then be allowed to stand until superfluous water has evaporated and it has become of the consistency of a thick paste, in no case for a shorter period than one month before being used, during which it

must be kept damp and clean and no portion of it allowed to become dry.

Alternatively, hydrated lime with 70% average calcium oxide content may be used and it must be protected from damp until required for use. It shall be soaked to a putty at least 24 hours before use.

4 LIME PLASTER

Lime plaster shall consist of a backing coat in cement, lime and sand (1:2:9) and a finishing coat of lime putty skim with 10% cement added.

5 POLISHED GRANOLITHIC

Polished granolithic shall consist of one part cement (by volume) coloured light brown with an approved dye, to two parts (by volume) of metamorphic coral chipping graded from 6mm down to 3mm with not more than 15% to pass a No. 40 B.S. sieve.

6 POLISHED TERRAZZO

All terrazzo work shall be carried out by an approved Sub-Contractor. Polished terrazzo shall consist of a first coat of cement and sand (1:3) and a 12mm finishing coat of "Snowcrete" and marble chippings (1:2), coloured with "Cemmentone No.1" colouring compound mix in the proportions of 1:10, compound to cement. The overall thickness will be as specified in the measured work.

Where terrazzo paving is specified as incorporating especially selected large aggregate the thickness of the finishing coat shall be increased as required.

The price shall include for all grinding and waxing to the Engineer's satisfaction.

7 VINYL ASBESTOS TILES

The vinyl asbestos floor tiles shall be 300 x 2mm thick and shall comply with B.S. 3260. They shall be of selected pattern and colour from the "marley Heavy Duty Tile Range" or equal and approved.

Vinyl asbestos floor tiles shall be stored and laid in accordance with the manufacturer's written recommendations using a bitumen-based adhesive. The

tiles shall be laid with butt joints straight both ways. Tiling shall start from the centre of a room or area.

8 GLAZED WALL TILES

White glazed wall tiles shall be size 150 x 150 x 6mm thick, manufactured to comply with B.S. 1281.

9 QUARRY TILES

Quarry tiles shall be manufactured to B.S. 1286 type A and shall be chosen from the manufacturer's standard colour range.

Qquarry tiles shall be bedded in 10mm thick cement mortar (1:3) with 10mm joint laid straight both ways. The joints shall be filled with cement mortar neatly flush pointed. The tiles are to be soaked in water before laying

10 PRECAST TERRAZZO TILES

Precast terrazzo tiles are to be as manufactured by the Linotic Flooring Company Ltd., P.O. Box 42290, Nairobi, or equal and approved.

11 ASBESTOS CEMENT PROMENADE TILES

Shall be as manufactured by Eternit Building Products Ltd.

12 MARBLE GLOMERATE TILES

Marble glomerate tiles shall be as manufactured by the Linotic Flooring Company Ltd. All edges shall be square and faces polished , or equal and approved.

13 BEDS AND BACKINGS

Beds and backings shall be composed of cement and sand in the volumetric proportions stated in the measured work.

WORKMANSHIP

1 GENERALLY

All screeds and pavings shall be finished smooth, even and truly level unless otherwise specified and paving shall be steel trowelled.

Rendering and plastering shall be finished plumb, square, smooth, hard and even, and junctions between surfaces shall be perfectly true, straight and square.

At the junction of all concrete work and block walling a 150mm wide strip of expanded metal lathing must be included to avoid plaster cracks.

All arrises and angles shall be clean and sharp or slightly round or thumb coved as directed including neatly forming mitres.

All surfaces to be paved or plastered must be brushed clean and well wetted before each coat is applied. All cement pavings and plaster shall be kept continually damp in the interval between application of coats and for seven days after the application of the final coat.

Where dubbing out is required, it shall be composed of one part cement to six parts of sand.

Partially or wholly set materials will not be allowed to be used or remixed. The plaster, etc., mixes must be used within two hours of being combined with water.

The Contractor shall prepare samples minimum one square metre of each of the screeds, pavings and plastering for the approval of the Architect, after which all work executed shall conform with the approved samples.

2 LIME PLASTERING

Lime plastering shall be carried out in two coats having a total thickness of not less than 15mm to walls and 10mm to ceilings.

The first coat shall be trowelled to a perfectly true and even surface and finished with a wood float, the surface being sprinkled with water from a brush during the process and before it has set thoroughly scratched to form a key. The finishing coat shall not be less than 1.5mm thick, thoroughly worked with a steel trowel, sprinkled with water as before and be brought to a uniform smooth and hard surface.

3 TYROLEAN RENDERING

Tyrolean rendering shall consist of a trowelled backing coat in cement and sand mortar (1:4) gauged with 10% lime, to a thickness of 10mm and a finished coat of cement sand mortar (1:4) applied with an approved machine to a thickness of between 5 and 10mm, to provide an even and uniform texture. Coloured cement or pigment is to be used if so directed by the Architect.

4 GRANOLITHIC AND TERRAZZO PAVING

Granolithic and terrazzo paving shall be spread and well compacted and given only sufficient trowelling to produce a perfectly level surface immediately after laying. When the granolithic or terrazzo has stiffened sufficiently so that a hard surface can be obtained without laitance, then the surface shall be machine ground to a perfectly even and smooth surface. On no account will dusting with neat cement to the surface be permitted.

5 MARBLE TILES AND TERAZZO TILES

The tiles are to be bedded in 10mm thick cement mortar (1:3) with fine butt joints. The surface is to be washed and polished on completion.

6 CERAMIC WALL TILES

Wall tiles shall be fixed with a cement-based adhesive with 3mm wide joints straight both ways. When an area of tiles is complete the joints should be grouted with white cement.

7 BEDS AND BACKING

Floor screeds shall not be laid in areas exceeding ten square metres during any period of 24 hours. As bays are formed steel edge strips must be used to retain the exposed edge of the screed.

The thicknesses and mixes of the screeds shall be adjusted to suit the various top dressing and the Contractor must first ascertain what finish is intended to each specified area before the work of laying screeds is put in hand.

Screeds shall be finished with a wood float for wood blocks and steel trowel for thermoplastic and similar tiles.

8 MAKING GOOD

All making good shall be cut out to a rectangular shape, the edges undercut to form a dovetail key and finished flush with the face of surrounding paving or plaster. Cut out and make good all cracks, blisters, and other defects and leave the whole of the work perfect on completion.

9 PRICES GENERALLY

In addition to the foregoing, prices of superficial items are to include for work in narrow widths, all liner labours, angles and arrises, all fair edges, for making good up to or stopping to a line at the required level at top of skirting or dados where directed and for making good up to windows, door frames and similar.

The prices for all linear items unless otherwise measured are to include for all short lengths, angles and arrises, mitres, and ends of every description.

Prices for pavings are to include for adequate covering and protection during the progress of the Works to ensure that the floors are handed over in perfect condition on completion.

Prices for all pavings and plastering, etc., shall include for hacking concrete surfaces and for raking out joints of walls 12mm deep and for cross-scoring undercoats to form a proper key.

Plastering on walls generally shall be taken to include flush faces of lintels, beams, etc., in the same.

11 PROTECTION

The Contractor's rates for all finishings shall allow for adequate protection against damage by all following trades or any other causes, to the satisfaction of the Engineer.

GLAZING

12 GLASS

All glass shall be manufactured complying with B.S. 952, free from flaws bubbles, specks and other imperfections.

Glass panes shall be cut to sizes to fit the openings with not more than 1.5mm play all round and where puttied shall be sprigged to wood or clipped to metal frames.

Clear sheet glass shall be ordinary glazing (O.Q) quality. Polished plate glass shall be (G.G.) quality.

Anti-bandit glass shall be 9mm thick laminated glass of approved type.

13 PUTTY

Putty for glazing in wood frames shall be composed of pure linseed oil and powdered whiting free from grittiness in accordance with B.S. 544 Type 1 putty.

Putty for glazing in metal frames shall be composed of hard-setting tropical putty specially manufactured for use with steel windows.

Rebates of metal frames receiving glass shall be prepared and treated with primer for putty prior to glazing and putty shall be primed ten days after glazing.

14 BEDDING STRIPS

Bedding strips shall be of plastic or washleather approved by the Architect and shall be cut to fit exactly the line of frame and beads.

15 ON COMPLETION

Remove all broken, scratched or cracked panes and replace with new to the satisfaction o the Architect. Clean inside and out with an approved cleaner. On no account shall windows be cleaned by scraping with glass.

PLUMBING

16 EXECUTION OF THE WORKS

The works shall be carried out strictly in accordance with: -

a) By-laws of the Local Authority

b) British Standard Code of Practice C.P. 301 : 1971, Building Drainage.

c) British Standard Code of Practice C.P 310 : 1965, Water Supply

d) British Standard Code of Practice C.P. 304 : 1968, Sanitary Pipework above Ground.

e) British Standard Code of Practice C.P. 305 : 1974. Sanitary Appliances.

f) British Standard Code of Practice C.P. 342 : 1970, Centralised Hot Water Supply.

g) All other relevant British Standard Specifications and Codes of Practice (hereinafter referred to as B.S. And C.P. Respectively)

h) The Working Drawings

i) The Engineer's instructions.

17 EXTENT OF THE WORKS

The Works include, unless otherwise specified, the supply, installation, testing and commissioning, and delivery up clean and in working order of the installations shown on the Drawings and specified in the Specifications, including all details such as: -

Cold and hot water pipes, discharge pipes (the discharge pipe is used as a comprehensive all-embracing description in place of the traditional soil and waste terms), drain and ventilating pipes, valves, fire fighting installations and equipment, thermal insulation, etc., and all labour, materials, tools, instruments and scaffolding necessary to execute the work in a first-class manner.

The Contractor shall undertake all modifications demanded by the Authorities in order to comply with the current regulations and produce all certificates, if any, from the Authorities without extra charge.

18 EXTENT OF THE CONTRACTOR'S DUTIES

At the commencement of the work, the Contractor shall investigate and report to the Architect the availability of all materials and equipment to be used in the work. If not available, the Contractor shall at this stage place orders for the materials in question and copy the orders to the Architect. Failure to do so shall in no way relieve the Contractor from supplying the specified materials and equipment in time.

The Contractor shall be responsible for verifying all dimensions relative to his work by actual measurements taken on the Site.

19 RECORD DRAWINGS

During the execution of the Works on the Site the Contractor shall, in all manner approved by the Architect, record on Working Drawings and Contract Drawings all information necessary for preparing Record Drawings of the installed Contract Works. Marked-up Drawings and other documents shall be made available to the Architect as he may require for inspection and checking.

Record Drawings may, subject to the approval of the Architect, include approved Working Drawings adjusted as a correct record of the installation of the Contract Works.

Record Drawings shall be prepared on approved translucent linen or plastic material suitable for reproduction by the Dyeline process or similar.

20 MATERIALS AND WORKMANSHIP GENERALLY

All materials, equipment and accessories are to be new and in accordance with the requirements of the current rules and regulations where such exist, or in their absence with the relevant B.S.

Uniformity of type and manufacture of equipment or accessories is to be preserved as far as practicable throughout the whole work.

The Contractor shall, if required by the Architect, submit samples of materials to the Architect for his approval before placing an order.

Where a particular item is specified as a particular firm's product "or similar" it is to be clearly understood that this is to indicate the type and quality of the equipment required. No attempt is being made to give preference to the equipment supplied by the firm whose name or products are quoted.

Where particular manufacturers are specified herein, no alternative make will be considered, and the Architect shall be allowed to reject any other makes.

MATERIALS AND WORKMANSHIP GENERALLY(CONTINUED)

The Contractor will be entirely responsible for all materials, apparatus, equipment, etc., furnished by him in connection with his work, and shall take all special care to protect all parts of finished work from damage until handed over to the Employer.

The work shall be carried out by competent workmen under skilled supervision. The Architect shall have the authority to have any of the work taken down or changed, which is executed in an unsatisfactory manner.

21 TUBING GENERALLY

All tubing exposed on faces of walls shall, unless otherwise specified be fixed at least 25mm clear of adjacent surfaces with approved holderbats built into walls, cut and pinned to walls in cement mortar; where fixed to woodwork, suitable clips shall be used.

All tubing specified as fixed to ceilings, roofs or roof structures shall be fixed with approved mild steel hangers cut and pinned to ceilings, roof or roof structures. Where three or more tubes are fixed to ceilings, roofs or roof structures close to each other, they shall be fixed in positions which leave the lower surfaces at the same horizontal level, unless otherwise specified.

Where insulated, tubing shall be fixed with the insulation at least 25mm clear of adjacent surfaces and with at least the same clearance between insulated pipes.

Tube fixings and supports shall, if nothing else is specified, be arranged at intervals not greater than those given in the following tables:-

21.1 Mild Steel Tubing

Maximum Spacing of Fixing in mm

Diameter of Pipe in mm	Horizontal Runs	Vertical Runs
15	1,800	
20	2,400	
25	2,400	
32	2,700	
40	3,000	
50	3,000	
65	3,600	
80	3,600	
100	4,000	

21.2 Unplasticised P.V.C. Pipe

	Maximum Spacing of Fixing in mm	
Diameter of Pipe in mm	Horizontal Runs	Vertical Runs
12		300
19		400
25		400
32- 152		500

Each support shall take its due proportion of the weight of the tube or pipe and shall allow free movement for expansion and contraction.

Full allowance shall be made for the expansion and contraction of pipework, precautions being taken to ensure that any forces produced by pipe movements are not transmitted to valves, equipment or plant.

All tubing specified as chased into walls shall have the wall face neatly cut and chased, the tubing wedged and fixed and plastered over.

Where tubing is laid in trenches care shall be taken to ensure that fittings are not strained.

All water systems shall be provided with sufficient drain points to enable them to function correctly. Valves and other user equipment shall be installed with adequate access for operation and maintenance. Where valves and other operational equipment are unavoidably installed beyond normal reach or in such a

position as to be difficult to reach from a shore step-ladder, extension spindles with floor or wall pedestals shall be provided.

Before any joint is made, the pipes shall be hung in their supports and adjusted to ensure that the joining faces are parallel and any falls which shall be required are achieved without springing the pipe.

All formed bends shall be made so as to retain the full diameter of the pipe.

Sleeves shall be provided where tubes pass through walls and soiled floors to allow movement of the tubes without damage to the structure. The overall length of the sleeve shall be such that it projects at least 2mm beyond the finished thickness of the wall or partition.

Tubing shall be cut by hacksaw or other method which does not reduce the diameter of the tube or form a bead or feather which might restrict the flow.

22 GALVANISED MILD STEEL TUBING

Galvanised mild steel tubing shall be in accordance with B.S. 1387 : 1967 with screwed and socketed joints; medium-duty for pipes above ground, heavy-duty for pipes under ground, cast into concrete or chased into walls.

Fittings for same shall be galvanised malleable iron to B.S. 1940 : 1965, with threads to B.S. 21 : 1957.

Joints shall be made with fine hemp and an approved jointing compound or tape. Compound containing red lead must not be used.

Long screw connectors and flat-faced unions shall not be used, unless otherwise specified.

Where laid underground or cast in concrete, galvanised mild steel tubing shall be protected by "Densotape" or similar, wound on at least two layers thick, or given two coats of approved bitumen. Minimum earth cover to underground tubing shall be 450mm.

Where chased into walls or cast into concrete galvanised mild steel tubing

carrying hot water shall be wrapped in hair felt secured by copper wire.

The fixing of galvanised mild steel shall use: -

a) Malleable iron "schoolboard" pattern brackets for building in or for screwing to structure,

or b) Malleable iron pipe rings, with either back plate, plugs or girder clips;

or c) purpose-made straps to the Architect's approval.

23 UNPLASTICISED P.V.C. PIPES

Unplasticised P.V.C. discharge and ventilating pipes and fittings shall be to B.S. 4514 : 1964, Grade 2.

U.P.V.C. ventilating pipes passing through roofs shall terminate at least 300mm above the roof level and shall be protected against insect penetration by a copper wire mosquito-proof ballon grating securing bound on the top of the pipe with stout copper wire.

Joints for U.P.V.C. discharge and ventilating pipes shall be spigot and socket joints which incorporate synthetic rubber rings or they shall be closely fitting spigots and sockets jointed together by means of a solvent solution provided by the pipe maker.

UNPLASTICISED P.V.C. PIPES(CONTINUED)

Joints of U.P.V.C. discharge and ventilation pipes to cast iron drain pipes shall be by means of purpose-made cast iron sleeves jointed with tarred yarn and fibrous lead yarn properly caulked into the wetted sockets. Joints to pitch fibre drain pipes shall be made with approved adaptors.

The fixing of U.P.V.C. pipes shall use holderbats of metal, or plastic-coated metal, care being taken that they do not damage the pipe when tightened. Where anchor points are specified to control thermal movement, the holderbars shall be fitted on the pipe sockets. Intermediate holderbars fitted to the pipe barrel shall be such as to allow thermal movement to take place.

At the foot of all U.P.V.C. ventilating stacks and where shown on the Drawings and in other positions as directed or necessary for cleaning,

inspection pipes with door shall be provided, with a bolted oval recess door, shaped internally to bore of pipe.

24 VALVES, COCKS, TAPS, ETC.

Draw-off taps and stop valves shall comply with B.S. 1010 ; 1959.

Brass ball valves shall comply with B.S. 1212 : 1953 and copper floats for ball valves shall comply with B.S. 1968 : 1953, and plastic floats for same shall comply with B.S 2456 : 1954.

Sluice valves shall comply with B.S. 1218 :1946
Gate valves on main supply shall comply with B.S. 3465.

25 VALVES, COCKS, TAPS, ETC.

Manually operated mixing valves for ablutionary and domestic purposes shall comply with B.S. 1415 : 1955

Drain taps shall comply with B.S. 2879 : 1957

Safety valves, stop valves and other safety fittings for air receivers and compressed air installations shall comply with B.S. 1123 : 1961

Safety valves, for thermal storage water heaters shall comply with B.S. 959 : 1967.

26 THERMAL INSULATION

Thermal insulating material for hot and cold water supply installation shall conform to B.S. 1334 : 1966, unless otherwise specified. The Contractor shall ensure that the thermal insulating materials used conform to the requirements of the Local Fire Authority.

All thermal insulating materials shall be delivered to the Site in a dry condition and housed in a store until drawn upon for use.

All surfaces to be insulated shall be cleaned carefully before fixing the insulating material.

The installation of insulating materials shall be entrusted only to operatives skilled in the work. All insulating material, however fixed, shall be in close

contact with the surface to which it is applied and all joints shall be sealed after ensuring that edges or ends of any section are built up close to one another. Edges or ends shall be cut either non-corrodable material or adequately protected against rust.

Each pipe or item shall be insulated separately.

Fixing of insulating material shall suit the progress of other installation works in the building.

Insulation, where pipes are fixed exposed, shall be pre-formed rigid sections with approved finish. Where pipes are fixed in close ducts, above false ceilings, etc., matts cut in suitable sections on the site shall be used, well secured with copper or galvanised wire, finally covered with asphalt roofing paper.

Where subject to outside weather or other potentially damp or wet conditions, the insulation shall be adequately protected against moisture pick-up.

If nothing else is specified, the minimum thickness of insulating material for cold and hot water pipes shall be as specified in B.S. 1588 : Table 1.

27 SANITARY APPLIANCES

The installation of sanitary appliances shall be in accordance with C.P. 305 : 1952 and B.S. 3202 : 1959.

The appliances shall be fixed in the positions shown on the Drawings or as directed by the Engineer.

For all sanitary appliances, the necessary number of supports, brackets, plugs, screws, washers, jointing materials, etc., shall be provided.

Where supports, brackets etc., are screwed to wall or structures, "Rawlplugs" or similar shall be used.

No traps for any appliances whatsoever shall have a seal less than 75mm.

Fixing shall, if required by the Architect, include for temporarily erecting appliances in the required position of service and discharge pipes, taking down, storing and permanently fixing after completion of wall finishings and connecting to service and discharge.

Care shall be taken at all times and particularly after fixing, to protect appliances from damage.

Upon completion of the work, all appliances shall be cleaned of plaster, paint, etc., and carefully examined for defects.

28 FIRE FIGHTING EQUIPMENT

The specified fire fighting shall be supplied and installed by the Contractor in the position shown on the Drawings.

Portable fire extinguishers shall comply with the following B.S. :

a) Water type (soda acid) -

b) Foam type (chemical) -

c) Foam type (gas pressure) -

d) Water type (gas pressure) -

e) Halogenated hydrocarbon type (carbon tetrochloride and chlorobromomethane) -

f) Carbon dioxide type -

g) Dry powder type -

h) Water type (stored pressure) -

Fire hose couplings and ancillary equipment shall comply with B.S. 336 : 1965.

Hose reels: Hoses to be 20mm reinforced red rubber canvas double braided, to comply with B.S. 3169 : 1970. Waterway pressure castings machined throughout. Hose plates 560mm diameter steel. Inlet valve with inlet screwed 3/4" B.S.P. Controller plastic jet spray pattern and shut-off. Test pressure : 2.5 Kg/square centimetre. Finish fire red.

The installation of fire extinguishers shall be in accordance with C.P. 402 : Part 3 : 1964.

29 TESTING

The whole of the water and discharge installation shall be tested to the satisfaction of the Engineer and the Local Authority. The Contractor shall provide all necessary testing apparatus and facilities for testing the installations and any defective work shall be replaced immediately and shall be the subject of re-testing until found satisfactory.

Where pipes are to be lagged, chased into walls or otherwise concealed, the work shall be tested prior to lagging, making good chases, etc.

All hot and cold water installations shall, if nothing else is specified, be tested to 1.5 times normal working pressure, minimum 4KG/cm squared; and compressed air systems tested with minimum 10 Kg/cm squared.

The test pressure shall be applied by means of a manually-operated test pump or, in the case of long mains or mains of large diameter, by a power-driven test pump. Pressure gauges shall be recalibrated before the test.

The test pressure shall be maintained by the pump for about one hour and a leak as specified in C.P. 310, section 502 J, shall be approved, but any visible individual leak shall be repaired.

Valves, cocks and taps shall be absolutely tight under the test pressure for the corresponding pipes as well as under a small pressure.

Testing drain pipes shall be carried out in accordance with C.P. 304, 1968.

Testing drain pipes shall be carried out in accordance with C.P. 301 : 1950.

Tests shall, if necessary, be done in sections as work proceeds without extra payment.

All tests shall be carried out in the presence of a representative of the local Authority and/or the Architect or his representative.

Upon completion of the work, including re-testing if necessary, the installation shall be thoroughly flushed out.

30 STERILISATION OF WATER SUPPLY PIPES

Sterilisation shall be carried out strictly in accordance with C.P. 310 : 1065. The sterilisation will not be approved unless the final test for residual chroline mentioned in the above C.P. proves positive.

31 COMMISSIONING

Before handing over, the Contractor shall confirm that the installation has been examined, tested, is ready for use, that it will operate and can be maintained efficiently.

When handing over, the Contractor shall demonstrate to the Employer the methods of operation, limitations, and the maintenance requirements and safety precautions to be observed; and shall also hand over any tools for operating, cleaning, testing and maintenance of the installation.

On acceptance the Contractor shall provide the Employer with operation and maintenance instructions and any other documents of information appropriate to the installation.

32 MEASUREMENT

Prices for tubing shall include for all short lengths and sockets. Connectors, elbows, bends, formed bends, tees, reducing pieces and other fittings are measured separately and are to include for any extra joints and other extra labour required. The prices for the reducing tees shall include for any extra reducing pieces which may be required, if the correct reducing tee is not available.

All pipes have been measured over all bends, tees and other fittings and the Contractor shall include in his prices for all cutting and waste.

DRAINAGE

1 SETTING OUT

Lines of drains shall be accurately set out and trenches excavated and bottoms trimmed to accurate gradients to approval before pipe laying commences.

2 DRAIN TRENCHES

Excavation shall be made to such depths and dimensions as may be required by the Architect to obtain proper falls and firm foundations. No permanent construction shall be commenced on any bottom until the excavation has been examined and approved by the Engineer. Should the Contractor in error, or without instructions of the Architect, make any excavation below the required level of the drain or bed, as the case may be, he will be required to refill such excavation to the correct levels with Class 15 concrete at his own expense.

Prices for excavation must include for excavating in all materials met with and for trimming bottoms to the necessary falls and for any extra excavation required for planking and strutting and working space, all as described under "Excavation". Excavation in hard rock requiring the use of compressors or wedging is measured separately.

3 KEEP EXCAVATIONS DRY

The Contractor shall keep the whole of the trenches or other excavations free from water, and he shall execute such works and install such pumps as may be required to keep the excavations dry at all times. No subsoils water shall be discharged into the sewers without the written permission of the Architect.

4 PITCH FIBRE DRAIN PIPES AND FITTINGS

Pitch fibre drain pipes and fittings shall be to B.S. 2760 and of approved manufacture. Joints shall be made with straight couplings as indicated in the B.S. and the laying, cutting and jointing shall be carried out strictly in accordance with the manufacturer's printed instructions.

5 CAST IRON DRAIN PIPES

Cast iron drain pipes shall be coated cast iron spigot and socket pipes conforming with B.S. 437 in all respects and with fittings to B.S. 1130. Pipes shall be jointed with asbestos yarn and caulked with molten lead or jointed with special jointing compound, all to approval.

6 BACKFILLING

The first backfilling of pipe trenches is to be of soft material free from stones and shall be watered and carefully tamped over and around the pipes in 300mm layers until they are covered to a depth of 600mm. Subsequent filling is to be in 150mm layers, watered and rammed. Only materials approved by the Engineer are to be used as backfilling.

Where hardcore is used for backfilling it is not to exceed 150mm gauge and all interstices shall be properly filled with small pieces and fine binder. Surplus excavated materials are to be removed from the Site.

If, in the opinion of the Architect, care has not been exercised in refilling trenches, he may order a fresh test to be made on the drain. In the event of the drain failing to pass the test the Contractor will be required to remedy the fault at his own expense.

7 CONCRETE BEDS AND SURROUNDS

Concrete beds and surrounds shall be Class 25 concrete to the thicknesses and widths specified.

Where pipes are specified to be haunched, the concrete shall be carried up from the outside edge of the bed to meet the pipe barrel tangentially.

Where pipes are specified to be surrounded, the concrete shall be carried up from the bed in a square section with a minimum of 150mm in thickness over the barrel of the pipe.

Rates for beds and surrounds shall include for forming recesses and filling with concrete, for mortar layer, etc., and for any necessary formwork.

8 LAYING PIPES

Each pipe shall be carefully examined on arrival, any defective pipes shall be removed immediately from the Site and not used in the Works. Minor damage to the protective coating of cast iron pipes shall be made good by painting with hot tar; if major defects in the coating exist, such pipes shall be rejected and removed from the Site.

Drains shall be laid in straight lines and to even gradients as required and to the satisfaction of the Architect.

Great care shall be exercised in setting out and determining the levels of the pipes and the Contractor shall provide suitable instruments and set up and maintain all sight rails, boning rods and bench marks, etc., necessary for the purpose.

LAYING PIPES(continued)

All drains shall be kept free from earth, debris, superfluous cement and other obstructions or water during laying and until completion of the Contract when they shall be handed over in a clean condition.

Pipes shall be laid with the sockets leading uphill and shall rest on solid and even foundations for the full length of the barrel. Socket recesses shall be formed in the foundation, as short as practicable but sufficiently deep to allow the pipe jointer room to work right round the pipe. Such recesses shall be filled with cement mortar (1:4) on completion of laying.

9 INSPECTION CHAMBERS

Inspection chambers shall be constructed in the positions indicated on the Drawings or as required by the Engineer. Such chambers shall be to the depths required to obtain even gradients in the drain and of sufficient size to contain the requisite main channel and any branches thereto and all to the entire satisfaction of the Architect and the Local Authority.

Rendering shall be trowelled smooth, coved at all internal angles and rounded on arrises.

10 TESTING

Each length of drain and manhole shall be tested as described hereinafter and approved by the Engineer before any backfilling of the trench takes place.

Testing shall not be carried out until at least 12 hours have elapsed after the jointing of the last pipe.

The test shall be as follows:

(i) The lower end of the pipe and all junctions shall be securely stoppered and the whole length under test filled with water.

(ii) When full, a further stopper shall be inserted at the top leaving a

pipe attached to the drain plug. This pipe shall be bent through a 900 and shall terminate in a header tank 225mm square.
The vertical distance between the concrete line of the drain plug and the top of the header tank shall be not less than 900mm.

TESTING(continued)

(iii) Water shall then be poured into the header tank which shall be kept full for a minimum period of 3 hours to allow absorption to take place. At the expiration of this period the header tank shall be topped up and the testing of the drain commenced. If, after a further period of 30 minutes, the water level in the header tank has not fallen by more than 2mm the test will be considered satisfactory.

(iv) In the event of a pipe failing to withstand the test, the point of failure shall be completely surrounded, at the Contractor's expense, with class 25 concrete 19mm maximum aggregate, so that there is a minimum cover of 150mm in all directions. The length shall then be re-tested.

(v) Immediately a length of drain has been approved the trench shall be backfilled for a depth of at least 300mm above the top of the pipes.

11 GULLEYS

Gulleys shall be approved 100mm salt glazed stoneware or cast iron trapped gulleys with 150 x 150mm cast iron gratings to receive the waste fittings. Bed the gulleys on and surround with Class 25 concrete 100mm thickness, carried up to form a 75 x 75mm kerb with all exposed surfaces finished in cement and sand (1:2) trowelled hard and smooth and all angles rounded. Make good cement joint to drain pipe and run drain to adjacent manhole.

12 MEASUREMENT

Drain pipes have been measured over all bends, junctions and other fittings, and the Contractor shall include in his prices for all joints, short lengths, cutting and waste. Prices for bends, junctions, etc., shall include for the extra joints, cutting and waste and any extra labour required.

PAINTING AND DECORATING

1 APPROVED SPECIALIST

All work under this trade must be executed by an approved specialist.

2 GENERALLY

The Contractor shall so arrange his programme of work that all other trades are completed and away from the area to be painted, when painting begins. Before painting the Contractor must remove all concrete and mortar droppings and the like from all work to be decorated and remove all stains from and obtain uniform colour to be oiled and polished.

All plaster, metal, wood or other surfaces which are to receive finishes of paint, stain, polish, distemper or paintwork of any description are to be carefully inspected by the Contractor before he allows any of his painters to commence work. The Contractor will be held solely responsible for all defective work condemned as a result of his painter's failure to insist on receiving from the other trades surfaces in the proper condition to allow first-class finishes of the various kinds specified being applied to them.

3 PAINTING GENERALLY

All materials are to be of the best quality and shall be of an approved

proprietary brand selected from the latest Schedule of Approved Paints issued by the Ministry of Works.

All materials to be applied externally shall be of exterior quality and/or recommended by the manufacturers for external use.

All materials shall be delivered on Site intact in the original sealed drums or tins and shall be mixed and applied strictly in accordance with the manufacturer's instructions and to the approval of the Architect.

Unless specially instructed or approved by the Architect, no paints, distemper, etc., are to be thinned, or otherwise adulterated, but are to be as supplied by the manufacturers and direct from the tins.

If required by the Engineer, the Contractor is to provide at his own expense samples of paints, etc., with containers and cases to be forwarded carriage paid by the Contractor for analysis to a laboratory.

The priming, undercoats and finishing coats shall each be of differing tints and the priming and undercoats shall be the correct brands and tints to suit the respective finishing coats, in accordance with the manufacturer's instructions. All finishing coats shall be of colours and tints selected by the Engineer. Each coat must be approved by the Architect before the next coat is applied.

Each coat shall be properly dry and in the case of oil or enamel, paints shall be well rubbed down with fine glass paper before the next coat is applied. The paintwork shall be finished smooth and free from brush marks.

Colour cards of all paints, etc., shall be submitted to, and samples prepared for approval of the Engineer before laying on, and such samples, when approved, shall become the standard for work.

All paints, emulsion paints, and distempers shall be applied by means of a brush or spray gun or rollers of an approved type, where so agreed by the Architect.

No painting is to be done on surfaces which are not thoroughly dry.

Prices of paint, distemper, etc., shall include for preparation of surfaces, rubbing down between each coat, stopping, knotting, etc., and all other work in connection and as described and as necessary to obtain a first-class and proper finish to approval.

Emulsion paint on ceilings and all undercoats of emulsion paint and complete oil painting on walls shall be completed before thermoplastic floorings are laid. Final coats of emulsion paint on walls shall be applied after such flooring has been laid complete.

4 SAMPLES

The Contractor shall furnish at the earliest possible opportunity before work commences and at his own cost, samples of painting for the Engineer's approval and any further samples in the case of rejection until such samples are approved by the Engineer and such samples, when approved, shall be the minimum standard for the work to which they apply.

The Engineer may reject any materials or workmanship not in his opinion up to the approved sample, and these must be removed from the Site without delay.

5 WOOD PRESERVATIVE

All woodwork in contact with walling or plaster shall be treated after cutting and preparation but before assembly or fixing with one coat of "TIMCIDE" wood preservative manufactured by Timsales Ltd., P.O. Box 18080, Nairobi. The solution is to be brushed on all faces of all timbers unless exposed to view and painted.

The Contractor shall note that this solution is POISONOUS and shall take all necessary precautions and instruct his workmen accordingly.

6 WAX POLISH

Wax polish shall be furniture polish of an approved brand and wood surfaces shall be clean, smooth, free from oil or grease or any other blemishes. A minimum of two coats shall be applied to approval.

7 PREPARATION AND PRIMING OF PLASTER, ETC… SURFACES

Plaster surfaces shall be perfectly smooth, free from defects and ready for decoration. All such surfaces shall be allowed to dry for a minimum period of

six weeks, stopped with approved plaster compound stopping and rubbed down flush, as necessary, and then be thoroughly brushed down and left free from all efflorescence, dirt and dust immediately prior to decorating.

Plaster surfaces which are to be finished with emulsion, oil or enamel paint, shall be primed with an alkali resisting primer complying with the particular paint manufacturer's specification and applied in accordance with their instructions.

Fibreboard or similar surfaces shall be lightly brushed down to remove all dirt, dust and loose particles and have all nail holes or other defects stopped with an approved plaster compound stopping, rubbed down flush and left with a texture to match surrounding material and shall receive one coat petrifying liquid as last.

8 PREPARATION AND PRIMING OF METAL ETC… SURFACES

All surfaces shall be thoroughly brushed down with wire brushes and scraped where necessary to remove all scale, rust, etc., immediately prior to decorating. Where severe rust exists and if approved by the Engineer as proprietary, derusting solution may be used in accordance with the manufacturer's instructions

Shop-primed and unprimed surfaces shall be given one coat of metal chromate primer.

PREPARATION AND PRIMING OF METAL ETC… SURFACES (continued)

Galvanised surfaces shall be treated before painting with an approved proprietary mordant of de-greasing solution before priming.

Coated surfaces already treated with bituminous solution shall be scraped to remove soft parts and then receive two isolating coats of aluminium primer or other approved anti-tar primer.

9 PREPARATION AND PRIMING OF WOODWORK

All woodwork shall be rubbed down, all knots covered with a thick coat of good shellac or aluminium knotting; primed with one coat of approved ready-mixed proprietary wood primer and all cracks, nail holes, defects and uneven surfaces, etc., stopped and faced up with hard stopping rubbed down flush.

10 PREPARATION OF PREVIOUSLY PAINTED METAL SURFACES

Thoroughly wash down with water containing an approved cleaning agent and rinse with clean water. Wire brush to remove all rust and loose paint and touch up bare patches with zink-rich primer.

11 PREPARATION OF PREVIOUSLY PAINTED WOODWORK

Thoroughly wash down with water containing an approved cleaning agent and rinse with clean water. Lightly rub down with glass paper and prime and bring forward all bare patches for decoration.

12 PREPARATION OF PREVIOUSLY PAINTED PLASTER, ETC., … SURFACES

Thoroughly wash down with water containing an approved detergent to remove stains and rinse with clean water. Make good all defect (cracks and the blemishes) with plaster, sand/cement or polyfilla (on internal surfaces) of same porosity as wall surface. Rub down with sand paper and dust clean.

13 EMULSION PAINT

After preparation as specified above a minimum of THREE coats, unless otherwise specified, shall be applied using a thinning medium of water only if and as recommended by the manufacturer.

14 EMULSION PAINT

An approved plaster primer tinted to match may be substituted for the first coat in three-coat work.

15 ENAMEL PAINT

Apply two undercoats and one finishing coat, after preparation and priming as specified above.

16 CLEAR POLYURETHANE VARNISH

Surfaces are to be treated with "Ronseal" or other equal and approved, in three coats. The first is to be applied with a linen pad and well rubbed in and

second and successive coats are to be applied by brush. The first and second coats are to be lightly rubbed with Grade 'O' and Grade 'OO' wire respectively.

17 POLYURETHANE CLEAR LACQUER

To be applied strictly as per the manufacturer's instructions.

18 IRONMONGERY

All ironmongery shall be removed from joinery, steel windows and louvers before painting is commenced, and shall be cleaned and renovated if necessary and refixed after completion of painting.

19 PAINTING ITEMS

Painting items as billed hereafter, shall include for preparing all priming surfaces as above described.

20 COVER UP

Cover up all floors, fittings, etc., with dust sheets when executing all painting and decorating work.

21 CLEAN AND TOUCH UP

Paint splashes, spots and stains shall be removed from floors, woodwork, etc., any damaged surfaces touched up and the whole of the work left clean and perfect upon completion.

SECTION IV

CONDITIONS OF CONTRACT

PART 1 - GENERAL CONDITIONS

PART 1 - GENERAL CONDITIONS

Refer to the General Conditions of Contract of Civil Engineering Construction (Fourth Edition 1987 - Reprinted 1992 with Editorial Amendments) published by Federation International des Ingenieurs-Conseils (FIDIC).

The Contractor shall be deemed to have procured copy of his own from: -

FIDIC Secretariat

P.O. Box 86

1000 Lausanne 12

Switzerland

Through the Association of Consulting Engineers of Kenya (ACEK)

P.O. Box 72643

Nairobi.

PART II - CONDITIONS OF PARTICULAR APPLICATION

Part II - Conditions of Particular Application

The following amendments or additions should be made to the General Conditions of Contract, Part I.
Where reference is made to any Clause or Sub-Clause, this shall mean, unless specifically stated otherwise, a Clause or Sub-Clause, in the General Conditions of Contract, but with the amendments or additions given in these Special Conditions of Contract. In case of any difference between the General Conditions of Contract and the Special Conditions of Contract, the Special Conditions of Contract shall govern.

Sub-Clause 1.1: definitions

Amend this sub clause as follows:

(a) (i) The Employer is the party stipulated in the Appendix to Bid.
(a) (iv) The Engineer is the party stipulated in the Appendix to Bid

Amend subparagraph (a) (iv) also by adding the following words after the word "Conditions":

"or any other competent person appointed by the Employer, and notified to the Contractor, to act in replacement of the Engineer".

Amend part(b) of sub-clause 1.1 as follows:

(b) (i) Insert in line 2 after "the Bills of Quantities", the following, "the rates entered by the Contractor (whether or not such rate be employed in computation of the contract price),"

Amend subpara. (b) (v) of Sub-Clause 1.1 by adding the following words at the end:

The word `tender' is synonymous with `bid' and the word `Appendix to Tender' with `Appendix to Bid' and the word `tender documents' with `bidding documents'.

Add the following at the end of this sub-clause:

(h) (i) "Materials" means materials and other things intended to form or forming part of the Permanent Works.

Sub-clause 2.1: Engineer's Duties and Authority

With reference to Sub-Clause 2.1 (b), the following provision shall also apply:

The Engineer shall obtain the specific approval of the Employer before taking any of the following actions specified in Part I:

(a) consenting to the subletting of any part of the Works under Clause 4;
(b) certifying additional cost determined under Clause 12;
(c) determining an extension of time under Clause 44;
(d) issuing a variation under Clause 51, except:

(i) in an emergency situation, as reasonably determined by the Engineer; or
(ii) if such variation would increase the Contract Price by less than the amount stated in the Appendix to Bid.

Sub-Clause 4.1 Subcontracting

Delete the second and third sentence and substitute with the following:

No single Sub-Contractor may be for more than 10 percent of the Contract Price nor shall the sum of the Sub-Contracts exceed 25 percent of the Contract Price. No one Sub-Contractor may be awarded Sub-Contracts to a total value greater than 10 percent of the Contract Price. All Sub-Contracts greater than 2 percent of the Contract Price are to have the prior consent of the Engineer. Any such consent shall not relieve the Contractor from any liability or obligation under the Contract and shall be responsible for the acts, defaults, and neglects of any Sub-Contractor, his agents, servants or workmen as fully as if they were acts, defaults or neglects of the Contractor, his agents, servants or workmen.

Sub-Clause 5.1 Language and Law

(a) The language is stipulated in the Appendix to Bid. Communication between the contractor and the Engineer's Representative shall be in this given language.

(b) The law is that in force in the country stipulated in the Appendix to Bid.

Sub-Clause: 5.2 Priority of Contract Documents

Delete the documents listed 1-6 and substitute:

(1) The Contract Agreement (if completed);
(2) The Letter of Acceptance;
(3) The Bid and the Appendix to Bid;
(4) The Conditions of Contract part II;
(5) The Conditions of Contract part I;
(6) The Special Specifications;
(7) The General Specifications for Building works, 1976" prepared by the then Ministry of Works, Housing and Physical Planning;
(8) The Drawings;
(9) The priced Bill of Quantities; and
(10) Other documents as listed in the Appendix to Bid.

Sub-Clause 8.3: Duty to inform

The Contractor shall promptly inform the Engineer of any error, omission, fault and other defect in the design of or Specifications for the works, which are discovered when reviewing the Contract documents, or in the process of execution of the works.

Sub-clause 10.1: Performance Security

Replace the text of Sub clause 10.1 with the following:

"The contractor shall provide security for his proper Performance of the contract Within 28 days after the receipt of the Letter of Acceptance. The Performance Security shall be in the form of a bank guarantee, and shall be issued by a bank located in the country of the Employer or a foreign bank through a correspondent bank located in the country of the Employer, as stipulated by the Employer in the Appendix to Bid. The Contractor shall notify the Engineer when providing the Performance security to the Employer.

"Without limitation to the provisions of the preceding paragraph, whenever the Engineer determines an addition to the Contract price as a result of a change in cost and/or legislation or as result of a variation amounting to more than 20 percent of the Contract price, the Contractor, at the Engineer's written request, shall promptly increase the value of the performance security in that currency by an equal percentage. The Performance security of a joint venture shall be in the name of the joint venture.

Sub-Clause 10.2 : Validity of the Performance Security

The performance security shall be valid until a date 28 days from the date of issue of the Taking-Over Certificate in the case of a bank guarantee, and one year from such date of issue in the case of a performance bond. The security shall be returned to the Contractor within 14 days of expiration.

Sub-clause 10.3 : Claims Under Performance Security

Delete the entire sub-clause 10.3.

Sub-Clause 10.4 Cost of Performance Security

The cost of complying with the requirements of this clause shall be borne by the Contractor.

Sub-clause 11.1 : Inspection of Site

In paragraph 2 last line after "affect his Tender" add

"and the Contractor shall be deemed to have based his Tender on all the aforementioned."

Delete the last Paragraph completely and replace with the following:
The Employer in no way guarantees the completeness nor the accuracy of the soil, materials, subsurface and hydrological information if made available to the Contractor at the time of tendering or at any other time during the period of contract, and the Contractor shall be responsible for ascertaining for himself all information as aforesaid for the execution of the works and his Tender shall be deemed to have been priced accordingly.

Add new Sub-Clause 11.2:

Sub-Clause 11.2 : Access to Data

"Data made available by the Employer in accordance with Clause 11.1 shall be deemed to include data listed elsewhere in the Contract as open for inspection at the address stipulated in the Appendix to Bid.

Sub-Clause 13.2: Submission to the Engineer

Wherever the Contractor is required to submit to the Engineer proposals, details, drawings, calculations, information literature materials, tests report and certificates, the Engineer will consider each submission and, if appropriate, he will reply to the Contractor in accordance with the relevant provision of the Conditions of Contract. Unless a defined period of time if stated in the Specifications, each submission shall be made by dates to be agreed with the Engineer having regard to the approved programme and the need to give the Engineer adequate time to consider each submission.The approval of the Engineer of any submission shall not relieve the Contractor from his responsibilities under the Contract.

Sub-Clause 14.1: Programme to be Submitted

The time within which the programme shall be submitted shall be the number of days stipulated in the Appendix to Bid.

This detailed programme shall be based upon the programme submitted by the Contractor as part of his tender and shall, in no material manner, deviate from the said programme.

The programme shall be in the form of a Critical Path Method Network (CPM Network) or any other method approved showing the order of procedure and a description of the construction methods and arrangements by which he proposes to carry out the works. The programme shall be co-ordinated with climatic and other conditions to provide for the completion of the Works in the order and by the time specified. The programme shall be revised as may be instructed by the Engineer and should include a chart of the principal quantities of work forecast for execution monthly.

The Contractor shall submit to the Engineer not later than 30 days from the date of award of the contract a general description of his proposed arrangements and methods for the execution of the Works, including temporary offices, buildings, access roads, construction plant and its intended production output, working shift arrangements, labour strength, skilled and unskilled, and supervision arrangements, power supply arrangements, supply of materials including a materials utilisation programme, stone crushing, aggregate production and storage, cement handling, concrete mixing and handling, methods of excavation, dealing with water, testing methods and facilities.

During the execution of the works, the Contractor shall submit to the Engineer full and detailed particulars of any proposed amendments to the arrangements and methods submitted in accordance with the foregoing.

The Employer shall have the right to withhold payment at any time, without being subjected to the interest consequences of Sub-Clause 60.8 (b), whenever the Contractor fails, owing to his omission or negligence, to submit the revised construction programmes as requested.

If details of the Contractor's proposals for Temporary Works are required by the Engineer for his own information the Contractor shall submit such details within seven days of being requested to do so.

The various operations pertaining to the works shall be carried out in such a progressive sequence as will achieve a continuous and consecutive output of fully completed Works inclusive of all drainage works and culverts within the time limits specified in the Contract. Generally the Contractor shall start at one end of the works and progress continuously towards the other without leaving any isolated section or sections of uncompleted Works provided always that the site of the works has been acquired in its entirely and the encumbrances and services thereon removed.
The Contractor shall allow in his programme for the following public holidays per calendar year in the Employer's country upon which the contractor shall not be permitted to work: -

New Year's Day (1st January)
Good Friday
Easter Monday
Labour Day (1st May)
Madaraka Day (1st June)
Idd-Ul-Fitr
Kenyatta Day (20th October)
Jamhuri Day (12th December)
Christmas Day (25th December)
Boxing Day (26th December)

The Contractor is deemed to have also allowed for a further 2 unspecified public holidays (per calendar year), which may be announced by the Government of the Employer with no prior notification, and upon which he shall not be permitted to work.

Sub-Clause 14.3 : Cash Flow Estimate to be Submitted

The time within which the detailed cash flow estimate shall be submitted shall be the number of days specified in the Appendix to Bid.

Sub-Clause 15.1 : Contractor's Superintendence

Add the following at the end of the first paragraph of sub clause 15.1:

The contractor shall, within seven (7) days of receipt of the Engineer's Order to commence the Works, inform the Engineer in writing, the name of the contractor's Representative and the anticipated date of his arrival on site.

Add the following Sub-Clause 15.2

Sub-Clause 15.2 : Language Ability

The Contractor's Agent or Representative on the site shall be able to read, write and speak the Language stipulated in the Appendix to Bid fluently.

Sub-clause 16.2 : Engineer at Liberty to Object

At the end of this Clause add
"by a competent substitute approved by the Engineer and at the contractor's own expense".

Add the following Sub-Clauses 16.3 and 16.4.

Sub-Clause 16.3 : Language Ability of Superintending Staff

"A reasonable proportion of the Contractor's superintending staff shall have a working knowledge of the language specified in the Appendix to Bid or the Contractor shall have available on site at all times a sufficient number of competent Interpreters to ensure the proper transmission of instructions and information"

Sub-Cause 16.4 : Employment of Local Personnel

"The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour with appropriate qualifications and experience from sources within and near the Site "

Sub-Clause 19.1 : Safety, Security, and Protection of the Environment

Add subpara.(d) of Sub-Clause 19.1 as follows:

Notwithstanding the Contractor's obligation under subparas. (a), (b), and (c) of Sub-Clause 19.1 of the Conditions of Contract, the Contractor shall further observe, without limitation, the following measures with a view to reducing or eliminating adverse environmental effects from the Works:

(i) Any quarries and borrow pits shall be filled and landscaped to their original state after extraction of construction material.

(ii) Soil erosion due to the surface runoff or water from culverts or other drainage structures should be avoided by putting in place proper erosion control measures that shall include, but not limited to, grassing and planting of trees.

(iv) Spillage of oil, fuel, and lubricants shall be avoided. And if spilt it shall be collected and disposed of in such a way as not to adversely affect the natural environment.

(v) Take all reasonable care to ensure minimum disturbance in the dispersal area.

(vi) Other environmental damage mitigation measures as may be instructed by Engineer from time to time.

Sub-Clause 20.4 : Employer's Risks

Amend Sub-Clause 20.4 to read as follows:
The Employer's risks are:

(a) Insofar as they directly affect the execution of the permanent Works are to be executed:

(i) War and hostilities (whether war be declared or not), invasion, act of foreign enemies.

(ii) Rebellion, revolution, insurrection, or military or usurped power, or civil war;

(iii) Riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Subcontractors and arising from the conduct of the Works;

(b) Loss or damage due to the use or occupation by the Employer of any Section or part of the Permanent Works, except as may be provided for in the Contract.

(c) Loss or damage to the extent that it is due to the design of the Works, other than any part of the design provided by the Contractor or for which the Contractor is responsible; and

(d) Any operation of the forces of nature (insofar as it occurs on the site) which an experienced contractor:

(i) Could not have reasonably foreseen, or

(ii) Could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures:

(A) Prevent loss or damage to physical property from occurring by taking appropriate measures, or

(B) Insure against such loss or damage

Sub-Clause 21.1: Insurance of Works and Contractor's Equipment

Add the following words at the end of subparas (a) and immediately before the last word of subpara.(b) of Sub-Clause 21.1:
"it being understood that such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred"

Delete the first sentence of this Clause and replace with the following:

"Prior to commencement of the Works the Contractor shall, without limiting his or the Employer's obligations and responsibilities under Clause 20, insure to the satisfaction of the Employer:"

Sub-Clause 21.2 : Scope of cover

Amend subpara. (a) of Sub-Clause 21.2 as follows: -

Delete words "from the start of work at the Site" and by substituting therefore the words "from the first working day after the commencement Date"

Add the following as Sub-Clause (c) under Sub-Clause 21.2

(c) It shall be the responsibility of the Contractor to notify the insurance company of any change in the nature and extent of the Works and to ensure the adequacy of the insurance coverage at all times during the period of the Contract.

Sub-Clause 21.4 : Exclusions

Amend Sub-Clause 21.4 to read as follows:" There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by the risks listed under Sub-Clause 20.4 subparas. (a) (i) to (iv) of the Conditions of Particular Application"

Sub-Clause 23.2 : Minimum Amount of Insurance

Add the following at the end of this Clause:-

"... with no limits to the number of occurrences"

Sub-Clause 24.3: Liaison with Airfield Authorities

The Contractor shall keep close contact with the airfield management and control his workmen and shall provide all assistance and facilities which may be required by such officials in the execution of their duties.

Sub-clause 25.1 : Evidence and Terms of Insurances

Amend Sub-Clause 25.1 as follows:-
Insert the words "as soon as practicable after the respective insurances have been taken out but in any case" before the words "prior to the start of work at the Site".
Add the following Sub-Clauses 25.5, 25.6, and 25.7

Sub-Clause 25.5 : Source of Insurance

" The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to, the insurance referred to in Clause 21, 23, and 24) only with the insurers which have been determined to be acceptable to the Employer."

Sub-Clause 25.6 : Insurance Notices

Each policy of insurance effected by the Contractor for purpose of the Contract shall include a provision to the effect that the Insurer shall have a duty to give notice in writing to the Contractor and Employer of the date when a premium becomes payable not more than thirty (30) days before that date and the policy shall remain in force until thirty (30) days after the giving of such notice.

Sub-Clause 25.7 : Notification to Insurers

It shall be the responsibility of the Contractor to notify the insurers under any of the insurances referred to in the preceding clauses 21, 23 and 24 on any matter or event which by the terms of such insurances are required to be so notified and the Contractor shall

indemnify and keep indemnified the Employer against all losses, claims, demands, proceedings, costs, charges and expenses whatsoever arising out of or in consequence of any default by the contractor in complying with the requirements of this sub-clause whether as a result of avoidance of such insurance or otherwise.

Sub-Clause 26.2: Inspection and Audit by the Employer

Add this new Sub-Clause as follows: The Contractor shall permit the Employer to inspect the Contractor's accounts and any other records relating to the performance of the Contract and to have them audited by auditors appointed by the Employer, if the Employer so requires."

Sub-Clause 28.2 : Royalties

Add at the end of this sub-clause the following sentence:
The contractor shall also be liable for all payments or compensation if any, levied in connection with the dumping of part or all of any such material.

Sub-clause 29.1 : Interference with Traffic and Adjoining Properties

Add the following sentence at the end of sub-clause 29.1: -
The contractor will be permitted to use existing public roads for access to the site. The contractor shall pay vehicle licence tax and road maintenance duty in accordance with the relevant regulations, and shall obtain any necessary permits or licences from relevant authorities for transporting his equipment.
Add the following sub-clause 29.2:-

Sub-Clause 29.2 : Reinstatement and Compensation for Damages to Persons or Property.

The Contractor shall reinstate all properties whether public or private which are damaged in consequence of the construction and maintenance of the works to a condition as specified and at least equal to that prevailing before his first entry on them.
If in the opinion of the Engineer the Contractor shall have failed to take reasonable and prompt action to discharge his obligations in the matter of reinstatement the Engineer will inform the contractor in writing of his opinion, in which circumstances the Employer reserves the right to employ others to do the necessary work of reinstatement and to deduct the cost thereof from any money due or which shall become due to the Contractor.

The Contractor shall refer to the Employer without delay all claims which may be considered to fall within the provisions of Clause 22.1.

Add the following sub-clauses 34.2 to 34.8:

Sub-Clause 34.2 : Conditions of Employment of Labour

The Contractor shall be responsible for making all arrangements for and shall bear all costs relating to recruitment, obtaining of all necessary visas, permits or other official permission for movements of staff and labour.

Sub-Clause 34.3 : Fair Wages

The Contractor shall, in respect of all persons employed anywhere by him in the execution of the Contract, and further in respect of all persons employed by him otherwise than in the execution of the Contract in every factory, workshop or place occupied or used by him for the execution of the Contract, observe and fulfil the following conditions:

a) The Contractor shall pay rates of wages, observe hours of labour and provide conditions, housing amenities and facilities not less favourable than those required by the Regulation of Wages (General)(Amendment) Order 1996, and subsequent amendments thereto, or in any Ministry of Labour or other Government Department in consultation with the appropriate wage fixing authority and generally recognised by other employees in the district or zone whose general circumstances in the trade or industry in which the Contractor is engaged are similar. The Contractor shall at all times during the continuance of the Contract display, for the information of his employees, a notice setting out the general rates of wages, hours and conditions of labour of his employees.

b) In the absence of any rates for wages, hours or conditions of labour so established the Contractor shall pay rates or wages and observe hours and conditions of labour which are not less favourable than the general level of wages, hours and conditions observed by other Employers whose general circumstances in the trade or industry in which the Contractor is engaged are similar.

c) Where the absence of established rates of wages, hours and conditions of labour or the dissimilarity of the general circumstances in the trade or industry in which the contractor is engaged prevent the contractor observing rates of wages, hours and conditions of labour ascertained under sub-paragraph (a) or (b) above the Contractor in fixing the rates of wages, hours and conditions of labour of his employees shall be guided by the advice of the Labour Department.

d) The Contractor shall recognise the freedom of his employees to be members of trade unions.

e) The Contractor shall maintain records in the Language stipulated in the Appendix to Bid of the times worked by, and the wages paid to his employees. The Contractor shall furnish to the Employer, if called upon to do so such particulars of the rates of wages, hours and conditions of labour as the Employer may direct.

f) The Contractor shall be responsible for observance by his Sub-Contractors of the foregoing provisions.

Sub-Clause 34.4 Breach of Fair Wages Clause

Any Contractor or Sub-Contractor who is found to be in breach of the Fair Wages clause shall cease to be approved as a Contractor or Sub-Contractor for such period as the Employer may determine.

Should a claim be made to the Employer alleging the contractor's default in payment of fair wages to any workman employed on the Contract and if proof thereof satisfactory to the Employer is furnished by the relevant Labour Authority, the Employer may, failing payment

by the Contractor, pay the claims out of any monies due or which may become due to the Contractor under the contract.

Sub-Clause 34.5 Recruitment of Unskilled Labour

Any additional unskilled labour which is required by the contractor for the works and which is not in his employment at the time of the acceptance of the Tender shall be recruited by the Contractor from the Labour Office nearest to the site or sites of the work.

Sub-Clause 34.6 Compensation for Injury

The Contractor shall in accordance with the Workman's Compensation Act of the Laws of the Country of the Employer and any other Regulations in force from time to time in the Country of the Employer pay compensation for loss or damage suffered in consequence of any accident or injury or disease resulting from his work to any workman or other person in the employment of the Contractor or any Subcontractor.

Sub-Clause 34.7 Labour Standards

a) The Contractor shall comply with the existing local labour laws, regulation and labour standards.
b) The Contractor shall formulate and enforce an adequate safety programme with respect to execution of the Works, whether performed by the contractor or sub-contractor. The Contractor has assurance from the Employer of cooperation where the implementation of these safety measures requires joint cooperation.

Sub-Clause 34.8 : Cross-Recruitment

The Contractor shall not induce personnel of the Employer or the Engineer to leave their regular employment and shall not, without the prior consent in writing of the Employer, employ personnel who have resigned from such service within the preceding six months.

Sub-Clause 34.9: Burial of the dead

The Contractor shall, at his own cost, make all transport arrangements necessary for the burial of the dead person’s remains. Transport shall be to the deceased’s place of permanent residence.The Contractor shall also be responsible, to the extent required by the local regulations, for making any arrangements with regard to burial of any of his local employees who may die while engaged upon the works.

Sub-Clause 34.10: Repatriation

The Contractor shall, at his own cost, be responsible for the provision of transport to and from the site at all times and the repatriation to the places where they were of all his own and his Sub-Contractor's labour and personnel employed upon the works and shall be responsible for the suitable maintenance of all such persons who are being or are about to be repatriated until they have left the country or the district as the case may be and in default the Employer may repatriate and maintain such persons and recover the costs from the Contractor.

Sub-Clause 34.11: Epidemics

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the government, or the local medical or sanitary authorities, for the purpose of dealing with or overcoming the same.

Sub-Clause 35.12: Observance by Sub-Contractors

The Contractor shall be responsible for the observance by his Sub-Contractors of the foregoing Clauses.

Sub-Clause 35.13: Costs, etc

The foregoing provision of this Clause shall apply to all labour and personnel employed by the Contractor and his Sub-Contractors and all costs, charges and expenses whatsoever that may be incurred by the Contractor all risks involved in giving effect to the provisions of this Clause, including all insurances, custom duties, medical or other fees, subsistence home or local leave and other matters, are deemed to be included in and covered by the rates or sums inserted by the Contractor in the Bills of Quantities. Add the following sub-clauses 35.2 and 35.3:-

Sub-Clause 35.2: Records

The contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.

Sub-Clause 35.3 : Reporting of Accidents

The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the contractor shall, in addition, notify the Engineer immediately by the quickest available means. The contractor shall also notify the relevant authority whenever the law of the Country of the Employer requires such report.

Sub-Clause 41.1 : Commencement of Works

Amend Sub-Clause 41.1 as follows: -
Delete the words "soon as is reasonably possible" in the first sentence and replace with "within the period stated in the Appendix to Bid".

Sub-Clause 43.1 : Time for Completion

Amend Sub-Clause 43.1 as follows:-
Delete the words from "within the time" to "such extended time" and substitute "by the date or dates stated or implied in the Clause 14 of these Conditions of Particular Application.

Sub-Clause 44.1 : Extension of Time for Completion

Add at the end of sub-clause 44.1 the following:
Neither rains falling within the rainy seasons as occurs in the Employer's country nor floods caused by such rains shall be deemed exceptional weather conditions such as may fairly entitle the Contractor to an extension of time for the completion of the work.

Sub-Clause 45.1 : Restriction on Working Hours

Add the following to sub-clause 45.1: -
If the Contractor requests for permission to work on a day of rest and if the Engineer shall grant such permission, the contractor shall not be entitled to any additional payment for so doing. The Contractor shall plan his operations such that he observes the Airfield Rules and Regulations in place or that may be issued from time to time.

Sub-Clause 52.1 : Valuation of Variations

Add final sentence as follows:
The agreement, fixing or determination of any rates or prices as aforesaid shall include any foreign currency and the proportion thereof.

Sub-Clause 52.2 : Power of Engineer to fix Rates

Add final sentence to the first paragraph, as follows:
In no circumstance shall the execution of the altered, additional or other work ordered be postponed or delayed on account of any dispute or difference between the parties as to the price to be paid or the means of ascertaining it.
Add as a third paragraph:
"Provided further that no change in the rate or price for any item contained in the Contract shall be considered unless such item accounts for an amount more than 2 percent of the

Contract Price, and the actual quantity of work executed under the item exceeds or falls short of the quantity set out in the Bill of Quantities by more than 25 percent."

Sub-Clause 52.3 : Variations Exceeding 15 Percent

Add a final sentence, as follows:

"Where the Contract provides for the payment of the Contract Price in more than one currency, the amount or proportion payable in each of the applicable currencies shall be specified when such further sum is agreed or determined, it being understood that in specifying these amounts or proportions the Contractor and the Engineer (or, failing agreement, the Engineer) shall take into account the currencies (and the proportions thereof) in which the Contractor's Site and general overhead cost of the Contract were incurred without being bound by the proportions of various currencies specified in the Appendix to Bid for payment of the Contract Price.

Sub-Clause 52.4 : Dayworks

Add the following at the end of sub-clause 52.4:

The work so ordered shall immediately become part of the works under the contract. The Contractor shall, as soon as practicable after receiving the Daywork order from the Engineer, undertake the necessary steps for due execution of such work. Prior to commencement of any work to be done on a Daywork basis, the Contractor shall give an advance notice to the Engineer stating the exact time of such commencement.

Sub-Clause 54.1: Contractor’s Equipment, Temporary Works and Materials; Exclusive Use for the Works

Amend Sub-Clause 54.1 as follows: -

Line 5: - Add "written" between "the" and "consent".

Delete Sub-Clauses 54.3 to 54.4 entirely and add Sub-Clauses 54.9 to 54.14 as follows:

Sub-Clause 54.9 : Vesting of Equipment

All Contractors Equipment, Temporary Works and Materials owned by the Contractor or by any Company in which the Contractor has a controlling interest shall when brought onto the site (or in the case of Hire Purchase Plant on the site on its becoming the property of the Contractor) shall be vested in and deemed to be the property of the Employer. This is without prejudice to the right of the Contractor to the sole use of the said Equipment, temporary works and materials for the purpose of the Works and without affecting his responsibility for the costs of maintenance and operation of the same under the provisions of the Contract.

Sub-Clause 54.10 : Revesting and Removal of Equipment

Upon the removal of any such Contractor's Equipment, temporary works or materials as had been deemed to have become the property of the Employer under Sub-Clause 54.9 and with the consent of the Engineer under sub-clause 54.1, the property therein shall be deemed to revest in the Contractor and upon completion of the maintenance of the Works

the property in the remainder of such Equipment, temporary works or materials as aforesaid shall, subject to Clause 63, be deemed to revest in the Contractor.

Sub-Clause 54.11 Notification of Equipment Ownership

The Contractor shall on request made by the Engineer at any time in relation to any item of Equipment forth-with notify to the Engineer in writing the name and address of the owner thereof and shall certify that the agreement for the hire thereof contains a provision in accordance with the requirements of sub-clause 54.5 of this clause.

Sub-Clause 54.12 : Avoidance of Seizure by owner of Equipment

The Employer shall in order to avoid seizure by the owner of Equipment be entitled to pay such owner the amount of any overdue installment or of other payable under any

agreement relating to such Equipment and in the event of his doing so any amount so paid by him shall be a debt due from the Contractor to the Employer and may be deducted by the Employer from any monies due or that may become due to the Contractor under the Contract or may be recovered by the Employer from the Contractor at law.

Sub-Clause 54.13 : Disposal of Equipment

If the Contractor shall fail to remove any Equipment, Temporary Works or materials as aforesaid or as required pursuant to Clause 33 within such reasonable time after completion
of the Works or as may be allowed by the Engineer, then the Employer may:

a) sell any such equipment, Temporary Works and materials as aforesaid, and
b) return at the Contractor's expense to the person, firm or company from whom any hired plant was held by the Contractor; and after deducting from any proceeds of sale the costs, charges and expenses in connection with such sale and in connection with return as aforesaid shall pay the balance (if any) to the Contractor but to the extent that if the proceeds of any sale are insufficient to meet all such costs, charges and expenses the excess shall be a debt due from the Contractor to the Employer and shall be deductible or recoverable by the

Employer from any monies due or that may become due to the Contractor under the contract or may be recovered by the Employer from the Contractor at Law.

Sub -Clause 54.14 : Gravel quarry inside the Park

If the Employer allows the Contractor to make use of construction materials inside the National Park for construction works under the contract, it shall be under the terms and conditions agreed mutually between them. The terms and conditions of the agreement shall form part of the Conditions of Contract Part II.

Add the following Sub-Clause 55.2

Sub-Clause 55.2 : Omissions of Rates

Items of Works described in the Bill of Quantities for which no rate or price has been entered in the Contract shall be considered as included in other rates and prices in the Contract and will not be paid for separately by the Employer.

Clause 60 of the General Conditions is deleted entirely and the following Sub-Clause 60.1 - 60.14 are substituted therefor:

Sub-Clause : 60.1 Monthly Statements

The Contractor shall submit a statement in the number of copies specified in the Appendix to Bid to the Engineer at the end of each month, in a tabulated form approved by the Engineer, showing the amounts to which the Contractor considers himself to be entitled. The statement shall include the following items, as applicable, which shall be taken into account in the sequence listed:

(a) the estimated Contract value of the Temporary and permanent Works executed up to the end of the month in question, determined in accordance with Sub-Clause 56.1 at the unit rates and prices included in the Contract, in local currency;
(b) the actual value certified for payment for the Temporary and Permanent Works executed up to the end of the previous month, at the unit rates and prices included in the Contract, in local currency;
(c) the estimated contract value at the unit rates and prices included in the Contract of the Temporary and Permanent Works for the month in question, in local currency, obtained by deducting (b) from (a);
(d) the value of any variations executed up to the end of the month in question, less the amount certified in the previous Interim Payment Certificate, expressed in local currency, pursuant to Clause 52,

(e) amounts approved in respect of Daywork executed up to the end of the month in question, less the amount for Daywork certified in the previous Interim Payment Certificate, indicating the amount of local currency as determined from the Daywork Schedule of the Bill of Quantities.

(f) amounts reflecting changes in cost and legislation, pursuant to Clause 70, expressed in local currency.

(g) any credit or debit for the month in question in respect of materials and plant for the Permanent Works, in local currency, and under the conditions set forth in Sub-Clause 60.3;

(h) any amounts to be deducted as repayment of the Advance under the provisions of Sub-Clause 60.7; and

(i) any other sum, expressed in the applicable currency, to which the Contractor may be entitled under the Contract or otherwise.

Sub-Clause 60.2 : Monthly Payments

The said statement shall be approved or amended by the Engineer in such a way that, in his opinion, it reflects the amounts in various currencies due to the Contractor in accordance with the Contract after deduction, other than pursuant to Clause 47 of any sums which may have come due to payable by the Contractor to the Employer. In cases where there is difference of opinion as to the value of any item, the Engineer's view shall prevail. Within 14 days of receipt of the monthly statement referred to in Sub-Clause 60.1, the Engineer shall determine the amounts due to the Contractor and shall deliver to the Employer and the Contractor an Interim payment Certificate, certifying the amounts due to the Contractor.

Provided that the Engineer shall not be bound to certify any payment under this sub-clause if the net amount thereof, after all retentions and deductions, would be less than the Minimum Amount of Interim Payment Certificates stated in the Appendix to Bid.

Sub-Clause 60.3 : Materials and Plant for the Permanent Works

With respect to materials and plant brought by the Contractor to the site for the Incorporation in the Permanent Works, the Contractor shall (a) receive a credit in the month in which these materials and plant are brought to the site and (b) be charged a debit in the month in which they are incorporated in the Permanent Works, both such credit and debit to be determined by the Engineer in accordance with the following provisions.

(a) no credit shall be given unless the following conditions shall have been met to the Engineer's satisfaction.

(i) the materials and Plant are in accordance with the specifications for the Works;

(ii) the materials and Plant have been delivered to the Site and are properly stored and protected against loss, damage, or deterioration;

(iii) the Contractor's record of the requirements, orders receipts and use of materials and plant are kept in a form approved by the Engineer, and such records are available for inspection by the Engineer;

(iv) the Contractor has submitted a statement of his cost of acquiring and delivering the materials and plant to the Site, together with such documents as may be required for the purpose of evidencing such cost;

(v) the materials are to be used within a reasonable time.

(b) the amount to be credited to the contractor shall be the equivalent of 50 percent of the contractors reasonable cost of the materials and plant delivered to the site, as determined by the Engineer after review of the documents listed in subpara. (a)(iv) above;

(c) the amount to be debited to the Contractor for any materials and plant incorporated into the Permanent Works shall be equivalent to the credit previously granted to the Contractor for such materials and plant pursuant to Sub-Clause (b) above, as determined by the Engineer; and

(d) the currencies in which the respective amounts shall be credited or debited as set forth above shall be determined by the Engineer.

Sub-Clause 60.4 : Place of Payment

Payments to the Contractor by the Employer shall be made in the currencies in which the Contract Price is payable into a bank account or accounts nominated by the Contractor.

Sub-Clause 60.5 : Retention Money

A retention amounting to the percentage stipulated in the Appendix to Bid of the amounts due in each currency, determined in accordance with the procedure set

out in Sub-Clause 60.1 (i) shall be made by the Engineer in the first and following Interim Payment Certificates.

Sub-Clause 60.6 : Payment of Retention Money

Upon the issue of the Taking-Over Certificate, with respect to the whole of the Works, one half of the Retention Money, or upon the issue of a Taking-Over Certificate with respect to a Section or part of the Permanent Works only such proportion thereof as the Engineer determines having regard to the relative value of such Section or part of the Permanent Works, shall be certified by the Engineer for payment to the Contractor.

Upon the expiration of the Defect Liability period for the Works, the other half of the Retention Money shall be certified by the Engineer for payment to the Contractor. Provided that, in the event of different Defects Liability Periods being applicable to different Sections or parts of the Permanent Works pursuant to Clause 48, the expression "expiration of the Defect Liability Period" shall, for the purpose of this ` sub-clause, be deemed to mean the expiration of the latest of such periods.

Provided also that if at such time, there shall remain to be executed by the Contractor any work instructed, pursuant to Clause 49 and 50, in respect of the Works, Engineer shall be entitled to withhold certification until completion of such work of so much of the balance of the Retention Money as shall, in the opinion of the Engineer, represent the cost of the Works remaining to be executed.

Sub-Clause 60.7 : Advance Payment

The Employer may make an interest-free advance payment to the Contractor exclusively for the costs of mobilization in respect of the Works in an amount named in the Letter of Acceptance, payable in local currency of the Contract Price, but in no event exceeding the amount stated in the Appendix to Bid. Payment of such advance amount will be due under separate certification by the Engineer after (a) execution of the Form of Agreement by the parties hereto; (b) provision by the Contractor of the performance security in accordance with Sub-Clause 10.1; and (c) provision by the Contractor of an unconditional bank guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. Such bank guarantee shall remain effective until the advance payment has been repaid pursuant to the paragraph below, but the amount thereof shall be progressively reduced by the amount repaid by the Contractor as indicated in Interim Payment Certificates issued in accordance with this Clause.

The advance payment shall be repaid through percentage deductions from the interim payments certified by the Engineer in accordance with this Clause. Deductions shall commence in the next Interim payment Certificate following that

in which the total of all interim payments certified to the Contractor has reached the

percentage of the Contract price stipulated in the Appendix to Bid less provisional Sums, and shall be made at the rate stated in the Appendix to Bid of the amount of all Interim Payment Certificates in the types and proportions of currencies of the

advance payment until such a time as the advance payment has been repaid; always provided the advance payment shall be completely repaid prior to the time when 80 percent of the Contract Price has been certified for payment.

Sub-Clause 60.8 : Time of Payment and Interest

(a) The amount due to the Contractor under any Interim or Final Payment Certificate issued by the Engineer pursuant to this Clause, or to any other term of the Contract, shall, subject to Clause 47, be paid by the Employer to the Contractor as follows:

(i) In the case of Interim Payment Certificates within 60 days after the Contractor's monthly statement has been submitted to the Engineer for certification, pursuant to Sub-Clause 60.1; and

(ii) in the case of the Final Payment Certificate pursuant to Sub-Clause 60.13, within 90 days after the Final Statement and written discharge have been submitted to the Engineer for certification; and

(b) In the event of the failure of the Employer to make payment within the times stated, the Employer shall pay to the Contractor interest compounded monthly at the average borrowing rate from Central Bank of Kenya. The interest shall be upon all sums unpaid from the date upon which the same should have been paid, in the currencies in which the payments are due. For the Local currency the interest shall include a mark-up of 3% over and above the borrowing rate. The provisions of this Sub-Clause are without prejudice to the Contractor's entitlement under Clause 69 or otherwise"

Sub-Clause 60.9 : Correction of Certificates

The Engineer may by any Interim Payment Certificate make any correction or modification any previous Interim Payment Certificate which has been issued by him, and shall have authority, if any work is not being carried out to his satisfaction to omit or reduce the value of such work in any Interim Payment Certificate.

Sub-Clause 60.10 : Statement at Completion

Not later than 84 days after the issue of the Taking-Over Certificate in respect of the whole of the Works, the Contractor shall submit to the Engineer a statement at Completion in the in the number of copies specified in the Appendix to bid with supporting documents showing in detail, in the form approved by the Engineer,

(a) the final value of all work done in accordance with the Contract up to the date stated in such Taking-Over Certificate;

(b) any further sums which the Contractor considers to be due; and

(c) an estimate of amounts which the Contractor considers will become due to him under the contract.

Estimate amounts shall be shown separately in such Statement at Completion. The Engineer shall certify payment in accordance with Sub-Clause 60.2.

Sub-Clause 60.11 : Final Statement

Not later than 56 days after the issue of the Defects Liability Certificate pursuant to Sub-Clause 62.1, the Contractor shall submit to the Engineer for consideration a draft final statement in the number of copies stipulated in the Appendix to Bid with supporting documents showing in detail, in the form approved by the Engineer,

(a) the value of all work done in accordance with the Contract; and

(b) any further sums which the Contractor considers will become due to him under the Contract or otherwise.

If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the final statement as agreed (for the purposes of these Conditions referred to as the "Final Statement").

If, following discussions between the Engineer and the Contractor and any changes to the draft final statement which may be agreed between them, it becomes evident that a dispute exists, the Engineer shall deliver to the Employer an Interim payment Certificate for those parts of the draft final statement, if any, which are not in dispute. The dispute shall then be settled in accordance with Clause 67. The Final Statement shall be then agreed upon settlement of the dispute.

Sub-Clause 60.12 : Discharge

Upon submission of the Final Statement, the Contractor shall give to the Employer, with a copy to the Engineer, a written discharge confirming that the total of the Final Statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the Contract. Provided that such discharge shall become effective only after payment due under the Final Payment Certificate issued pursuant to Sub-Clause 60.13 has been made and the performance security referred to in Sub-Clause 10.1 has been returned to the Contractor.

Sub-Clause 60.13 : Final Payment Certificate

Within 28 days after receipt of the Final Statement, and the written discharge, the Engineer shall deliver to the Employer (with a copy to the Contractor) a Final Payment Certificate stating

(a) the amount which in the opinion of the Engineer, is finally due under the Contract or otherwise, and

(b) after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, other than under Clause 47, the balance, if any due, from the Employer to the Contractor or from the Contractor to the Employer as the case may be.

Sub-Clause 60.14 : Cessation of Employer's Liability

The Employer shall not be liable to the Contractor for any matter or thing arising out of or in connection with the contract or execution of the Works, unless the Contractor shall have

included a claim in respect thereof in his Final Statement and (except in respect of matters or things arising after the issue of the Taking-Over Certificate in respect of the whole of the Works) in the statement at completion referred to in Sub-Clause 60.10.

Sub-Clause 63.1 : Default of Contractor

Delete the last paragraph of this sub-clause and substitute:
"then the Employer may, after giving 14 days notice to the Contractor, enter upon the Site and expel the Contractor therefrom without thereby voiding the contract, or releasing the Contractor from any of his obligations or liabilities under the contract, or affecting the rights and powers conferred on the Employer or the Engineer by the contract, may himself complete the Works or may employ any other contractor to complete the works. The Employer or such other contractor may use for such completion so much of the Contractor's Equipment, plant, Temporary Works and materials, which have been deemed to be reserved exclusively for the execution of the Works, under the provisions of the contract, as he or they may think proper, and the Employer may at any time, sell any of the said Contractor's Equipment, Temporary Works, and unused Plant and Materials, and apply the proceeds of sale in or towards

the satisfaction of any sums due or which may become due to him from the Contractor under the Contract".

Sub-Clause 63.2 : Valuation at Date of Expulsion

Modify the heading of Sub-Clause 63.2 by substituting " Valuation at Date of Expulsion" for valuation at Date of Termination". In Sub-Clause 63.2, delete the word "termination" on the second and fifth lines and substitute "expulsion".

Sub-Clause 63.3 : Payment after Expulsion

Modify the heading of Sub-Clause 63.3 by substituting "payment after Expulsion" for payment after Termination". In Sub-Clause 63.3, delete the words "terminates the Contractor's employment" on the first line, and substitute "shall enter and expel the Contractor".

Sub-Clause 63.4 : Assignment of Benefit of Agreement

In Sub-Clause 63.4, delete the word "termination" on the second line, and substitute "expulsion".

Sub-Clause 63.5: Corrupt or Fraudulent Practices

If in the judgement of the of the Employer Contractor has engaged in corrupt or fraudulent practices, in competing for or in executing the Contract, then the Employer may, after having given 14 days notice to the Contractor, terminate the Contractor's employment under the Contract and expel him from the Site, and the provision of Clause 63 shall apply as if such expulsion had been made under Sub-Clause 63.1

For the purpose of this sub-clause:

"corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.
" 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 Employer, and

includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.

Sub-Clause 65.2 : Special Risks

Amend Sub-Clause 65.2 to read as follows:
"The Special Risks are the risks defined under para. (a), subparas. (i) to (v) of Sub-Clause 20.4

Sub-Clause 67.3 (b): Arbitration

Delete the words 'shall be finally settled…International Chamber of Commerce' and substitute 'shall finally be settled in Nairobi under the arbitration Laws of Kenya in the manner described in the appendix to bid'.

Sub-Clause 68.2 : Notice to Employer and Engineer

For the purposes of this Sub-Clause, the addresses are those specified in the Appendix to Bid.

Clause 69 : Default of Employer

In Sub-Clauses 69.1, 69.4, and 69.5, substitute "Sub-Clause 60.8" for "Sub-Clause 60.10".

Sub-Clause 69.1 (d) : Economic Dislocation

Sub-Clause 69.1 (d) is deleted

Sub-Clause 69.3 : Payments on Termination

Delete from "but in addition to the payments specified...." to the end of the sub-clause.

Sub-Clause 69.4 : Contractors Entitlement to Suspend Work

Delete the first paragraph of this Sub-Clause entirely and replace with the following:-

"Without prejudice to the Contractor's entitlement to interest under Sub-Clause 60.8 (of these conditions of Particular Application) and to terminate under Sub-Clause 69.1, the contractor may suspend work or reduce the rate of work within 28 days after the expiry of the time stated in Sub-Clause 60.8 (of these Conditions of Particular Application) after giving 28 days notice to the Employer, with a copy to the Engineer."

Sub-Clause 69.5: Resumption of Work

After the words "reasonably possible" add: ", provided not later than 28 days after the date of payment."

Clause 70 : Changes in Cost and Legislation

Delete Clause 70 in its entirety, and substitute:

Sub-Clause 70.1: Price Adjustment

The amounts payable to the Contractor in bid currency pursuant to Sub-Clause Adjustment 60.1, shall be adjusted in respect of provable rise or fall in the current cost of labour, materials, and other inputs to the Works, by applying to such amounts a reasonable adjustment, formula or calculation to base prices or costs as the Engineer shall approve. The base costs or prices shall be those prevailing on the days prior to the latest date for submission to bids. Current costs 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.

Sub-Clause 70.2: Other Changes

To the extent that full compensation for any rise or fall in costs to the Contractor is in Cost 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.

Sub-Clause 70.3: Adjustment after Completion

If the Contractor fails to complete the Works within the time for completion prescribed under Clause 43, adjustment of prices thereafter until the date of completion of the Works shall be made using prices favourable to the Employer, provided that if an extension of time is granted pursuant to Clause 44, the above provision shall apply only to adjustments made after the expiry of such extension of time.

Sub-Clause 70.4: Subsequent Legislation

If, after the date 28 days prior to the latest date for submission of bids for the Legislation Contract, there occur in the country in which the Works are being or are to be executed changes to any National or State Statute, Ordinance, Decree, or other Law or any regulation or by-law of any local or other duly constituted authority, or the introduction of any such State Statute, Ordinance, Decree, Law regulation or by-law which causes additional or reduced cost to the Contractor, other than under the preceding sub-clauses of this clause, in the execution of the contract, such additional or reduced cost shall after due consultation with the Employer and the Contractor, be determined by the Engineer and shall

be added to or deducted from the Contract Price and the Engineer shall notify the Contractor accordingly, with a copy to the Employer. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same shall already have taken into account in accordance with the provisions of Sub-Clauses 70.1 to 70.3.

Sub-Clause 72.2 : Currency Proportions

Delete the words "prevailing, as determined by the Central Bank..." up to the end of the Sub-Clause and substitute with the following:

"stated by the Contractor in the Appendix to Bid, included with its original bid."

Sub-Clause 72.4 : Substantial Changes in Currency Requirements

The foreign and local currency portions of the balance of the Contract price shall be amended by agreement between the Employer and the Contractor to reflect any substantial changes in the

expected foreign and local currency requirements of the Contractor during the execution of the Works, provided that

(a) the Contractor shall inform the Employer and the Engineer whenever any such substantial change may occur; or

(b) the Engineer may recommend a review of such expected requirements if in his judgment there is evidence of a change in the country of origin of materials, plant, or services to be provided under the Contract which should result in any substantial change of such expected requirements.

ADDITIONAL CLAUSES

Clause 73 : Taxation

Sub-Clause 73.1 : Local Taxation

The priced bid by the Contractor shall include all customs duties, business taxes, and income and other taxes that may be levied in accordance with the laws and regulations in being on the date 28 days prior to the latest date for submission of bids in the Employer's country on the Contractor's Equipment, Plant, Materials, and Supplies (permanent, temporary, and consumable) acquired for the purpose of the Contract and on the services performed under the Contract.

Nothing in the Contract shall relieve the Contractor from his responsibility to pay any tax that may be levied in the Employer's country on profits made by him in respect of the Contract.

Sub-Clause 73.2 Tax Remission

Remission of both duties and VAT on the Contractors Equipment, Plant, Materials and Supplies (permanent temporary and consumables for works under this Contract shall

be granted upon prior written request to the Employer. The written request shall include shipping documents, invoices, packing lists and any other related documents for each consignment for the purposes of processing exemption letters for the respective goods and services. The employer shall grant on consignment-by-consignment basis. This not withstanding fuels, oils and lubricants shall not qualify for exemption as stipulated in Legal notice No. 92 of 14th June 2001.

Sub-Clause 73.3 : Income Taxes on Staff

The Contractor's staff and labour will be liable to pay personal income taxes in the Employer's country in respect of such of their salaries and wages as are chargeable under the laws and regulations for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such laws and regulations.

Sub-Clause 74.1 : Joint and Several Liability

If the contractor is a joint venture of two or more persons, all such persons shall be joint and severally bound to the Employer for the fulfillment of the terms of the Contract and shall designate one of such persons to act as a leader with authority to bind the joint venture. The composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer.

Sub-Clause 75.1: Details to be Confidential

The Contractor and the Engineer shall treat all the details of the Contract as private and confidential, save insofar as necessary for the purposes of performance of the contract. The Contractor or Engineer shall not publish or disclose any particulars of the Contract in any trade or technical paper or elsewhere without prior written consent of the Employer.

Claus 76: Regular Management Meetings

Insert a new Clause 76 as follows:

There shall be regular and pre-agreed management meetings whose venue shall be within or near the site. The purpose of the meetings shall include inspection of Contractor’s site operations, review of progress of work and other matters related to the Contract. Those attending the meetings shall include authorized representative of the Employer and the Contractor. The record of the meetings shall be compiled and dispatched to the Employer and the Contractor by the Engineer who shall call up, and preside over the meetings. Any obligation arising from the meetings shall be construed as part of the Contract, unless the matters so discussed and recorded are of general nature.

SECTION V

PRELIMINARIES

Item No.		Kshs
A.	**Definition of Terms** Wherever used hereinafter and in all Contract Documents the following definitions of terms shall apply:- **Employer**: The term "Employer" shall mean **Kenya Wildlife Services,** P.O. Box 40241, NAIROBI **Contractor**: The term "Contractor" shall mean the person, partnership, firm or company, whose tender for the Works has been accepted and who has, have, will sign(ed) this Contract and shall include his or their heirs, executors, administrators, assigns, successors and duly appointed representatives. Engineer: **The term "Engineer" shall mean The Party stipulated in the Appendix to Bid** **Works:** The term "the works" shall mean all or any portion of the work, materials and articles whether the same are being manufactured or prepared, which are to be used in the execution of this Contract and whether the same be on the site of the work or not. It shall also be deemed to include the work of all Sub-Contractors and of all variations. **Contract**: The term "the Contract" shall mean the Form of Tender, Articles of Agreement and Conditions of Contract, Form of Bond, Drawings and priced and signed Bills of Quantities.	
B	**Description of site** The site of the works is situated in marsabit National Reserve Headquarters, approximately 600kilometres North of Nairobi There shall be a mandatory pre-tender site visit, bidders shall congretagate at marsabit national reserve headquarters on date and time stipulated on the advert/letter inviting the bids, before proceeding to respective sites under direction of employers representative presiding the activity	
C	**Description of works and scope of contract** The Works to be executed under this Contract comprise the following works:- 1. Gate house - Ahmed gate 2. Gate house - Ajamako gate	
	Amount Carried to collection	

Item No.	Particular preliminaries con't	KShs.
	3. Rangers accomodation Ajamako 4. Gate house - Bongole Kituruni 5. Fence Guardpost House- Badasa 6. Fence Guardpost House- Karantina 7. ADS office	
A.	**Form of Agreement** The Contractor shall be required to enter into a contract which shall be the current Form of Standard bidding document, "the conditions of contract for works of Civil Engineering Construction as published by FIDIC – Fourth Edition (1987)". The Contractor shall be deemed to have read and acquainted himself with the said Conditions.	
B.	**Conditions of Contract** The contractor's attention is drawn to the text of the said conditions of contract and he is to allow in his prices for any costs arising therefrom or in connection therewith.	
C.	**Government taxes** The tender sum **shall be deemed inclusive** of all government taxes payable 30 days prior to submission of tender. The employer shall comply with all legal provisions requiring deduction and remittance of such taxes to the Kenya Revenue Authority. **No claims shall be entertained from the contractor for non compliance with this clause**	
D	**Measurements** event of any discrepancies arising between the Bills of Quantities and the actual works, the site measurements shall generally take precedence. However, such discrepancies between any contract documents shall immediately be referred to the Engineer. The discrepancies shall then be treated as a variation and be dealt with in accordance with the said Conditions.	
	AMount Carried to collection	

Item No.	GENERAL PRELIMINARIES	KShs
A.	**Sufficiency of tender** The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his Tender for the works and of the rates and prices stated in the priced bills of quantities which rates and prices shall cover all his obligations under the contract and all matters and things necessary for the proper completion and maintenance of the Works.	
B.	**Site works** The contractor shall allow for among other things the following:- - Providing all materials, tools, plant and scaffolding - Complying with local authority regulations and by-laws - Providing adequate supervision - Transporting materials and workmen etc., to and from the site. No erection of labour camps shall be allowed on site. - Complying with all relevant Acts governing construction works and employment - Security for the works, stores etc. - Cleaning and making good damages to all access roads - Complying with Police regulations - Providing and maintaining a progress schedule - Overtime working - Testing of materials as required - Sanitation of the works - Protecting the works and all plant and materials - Cleaning the site on completion - Training Levy - Maintaining adequate site record and diary - Site safety and first aid facilities - Standards Levy - Site clearance - Contractors all risk policy - Performance Bond - Value added tax (VAT) - Withholding tax	
	Amount Carried to collection	

Item No.	General preliminaries (CON'T)	KShs
A.	**Existing Property** The Contractor shall take every precaution to avoid damage to all existing property including hard and soft landscaping, buildings and access routes. The Contractor will be held responsible for all damage thereto and shall make good all such damage when directed all at his own expense. The Contractor shall satisfy himself prior to commencing the work of the type, location and depth of all existing services and other works not visible and shall allow for providing all necessary protection required. Any damage or disturbance caused shall be reported immediately to the Engineer and made good at the Contractor's expense. Should it be found necessary to interrupt any service, prior approval of the method and timing must be obtained in writing from the Engineer.	
B.	**Access to the site** Means of access to the Site shall be agreed with the Engineer prior to commencement of the work.	
C.	**Hoarding** Where necessary, as identified by the Engineer the Contractor shall provide, maintain and clear away on completion hoarding required for the work areas, access ways and storage areas. The hoarding shall be 3m high G.C.I, or such other material as may be approved by the Engineer. Advertisements will not be permitted on the hoarding or any other part of the site.	
D.	**Power and Water** The Contractor shall be responsible for the provision of power and water supplies for use in the works. The contractor shall have satisfied himself as to the source and nature of these services and his tender shall be deemed to include for all such requirements and other matters necessary for the completion of the works.	
	Amount Carried to collection	

Item No.	General preliminaries (CON'T)	KShs
A.	Provisional works All works described as "Provisional " in these bills of quantities is subject to re-measurement in order to ascertain actual quantity executed for which payment will be made All "provisional" and other works liable to adjustment under this contract shall be left uncovered for a reasonable time to allow for all measurements needed for such adjustment to be taken by the quantity Surveyor. Immediately the work is ready for measuring, the contractor shall give notice in writing to the Quantity Surveyor. If the contractor makes default, in these respects he shall if the Engineer so directs uncover at his expense the work to enable all measurements to be taken and afterwards reinstate at his own expense	
B.	**Prevention of Nuisance** The works and such sections of the site necessary therefore shall be under the entire care and control of the Contractor during the whole period of the Contract and he shall take all possible precautions to prevent any nuisance, inconvenience or injury to the holders or occupiers of the existing or surrounding properties and to the public generally and shall at all times keep all paths and roads affected by the Works in a safe and clear state, safety of all wheeled traffic and pedestrians.	
C.	**Labour camps** The employer shall not allow for erection or maintenance of labour camp on site'The Contractor shall therefore include in his prices for the transport of materials, workmen and plant to and from the site of the proposed works, at such hours and by such routes as are permitted by the Authorities	
	Amount Carried to collection	

Item No	General preliminaries (CON'T)	KShs
A.	**Telephone**	
	Allow Kshs 90,000/= to be drawn in airtime by the PM, or his designated representative, in lieu of fixed line	90,000/=
B.	**Temporary buildings** The Contractor must provide for all temporary buildings required for the storage of materials and he must maintain them and clear them away on completion of the works to the satisfaction of the Engineer.	
C.	**Contractor's superintendence/site agent**	
	The Contractor shall constantly keep on the works literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the Project Manager and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.	
D	**Copyright** The copyright of these documents is vested in the Quantity Surveyor and they may not be reproduced in whole or in part without the Quantity surveyor's written permission.	
	Amount carried to collection	

Item No	General preliminaries (CON'T)	KShs
	Collection	
	Page 165	
	Page 166	
	Page 167	
	Page 168	
	Page 169	
	Page 170	
	AMOUNT CARRIED TO GRAND SUMMARY- PG. 180 OF 180 OF THE BILLS OF QUANTITIES	

BILLS OF QUANTITIES.

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**					
	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	49			
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 top soil 300 mm (average) deep: deposit on site where directed	SM	31			
D.	Excavate to reduce levels average depth 250mm	SM	31			
E.	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	29			
F.	Extra over all excavations for excavating in rock	CM	2			
	Disposal of excavated materials					
G.	Backfill and compact selected excavated materials	CM	20			
H	Spread surplus materials on site as directed	CM	9			
	Disposal of water					
I	Keep trenches free from all water		Item			
	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.
	Hardcore fillings					
A	Fillings: levelled and compacted in 150 mm layers: average thickness 300mm	SM	31			
B	Gladiator "TC" or any other equal and approved Chemical anti-termite treatment to subsoil or filling	SM	31			
	murram blinding					
C	50 mm fillings as blinding to hardcore : levelled and compacted	SM	31			
	Insitu concrete : Mix 1:4:8 : Vibrated					
D	50 mm blinding : under strip foundations	SM	2			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
E	Foundations in trenches	CM	6			
F	150 mm Thick beds	SM	31			
	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:-					
G	Assorted bars	Kg	660			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
H	In beds : 250 mm laps	SM	31			
	Formwork : to					
I	Vertical : sides of strip foundations	SM	13			
J	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	32			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Natural Stones : in cement mortar (1:4) including hoop iron reinforcement in every alternate course					
A	200 mm walls	SM	47			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
B	Horizontal : 200 mm wide	LM	32			
	Labours and sundries					
C	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	31			
	12 mm cement and sand (1:4) render: on concrete or stonework to:					
D	Plinths	SM	14			
	Prepare and apply two coats bituminous paint : on render : to					
E	Plinths	SM	14			
	Paving slab surround					
F	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			
	Carried to Collection					
	Collection					
	From page 1					
	From page 2					
	From page 3					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	3			
	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	Assorted	Kg	330			
	Formwork to:					
C	Sides and soffits : beams	SM	35			
	Machine dressed masonry wall: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
D	200 mm Walls	SM	86			
	Labours and sundries					
E	Labour and materials for eaves filling 250mm high to 200mm thick walls	LM	32			
F	Eaves raking	LM	12			
	Vents					
G	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends	NO	12			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**					
	Element No.3 Roof					
	Roof coverings					
A.	26 gauge prepainted versatile roofing sheeting fixed as per manufactures instructions with approved roofing nails complete with washers	SM	46			
B.	Ditto Ridge cap	LM	12			
C.	Ditto Hip cap	LM	12			
	The following in sawn cell cured 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	42			
E	100x50 mm Tie beam	LM	30			
F	100x50 mm Struts and ties	LM	34			
G	100x50mm King post	LM	5			
H	75x50 mm Purlins	LM	81			
I	50x50 mm Battens	LM	242			
J	100x50mm wall plate fixed onto blockwork with approved mild steel brackets at 1500 c/c	LM	20			
	Eaves, fascias and barge boards					
K	225x25 mm Fascia or barge board with splayed wading joints	LM	29			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Eaves and gable lining					
	wrot cypress					
A	50x25 mm slats at 50 mm centres nailed to rafters	SM	17			
	Metalwork					
B	Galvanised coffee tray mesh bat proofing at eaves fixed with galvanised clout nails at 450 mm centres	SM	17			
	Painting generally					
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
	Externally on					
C	Fascia and barge board: Girth 200-300 mm	LM	29			
D	Sloping soffits of eaves boarding	SM	17			
	Carried to collection					
	Collection					
	From page 5					
	From page 6 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**					
	Element No.4 Windows					
	Precast concrete units: mix 1:2:4 ***(12 mm aggregate) vibrated***					
A.	300mm wide x 75mm thick cill : weathered and throated : bedded and jointed in cement mortar (1:4) : pointed in mastic.	LM	10			
	Precast concrete units : mix 1:2:4 ***(20 mm aggregate) : vibrated :*** ***4No. R8 reinforcement***					
B.	200x215 mm lintol	LM	10			
	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: ironmongery: bedded and pointed all round in mastic: burglar proofing: as per Engineers detail's:					
C	Window size2000x1650mm high overall	NO	4			
	Glazing					
	5 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	14			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
E	Windows: general surfaces	SM	14			
	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	9			
B	150x25 mm fascia : two labours	LM	9			
C	Extra for stopped ends	NO	8			
	General joinery: cypress or equal approved: selected and kept clean					
D	50x20 mm bearers : plugged	LM	9			
	Curtain tracks					
E	Brass "I" section track screwed to pelmets (measured seperately): rollers: end stops: laps	LM	9			
	Prepare and prime before fixing on wood					
F	Bearers : not exceeding 100 mm girth	LM	9			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss finishng paint : on wood					
G	pelmets : general surfaces	SM	6			
	Carried to collection					
	Collection					
	From page 7					
	From page 8 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**					
	Element No.5 Doors					
	Precast concrete units : mix 1:2:4 (20 mm aggregate) : vibrated : 4No. Y8 reinforcement					
A.	200x215 mm lintol	LM	3			
	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:					
B.	Door size 900x 2100 mm high overall in two equal leaves	NO	2			
	Flush doors: solid cored					
C.	45 mm thick door size 850x2050 mm high: faced both sides with imported quality veneer : hardwood lipped all edges	NO	1			
	Frames and linings : softwood : selected and kept clean					
D.	100x50 mm frame : plugged	LM	1			
E.	20x20 mm Architrave : ditto	LM	1			
F.	Ditto quadrant	LM	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	1.5			
B.	5-lever mortice lock complete with handles	NO	2			
C.	3-lever mortice lock with lever handles	NO	1			
D.	Rubber door stop : rawl bolted to concrete	NO	2			
	Prepare and prime before fixing on wood					
E.	Frames : not exceeding 100 mm girth	LM	1			
F.	Architraves : ditto	LM	1			
G.	Ditto quadrant	LM	1			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
H.	Doors general surfaces	SM	8			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss paint finishing coat : on wood					
I.	Doors general surfaces	SM	4			
J.	Frames : over 100 but not exceeding 200 mm girth	LM	1			
K.	Architraves : not exceeding 100 mm girth	LM	1			
L.	Ditto quadrant	LM	1			
	Carried to collection					
	Collection					
	From page 9					
	From page 10 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**					
	Element No.06 External Wall Finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A	Beams	SM	9			
B	Gable end wallings	SM	5			
	Prepare and apply three coats plastic emulsion paint : on render to					
C	Beams	SM	9			
D	Gable end wallings	SM	5			
	Random rubble facing					
E	Random stone facing consisting of 150mm diameter (maximum) smooth weatherd boulders jointed in cement and sand mortar (1:4) including supporting wire built in blockwork/masonry in every other course at 150mm c/c.	SM	48			
	Pointing					
F	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	48			
G	**Extra over** wire brushing and dusting to key pointed masonary wall surfaces	SM	96			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**					
	Element No.07 Internal Finishes					
	Floor finishes ***Ceramic flooring***					
	Cement and sand (1:4) screed: steel trowelled on concrete to					
A	40mm thick: to receive ceramic floor tiles: (m/s)	SM	32			
	330x330x6 mm glazed ceramic floor tiles: on cement and sand backing(m/s) : bedded and jointed in cement mortar (1:4) : pointed in matching cement					
B	Floors	SM	32			
C	Extra for fair edges	LM	31			
	Prime grade softwood : selected and kept clean					
D	100x25 mm skirting with four labours: plugged	LM	29			
	Prepare and prime backs of timber before fixing					
E	Skirtings : not exceeding 100 mm girth	LM	29			
	Prepare and apply three coats gloss oil paint : on wood					
F	Skirtings : not exceeding 100 mm girth	LM	29			
	12 mm cement and sand (1:4) plaster : steel trowelled : on stonework to					
G	Walls	SM	84			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare and apply three silk vinyl emulsion paint : on plaster to					
A	Walls	SM	84			
	Ceiling finishes					
	General joinery : cypress: pressure impregnated with tanalith "C" or equal					
B	Skeleton framework to ceilings: 50x50 mm one direction at 600 mm centres and 50x100 mm other direction at 1200 mm centres	SM	331			
	Celotex softboard : nailed to branderings (Measured seperately)					
C	12 mm ceiling linings	SM	31			
D	Extra over for access trap door size 800x800 mm overall : framing all round	NO	2			
	Prime grade softwood : selected and kept clean					
E	75x20 mm Cornice : plugged	LM	32			
	Prepare and apply three coats plastic emulsion paint to					
F	celotex linings	SM	31			
G	Cornice: not exceeding 100 mm girth	LM	32			
	Carried to collection					
	Collection					
	From page 12					
	From page 13 (Above)					
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**					
	Element No. 8 Fixtures and Fittings					
	Storage cabinet					
	The following in wrot prime grade softwood and mahogany veneered 25mm thick blockboard					
A.	cabinet size 1100 mm long x 600 mm deep x 2400 mm high overall : comprising 2 No. doors size 500x2100 mm high overall: comprising 1 No. vertical divisions at 550mm c/c and 4 No. horizontal division at 500mm c/c complete with all bearer plugs, painting, ironmongery 100mm mass concrete benching	NO	2			
	softboard pin board					
B	Supply and fix 12mm thick softboard pin board mounted on masonry block walling: overall size Hardwood lipping to all exposed edges					
C	size 2400x1200mm	N0.	1			
	Concrete worktop					
D	2250mm long x600mm wide x 75mm thick reinforced (Y-8) concrete worktop: Cast at 1000mm above finished floor level level on 100mm thick concrete (1:3:6) benching, comprising 50 thick RC vertical divisions at 600mm C/C including all necessary formwork: Ceramic tile tinishes on all exposed surfaces	NO	2			
	Total Carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**					
	Element No. 9 Entryway canopy					
	Site Preparation					
A.	Clearing site: grubbing up roots, bushes, scrub, undergrowth or like; small tress not exceeding 600mm girth	SM	29			
	Excavations.					
B.	Oversite excavation to remove vegetale top soil average depth 250mm	SM	20			
C.	Excavate pits: to receive column bases: 4 No pits.not exceeding 1.50 metres deep from stripped level	CM	2			
D.	Extra over all excavations for excavating in hard rock	CM	1			
	Disposal of excavated materials					
E.	Backfill and compact selected excavated materials	CM	2			
F.	Spread surplus materials where directed on site	CM	1			
	Disposal of water					
G	Keep excavations free from all water including spring and running water		Item			
	Planking and strutting					
H	Planking and strutting to sides of excavations		Item			
	Undressed Natural Stones : in cement mortar (1:4): Including hoop iron in every alternate course.					
I	200 mm walls	SM	27			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Hardcore fillings					
A	300 mm thick Fillings: levelled and compacted in 150 mm layers	SM	20			
	Murram blinding					
B	50 mm fillings as blinding to hardcore : levelled and compacted	SM	20			
	Anti termite treatment					
C	Gladiator TC: 1% solution at rate of 7 litres per square metre:	SM	20			
	Damp proof membrane					
D	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	20			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A222 : weighing 2.22 kilogrammes per square metre					
E	In beds : 200 mm laps	SM	20			
	Insitu mass concrete : Mix 1:3:6 : vibrated: in:-					
F	Strip foundations	CM	2			
G	Column bases	CM	2			
H	200 mm Thick beds laid to falls not exceeding 15 degrees from horizontal level	SM	20			
	Sawn formwork : to					
I	Vertical : sides of column bases	SM	9			
J	Extra over: formwork to forming 225mm diameter hole (pocket) in column base	No.	4			
K	Vertical : edges of beds over 150 but not exceeding 225mm wide	LM	20			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Columns					
	Gumpoles: Eucalyptus saligina; debarked grade GJ: Pressure impregnated including three coats timberguard finish					
A.	250mm diameter columns	LM	24			
B.	200mm diameter horizontal bracings/bearers fixed with and including approved nails to timber columns (m/s)	LM	126			
	Gate					
	45x50x3mm square hollow section framing with 40x40x3mm diagonally intersecting intermediate rails: 25x25mmx3mm thick vertical cleats at 120mm spacing c/c. ends angles cut, mitred and welded:one coat red oxide primer before erection one edge fixed to gumpole column: all welding ground to smooth finish: three purpose made hinges: tower bolts and barrel bolts: locking cleats and bolt guides; padlock eye one coa red oxide primer: two coats oil paint finish.					
C.	Gate size 4500x1800mm in two equal leaves with a lockacle sinle leaf pedestian opening size 900x1900mm *ref: arch drawings*	No.	1			
	Roof coverings					
D	26 gauge prepainted versatile roofing sheeting fixed as per manufactures instructions with approved roofing nails complete with washers	SM	40			
E	Ditto Ridge cap	LM	4			
F	Ditto Hip cap	LM	12			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	The following in sawn cell cured 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					
A	100x50 mm Main Rafters	LM	70			
B	100x50 mm Tie beam	LM	50			
C	100x50 mm Struts and ties	LM	44			
D	100x50mm King post	LM	10			
E	75x50 mm Purlins	LM	81			
F	50x50 mm battens	LM	240			
G	100x50mm wall plate fixed onto blockwork with approved mild steel brackets at 1500 c/c	LM	20			
	Eaves, fascias and barge boards					
H	225x25 mm Fascia or barge board with splayed wading joints	LM	38			
	Eaves and gable lining					
	wrot cypress					
I	110x25 mm t&g at 100 mm centres nailed to rafters	SM	40			
	Metalwork					
J	Galvanised coffee tray mesh bat proofing at eaves fixed with galvanised clout nails at 450 mm centres	SM	40			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Knot, prime, stop and apply three coats crown alkyd clear polyurethane varnish wood:					
A	T&G Surfaces	SM	40			
	Carried to Collection					
	Collection					
	From page 15					
	From page 16					
	From page 17					
	From page 18					
	From page 19 above					
	Total carried to Summary			**Kshs.**		

Elemen No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AHMED GATE MARSABIT N. RESERVE**			
	Ahmed Gate house-Summary			
1	Substructures	3		
2	Walling	4		
3	Roof	6		
4	Windows	8		
5	Doors	10		
6	External wall finish	11		
7	Internal finishes	13		
8	Fixtures and fittings	14		
9	Entryway canopy	19		
10	Allow a PC sum of Kshs 300,000 for electrical works including fittings incidental thereto		300,000	
	Total Ahmed Gate House carried to grand Summary pg. 180	**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**					
	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	49			
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 top soil 300 mm (average) deep: deposit on site where directed	SM	31			
D.	Excavate to reduce levels average depth 250mm	SM	31			
E.	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	29			
F.	Extra over all excavations for excavating in rock	CM	2			
	Disposal of excavated materials					
G.	Backfill and compact selected excavated materials	CM	20			
H	Spread surplus materials on site as directed	CM	9			
	Disposal of water					
I	Keep trenches free from all water		Item			
	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.
	Hardcore fillings					
A	Fillings: levelled and compacted in 150 mm layers: average thickness 300mm	SM	31			
B	Gladiator "TC" or any other equal and approved Chemical anti-termite treatment to subsoil or filling	SM	31			
	murram blinding					
C	50 mm fillings as blinding to hardcore : levelled and compacted	SM	31			
	Insitu concrete : Mix 1:4:8 : Vibrated					
D	50 mm blinding : under strip foundations	SM	2			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
E	Foundations in trenches	CM	6			
F	150 mm Thick beds	SM	31			
	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:-					
G	Assorted bars	Kg	660			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
H	In beds : 250 mm laps	SM	31			
	Formwork : to					
I	Vertical : sides of strip foundations	SM	13			
J	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	32			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Natural Stones : in cement mortar (1:4) including hoop iron reinforcement in every alternate course					
A	200 mm walls	SM	47			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
B	Horizontal : 200 mm wide	LM	32			
	Labours and sundries					
C	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	31			
	12 mm cement and sand (1:4) render: on concrete or stonework to:					
D	Plinths	SM	14			
	Prepare and apply two coats bituminous paint : on render : to					
E	Plinths	SM	14			
	Paving slab surround					
F	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			
	Carried to Collection					
	Collection					
	From page 21					
	From page 22					
	From page 23					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	3			
	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	Assorted	Kg	330			
	Formwork to:					
C	Sides and soffits : beams	SM	35			
	Machine dressed masonry wall: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
D	200 mm Walls	SM	86			
	Labours and sundries					
E	Labour and materials for eaves filling 250mm high to 200mm thick walls	LM	32			
F	Eaves raking	LM	12			
	Vents					
G	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends	NO	12			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No.3 Roof					
	Roof coverings					
A.	26 gauge prepainted versatile roofing sheeting fixed as per manufactures instructions with approved roofing nails complete with washers	SM	46			
B.	Ditto Ridge cap	LM	12			
C.	Ditto Hip cap	LM	12			
	The following in sawn cell cured 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	42			
E	100x50 mm Tie beam	LM	30			
F	100x50 mm Struts and ties	LM	34			
G	100x50mm King post	LM	5			
H	75x50 mm Purlins	LM	81			
I	50x50 mm Battens	LM	242			
J	100x50mm wall plate fixed onto blockwork with approved mild steel brackets at 1500 c/c	LM	20			
	Eaves, fascias and barge boards					
K	225x25 mm Fascia or barge board with splayed wading joints	LM	29			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Eaves and gable lining					
	wrot cypress					
A	50x25 mm slats at 50 mm centres nailed to rafters	SM	17			
	Metalwork					
B	Galvanised coffee tray mesh bat proofing at eaves fixed with galvanised clout nails at 450 mm centres	SM	17			
	Painting generally					
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
	Externally on					
C	Fascia and barge board: Girth 200-300 mm	LM	29			
D	Sloping soffits of eaves boarding	SM	17			
	Carried to collection					
	Collection					
	From page 25					
	From page 26 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No.4 Windows					
	Precast concrete units: mix 1:2:4 ***(12 mm aggregate) vibrated***					
A.	300mm wide x 75mm thick cill : weathered and throated : bedded and jointed in cement mortar (1:4) : pointed in mastic.	LM	10			
	Precast concrete units : mix 1:2:4 ***(20 mm aggregate) : vibrated :*** ***4No. R8 reinforcement***					
B.	200x215 mm lintol	LM	10			
	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: ironmongery: bedded and pointed all round in mastic: burglar proofing: as per Engineers detail's:					
C	Window size2000x1650mm high overall	NO	4			
	Glazing					
	5 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	14			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
E	Windows: general surfaces	SM	14			
	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	9			
B	150x25 mm fascia : two labours	LM	9			
C	Extra for stopped ends	NO	8			
	General joinery: cypress or equal approved: selected and kept clean					
D	50x20 mm bearers : plugged	LM	9			
	Curtain tracks					
E	Brass "I" section track screwed to pelmets (measured seperately): rollers: end stops: laps	LM	9			
	Prepare and prime before fixing on wood					
F	Bearers : not exceeding 100 mm girth	LM	9			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss finishng paint : on wood					
G	pelmets : general surfaces	SM	6			
	Carried to collection					
	Collection					
	From page 27					
	From page 28 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No.5 Doors					
	Precast concrete units : mix 1:2:4 (20 mm aggregate) : vibrated : 4No. Y8 reinforcement					
A.	200x215 mm lintol	LM	3			
	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:					
B.	Door size 900x 2100 mm high overall in two equal leaves	NO	2			
	Flush doors: solid cored					
C.	45 mm thick door size 850x2050 mm high: faced both sides with imported quality veneer : hardwood lipped all edges	NO	1			
	Frames and linings : softwood : selected and kept clean					
D.	100x50 mm frame : plugged	LM	1			
E.	20x20 mm Architrave : ditto	LM	1			
F.	Ditto quadrant	LM	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	1.5			
B.	5-lever mortice lock complete with handles	NO	2			
C.	3-lever mortice lock with lever handles	NO	1			
D.	Rubber door stop : rawl bolted to concrete	NO	2			
	Prepare and prime before fixing on wood					
E.	Frames : not exceeding 100 mm girth	LM	1			
F.	Architraves : ditto	LM	1			
G.	Ditto quadrant	LM	1			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
H.	Doors general surfaces	SM	8			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss paint finishing coat : on wood					
I.	Doors general surfaces	SM	4			
J.	Frames : over 100 but not exceeding 200 mm girth	LM	1			
K.	Architraves : not exceeding 100 mm girth	LM	1			
L.	Ditto quadrant	LM	1			
	Carried to collection					
	Collection					
	From page 29					
	From page 30 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No.06 External Wall Finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A	Beams	SM	9			
B	Gable end wallings	SM	5			
	Prepare and apply three coats plastic emulsion paint : on render to					
C	Beams	SM	9			
D	Gable end wallings	SM	5			
	Random rubble facing					
E	Random stone facing consisting of 150mm diameter (maximum) smooth weatherd boulders jointed in cement and sand mortar (1:4) including supporting wire built in blockwork/masonry in every other course at 150mm c/c.	SM	48			
	Pointing					
F	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	48			
G	**Extra over** wire brushing and dusting to key pointed masonary wall surfaces	SM	96			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No.07 Internal Finishes					
	Floor finishes ***Ceramic flooring***					
	Cement and sand (1:4) screed: steel trowelled on concrete to					
A	40mm thick: to receive ceramic floor tiles: (m/s)	SM	32			
	330x330x6 mm glazed ceramic floor tiles: on cement and sand backing(m/s) : bedded and jointed in cement mortar (1:4) : pointed in matching cement					
B	Floors	SM	32			
C	Extra for fair edges	LM	31			
	Prime grade softwood : selected and kept clean					
D	100x25 mm skirting with four labours: plugged	LM	29			
	Prepare and prime backs of timber before fixing					
E	Skirtings : not exceeding 100 mm girth	LM	29			
	Prepare and apply three coats gloss oil paint : on wood					
F	Skirtings : not exceeding 100 mm girth	LM	29			
	12 mm cement and sand (1:4) plaster : steel trowelled : on stonework to					
G	Walls	SM	84			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare and apply three silk vinyl emulsion paint : on plaster to					
A	Walls	SM	84			
	Ceiling finishes					
	General joinery : cypress: pressure impregnated with tanalith "C" or equal					
B	Skeleton framework to ceilings: 50x50 mm one direction at 600 mm centres and 50x100 mm other direction at 1200 mm centres	SM	331			
	Celotex softboard : nailed to branderings (Measured seperately)					
C	12 mm ceiling linings	SM	31			
D	Extra over for access trap door size 800x800 mm overall : framing all round	NO	2			
	Prime grade softwood : selected and kept clean					
E	75x20 mm Cornice : plugged	LM	32			
	Prepare and apply three coats plastic emulsion paint to					
F	celotex linings	SM	31			
G	Cornice: not exceeding 100 mm girth	LM	32			
	Carried to collection					
	Collection					
	From page 32					
	From page 33 (Above)					
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No. 8 Fixtures and Fittings					
	Storage cabinet					
	The following in wrot prime grade softwood and mahogany veneered 25mm thick blockboard					
A.	cabinet size 1100 mm long x 600 mm deep x 2400 mm high overall : comprising 2 No. doors size 500x2100 mm high overall: comprising 1 No. vertical divisions at 550mm c/c and 4 No. horizontal division at 500mm c/c complete with all bearer plugs, painting, ironmongery 100mm mass concrete benching	NO	2			
	softboard pin board					
B	Supply and fix 12mm thick softboard pin board mounted on masonry block walling: overall size Hardwood lipping to all exposed edges					
C	size 2400x1200mm	N0.	1			
	Concrete worktop					
D	2250mm long x600mm wide x 75mm thick reinforced (Y-8) concrete worktop: Cast at 1000mm above finished floor level level on 100mm thick concrete (1:3:6) benching, comprising 50 thick RC vertical divisions at 600mm C/C including all necessary formwork: Ceramic tile tinishes on all exposed surfaces	NO	2			
	Total Carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No. 9 Entryway canopy					
	Site Preparation					
A.	Clearing site: grubbing up roots, bushes, scrub, undergrowth or like; small tress not exceeding 600mm girth	SM	29			
	Excavations.					
B.	Oversite excavation to remove vegetale top soil average depth 250mm	SM	20			
C.	Excavate pits: to receive column bases: 4 No pits.not exceeding 1.50 metres deep from stripped level	CM	2			
D.	Extra over all excavations for excavating in hard rock	CM	1			
	Disposal of excavated materials					
E.	Backfill and compact selected excavated materials	CM	2			
F.	Spread surplus materials where directed on site	CM	1			
	Disposal of water					
G	Keep excavations free from all water including spring and running water		Item			
	Planking and strutting					
H	Planking and strutting to sides of excavations		Item			
	Undressed Natural Stones : in cement mortar (1:4): Including hoop iron in every alternate course.					
I	200 mm walls	SM	27			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Hardcore fillings					
A	300 mm thick Fillings: levelled and compacted in 150 mm layers	SM	20			
	Murram blinding					
B	50 mm fillings as blinding to hardcore : levelled and compacted	SM	20			
	Anti termite treatment					
C	Gladiator TC: 1% solution at rate of 7 litres per square metre:	SM	20			
	Damp proof membrane					
D	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	20			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A222 : weighing 2.22 kilogrammes per square metre					
E	In beds : 200 mm laps	SM	20			
	Insitu mass concrete : Mix 1:3:6 : vibrated: in:-					
F	Strip foundations	CM	2			
G	Column bases	CM	2			
H	200 mm Thick beds laid to falls not exceeding 15 degrees from horizontal level	SM	20			
	Sawn formwork : to					
I	Vertical : sides of column bases	SM	9			
J	Extra over: formwork to forming 225mm diameter hole (pocket) in column base	No.	4			
K	Vertical : edges of beds over 150 but not exceeding 225mm wide	LM	20			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Columns					
	Gumpoles: Eucalyptus saligina; debarked grade GJ: Pressure impregnated including three coats timberguard finish					
A.	250mm diameter columns	LM	24			
B.	200mm diameter horizontal bracings/bearers fixed with and including approved nails to timber columns (m/s)	LM	126			
	Gate					
	45x50x3mm square hollow section framing with 40x40x3mm diagonally intersecting intermediate rails: 25x25mmx3mm thick vertical cleats at 120mm spacing c/c. ends angles cut, mitred and welded:one coat red oxide primer before erection one edge fixed to gumpole column: all welding ground to smooth finish: three purpose made hinges: tower bolts and barrel bolts: locking cleats and bolt guides; padlock eye one coa red oxide primer: two coats oil paint finish.					
C.	Gate size 4500x1800mm in two equal leaves with a lockacle sinle leaf pedestian opening size 900x1900mm *ref: arch drawings*	No.	1			
	Roof coverings					
D	26 gauge prepainted versatile roofing sheeting fixed as per manufactures instructions with approved roofing nails complete with washers	SM	40			
E	Ditto Ridge cap	LM	4			
F	Ditto Hip cap	LM	12			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	The following in sawn cell cured 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					
A	100x50 mm Main Rafters	LM	70			
B	100x50 mm Tie beam	LM	50			
C	100x50 mm Struts and ties	LM	44			
D	100x50mm King post	LM	10			
E	75x50 mm Purlins	LM	81			
F	50x50 mm battens	LM	240			
G	100x50mm wall plate fixed onto blockwork with approved mild steel brackets at 1500 c/c	LM	20			
	Eaves, fascias and barge boards					
H	225x25 mm Fascia or barge board with splayed wading joints	LM	38			
	Eaves and gable lining					
	wrot cypress					
I	110x25 mm t&g at 100 mm centres nailed to rafters	SM	40			
	Metalwork					
J	Galvanised coffee tray mesh bat proofing at eaves fixed with galvanised clout nails at 450 mm centres	SM	40			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Knot, prime, stop and apply three coats crown alkyd clear polyurethane varnish wood:					
A	T&G Surfaces	SM	40			
	Carried to Collection					
	Collection					
	From page 35					
	From page 36					
	From page 37					
	From page 38					
	From page 39 above					
	Total carried to Summary			**Kshs.**		

Element No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT AJAMAKO MARSABIT N. RESERVE**			
	Gate house			
1	Substructures	23		
2	Walling	24		
3	Roof	26		
4	Windows	28		
5	Doors	30		
6	External wall finish	31		
7	Internal finishes	32		
8	Fixtures and fittings	34		
9	Entryway canopy	39		
10	Allow a PC sum of Kshs 300,000 for electrical works including fittings incidental thereto		300,000	
	Total Ajamako Gate House carried to grand Summary pg. 180	**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	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	39			
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.	2			
C.	Excavate vegetable soil 200 mm (average) Deep: spread on site as directed	SM	39			
D	Excavate to reduce levels n.e 300mm deep from stripped levels	SM	39			
E	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	30			
F	Extra over all excavations for excavating in rock	CM	1			
	Disposal of excavated materials					
G	Backfill and compact selected excavated materials	CM	15			
H	Spread surplus excavated materials on site as may be directed by the project manager	CM	15			
	Planking and strutting					
I	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	32			
C	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	32			
	Murram blinding					
D	50 mm fillings as blinding to hardcore : levelled and compacted	SM	32			
	Insitu concrete : Mix 1:3:6					
E	50 mm blinding : under strip foundations	SM	39			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
F	Foundations in trenches	CM	4			
G	100 mm Thick beds	SM	39			
	High tensile reinforcement to BS 4461 incl. Cutting to lengths,bending,twisting and fixing.include all necessary wires and spacing blocks					
H	Assorted bars	Kg.	440			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
I	In beds : 200 mm laps	SM	39			
	Formwork : to					
J	Vertical : sides of foundations	SM	13			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	27			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
B	200 mm Walls	SM	50			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
C	Horizontal : 200 mm wide	LM	33			
D	Ditto : 100 mm wide	LM	2			
	Labours and sundries					
E	Single layer 1000 gauge damp proof membrane : 200 mm laps	SM	39			
	12 mm cement and sand (1:4) render: on concrete or blockwork to:					
F	Plinths	SM	8			
	Prepare and apply two coats bituminous paint : on render : to					
G	Plinths	SM	8			
	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	22			
	Carried to Collection					
	Collection					
	From page 41					
	From page 42					
	From page 43(above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	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	Assorted	Kg	220			
	Formwork to:					
C	Sides and soffits : beams	SM	26			
	medium chisel dressed masonry wall: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
D	200 mm Walls	SM	89			
E	100mm Ditto	SM	4			
	Labours and sundries					
F	Labour and materials for eaves filling 300mm high to 200mm thick walls	LM	20			
G	Fair raking	LM	10			
	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 Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	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	70			
B.	Pre-painted gauge 28 roof cap fixed with and including roofing nails to match roof	SM	11			
	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 Rafters	LM	49			
D	150x50 mm Ridge board	LM	22			
E	75x50 mm Purlins	LM	66			
F	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	20			
	Wrot Cypress, Selected and kept clean					
	fascias and barge boards					
G	250x25 mm Fascia or barge board with splayed wading joints	LM	36			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Rainwater goods					
	24 Gauge galvanised mild steel sheet rainwater goods with lapped, rivetted and soldered joints or seams including all labours					
A	150 mm Diameter half round eaves gutter: 25x6 mm: M.S brackets screwed to fascia at 600 mm centres	LM	22			
B	Extra for stopped end	NO	4			
C	Extra for 100 mm drop nozzle	NO	2			
D	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	6			
E	Extra for bend	NO	2			
F	Extra swan neck projections	NO	2			
G	Extra for shoe	NO	2			
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
H	Fascia and barge board: Girth 200-300 mm	LM	22			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint on metalwork					
I	Large pipes	SM	2			
J	150 mm diameter half round gutter	SM	5			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Plastic Tank					
A	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.	1			
	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***					
B	2000mm diameter tank platform	No.	1			
	Carried to Collection					
	Collection					
	From page 45					
	From page 46					
	From page 47- Above					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No.4 Windows					
	Burnt clay window cill					
A.	150x150x20mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	8			
	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 1200x1200 mm high overall	NO	4			
C	Window size 450x600 mm high overall	NO	2			
	Glazing					
	5 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	6			
E	Ditto obscure Sheet glass	SM	1			
	Pelmet boxes: softwood: selected and kept clean					
F	150x25 mm top	LM	8			
G	150x25 mm fascia : two labours	LM	8			
H	Extra for stopped ends	NO	12			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	General joinery: cypress or equal approved: selected and kept clean					
A	50x20 mm bearers : plugged	LM	12			
	Curtain tracks					
B	Brass "I" section track screwed to pelmets (measured seperately): rollers: end stops: laps	LM	12			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
C	Windows: general surfaces	SM	12			
	Prepare and prime before fixing on wood					
D	Bearers : not exceeding 100 mm girth	LM	8			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss finishng paint : on wood					
E	pelmets : general surfaces	SM	12			
	Carried to collection					
	Collection					
	From page 48					
	From page 49 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No. 5 Doors					
	Precast concrete units : mix 1:2:4 (20 mm aggregate) : vibrated : 4No. Y10 reinforcement					
A.	200x215 mm lintol	LM	5			
	Mild steel: K.S. 02-18					
	custom made steel door : 50x50x3mm SHS 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 Architects detail's:					
B.	Door size 900 x 2400 mm high overall	NO	2			
	Flush doors: solid cored					
C.	45 mm thick door size 850x2050 mm high: faced both sides with imported quality veneer : hardwood lipped all edges	NO	2			
	Frames and linings : softwood : selected and kept clean					
D	100x50 mm frame : plugged	LM	11			
E	20x20 mm Architrave : ditto	LM	11			
F	Ditto quadrant	LM	11			
	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.	5-lever mortice lock with lever handles	NO	2			
C.	3-lever mortice lock with lever handles	NO	2			
D.	Rubber door stop : rawl bolted to concrete	NO	4			
	Prepare and prime before fixing on wood					
E	Frames : not exceeding 100 mm girth	LM	11			
F	Architraves : ditto	LM	11			
G	Ditto quadrant	LM	11			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
H	Doors general surfaces	SM	8			
	Knot, prime, stop and apply three coats crown alkyd clear polyurethane varnish wood:					
I	Doors general surfaces	SM	8			
J	Frames : over 100 but not exceeding 200 mm girth	LM	11			
K	Architraves : not exceeding 100 mm girth	LM	64			
L	Ditto quadrant	LM	64			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
M	Doors general surfaces	SM	26			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss paint finishing coat : on wood					
A	Doors general surfaces	SM	62			
B	Frames : over 100 but not exceeding 200 mm girth	LM	64			
C	Architraves : not exceeding 100 mm girth	LM	11			
D	Ditto quadrant	LM	11			
	Amount carried to collection					
	Collection					
	From page 50					
	From page 51					
	From page 52(above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	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	6			
	Painting					
C	Beams	SM	8			
D	Gable end walling	SM	6			
	Pointing					
E	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	81			
F	**Extra over** wire brushing and dusting to key pointed masonary wall surfaces and random rubble	SM	81			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Cement and sand (1:4) screed: steel trowelled on concrete to					
A.	40 mm thick: floor screed with green oxide admixtu	SM	39			
B	Ditto 100mm wide skirting	LM	47			
	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					
C	Floors	SM	4			
D	Extra for fair edges	LM	10			
	Cement and sand (1:4) screed: steel trowelled on concrete to: red oxide.					
E	50 mm floors	SM	2			
	Wall finishes					
	300x200x6 mm coloured glazed tiles: on cement and sand backing (m/s) : bedded in cement mortar (1:4) : pointed in white cement and sand backing (m/s) : bedded					
F	Walls	SM	17			
G	Extra for fair edges	LM	8			
	12 mm cement and sand (1:4) backing					
H	Walls : finished to receive tiles	SM	17			
I	Matching plastic edge trims	LM	40			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	12 mm cement and sand (1:4) plaster : steel trowelled : on blockwork to					
A	Walls: internally	SM	127			
	Prepare and apply one undercoat and two finishing coats hard gloss paint : on plaster to					
B	Walls	SM	127			
	Ceiling finishes					
	General joinery : cypress: pressure impregnated with tanalith "C" or equal					
C	Skeleton framework to ceilings: 50x50 mm one direction at 600 mm centres and 50x100 mm other direction at 1200 mm centres	SM	77			
	chipboard : nailed to branderings (Measured seperately)					
D	10mm ceiling linings	SM	77			
E	Extra over for access trap door size 800x800 mm overall : framing all round	NO	1			
F	75x20 mm Cornice : plugged	LM	50			
	Knot, prime, prepare and Prepare one undercoat and two finishing coats plastic emulsion paint to					
G	ceiling linings	SM	77			
H	Cornice: not exceeding 100 mm girth	LM	50			
	Carried to collection					
	Collection					
	From page 54					
	From page 55 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No.08 Fixtures and Fittings					
	25mm thick blockboard with first quality mahogany veneer facing on both faces: hardwood lipping on all exposed edges					
	Concrete worktop					
A	1200mm 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	2			
	Kitchen Undersink Cupboard					
B	Cupboard size 1200x600x900 mm high overall: comprising 3No. doors size 400x600 mm 3No. drawers size 600x500x 150 mm deep: shelvings: Ceramic tiles worktop: ironmongery : painting 100mm mass concrete benching	NO	2			
	kitchen over head shelving:					
C	Overhead shelving size 1200 mm long x 400 mm deep x 600 mm high : comprising 3 No. vertical divisions at 600mm 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 RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	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	1			
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	1			
C	"Lorenzetti" or equal and approved Automatic Shower heater with energy saver selector.	NO	1			
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	1			
F.	Soapdish as "Twyfords" Cat: no. VC9312WH or any other equal and approved.	NO	1			
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	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	25mm diameter x 900mm long chromium plated towel rail including end brackets to match: Plugged to blockwork or masonry.	NO	1			
B	Satin aluminium coat hook as Twyfords cat No. PB0204SI or any other equal and approved.	NO	2			
C	Tumbler and tooth brush holder as "Twyfords" Cat: no.VC9805WH or any other equal and approv	NO	1			
	Carried to collection					
	<u>Collection</u>					
	From page 57					
	From page 58 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No. 10 Drainage (Provisional)					
	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 Medium Grade					
A	100 mm diameter uPVC golden brown	LM	18			
B	100 mm diameter uPVC grey pipe	LM	18			
C	50 mm diameter uPVC grey pipe	LM	12			
D	40 mm diameter uPVC grey pipe	LM	12			
E	32 mm diameter uPVC grey pipe	LM	12			
	Extra over uPVC and muPVC soil and waste pipework for the following					
F	100 mm diameter WC connector	No.	1			
G	100 mm diameter sweep bend	No.	4			
H	100 mm diameter long radius bend	No.	2			
I	100 mm diameter vent cowl	No.	1			
J	100 mm diameter weathering slate	No.	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	100 mm diameter short radius bend	No.	1			
B	100 mm diameter single branch	No.	1			
C	100 x 50 mm diameter Boss Connector	No.	1			
D	50 mm diameter sweep tee	No.	1			
E	50 x 40 mm sweep tee	No.	1			
F	50 mm diameter sweep bend	No.	2			
G	50 mm diameter 'P' trap	No.	2			
H	40 mm diameter shower 'P' trap	No.	2			
I	50 mm diameter floor trap	No.	2			
J	50 mm diameter vent cowl	No.	2			
K	50 mm diameter weathering slate	No.	2			
L	40 mm diameter sweep tee	No.	4			
M	40 mm diameter sweep bend	No.	3			
N	40 mm diameter rodding eye	No.	2			
O	40 x 32 mm diameter reducer	No.	2			
P	32 mm diameter sweep bend	No.	2			
Q	32 mm diameter sweep tee	No.	2			
R	32 mm diameter rodding eye	No.	2			
	Gulley traps					
S	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 square painted gulley trap cover made from 3 mm thick mild steel sheet: D-Handle 40mm Diameter-vent	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	30			
B	Allow for testing the whole of the drainage installations during the progress and completion of the works to approval		item			
	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			
	septic tank					
K	***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					
L	6000x1800x2200mm overall	No.	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	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					
A	1200mm Diameter by 6000mm deep	No.	3			
B	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					
C	100mm diameter pipe in trenches	LM	45			
D	Allow for testing the whole of the drainage installations during the progress and completion of the works to approval		item			
	Amount carried to Collection					
	Collection					
	From page 59					
	From page 60					
	From page 61					
	From page 62					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No. 11 Internal Plumbing (provisional)					
	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, deliver and fix u P.V.C Polypropylene Random (PPR) pipes jointed and fixed as described in accordance to manufacturers instructions					
A.	15mm diameter	LM	40			
B.	20mm ditto	LM	18			
C.	25mm ditto	LM	12			
D	15mm bend	No.	10			
E	20mm ditto	No.	6			
F	15mm equal tee	No.	6			
	high pressure brass valves and jointing to pipes					
G	15mm ditto	No.	1			
H	20mm ditto	No.	1			
I	32mm. Ball valve with plastic float, brass stem and connecting to tank with union and backnut including perforation	No.	1			
J	20mm ditto	No.	1			
	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 space Water storage tank					
C	Plastic water storage tank 900 litres (200 gallons) rectangular tank in roof space approximate dimensions 1270x1270x580mm including overflow pipes	NO	1			
	Ground Water sorage 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.	1			
	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.	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	***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 63 From page 64 From page 65 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No. 12 Electrical Works (provisional)					
	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 switching	No.	4			
B.	Two way switching	No.	3			
C.	Pendant light fitting comprising ceilling rose,code and lampholder as volex complete with bulb	No.	2			
D.	60W spherical fitting	No.	2			
E.	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:					
F	Single	No.	2			
	5A Flush mounted switches as volex					
G	1gang 1 way	No.	4			
H	2 gang 2 way	No.	3			
	Total carried to collection			**Kshs.**	**-**	

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	6Ways consumer unit as crabtree complete with cicuit breakers	No.	1			
B	3x16mm2 single core copper cables as sub-main and drawn in 50mm diameter heavy gauge PVC conduits including all conduit accessories.	Lm.	4			
C	KPL&C manhole size 600x600x750mm complete with iron cover.	No.	1			
D	1,200mmx25mm copper earth electrode complete with clamp.	No.	1			
E	Standard cable looping box		Item			
F	Allow for the Testing of the complete electrical installations to the satisfaction of the engineer		Item			
	Carried to collection					
	<u>Collection</u>					
	From page 65					
	From page 67 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	Element No.13 Fire Fighting Equipment					
	Fire extinguishers					
	Fire extinguishers : ***including fixing brackets to masonry or timber backgrounds***					
A.	Water/CO2: 9 Litres	No.	1			
B.	Dry Powder 9 Kgs	No.	1			
	Total carried to Summary					

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED RANGERS ACCOMODATION** **AT AJAMAKO MARSABIT N. RESERVE**					
	Summary	From page				
1	Substructures	43				
2	Walling	44				
3	Roof	47				
4	Windows	49				
5	Doors	52				
6	External wall finish	53				
7	Internal finishes	55				
8	Fixtures and fittings	56				
9	sanitary fittings	58				
10	Internal Drainage	62				
11	internal Plumbing	65				
12	Electrical Works	67				
13	Fire Fighting Equipment	68				
	TOTAL RANGERS ACOMMODATION-AJAMAKO CARRIED TO GRAND SUMMARY pg 180		**Kshs.**			

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**					
	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	49			
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 top soil 300 mm (average) deep: deposit on site where directed	SM	31			
D.	Excavate to reduce levels average depth 250mm	SM	31			
E.	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	29			
F.	Extra over all excavations for excavating in rock	CM	2			
	Disposal of excavated materials					
G.	Backfill and compact selected excavated materials	CM	20			
H	Spread surplus materials on site as directed	CM	9			
	Disposal of water					
I	Keep trenches free from all water		Item			
	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.
	Hardcore fillings					
A	Fillings: levelled and compacted in 150 mm layers: average thickness 300mm	SM	31			
B	Gladiator "TC" or any other equal and approved Chemical anti-termite treatment to subsoil or filling	SM	31			
	murram blinding					
C	50 mm fillings as blinding to hardcore : levelled and compacted	SM	31			
	Insitu concrete : Mix 1:4:8 : Vibrated					
D	50 mm blinding : under strip foundations	SM	2			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
E	Foundations in trenches	CM	6			
F	150 mm Thick beds	SM	31			
	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:-					
G	Assorted bars	Kg	660			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
H	In beds : 250 mm laps	SM	31			
	Formwork : to					
I	Vertical : sides of strip foundations	SM	13			
J	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	32			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Natural Stones : in cement mortar (1:4) including hoop iron reinforcement in every alternate course					
A	200 mm walls	SM	47			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
B	Horizontal : 200 mm wide	LM	32			
	Labours and sundries					
C	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	31			
	12 mm cement and sand (1:4) render: on concrete or stonework to:					
D	Plinths	SM	14			
	Prepare and apply two coats bituminous paint : on render : to					
E	Plinths	SM	14			
	Paving slab surround					
F	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			
	Carried to Collection					
	Collection					
	From page 70					
	From page 71					
	From page 72					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	3			
	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	Assorted	Kg	330			
	Formwork to:					
C	Sides and soffits : beams	SM	35			
	Machine dressed masonry wall: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
D	200 mm Walls	SM	86			
	Labours and sundries					
E	Labour and materials for eaves filling 250mm high to 200mm thick walls	LM	32			
F	Eaves raking	LM	12			
	Vents					
G	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends	NO	12			
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**					
	Element No.3 Roof					
	Roof coverings					
A.	26 gauge prepainted versatile roofing sheeting fixed as per manufactures instructions with approved roofing nails complete with washers	SM	46			
B.	Ditto Ridge cap	LM	12			
C.	Ditto Hip cap	LM	12			
	The following in sawn cell cured 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	42			
E	100x50 mm Tie beam	LM	30			
F	100x50 mm Struts and ties	LM	34			
G	100x50mm King post	LM	5			
H	75x50 mm Purlins	LM	81			
I	50x50 mm Battens	LM	242			
J	100x50mm wall plate fixed onto blockwork with approved mild steel brackets at 1500 c/c	LM	20			
	Eaves, fascias and barge boards					
K	225x25 mm Fascia or barge board with splayed wading joints	LM	29			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Eaves and gable lining					
	wrot cypress					
A	50x25 mm slats at 50 mm centres nailed to rafters	SM	17			
	Metalwork					
B	Galvanised coffee tray mesh bat proofing at eaves fixed with galvanised clout nails at 450 mm centres	SM	17			
	Painting generally					
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
	Externally on					
C	Fascia and barge board: Girth 200-300 mm	LM	29			
D	Sloping soffits of eaves boarding	SM	17			
	Carried to collection					
	Collection					
	From page 74					
	From page 75 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**					
	Element No.4 Windows					
	Precast concrete units: mix 1:2:4 (12 mm aggregate) vibrated					
A.	300mm wide x 75mm thick cill : weathered and throated : bedded and jointed in cement mortar (1:4) : pointed in mastic.	LM	10			
	Precast concrete units : mix 1:2:4 (20 mm aggregate) : vibrated : 4No. R8 reinforcement					
B.	200x215 mm lintol	LM	10			
	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: ironmongery: bedded and pointed all round in mastic: burglar proofing: as per Engineers detail's:					
C	Window size2000x1650mm high overall	NO	4			
	Glazing					
	5 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	14			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
E	Windows: general surfaces	SM	14			
	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	9			
B	150x25 mm fascia : two labours	LM	9			
C	Extra for stopped ends	NO	8			
	General joinery: cypress or equal approved: selected and kept clean					
D	50x20 mm bearers : plugged	LM	9			
	Curtain tracks					
E	Brass "I" section track screwed to pelmets (measured seperately): rollers: end stops: laps	LM	9			
	Prepare and prime before fixing on wood					
F	Bearers : not exceeding 100 mm girth	LM	9			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss finishng paint : on wood					
G	pelmets : general surfaces	SM	6			
	Carried to collection					
	Collection					
	From page 76					
	From page 77 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**					
	Element No.5 Doors					
	Precast concrete units : mix 1:2:4 (20 mm aggregate) : vibrated : 4No. Y8 reinforcement					
A.	200x215 mm lintol	LM	3			
	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:					
B.	Door size 900x 2100 mm high overall in two equal leaves	NO	2			
	Flush doors: solid cored					
C.	45 mm thick door size 850x2050 mm high: faced both sides with imported quality veneer : hardwood lipped all edges	NO	1			
	Frames and linings : softwood : selected and kept clean					
D.	100x50 mm frame : plugged	LM	1			
E.	20x20 mm Architrave : ditto	LM	1			
F.	Ditto quadrant	LM	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	1.5			
B.	5-lever mortice lock complete with handles	NO	2			
C.	3-lever mortice lock with lever handles	NO	1			
D.	Rubber door stop : rawl bolted to concrete	NO	2			
	Prepare and prime before fixing on wood					
E.	Frames : not exceeding 100 mm girth	LM	1			
F.	Architraves : ditto	LM	1			
G.	Ditto quadrant	LM	1			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
H.	Doors general surfaces	SM	8			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss paint finishing coat : on wood					
I.	Doors general surfaces	SM	4			
J.	Frames : over 100 but not exceeding 200 mm girth	LM	1			
K.	Architraves : not exceeding 100 mm girth	LM	1			
L.	Ditto quadrant	LM	1			
	Carried to collection					
	Collection					
	From page 78					
	From page 79 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**					
	Element No.06 External Wall Finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A	Beams	SM	9			
B	Gable end wallings	SM	5			
	Prepare and apply three coats plastic emulsion paint : on render to					
C	Beams	SM	9			
D	Gable end wallings	SM	5			
	Random rubble facing					
E	Random stone facing consisting of 150mm diameter (maximum) smooth weatherd boulders jointed in cement and sand mortar (1:4) including supporting wire built in blockwork/masonry in every other course at 150mm c/c.	SM	48			
	Pointing					
F	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	48			
G	**Extra over** wire brushing and dusting to key pointed masonary wall surfaces	SM	96			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**					
	Element No.07 Internal Finishes					
	Floor finishes ***Ceramic flooring***					
	Cement and sand (1:4) screed: steel trowelled on concrete to					
A	40mm thick: to receive ceramic floor tiles: (m/s)	SM	32			
	330x330x6 mm glazed ceramic floor tiles: on cement and sand backing(m/s) : bedded and jointed in cement mortar (1:4) : pointed in matching cement					
B	Floors	SM	32			
C	Extra for fair edges	LM	31			
	Prime grade softwood : selected and kept clean					
D	100x25 mm skirting with four labours: plugged	LM	29			
	Prepare and prime backs of timber before fixing					
E	Skirtings : not exceeding 100 mm girth	LM	29			
	Prepare and apply three coats gloss oil paint : on wood					
F	Skirtings : not exceeding 100 mm girth	LM	29			
	12 mm cement and sand (1:4) plaster : steel trowelled : on stonework to					
G	Walls	SM	84			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare and apply three silk vinyl emulsion paint : on plaster to					
A	Walls	SM	84			
	Ceiling finishes					
	General joinery : cypress: pressure impregnated with tanalith "C" or equal					
B	Skeleton framework to ceilings: 50x50 mm one direction at 600 mm centres and 50x100 mm other direction at 1200 mm centres	SM	331			
	Celotex softboard : nailed to branderings (Measured seperately)					
C	12 mm ceiling linings	SM	31			
D	Extra over for access trap door size 800x800 mm overall : framing all round	NO	2			
	Prime grade softwood : selected and kept clean					
E	75x20 mm Cornice : plugged	LM	32			
	Prepare and apply three coats plastic emulsion paint to					
F	celotex linings	SM	31			
G	Cornice: not exceeding 100 mm girth	LM	32			
	Carried to collection					
	Collection					
	From page 81					
	From page 82 (Above)					
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**					
	Element No. 8 Fixtures and Fittings					
	Storage cabinet					
	The following in wrot prime grade softwood and mahogany veneered 25mm thick blockboard					
A.	cabinet size 1100 mm long x 600 mm deep x 2400 mm high overall : comprising 2 No. doors size 500x2100 mm high overall: comprising 1 No. vertical divisions at 550mm c/c and 4 No. horizontal division at 500mm c/c complete with all bearer plugs, painting, ironmongery 100mm mass concrete benching	NO	2			
	softboard pin board					
B	Supply and fix 12mm thick softboard pin board mounted on masonry block walling: overall size Hardwood lipping to all exposed edges					
C	size 2400x1200mm	N0.	1			
	Concrete worktop					
D	2250mm long x600mm wide x 75mm thick reinforced (Y-8) concrete worktop: Cast at 1000mm above finished floor level level on 100mm thick concrete (1:3:6) benching, comprising 50 thick RC vertical divisions at 600mm C/C including all necessary formwork: Ceramic tile tinishes on all exposed surfaces	NO	2			
	Total Carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**					
	Element No. 9 Entryway canopy					
	Site Preparation					
A.	Clearing site: grubbing up roots, bushes, scrub, undergrowth or like; small tress not exceeding 600mm girth	SM	29			
	Excavations.					
B.	Oversite excavation to remove vegetale top soil average depth 250mm	SM	20			
C.	Excavate pits: to receive column bases: 4 No pits.not exceeding 1.50 metres deep from stripped level	CM	2			
D.	Extra over all excavations for excavating in hard rock	CM	1			
	Disposal of excavated materials					
E.	Backfill and compact selected excavated materials	CM	2			
F.	Spread surplus materials where directed on site	CM	1			
	Disposal of water					
G	Keep excavations free from all water including spring and running water		Item			
	Planking and strutting					
H	Planking and strutting to sides of excavations		Item			
	Undressed Natural Stones : in cement mortar (1:4): Including hoop iron in every alternate course.					
I	200 mm walls	SM	27			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Hardcore fillings					
A	300 mm thick Fillings: levelled and compacted in 150 mm layers	SM	20			
	Murram blinding					
B	50 mm fillings as blinding to hardcore : levelled and compacted	SM	20			
	Anti termite treatment					
C	Gladiator TC: 1% solution at rate of 7 litres per square metre:	SM	20			
	Damp proof membrane					
D	Single layer 500 gauge damp proof membrane : 200 mm laps	SM	20			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A222 : weighing 2.22 kilogrammes per square metre					
E	In beds : 200 mm laps	SM	20			
	Insitu mass concrete : Mix 1:3:6 : vibrated: in:-					
F	Strip foundations	CM	2			
G	Column bases	CM	2			
H	200 mm Thick beds laid to falls not exceeding 15 degrees from horizontal level	SM	20			
	Sawn formwork : to					
I	Vertical : sides of column bases	SM	9			
J	Extra over: formwork to forming 225mm diameter hole (pocket) in column base	No.	4			
K	Vertical : edges of beds over 150 but not exceeding 225mm wide	LM	20			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Columns					
	Gumpoles: Eucalyptus saligina; debarked grade GJ: Pressure impregnated including three coats timberguard finish					
A.	250mm diameter columns	LM	24			
B.	200mm diameter horizontal bracings/bearers fixed with and including approved nails to timber columns (m/s)	LM	126			
	Gate					
	45x50x3mm square hollow section framing with 40x40x3mm diagonally intersecting intermediate rails: 25x25mmx3mm thick vertical cleats at 120mm spacing c/c. ends angles cut, mitred and welded:one coat red oxide primer before erection one edge fixed to gumpole column: all welding ground to smooth finish: three purpose made hinges: tower bolts and barrel bolts: locking cleats and bolt guides; padlock eye one coa red oxide primer: two coats oil paint finish.					
C.	Gate size 4500x1800mm in two equal leaves with a lockacle sinle leaf pedestian opening size 900x1900mm *ref: arch drawings*	No.	1			
	Roof coverings					
D	26 gauge prepainted versatile roofing sheeting fixed as per manufactures instructions with approved roofing nails complete with washers	SM	40			
E	Ditto Ridge cap	LM	4			
F	Ditto Hip cap	LM	12			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	The following in sawn cell cured 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					
A	100x50 mm Main Rafters	LM	70			
B	100x50 mm Tie beam	LM	50			
C	100x50 mm Struts and ties	LM	44			
D	100x50mm King post	LM	10			
E	75x50 mm Purlins	LM	81			
F	50x50 mm battens	LM	240			
G	100x50mm wall plate fixed onto blockwork with approved mild steel brackets at 1500 c/c	LM	20			
	Eaves, fascias and barge boards					
H	225x25 mm Fascia or barge board with splayed wading joints	LM	38			
	Eaves and gable lining					
	wrot cypress					
I	110x25 mm t&g at 100 mm centres nailed to rafters	SM	40			
	Metalwork					
J	Galvanised coffee tray mesh bat proofing at eaves fixed with galvanised clout nails at 450 mm centres	SM	40			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Knot, prime, stop and apply three coats crown alkyd clear polyurethane varnish wood:					
A	T&G Surfaces	SM	40			
	Carried to Collection					
	Collection					
	From page 84					
	From page 85					
	From page 86					
	From page 87					
	From page 88 above					
	Total carried to Summary			**Kshs.**		

Elemen No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED GATEHOUSE** **AT BONGOLE KITURUNI MARSABIT N. RESERVE**			
	Gate house			
1	Substructures	72		
2	Walling	73		
3	Roof	75		
4	Windows	77		
5	Doors	79		
6	External wall finish	80		
7	Internal finishes	82		
8	Fixtures and fittings	83		
9	Entryway canopy	88		
10	Allow a PC sum of Kshs 300,000 for electrical works including fittings incidental thereto		300,000	
	Total kituruni Gate House carried to grand Summary pg 180	**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	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	39			
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.	2			
C.	Excavate vegetable soil 200 mm (average) Deep: spread on site as directed	SM	39			
D	Excavate to reduce levels n.e 300mm deep from stripped levels	SM	39			
E	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	30			
F	Extra over all excavations for excavating in rock	CM	1			
	Disposal of excavated materials					
G	Backfill and compact selected excavated materials	CM	15			
H	Spread surplus excavated materials on site as may be directed by the project manager	CM	15			
	Planking and strutting					
I	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	32			
C	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	32			
	Murram blinding					
D	50 mm fillings as blinding to hardcore : levelled and compacted	SM	32			
	Insitu concrete : Mix 1:3:6					
E	50 mm blinding : under strip foundations	SM	39			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
F	Foundations in trenches	CM	4			
G	100 mm Thick beds	SM	39			
	High tensile reinforcement to BS 4461 incl. Cutting to lengths,bending,twisting and fixing.include all necessary wires and spacing blocks					
H	Assorted bars	Kg.	440			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
I	In beds : 200 mm laps	SM	39			
	Formwork : to					
J	Vertical : sides of foundations	SM	13			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	27			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
B	200 mm Walls	SM	50			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
C	Horizontal : 200 mm wide	LM	33			
D	Ditto : 100 mm wide	LM	2			
	Labours and sundries					
E	Single layer 1000 gauge damp proof membrane : 200 mm laps	SM	39			
	12 mm cement and sand (1:4) render: on concrete or blockwork to:					
F	Plinths	SM	8			
	Prepare and apply two coats bituminous paint : on render : to					
G	Plinths	SM	8			
	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	22			
	Carried to Collection					
	Collection					
	From page 90					
	From page 91					
	From page92(above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	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	Assorted	Kg	220			
	Formwork to:					
C	Sides and soffits : beams	SM	26			
	medium chisel dressed masonry wall: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
D	200 mm Walls	SM	89			
E	100mm Ditto	SM	4			
	Labours and sundries					
F	Labour and materials for eaves filling 300mm high to 200mm thick walls	LM	20			
G	Fair raking	LM	10			
	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 Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	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	70			
B.	Pre-painted gauge 28 roof cap fixed with and including roofing nails to match roof	SM	11			
	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 Rafters	LM	49			
D	150x50 mm Ridge board	LM	22			
E	75x50 mm Purlins	LM	66			
F	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	20			
	Wrot Cypress, Selected and kept clean					
	fascias and barge boards					
G	250x25 mm Fascia or barge board with splayed wading joints	LM	36			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Rainwater goods					
	24 Gauge galvanised mild steel sheet rainwater goods with lapped, rivetted and soldered joints or seams including all labours					
A	150 mm Diameter half round eaves gutter: 25x6 mm: M.S brackets screwed to fascia at 600 mm centres	LM	22			
B	Extra for stopped end	NO	4			
C	Extra for 100 mm drop nozzle	NO	2			
D	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	6			
E	Extra for bend	NO	2			
F	Extra swan neck projections	NO	2			
G	Extra for shoe	NO	2			
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
H	Fascia and barge board: Girth 200-300 mm	LM	22			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint on metalwork					
I	Large pipes	SM	2			
J	150 mm diameter half round gutter	SM	5			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Plastic Tank					
A	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.	1			
	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***					
B	2000mm diameter tank platform	No.	1			
	Carried to Collection					
	Collection					
	From page 94					
	From page 95					
	From page 96- Above					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	Element No.4 Windows					
	Burnt clay window cill					
A.	150x150x20mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	8			
	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 1200x1200 mm high overall	NO	4			
C	Window size 450x600 mm high overall	NO	2			
	Glazing					
	5 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	6			
E	Ditto obscure Sheet glass	SM	1			
	Pelmet boxes: softwood: selected and kept clean					
F	150x25 mm top	LM	8			
G	150x25 mm fascia : two labours	LM	8			
H	Extra for stopped ends	NO	12			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	General joinery: cypress or equal approved: selected and kept clean					
A	50x20 mm bearers : plugged	LM	12			
	Curtain tracks					
B	Brass "I" section track screwed to pelmets (measured seperately): rollers: end stops: laps	LM	12			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
C	Windows: general surfaces	SM	12			
	Prepare and prime before fixing on wood					
D	Bearers : not exceeding 100 mm girth	LM	8			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss finishng paint : on wood					
E	pelmets : general surfaces	SM	12			
	Carried to collection					
	Collection					
	From page 97					
	From page 98 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	Element No. 5 Doors					
	Precast concrete units : mix 1:2:4 (20 mm aggregate) : vibrated : 4No. Y10 reinforcement					
A.	200x215 mm lintol	LM	5			
	Mild steel: K.S. 02-18					
	custom made steel door : 50x50x3mm SHS 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 Architects detail's:					
B.	Door size 900 x 2400 mm high overall	NO	2			
	Flush doors: solid cored					
C.	45 mm thick door size 850x2050 mm high: faced both sides with imported quality veneer : hardwood lipped all edges	NO	2			
	Frames and linings : softwood : selected and kept clean					
D	100x50 mm frame : plugged	LM	11			
E	20x20 mm Architrave : ditto	LM	11			
F	Ditto quadrant	LM	11			
	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.	5-lever mortice lock with lever handles	NO	2			
C.	3-lever mortice lock with lever handles	NO	2			
D.	Rubber door stop : rawl bolted to concrete	NO	4			
	Prepare and prime before fixing on wood					
E	Frames : not exceeding 100 mm girth	LM	11			
F	Architraves : ditto	LM	11			
G	Ditto quadrant	LM	11			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
H	Doors general surfaces	SM	8			
	Knot, prime, stop and apply three coats crown alkyd clear polyurethane varnish wood:					
I	Doors general surfaces	SM	8			
J	Frames : over 100 but not exceeding 200 mm girth	LM	11			
K	Architraves : not exceeding 100 mm girth	LM	64			
L	Ditto quadrant	LM	64			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
M	Doors general surfaces	SM	26			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss paint finishing coat : on wood					
A	Doors general surfaces	SM	62			
B	Frames : over 100 but not exceeding 200 mm girth	LM	64			
C	Architraves : not exceeding 100 mm girth	LM	11			
D	Ditto quadrant	LM	11			
	Amount carried to collection					
	Collection					
	From page 99					
	From page 100					
	From page 101(above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	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	6			
	Painting					
C	Beams	SM	8			
D	Gable end walling	SM	6			
	Pointing					
E	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	81			
F	**Extra over** wire brushing and dusting to key pointed masonary wall surfaces and random rubble	SM	81			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Cement and sand (1:4) screed: steel trowelled on concrete to					
A.	40 mm thick: floor screed with green oxide admixtu	SM	39			
B	Ditto 100mm wide skirting	LM	47			
	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					
C	Floors	SM	4			
D	Extra for fair edges	LM	10			
	Cement and sand (1:4) screed: steel trowelled on concrete to: red oxide.					
E	50 mm floors	SM	2			
	Wall finishes					
	300x200x6 mm coloured glazed tiles: on cement and sand backing (m/s) : bedded in cement mortar (1:4) : pointed in white cement and sand backing (m/s) : bedded					
F	Walls	SM	17			
G	Extra for fair edges	LM	8			
	12 mm cement and sand (1:4) backing					
H	Walls : finished to receive tiles	SM	17			
I	Matching plastic edge trims	LM	40			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	12 mm cement and sand (1:4) plaster : steel trowelled : on blockwork to					
A	Walls: internally	SM	127			
	Prepare and apply one undercoat and two finishing coats hard gloss paint : on plaster to					
B	Walls	SM	127			
	Ceiling finishes					
	General joinery : cypress: pressure impregnated with tanalith "C" or equal					
C	Skeleton framework to ceilings: 50x50 mm one direction at 600 mm centres and 50x100 mm other direction at 1200 mm centres	SM	77			
	chipboard : nailed to branderings (Measured seperately)					
D	10mm ceiling linings	SM	77			
E	Extra over for access trap door size 800x800 mm overall : framing all round	NO	1			
F	75x20 mm Cornice : plugged	LM	50			
	Knot, prime, prepare and Prepare one undercoat and two finishing coats plastic emulsion paint to					
G	ceiling linings	SM	77			
H	Cornice: not exceeding 100 mm girth	LM	50			
	Carried to collection					
	Collection					
	From page 103					
	From page 104 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	Element No.08 Fixtures and Fittings					
	25mm thick blockboard with first quality mahogany veneer facing on both faces: hardwood lipping on all exposed edges					
	Concrete worktop					
A	1200mm 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	2			
	Kitchen Undersink Cupboard					
B	Cupboard size 1200x600x900 mm high overall: comprising 3No. doors size 400x600 mm 3No. drawers size 600x500x 150 mm deep: shelvings: Ceramic tiles worktop: ironmongery : painting 100mm mass concrete benching	NO	2			
	kitchen over head shelving:					
C	Overhead shelving size 1200 mm long x 400 mm deep x 600 mm high : comprising 3 No. vertical divisions at 600mm 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 FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	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	1			
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	1			
C	"Lorenzetti" or equal and approved Automatic Shower heater with energy saver selector.	NO	1			
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	1			
F.	Soapdish as "Twyfords" Cat: no. VC9312WH or any other equal and approved.	NO	1			
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	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	25mm diameter x 900mm long chromium plated towel rail including end brackets to match: Plugged to blockwork or masonry.	NO	1			
B	Satin aluminium coat hook as Twyfords cat No. PB0204SI or any other equal and approved.	NO	2			
C	Tumbler and tooth brush holder as "Twyfords" Cat: no.VC9805WH or any other equal and approv	NO	1			
	Carried to collection					
	<u>Collection</u>					
	From page 106					
	From page 107 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	Element No. 10 Drainage (Provisional)					
	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 Medium Grade					
A	100 mm diameter uPVC golden brown	LM	18			
B	100 mm diameter uPVC grey pipe	LM	18			
C	50 mm diameter uPVC grey pipe	LM	12			
D	40 mm diameter uPVC grey pipe	LM	12			
E	32 mm diameter uPVC grey pipe	LM	12			
	Extra over uPVC and muPVC soil and waste pipework for the following					
F	100 mm diameter WC connector	No.	1			
G	100 mm diameter sweep bend	No.	4			
H	100 mm diameter long radius bend	No.	2			
I	100 mm diameter vent cowl	No.	1			
J	100 mm diameter weathering slate	No.	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	100 mm diameter short radius bend	No.	1			
B	100 mm diameter single branch	No.	1			
C	100 x 50 mm diameter Boss Connector	No.	1			
D	50 mm diameter sweep tee	No.	1			
E	50 x 40 mm sweep tee	No.	1			
F	50 mm diameter sweep bend	No.	2			
G	50 mm diameter 'P' trap	No.	2			
H	40 mm diameter shower 'P' trap	No.	2			
I	50 mm diameter floor trap	No.	2			
J	50 mm diameter vent cowl	No.	2			
K	50 mm diameter weathering slate	No.	2			
L	40 mm diameter sweep tee	No.	4			
M	40 mm diameter sweep bend	No.	3			
N	40 mm diameter rodding eye	No.	2			
O	40 x 32 mm diameter reducer	No.	2			
P	32 mm diameter sweep bend	No.	2			
Q	32 mm diameter sweep tee	No.	2			
R	32 mm diameter rodding eye	No.	2			
	Gulley traps					
S	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 square painted gulley trap cover made from 3 mm thick mild steel sheet: D-Handle 40mm Diameter-vent	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	30			
B	Allow for testing the whole of the drainage installations during the progress and completion of the works to approval		item			
	Manholes/inspection chambers					
C	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			
D	ditto: 1000mm deep	N0.	2			
	septic tank					
E	***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					
F	6000x1800x2200mm overall	No.	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	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					
A	1200mm Diameter by 6000mm deep	No.	3			
B	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					
C	100mm diameter pipe in trenches	LM	45			
D	Allow for testing the whole of the drainage installations during the progress and completion of the works to approval		item			
	Amount carried to Collection					
	Collection					
	From page 108					
	From page 109					
	From page 110					
	From page 111					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	Element No. 11 Internal Plumbing (provisional)					
	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, deliver and fix u P.V.C Polypropylene Random (PPR) pipes jointed and fixed as described in accordance to manufacturers instructions					
A.	15mm diameter	LM	40			
B.	20mm ditto	LM	18			
C.	25mm ditto	LM	12			
D	15mm bend	No.	10			
E	20mm ditto	No.	6			
F	15mm equal tee	No.	6			
	high pressure brass valves and jointing to pipes					
G	15mm ditto	No.	1			
H	20mm ditto	No.	1			
I	32mm. Ball valve with plastic float, brass stem and connecting to tank with union and backnut including perforation	No.	1			
J	20mm ditto	No.	1			
	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 space Water storage tank					
C	Plastic water storage tank 900 litres (200 gallons) rectangular tank in roof space approximate dimensions 1270x1270x580mm including overflow pipes	NO	1			
	Ground Water sorage 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.	1			
	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.	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	***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 112 From page 113 From page 114 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	Element No. 12 Electrical Works (provisional)					
	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 switching	No.	4			
B.	Two way switching	No.	3			
C.	Pendant light fitting comprising ceilling rose,code and lampholder as volex complete with bulb	No.	2			
D.	60W spherical fitting	No.	2			
E.	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:					
F	Single	No.	2			
	5A Flush mounted switches as volex					
G	1gang 1 way	No.	4			
H	2 gang 2 way	No.	3			
	Total carried to collection			**Kshs.**	**-**	

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	6Ways consumer unit as crabtree complete with cicuit breakers	No.	1			
B	3x16mm2 single core copper cables as sub-main and drawn in 50mm diameter heavy gauge PVC conduits including all conduit accessories.	Lm.	4			
C	KPL&C manhole size 600x600x750mm complete with iron cover.	No.	1			
D	1,200mmx25mm copper earth electrode complete with clamp.	No.	1			
E	Standard cable looping box		Item			
F	Allow for the Testing of the complete electrical installations to the satisfaction of the engineer		Item			
	Carried to collection					
	<u>Collection</u>					
	From page 115					
	From page 116 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	Element No.13 Fire Fighting Equipment					
	Fire extinguishers					
	Fire extinguishers : ***including fixing brackets to masonry or timber backgrounds***					
A.	Water/CO2: 9 Litres	No.	1			
B.	Dry Powder 9 Kgs	No.	1			
	Total carried to Summary					

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT BADASA MARSABIT N. RESERVE**					
	Summary	From page				
1	Substructures	92				
2	Walling	93				
3	Roof	96				
4	Windows	98				
5	Doors	101				
6	External wall finish	102				
7	Internal finishes	104				
8	Fixtures and fittings	105				
9	sanitary fittings	107				
10	Internal Drainage	111				
11	internal Plumbing	114				
12	Electrical Works	116				
13	Fire Fighting Equipment	117				
	TOTAL FENCE GUARDPOST HOUSE AT BADASA CARRIED TO GRAND SUMMARY pg 180		**Kshs.**			

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	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	39			
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.	2			
C.	Excavate vegetable soil 200 mm (average) Deep: spread on site as directed	SM	39			
D	Excavate to reduce levels n.e 300mm deep from stripped levels	SM	39			
E	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	30			
F	Extra over all excavations for excavating in rock	CM	1			
	Disposal of excavated materials					
G	Backfill and compact selected excavated materials	CM	15			
H	Spread surplus excavated materials on site as may be directed by the project manager	CM	15			
	Planking and strutting					
I	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	32			
C	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	32			
	Murram blinding					
D	50 mm fillings as blinding to hardcore : levelled and compacted	SM	32			
	Insitu concrete : Mix 1:3:6					
E	50 mm blinding : under strip foundations	SM	39			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
F	Foundations in trenches	CM	4			
G	100 mm Thick beds	SM	39			
	High tensile reinforcement to BS 4461 incl. Cutting to lengths,bending,twisting and fixing.include all necessary wires and spacing blocks					
H	Assorted bars	Kg.	440			
	Mesh fabric reinforcement to BS 4483: Square mesh reference A142 : weighing 2.22 kilogrammes per square metre					
I	In beds : 200 mm laps	SM	39			
	Formwork : to					
J	Vertical : sides of foundations	SM	13			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	27			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
B	200 mm Walls	SM	50			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
C	Horizontal : 200 mm wide	LM	33			
D	Ditto : 100 mm wide	LM	2			
	Labours and sundries					
E	Single layer 1000 gauge damp proof membrane : 200 mm laps	SM	39			
	12 mm cement and sand (1:4) render: on concrete or blockwork to:					
F	Plinths	SM	8			
	Prepare and apply two coats bituminous paint : on render : to					
G	Plinths	SM	8			
	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	22			
	Carried to Collection					
	Collection					
	From page 119					
	From page 120					
	From page 121(above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	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	Assorted	Kg	220			
	Formwork to:					
C	Sides and soffits : beams	SM	26			
	medium chisel dressed masonry wall: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
D	200 mm Walls	SM	89			
E	100mm Ditto	SM	4			
	Labours and sundries					
F	Labour and materials for eaves filling 300mm high to 200mm thick walls	LM	20			
G	Fair raking	LM	10			
	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 Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	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	70			
B.	Pre-painted gauge 28 roof cap fixed with and including roofing nails to match roof	SM	11			
	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 Rafters	LM	49			
D	150x50 mm Ridge board	LM	22			
E	75x50 mm Purlins	LM	66			
F	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	20			
	Wrot Cypress, Selected and kept clean					
	fascias and barge boards					
G	250x25 mm Fascia or barge board with splayed wading joints	LM	36			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Rainwater goods					
	24 Gauge galvanised mild steel sheet rainwater goods with lapped, rivetted and soldered joints or seams including all labours					
A	150 mm Diameter half round eaves gutter: 25x6 mm: M.S brackets screwed to fascia at 600 mm centres	LM	22			
B	Extra for stopped end	NO	4			
C	Extra for 100 mm drop nozzle	NO	2			
D	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	6			
E	Extra for bend	NO	2			
F	Extra swan neck projections	NO	2			
G	Extra for shoe	NO	2			
	Knot, prime, stop and apply one coat undercoat and twos coat gloss finishing paint on woodwork					
H	Fascia and barge board: Girth 200-300 mm	LM	22			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint on metalwork					
I	Large pipes	SM	2			
J	150 mm diameter half round gutter	SM	5			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Plastic Tank					
A	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.	1			
	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***					
B	2000mm diameter tank platform	No.	1			
	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 FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	Element No.4 Windows					
	Burnt clay window cill					
A.	150x150x20mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	8			
	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 1200x1200 mm high overall	NO	4			
C	Window size 450x600 mm high overall	NO	2			
	Glazing					
	5 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	6			
E	Ditto obscure Sheet glass	SM	1			
	Pelmet boxes: softwood: selected and kept clean					
F	150x25 mm top	LM	8			
G	150x25 mm fascia : two labours	LM	8			
H	Extra for stopped ends	NO	12			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	General joinery: cypress or equal approved: selected and kept clean					
A	50x20 mm bearers : plugged	LM	12			
	Curtain tracks					
B	Brass "I" section track screwed to pelmets (measured seperately): rollers: end stops: laps	LM	12			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
C	Windows: general surfaces	SM	12			
	Prepare and prime before fixing on wood					
D	Bearers : not exceeding 100 mm girth	LM	8			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss finishng paint : on wood					
E	pelmets : general surfaces	SM	12			
	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 FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	Element No. 5 Doors					
	Precast concrete units : mix 1:2:4 (20 mm aggregate) : vibrated : 4No. Y10 reinforcement					
A.	200x215 mm lintol	LM	5			
	Mild steel: K.S. 02-18					
	custom made steel door : 50x50x3mm SHS 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 Architects detail's:					
B.	Door size 900 x 2400 mm high overall	NO	2			
	Flush doors: solid cored					
C.	45 mm thick door size 850x2050 mm high: faced both sides with imported quality veneer : hardwood lipped all edges	NO	2			
	Frames and linings : softwood : selected and kept clean					
D	100x50 mm frame : plugged	LM	11			
E	20x20 mm Architrave : ditto	LM	11			
F	Ditto quadrant	LM	11			
	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.	5-lever mortice lock with lever handles	NO	2			
C.	3-lever mortice lock with lever handles	NO	2			
D.	Rubber door stop : rawl bolted to concrete	NO	4			
	Prepare and prime before fixing on wood					
E	Frames : not exceeding 100 mm girth	LM	11			
F	Architraves : ditto	LM	11			
G	Ditto quadrant	LM	11			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
H	Doors general surfaces	SM	8			
	Knot, prime, stop and apply three coats crown alkyd clear polyurethane varnish wood:					
I	Doors general surfaces	SM	8			
J	Frames : over 100 but not exceeding 200 mm girth	LM	11			
K	Architraves : not exceeding 100 mm girth	LM	64			
L	Ditto quadrant	LM	64			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
M	Doors general surfaces	SM	26			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss paint finishing coat : on wood					
A	Doors general surfaces	SM	62			
B	Frames : over 100 but not exceeding 200 mm girth	LM	64			
C	Architraves : not exceeding 100 mm girth	LM	11			
D	Ditto quadrant	LM	11			
	Amount 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 FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	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	6			
	Painting					
C	Beams	SM	8			
D	Gable end walling	SM	6			
	Pointing					
E	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	81			
F	**Extra over** wire brushing and dusting to key pointed masonary wall surfaces and random rubble	SM	81			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Cement and sand (1:4) screed: steel trowelled on concrete to					
A.	40 mm thick: floor screed with green oxide admixtu	SM	39			
B	Ditto 100mm wide skirting	LM	47			
	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					
C	Floors	SM	4			
D	Extra for fair edges	LM	10			
	Cement and sand (1:4) screed: steel trowelled on concrete to: red oxide.					
E	50 mm floors	SM	2			
	Wall finishes					
	300x200x6 mm coloured glazed tiles: on cement and sand backing (m/s) : bedded in cement mortar (1:4) : pointed in white cement and sand backing (m/s) : bedded					
F	Walls	SM	17			
G	Extra for fair edges	LM	8			
	12 mm cement and sand (1:4) backing					
H	Walls : finished to receive tiles	SM	17			
I	Matching plastic edge trims	LM	40			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	12 mm cement and sand (1:4) plaster : steel trowelled : on blockwork to					
A	Walls: internally	SM	127			
	Prepare and apply one undercoat and two finishing coats hard gloss paint : on plaster to					
B	Walls	SM	127			
	Ceiling finishes					
	General joinery : cypress: pressure impregnated with tanalith "C" or equal					
C	Skeleton framework to ceilings: 50x50 mm one direction at 600 mm centres and 50x100 mm other direction at 1200 mm centres	SM	77			
	chipboard : nailed to branderings (Measured seperately)					
D	10mm ceiling linings	SM	77			
E	Extra over for access trap door size 800x800 mm overall : framing all round	NO	1			
F	75x20 mm Cornice : plugged	LM	50			
	Knot, prime, prepare and Prepare one undercoat and two finishing coats plastic emulsion paint to					
G	ceiling linings	SM	77			
H	Cornice: not exceeding 100 mm girth	LM	50			
	Carried to collection					
	Collection					
	From page 132					
	From page 133 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	Element No.08 Fixtures and Fittings					
	25mm thick blockboard with first quality mahogany veneer facing on both faces: hardwood lipping on all exposed edges					
	Concrete worktop					
A	1200mm 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	2			
	Kitchen Undersink Cupboard					
B	Cupboard size 1200x600x900 mm high overall: comprising 3No. doors size 400x600 mm 3No. drawers size 600x500x 150 mm deep: shelvings: Ceramic tiles worktop: ironmongery : painting 100mm mass concrete benching	NO	2			
	kitchen over head shelving:					
C	Overhead shelving size 1200 mm long x 400 mm deep x 600 mm high : comprising 3 No. vertical divisions at 600mm 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 FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	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	1			
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	1			
C	"Lorenzetti" or equal and approved Automatic Shower heater with energy saver selector.	NO	1			
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	1			
F.	Soapdish as "Twyfords" Cat: no. VC9312WH or any other equal and approved.	NO	1			
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	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	25mm diameter x 900mm long chromium plated towel rail including end brackets to match: Plugged to blockwork or masonry.	NO	1			
B	Satin aluminium coat hook as Twyfords cat No. PB0204SI or any other equal and approved.	NO	2			
C	Tumbler and tooth brush holder as "Twyfords" Cat: no.VC9805WH or any other equal and approv	NO	1			
	Carried to collection					
	<u>Collection</u>					
	From page 135					
	From page 136 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	Element No. 10 Drainage (Provisional)					
	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 Medium Grade					
A	100 mm diameter uPVC golden brown	LM	18			
B	100 mm diameter uPVC grey pipe	LM	18			
C	50 mm diameter uPVC grey pipe	LM	12			
D	40 mm diameter uPVC grey pipe	LM	12			
E	32 mm diameter uPVC grey pipe	LM	12			
	Extra over uPVC and muPVC soil and waste pipework for the following					
F	100 mm diameter WC connector	No.	1			
G	100 mm diameter sweep bend	No.	4			
H	100 mm diameter long radius bend	No.	2			
I	100 mm diameter vent cowl	No.	1			
J	100 mm diameter weathering slate	No.	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	100 mm diameter short radius bend	No.	1			
B	100 mm diameter single branch	No.	1			
C	100 x 50 mm diameter Boss Connector	No.	1			
D	50 mm diameter sweep tee	No.	1			
E	50 x 40 mm sweep tee	No.	1			
F	50 mm diameter sweep bend	No.	2			
G	50 mm diameter 'P' trap	No.	2			
H	40 mm diameter shower 'P' trap	No.	2			
I	50 mm diameter floor trap	No.	2			
J	50 mm diameter vent cowl	No.	2			
K	50 mm diameter weathering slate	No.	2			
L	40 mm diameter sweep tee	No.	4			
M	40 mm diameter sweep bend	No.	3			
N	40 mm diameter rodding eye	No.	2			
O	40 x 32 mm diameter reducer	No.	2			
P	32 mm diameter sweep bend	No.	2			
Q	32 mm diameter sweep tee	No.	2			
R	32 mm diameter rodding eye	No.	2			
	Gulley traps					
S	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 square painted gulley trap cover made from 3 mm thick mild steel sheet: D-Handle 40mm Diameter-vent	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	30			
B	Allow for testing the whole of the drainage installations during the progress and completion of the works to approval		item			
	Manholes/inspection chambers					
C	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			
D	ditto: 1000mm deep	N0.	2			
	septic tank					
E	***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					
F	6000x1800x2200mm overall	No.	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	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					
A	1200mm Diameter by 6000mm deep	No.	3			
B	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					
C	100mm diameter pipe in trenches	LM	45			
D	Allow for testing the whole of the drainage installations during the progress and completion of the works to approval		item			
	Amount carried to Collection					
	Collection					
	From page 137					
	From page 138					
	From page 139					
	From page 140					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	Element No. 11 Internal Plumbing (provisional)					
	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, deliver and fix u P.V.C Polypropylene Random (PPR) pipes jointed and fixed as described in accordance to manufacturers instructions					
A.	15mm diameter	LM	40			
B.	20mm ditto	LM	18			
C.	25mm ditto	LM	12			
D	15mm bend	No.	10			
E	20mm ditto	No.	6			
F	15mm equal tee	No.	6			
	high pressure brass valves and jointing to pipes					
G	15mm ditto	No.	1			
H	20mm ditto	No.	1			
I	32mm. Ball valve with plastic float, brass stem and connecting to tank with union and backnut including perforation	No.	1			
J	20mm ditto	No.	1			
	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 space Water storage tank					
C	Plastic water storage tank 900 litres (200 gallons) rectangular tank in roof space approximate dimensions 1270x1270x580mm including overflow pipes	NO	1			
	Ground Water sorage 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.	1			
	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.	1			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	***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 141 From page 142 From page 143 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	Element No. 12 Electrical Works (provisional)					
	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 switching	No.	4			
B.	Two way switching	No.	3			
C.	Pendant light fitting comprising ceilling rose,code and lampholder as volex complete with bulb	No.	2			
D.	60W spherical fitting	No.	2			
E.	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:					
F	Single	No.	2			
	5A Flush mounted switches as volex					
G	1gang 1 way	No.	4			
H	2 gang 2 way	No.	3			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	6Ways consumer unit as crabtree complete with cicuit breakers	No.	1			
B	3x16mm2 single core copper cables as sub-main and drawn in 50mm diameter heavy gauge PVC conduits including all conduit accessories.	Lm.	4			
C	KPL&C manhole size 600x600x750mm complete with iron cover.	No.	1			
D	1,200mmx25mm copper earth electrode complete with clamp.	No.	1			
E	Standard cable looping box		Item			
F	Allow for the Testing of the complete electrical installations to the satisfaction of the engineer		Item			
	Carried to collection					
	<u>Collection</u>					
	From page 145					
	From page 146 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	Element No.13 Fire Fighting Equipment					
	Fire extinguishers					
	Fire extinguishers : ***including fixing brackets to masonry or timber backgrounds***					
A.	Water/CO2: 9 Litres	No.	1			
B.	Dry Powder 9 Kgs	No.	1			
	Total carried to Summary					

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED FENCE GUARDPSOST HOUSE** **AT KARANTINA MARSABIT N. RESERVE**					
	Summary	From page				
1	Substructures	121				
2	Walling	122				
3	Roof	125				
4	Windows	127				
5	Doors	130				
6	External wall finish	131				
7	Internal finishes	133				
8	Fixtures and fittings	134				
9	sanitary fittings	136				
10	Internal Drainage	140				
11	internal Plumbing	143				
12	Electrical Works	145				
13	Fire Fighting Equipment	146				
	TOTAL KARANTINA FENCE GUARDPOST HOUSE CARRIED TO GRAND SUMMARY pg 180		**Kshs.**			

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	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	220			
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.	6			
C.	Excavate vegetable soil 200 mm (average) Deep: spread on site as directed	SM	167			
D.	Excavate to reduce levels n.e 1.5metres deep from stripped levels	CM	200			
E.	Excavate foundation trench not exceeding 1.50 metres deep from reduced level	CM	228			
F	Excavate pits for column bases not exceeding 1.50 metres deep from reduced level	CM	144			
G	Extra over all excavations for excavating in rock	CM	5			
	Disposal of excavated materials					
H	Backfill and compact selected excavated materials	CM	240			
I	Spread surplus excavated materials on site as may be directed by the project manager	CM	352			
	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	85			
C	Gladiator "TC" or any other equal and approved chemical anti-termite treatment to subsoil filling and trench bottoms.	SM	142			
	murram blinding					
D	50 mm fillings as blinding to hardcore : levelled and compacted	SM	142			
	Insitu concrete : Mix 1:3:6					
E	50 mm blinding : under strip foundations	SM	76			
F	Column bases	SM	24			
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
G	Foundations in trenches	CM	15			
H	Column bases	CM	12			
I	Stub Columns	CM	2			
J	Ground beams	CM	12			
K	100 mm Thick beds	SM	167			
	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.	3690			
	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	167			
	Formwork : to					
B	Vertical : sides of foundations	SM	52			
C	Ditto:Column bases	SM	48			
D	Ditto: stub columns	SM	29			
E	Ditto: ground beam	SM	140			
F	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	62			
	Undressed masonry walling: laid in cement mortar (1:4): and including hoop iron reinforcement in every alternate course					
G	200 mm Walls	SM	191			
H	Ditto : 150 mm wide	SM	27			
	Damp proof courses : bituminous felt bedded in cement mortar (1:4) : 300 mm laps					
I	Horizontal : 200 mm wide	LM	116			
J	Ditto : 100 mm wide	LM	18			
	Labours and sundries					
K	Single layer 1000 gauge damp proof membrane : 200 mm laps	SM	167			
	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	28			
	Prepare and apply two coats bituminous					
	paint : on render : to					
B	Plinths	SM	28			
	Paving slab surround					
C	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	83			
	Carried to Collection					
	Collection					
	From page 148					
	From page 149					
	From page 150					
	From page 151 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No. 2 Walling					
	Insitu concrete : Mix 1:2:4 : Vibrated reinforced					
A.	Beams	CM	8			
B.	Cylidrical columns	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.	Assorted	Kg	1080			
	Formwork to:					
D.	Soffittes of suspended floor slab	SM	6			
E.	Vertical : edges of beds over 75 but not exceeding 150 mm wide	LM	10			
F.	Sides and soffits : beams	SM	102			
G.	Vertical : cylindrical sides of columns	SM	10			
H.	Extra over: for fair face finish	SM	10			
	Solid Precast concrete block wall: laid in cement sand (1:4): and including hoop iron reinforcement in every alternate course					
I.	200 mm Walls	SM	285			
J.	150mm Ditto	SM	56			
	Total Carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Labours and sundries					
A.	Labour and materials for eaves filling 10mm high to 200mm thick walls	LM	62			
B.	Fair raking	LM	36			
	Vents					
C.	100 mm Diameter x 300 mm long pvc pipe sleeve: grouted into walling : mosquito gauze set into both ends: coffee tray wire reinforced	NO	34			
	Carried to Collection					
	Collection					
	From page 152					
	From page 153(above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	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	278			
B.	Pre-painted gauge 28 roof cap fixed with and including roofing nails to match roof	SM	42			
	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	170			
D	Ditto Common rafters	LM	142			
E	100x50 mm Tie beam	LM	116			
F	75x50 mm Struts and ties	LM	202			
G	150x50 mm Ridge board	LM	42			
H	75x50 mm Purlins	LM	367			
I	150x50 mm Ceiling joists	LM	178			
J	100x50mm wall plate fixed onto blockwork with approved bolts and nuts as per Engineers detail	LM	62			
K	150x50 mm verandah beam	LM	10			
	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	97			
	Eaves and gable lining					
	wrot cypress					
B.	50x25 mm slats at 50 mm centres nailed to rafters	SM	58			
	Metalwork					
C.	Galvanised coffee tray mesh bat proofing at eaves fixed with galvanised clout nails at 450 mm centres	SM	58			
	Rainwater goods					
	24 Gauge galvanised mild steel sheet rainwater goods with lapped, rivetted and soldered joints or seams including all labours					
D.	150 mm Diameter half round eaves gutter: 25x6 mm: M.S brackets screwed to fascia at 600 mm centres	LM	62			
E	Extra for stopped end	NO	8			
F	Extra for 100 mm drop nozzle	NO	6			
G	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			
H	Extra for bend	NO	6			
I	Extra swan neck projections	NO	6			
J	Extra for shoe	NO	6			
	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	97			
B	Sloping soffits of eaves boarding	SM	56			
	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	15			
	Carried to collection					
	Collection					
	From page 154					
	From page 155					
	From page 156 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No.4 Windows					
	Precast concrete units : mix 1:2:4 ***(20 mm aggregate) : vibrated :*** ***4No. Y10 reinforcement***					
A.	200x300mm lintol	LM	32			
	Burnt clay window cill					
B	150x150x10mm mm cill : weathered and throated :bedded and jointed in matching cement mortar (1:4) :pionted in mastic	LM	27			
	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:***					
C	Window size 1000x1000 mm high overall (W-1)	NO	5			
D	Window size 1000x1300 mm high overall (W-2)	NO	2			
E	Window size 1500x1600 mm high overall (W-3)	NO	9			
F	Window size 1500x1450 mm high overall (W-4)	NO	1			
	Glazing					
	5 mm clear sheet glass and glazing: to **Plastic frames including glazing bead**					
G	In panes: over 0.1 but not exceeding 0.50 square metres	SM	27			
H	Ditto obscure Sheet glass	SM	5			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Pelmet boxes: hardwood-camphor: selected and kept clean					
A	150x25 mm top	LM	27			
B	150x25 mm fascia : two labours	LM	27			
C	Extra for stopped ends	NO	34			
	General joinery: cypress or equal approved: selected and kept clean					
D	50x20 mm bearers : plugged	LM	27			
	Curtain tracks					
E	Brass "I" section track screwed to pelmets (measured seperately): rollers: end stops: laps	LM	27			
	Prepare and prime before fixing on wood					
F	Bearers : not exceeding 100 mm girth	LM	27			
	Knot, prime, stop and apply three coats crown alkyd clear polyurethane varnish wood:					
G	pelmets : general surfaces	SM	8			
	Prepare, touch up primer and apply one undercoat and two coats gloss finishing paint : on metal					
H	Windows surfaces generally	SM	64			
	Carried to collection					
	Collection					
	From page 157					
	From page 158 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No. 5 Doors					
	Precast concrete units : mix 1:2:4 (20 mm aggregate) : vibrated : 4No. Y10 reinforcement					
A.	200x300mm lintol	LM	23			
	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 Architects detail's:					
B	Door size 900 x 2500 mm high overall (D-3)	NO	1			
C	Ditto size 1500 x 2500 mm high overall in two equal leaves (D-4)	NO	1			
	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	14			
	Frames and linings : softwood : selected and kept clean					
E	100x50 mm frame : plugged	LM	95			
F	20x20 mm Architrave : ditto	LM	95			
G	Ditto quadrant	LM	85			
	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	21			
B.	5-lever mortice lock with lever handles	NO	2			
C.	3-lever mortice lock with lever handles	NO	14			
D.	Rubber door stop : rawl bolted to concrete	NO	17			
	Prepare and prime before fixing on wood					
E	Frames : not exceeding 100 mm girth	LM	95			
F	Architraves : ditto	LM	95			
G	Ditto quadrant	LM	95			
	Knot, prime, stop and apply three coats crown alkyd clear polyurethane varnish wood:					
H	Doors general surfaces	SM	53			
I	Frames : over 100 but not exceeding 200 mm girth	LM	95			
J	Architraves : not exceeding 100 mm girth	LM	95			
K	Ditto quadrant	LM	95			
	Prepare, touch up primer and apply one undercoat and two finishing coats gloss paint : on metal					
L	Doors general surfaces	SM	11			
	Prepare and knot coated surfaces: prime and apply one undercoat and two coats gloss paint finishing coat : on wood					
M	Doors general surfaces	SM	62			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Frames : over 100 but not exceeding 200 mm girth	LM	95			
B	Architraves : not exceeding 100 mm girth	LM	95			
C	Ditto quadrant	LM	95			
	<u>Collection</u>					
	From page 159					
	From page 160					
	From page 161(above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No.06 External Finishes					
	Wall finishes					
	12 mm cement and sand (1:4) render : wood floated : on concrete or blockwork to					
A.	Beams and columns	SM	30			
B	Gable end walling	SM	20			
	Painting					
C	rendered external wall surfaces generally	SM	50			
	Pointing					
D	Recessed horizontal and flush vertical joints: external wall finish pointed in cement sand mortar 1:4	SM	124			
E	**Extra over** wire brushing and dusting to key pointed masonary wall surfaces and random rubble	SM	124			
	Wrot prime grade cypress: selected and kept clean: pressure impregnated					
F.	100x25mm thick T&G boarding nailed to External verandahs	SM	20			
	Knot, prime, stop and apply three coat crown alkyd varnish on woodwork.					
G.	T&g ceiling linings	SM	20			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No. 7 Internal Finishes					
	Floor finishes					
	Cement and sand (1:4) screed: steel trowelled on concrete to					
A.	40 mm thick: to receive floor tiles: (m/s)	SM	142			
	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					
B.	Floors	SM	142			
C.	Extra for fair edges	LM	100			
	General joinery : Hardwood-camphor: selected and kept clean					
D.	100x25 mm skirting : two labours : plugged	LM	228			
	Prepare and prime backs of timber before fixing					
E.	Skirtings : not exceeding 100 mm girth	LM	228			
	Prepare and apply three coats clear polyurethane varnish : on wood					
F.	Skirtings : not exceeding 100 mm girth	LM	228			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Wall finishes					
	300x200x6 mm coloured glazed tiles: on cement and sand backing (m/s) : bedded in cement mortar (1:4) : pointed in white cement and sand backing (m/s) : bedded					
A.	Walls	SM	83			
B.	Extra for fair edges	LM	18			
	12 mm cement and sand (1:4) backing steel trowelled: on block work to:					
C.	Walls : finished to receive tiles	SM	82			
D.	Matching plastic edge trims	LM	63			
	12 mm cement and sand (1:4) plaster : steel trowelled : on blockwork to					
E.	Walls: internally	SM	538			
	Prepare and apply one undercoat and two finishing coats silk vinyl paint : on plaster to					
F.	Walls	SM	395			
	General joinery : cypress: pressure impregnated with tanalith "C" or equal					
G.	Skeleton framework to ceilings: 50x50 mm one direction at 500 mm centres and 50x100 mm other direction at 1000 mm centres	SM	167			
	Ceiling finishes					
	General joinery : cypress: pressure impregnated with tanalith "C" or equal					
H.	Skeleton framework to ceilings: 50x50 mm one direction at 600 mm centres and 50x100 mm other direction at 1200 mm centres	SM	167			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Celotex softboard : nailed to branderings (Measured seperately)					
A	12mm ceiling linings	SM	167			
B	Extra over for access trap door size 800x800 mm overall : framing all round	NO	2			
B	75x20 mm Cornice : plugged	LM	228			
	Knot, prime, prepare and Prepare one undercoat and two finishing coats plastic emulsion paint to					
C	Celotex linings	SM	167			
D	Cornice: not exceeding 100 mm girth	LM	228			
	Carried to collection					
	Collection					
	From page 163					
	From page 164					
	From page 165 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No.08 Fixtures and Fittings					
	Concrete worktop					
A	2100mm 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			
B	Ditto 1400mm long	NO	1			
C	Ditto 650mm long	NO	2			
	Kitchen Undersink Cupboard /Shelving					
D	Cupboard size 2100x600x900 mm high overall: comprising 7No. doors size 500x600 mm 7No. drawers size 600x500x 150 mm deep: shelvings: Ceramic tiles worktop (m/s): ironmongery : painting 100mm mass concrete benching	NO	2			
	kitchen over head shelving:					
E	Overhead shelving size 2000 mm long x 450 mm deep x 600 mm high : comprising 4 No. vertical divisions at 500mm c/c and one No. horizontal division at 300mm c/c complete with all	NO	1			
	Extra over: worktop finishes 20mm thick by 600mm wide natural grain granite worktop : on cement and sand backing (m/s) : bedded in cement mortar (1:4) : pointed in matching cement: rounded edges icluding forming recess for WHBS.					
F	Worktop : horizontal surfaces	LM	10			
G	Ditto 100x200mm thick fascia	LM	15			
	Total carried to summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	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. AL4522WH 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	5			
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			
C	Range of bowl urinals bowls as Twyfords: No. 1VC7003WH with hangers: 1No. 13548 divisions: stainless steel flush pipes with spreader and clip: stainless steel dome outlet gratings; chromium plated waste pipe: automatic flushing cistern with syphon: tap and hangers comprising 2No. bowls and 1No. Division.	set	1			
D	Stainless steel single bowl single drainer sink size 1200x600 mm : complete	NO	1			
	Accessories					
E	Toilet toilet roll holder as "Twyfords" Cat: no. VC9806WH or any other equal and approved.	NO	5			
F	Siemens or other equal and approved hot air hand drier: including fixing to backgrounds requiring plugging and incidental electrical connection.	NO	3			
	Total carried to Collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	Soap dispenser as "Twyfords" Cat: no. PB0360CP or any other equal and approved.	NO	3			
B	6 mm Float plate silver coated mirror size 2100x600 mm with bevelled edges, complete with dome headed screws	NO	3			
C	25mm diameter x 900mm long chromium plated towel rails including end brackets and plugging to blockwork.	NO	1			
D	Satin aluminium coat hook as Twyfords cat No. PB0204SI or any other equal and approved.	NO	5			
	Carried to collection					
	<u>Collection</u>					
	From page 167					
	From page 168 (above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No. 10 Drainage (All Provisional)					
	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 Medium Grade					
A	100 mm diameter uPVC golden brown	LM	40			
B	100 mm diameter uPVC grey pipe	LM	40			
C	50 mm diameter uPVC grey pipe	LM	36			
D	40 mm diameter uPVC grey pipe	LM	30			
E	32 mm diameter uPVC grey pipe	LM	30			
	Extra over uPVC and muPVC soil and waste pipework for the following					
F	100 mm diameter WC connector	No.	4			
G	100 mm diameter sweep bend	No.	8			
H	100 mm diameter long radius bend	No.	8			
I	100 mm diameter vent cowl	No.	2			
J	100 mm diameter short radius bend	No.	2			
K	100 mm diameter weathering slate	No.	2			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
A	100 mm diameter single branch	No.	4			
B	100 x 50 mm diameter Boss Connector	No.	4			
C	50 mm diameter sweep tee	No.	6			
D	50 x 40 mm sweep tee	No.	3			
E	50 mm diameter sweep bend	No.	2			
F	50 mm diameter 'P' trap	No.	4			
G	40 mm diameter shower 'P' trap	No.	4			
H	50 mm diameter floor trap	No.	6			
I	50 mm diameter vent cowl	No.	2			
J	50 mm diameter weathering slate	No.	2			
K	40 mm diameter sweep tee	No.	4			
L	40 mm diameter sweep bend	No.	3			
M	40 mm diameter rodding eye	No.	4			
N	40 x 32 mm diameter reducer	No.	4			
O	32 mm diameter sweep bend	No.	4			
P	32 mm diameter sweep tee	No.	4			
Q	32 mm diameter rodding eye	No.	6			
	Gulley traps					
R	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 square painted gulley trap cover made from 3 mm thick mild steel sheet: D-Handle 40mm Diameter-vent	NO	4			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	Manholes/inspection chambers					
A	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.	6			
	septic tank					
B	***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					
C	6000x1800x2200mm overall	No.	1			
	French drain					
	Radial arms: excavating: disposing of soil by spreading on site: 150mm perforated UPVC pipe: filling bottom 800mm of trench with crushed stone, two layers of 500 gauge polythene sheeting: 200mm thick bed of approved compacted soil and remainder with excavated materials					
	Ref drawing No. (50) 5344					
D	1000mm extreme wide x 1250mm average deep	LM	21			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	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					
A	1200mm Diameter by 6000mm deep	No.	3			
	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					
B	Average 500 mm deep	LM	40			
C	Allow for testing the whole of the drainage installations during the progress and completion of the works to approval		item			
	Carried to collection					
	Collection					
	From page 169					
	From page 170					
	From page 171					
	From page 172 (Above)					
	Total carried to Summary			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No. 11 Plumbing (All provisional)					
	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, deliver and fix Polypropylene Random (PPR) pipes jointed and fixed as described in accordance to manufacturers instructions					
A.	15mm diameter	LM	50			
B.	20mm ditto	LM	25			
C.	25mm ditto	LM	100			
D	15mm bend	No.	20			
E	20mm ditto	No.	10			
F	15mm equal tee	No.	10			
	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	No.	4			
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	50			
	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	4			
	Roof space Water storage tank					
C	Plastic water storage tank 900 litres (200 gallons) rectangular tank in roof space approximate dimensions 1270x1270x580mm including overflow pipes	NO	4			
	Ground Water sorage 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.
A	***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 173 From page 174 From page 175 (above)					
	Total carried to Summary			**Kshs.**		

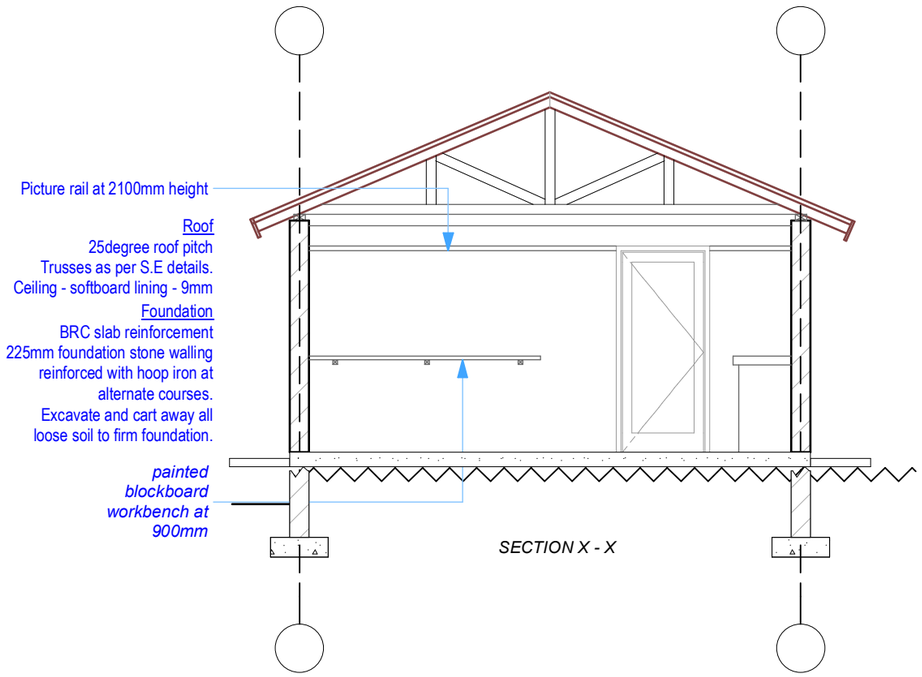
Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No. 12 Electrical Works (Provisional)					
	Rates quoted shall be inclusive of supply and installation includinfg builders work incidental thereto.					
	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 switching	No.	20			
B.	Two way switching	No.	8			
	Supply , fix into position and test the following light fittings					
C	2x36W 1200mm HPF surface flourescent with clear acrylic diffuser as Thorn Diffusalax Cat. No. DLUCXZ 236 -Type 5	No	14			
D	Ditto single tube	No	7			
E	Pendant light fitting comprising ceilling rose,code and lampholder as volex complete with bulb	No.	10			
F	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:					
G	Single	No.	11			
H	13A single flush mounted socket outlets as volex	No.	11			
	Total carried to collection			**Kshs.**		

Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	5A Flush mounted switches as volex					
A	1gang 1 way	No.	14			
B	2 gang 2 way	No.	20			
C	Cooker power point wired in 3x6mm2 single core PVC cables drawn in 20mm diameter heavy gauge PVC conduits including all conduit accessories and outlet boxes.	No.	2			
D	45A DP cooker control unit as volex	No.	2			
E	Cooker terminal outlet as CPL	No.	2			
F	6Ways consumer unit as crabtree complete with cicuit breakers	No.	2			
H	60A SPN switch fuse as KEW	No.	2			
I	KPL&C manhole size 600x600x750mm complete with iron cover.	No.	2			
J	1,200mmx25mm copper earth electrode complete with clamp.	No.	2			
K	1,200mmx25mm copper earth electrode complete with clamp.	No.	2			
L	Standard cable looping box		Item			
M	Allow for the Testing of the complete electrical installations to the satisfaction of the engineer		Item			
	Carried to collection					
	Collection					
	From page 176					
	From page 177 (Above)					
	Total carried to Summary			**Kshs.**		

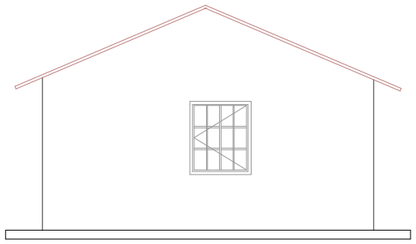
Item No.	Description	Unit	Quantity	Rate	Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**					
	Element No.13 Fire Fighting Equipment					
	Fire extinguishers					
	Fire extinguishers : ***including fixing brackets to masonry or timber backgrounds***					
A.	Water/CO2: 9 Litres	No.	2			
B.	Dry Powder 9 Kgs	No.	2			
	Total carried to Summary			**Kshs.**		

elemen No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE **PROPOSED AD'S OFFICE BLOCK** **MARSABIT NATIONAL RESERVE**			
	Summary	From page		
1	Substructures	151		
2	Walling	153		
3	Roof	156		
4	Windows	158		
5	Doors	161		
6	External wall finish	162		
7	Internal finishes	165		
8	Fixtures and fittings	166		
9	sanitary fittings	168		
10	Internal Drainage	172		
11	internal Plumbing	175		
12	Electrical Works	177		
13	Fire Fighting Equipment	178		
	Total Ads office carried to Grand Summary pg 180	**Kshs.**		

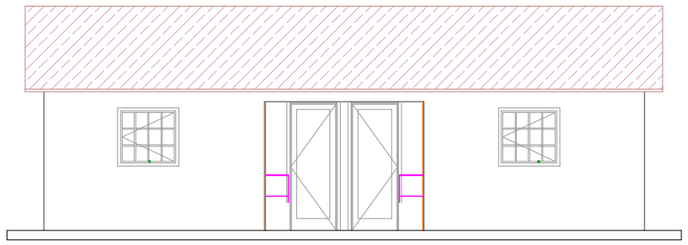
Item No.	Description		Kshs.	Cts.
	KENYA WILDLIFE SERVICE			
	CONSTRUCTION OF BUILDING FACILITIES VARIOUS SITES			
	MARSABIT NATIONAL RESERVE			
	GRAND SUMMARY	**From page**		
1	**Preliminaries**	171		
2	**Gate house - Ahmed gate**	20		
3	**Gate house - Ajamako gate**	40		
4	**rangers accomodation Ajamako**	69		
5	**Gate house - Bongole Kituruni**	89		
6	**Fence Guardpost House- Badasa**	118		
7	**Fence Guardpost House- Karantina**	147		
8	**ADS office**	179		
9	**Subtotal (1)**			
10	**Add 15% Contigencies**			
11	**Subtotal (2)**			
12	**ADD 16% VAT**			
	GRAND TOTAL CARRIED TO FORM OF TENDER	**Kshs.**		



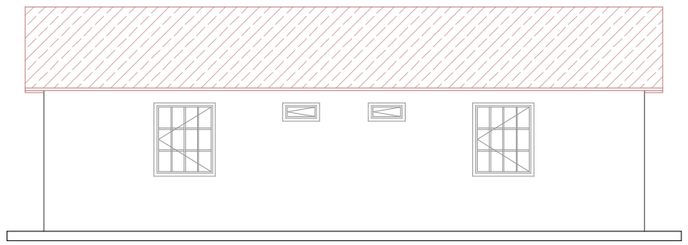
SECTION X - X



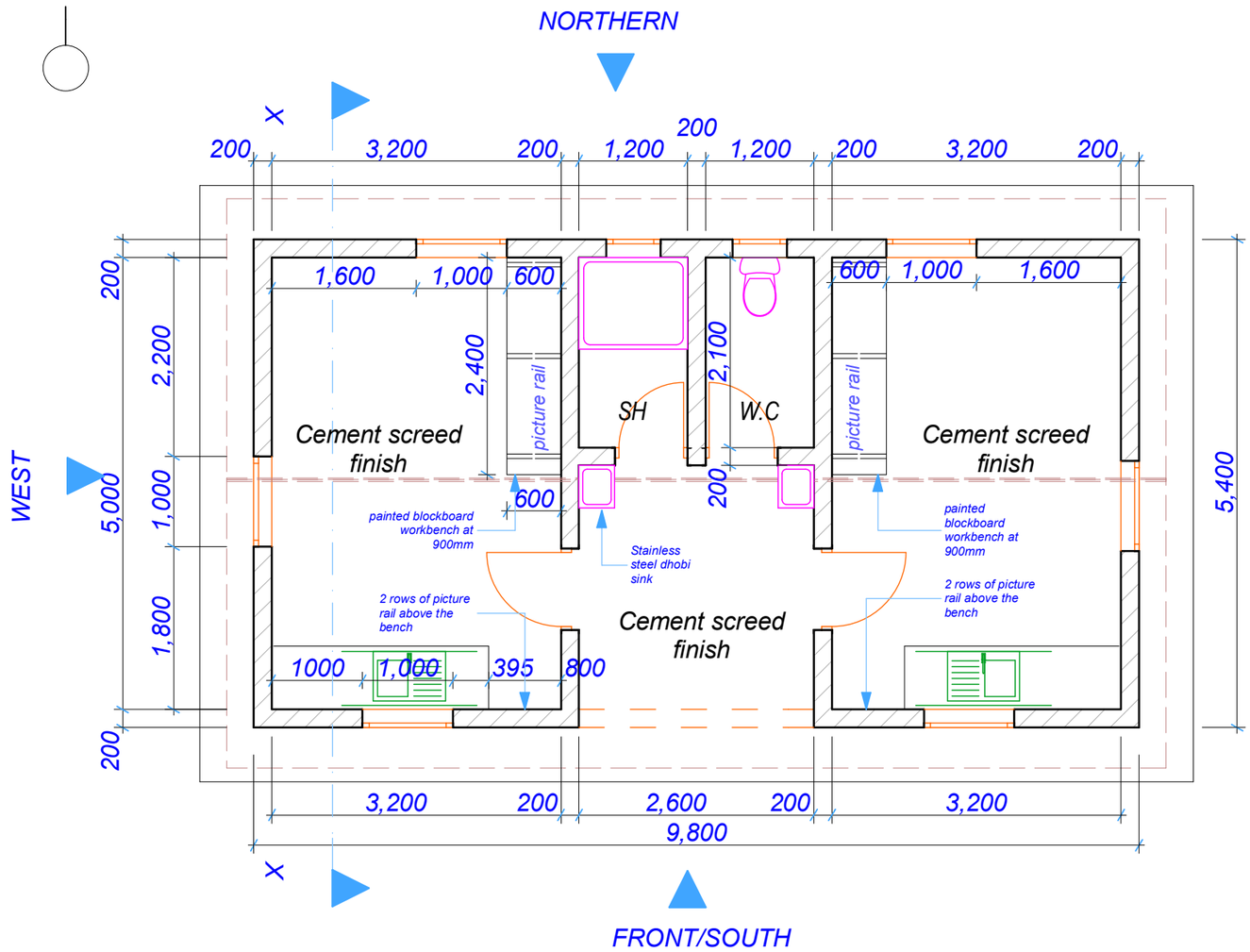
WEST ELEVATION



FRONT/SOUTH ELEVATION



NORTHERN ELEVATION



NOTES

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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

RANGER ACCOMODATION AT AJAMARKO IN MARSABIT NATIONAL RESERVE

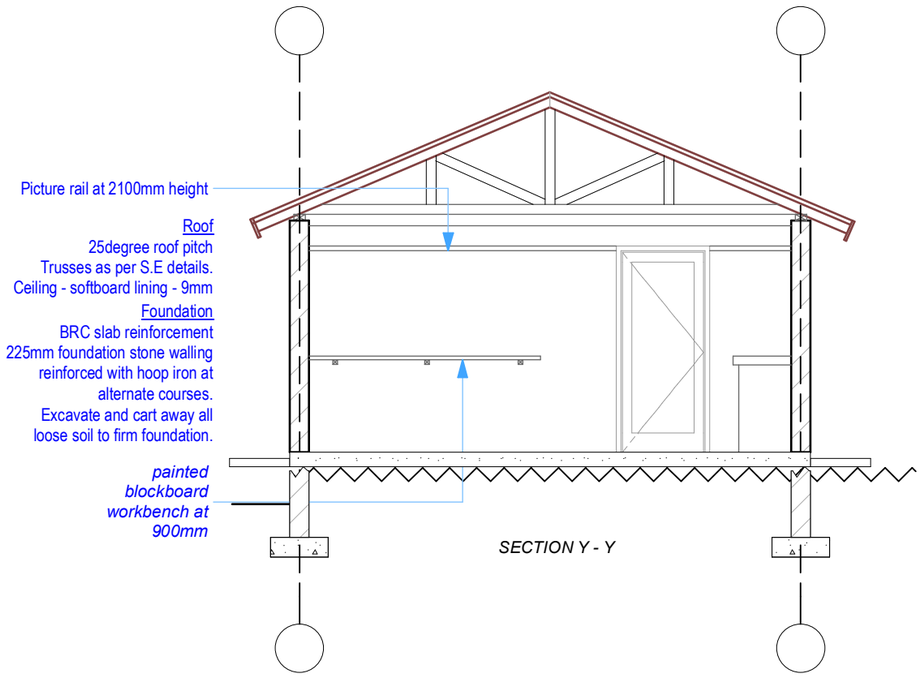
Drawing title :
LAYOUT DRAWINGS

Client : KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

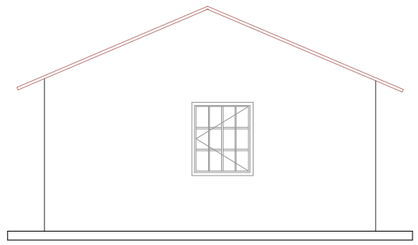
Drawn by : Kathuli P.F

Architect : PATRICK KATHULI .F.

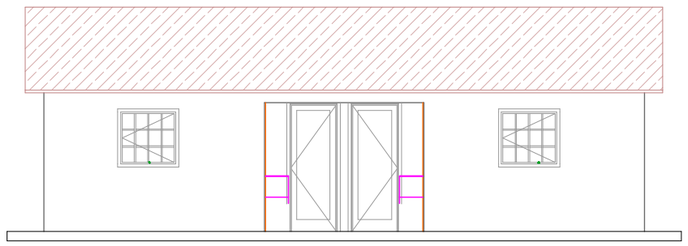
Date : MARCH - 2019



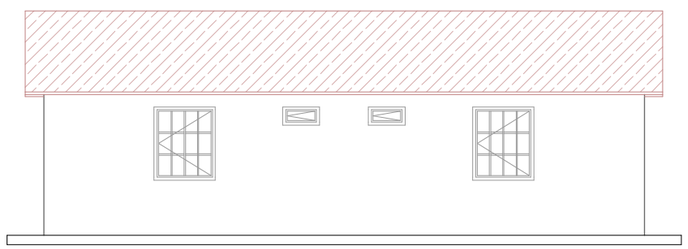
SECTION Y - Y



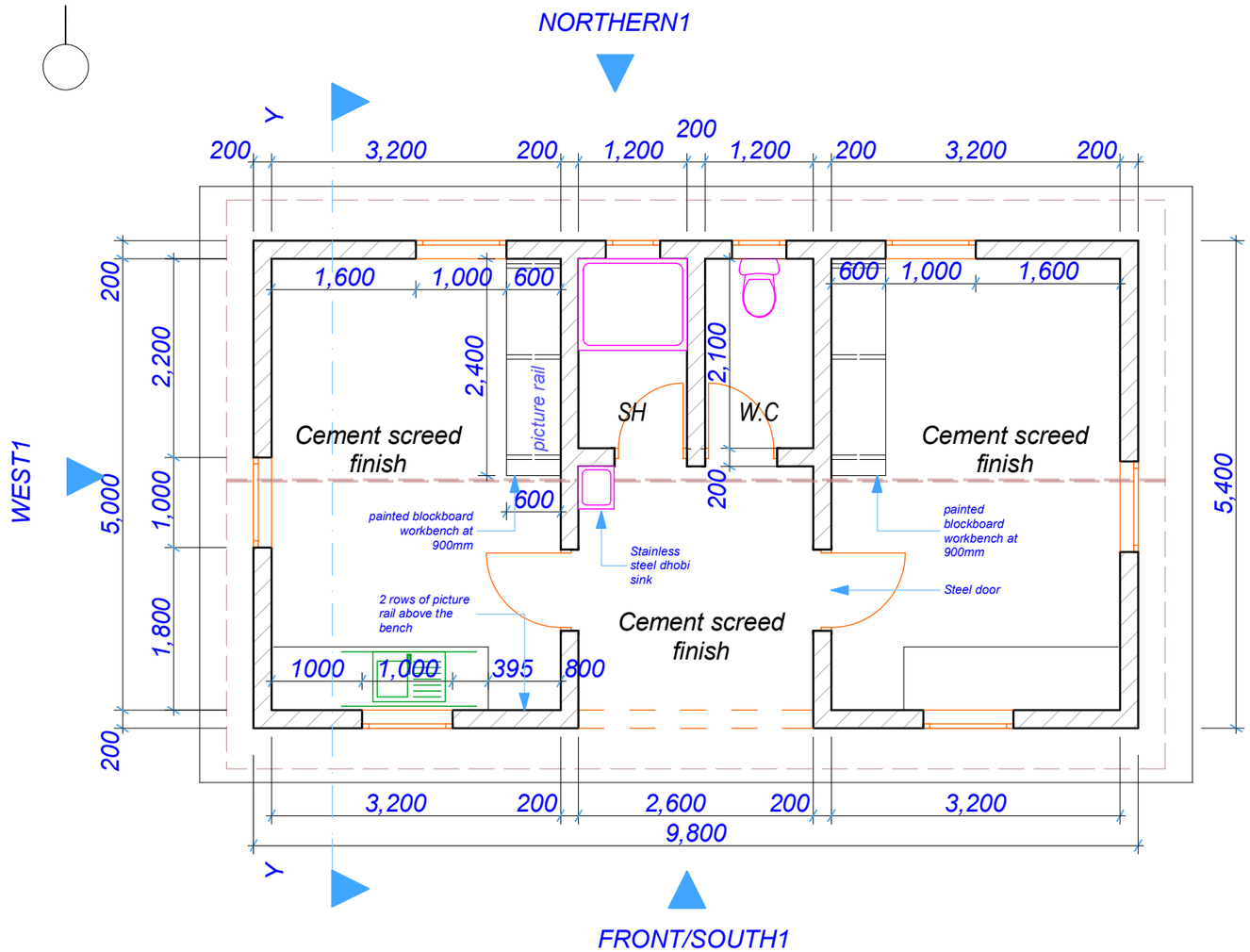
WEST 1 ELEVATION



FRONT/SOUTH 1 ELEVATION



NORTHERN 1 ELEVATION



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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

FENCE GUARDPOST HOUSE AT BADASSA AND KARANTINA IN

MARSABIT NATIONAL RESERVE

Drawing title :

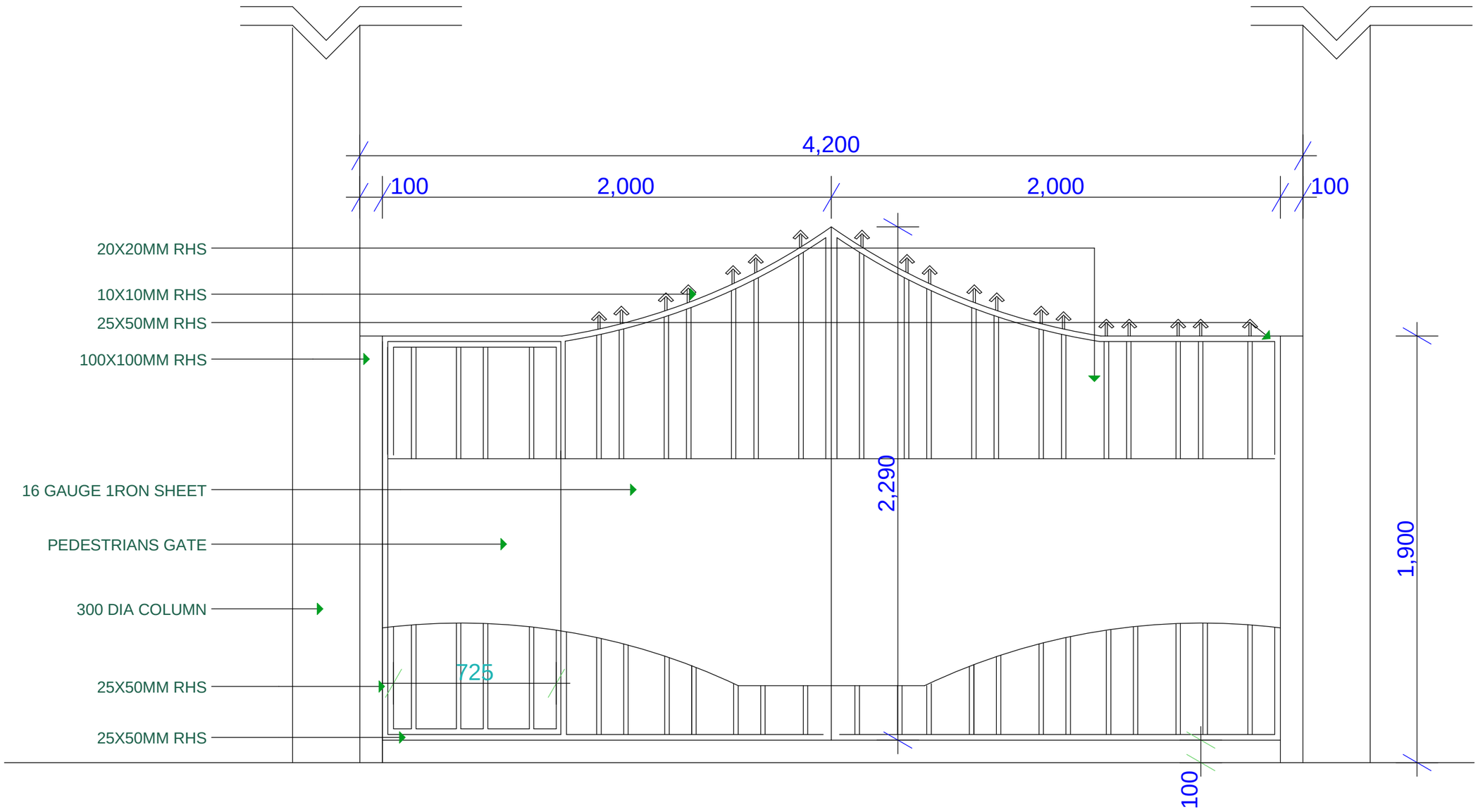
LAYOUT DRAWINGS

Client : **KENYA WILDLIFE SERVICE**
P.O. BOX 40241 00100 NAIROBI
KENYA

Drawn by : **Kathuli P.F**

Architect : **PATRICK KATHULI .F.**

Date : **MARCH - 2019**



NB: CONFIRM MAIN DIMENSIONS ON SITE!

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REVISIONS

No.	DATE.	DESCRIPTION

PROPOSED GATE HOUSE AT

AHMED, ARJAMAKO AND, BONGOLE KITURUNI.

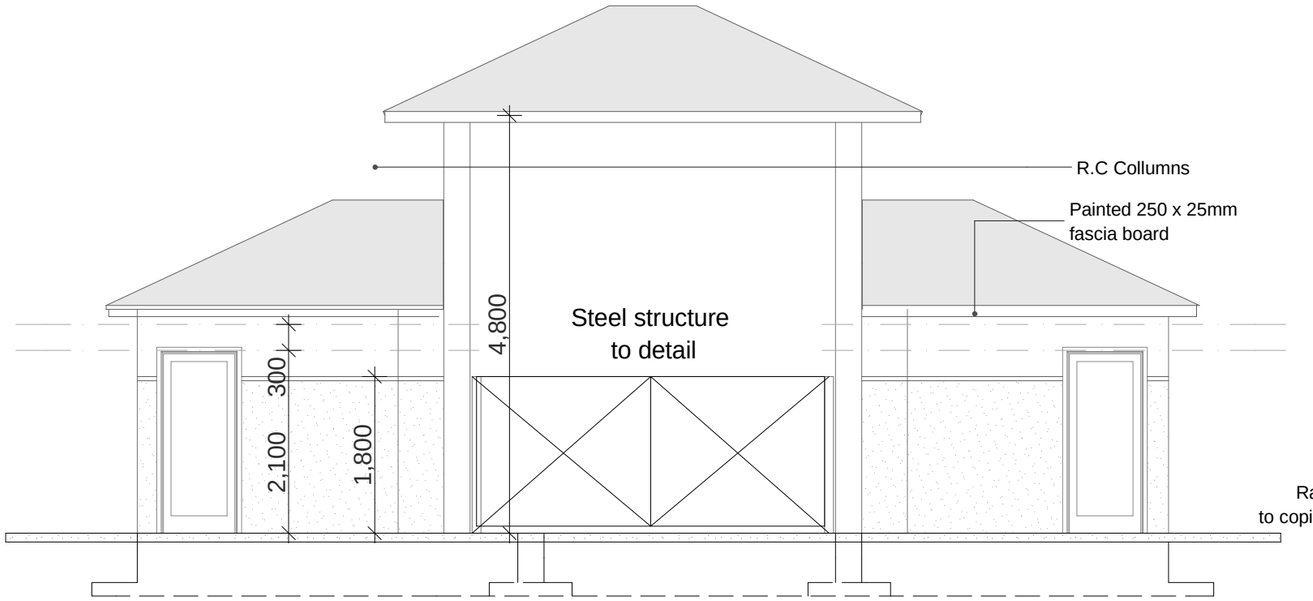
Drawing title : GATE DETAILS

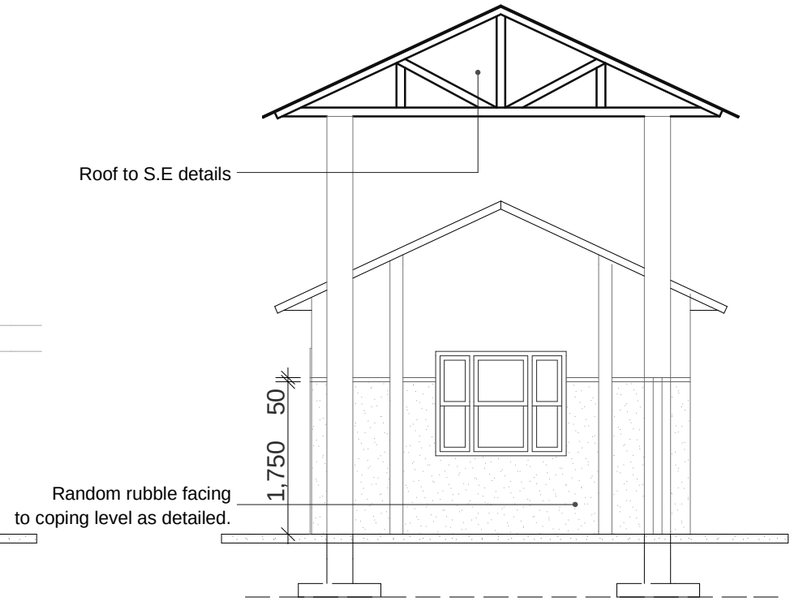
Client : **KENYA WILDLIFE SERVICE**
P.O. BOX 40241 00100 NAIROBI
KENYA

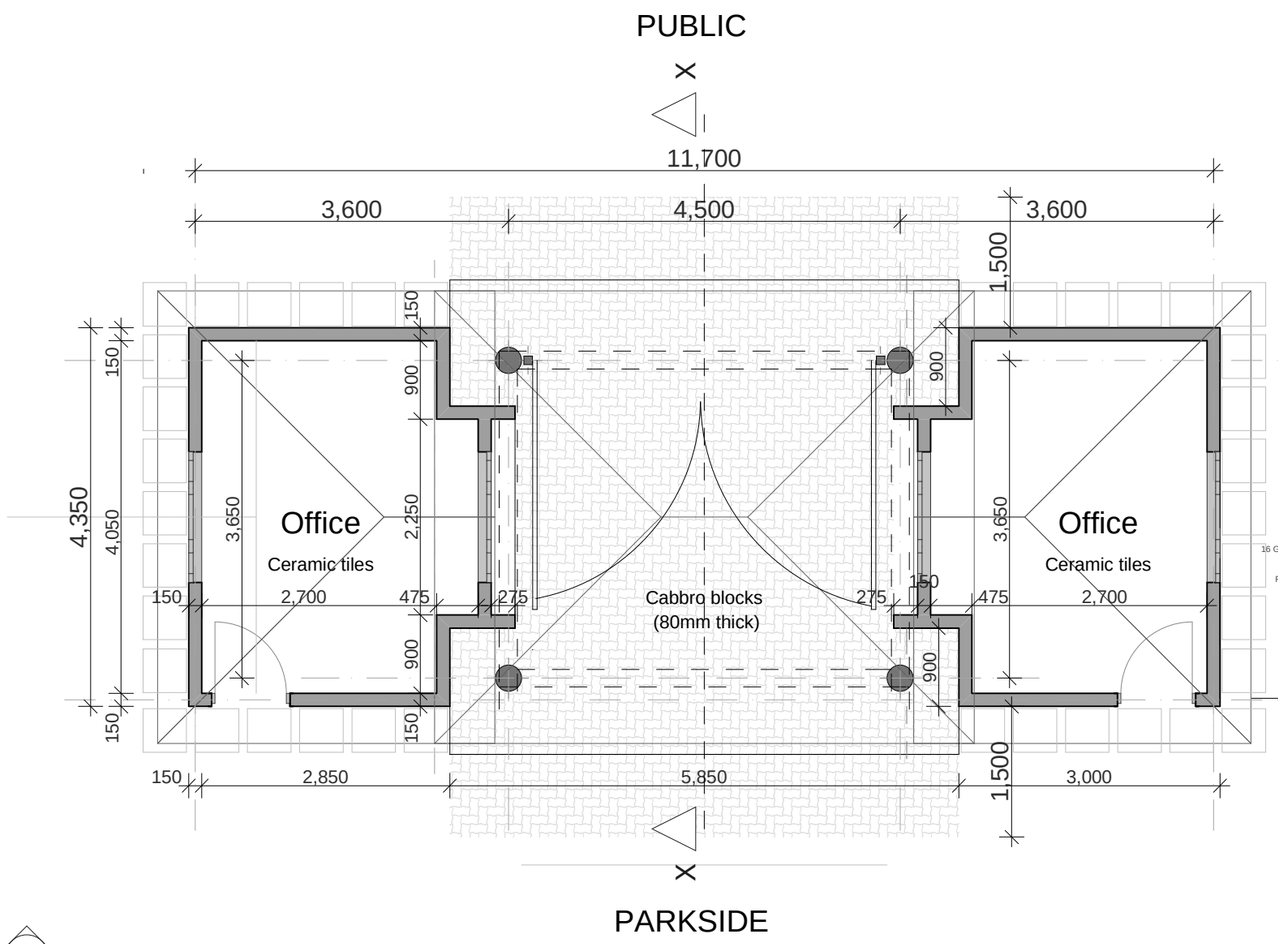
Drawn by : **Kathuli P.F**

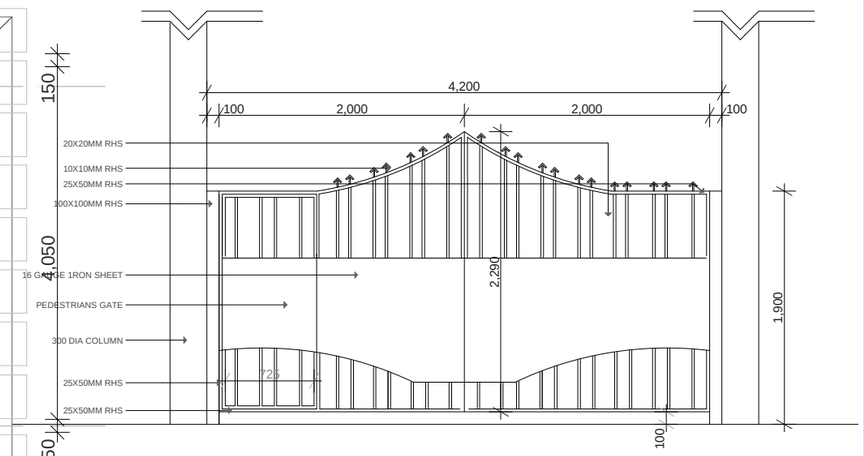
Architect : **PATRICK KATHULI .F.**

Date : **MARCH - 2019**









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REVISIONS

No.	DATE.	DESCRIPTION

PROPOSED GATE HOUSE AT

AHMED, ARJAMAKO AND BONGOLE KITURUNI.

Drawing title :

LAYOUT DETAILS

Client :

KENYA WILDLIFE SERVICE
P.O. BOX 40241 00100 NAIROBI
KENYA

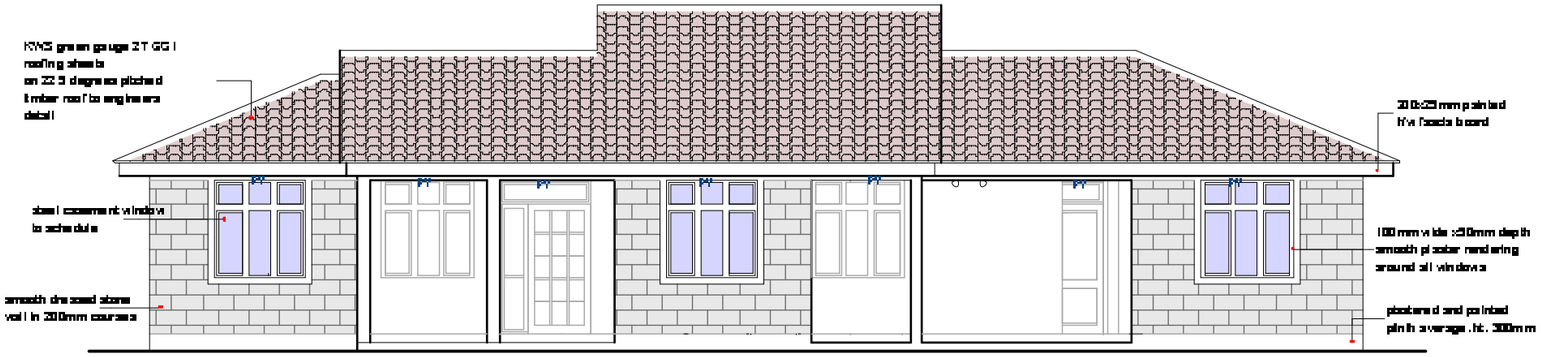
Drawn by : **Kathuli P.F**

Architect :

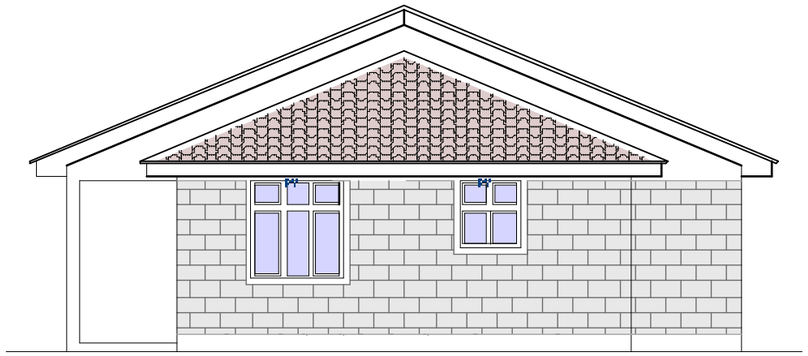
PATRICK KATHULI .F.

Date :

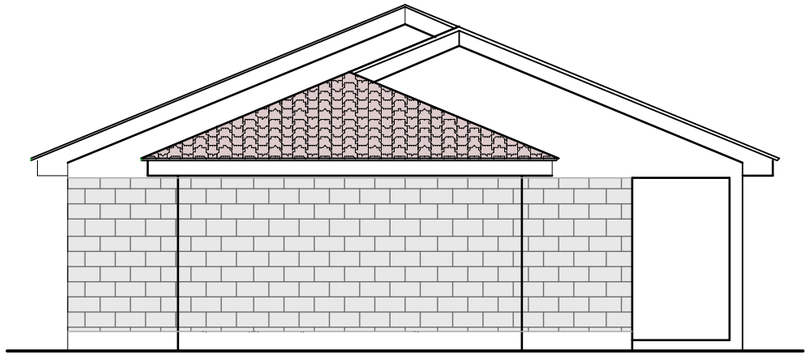
NOV - 2018



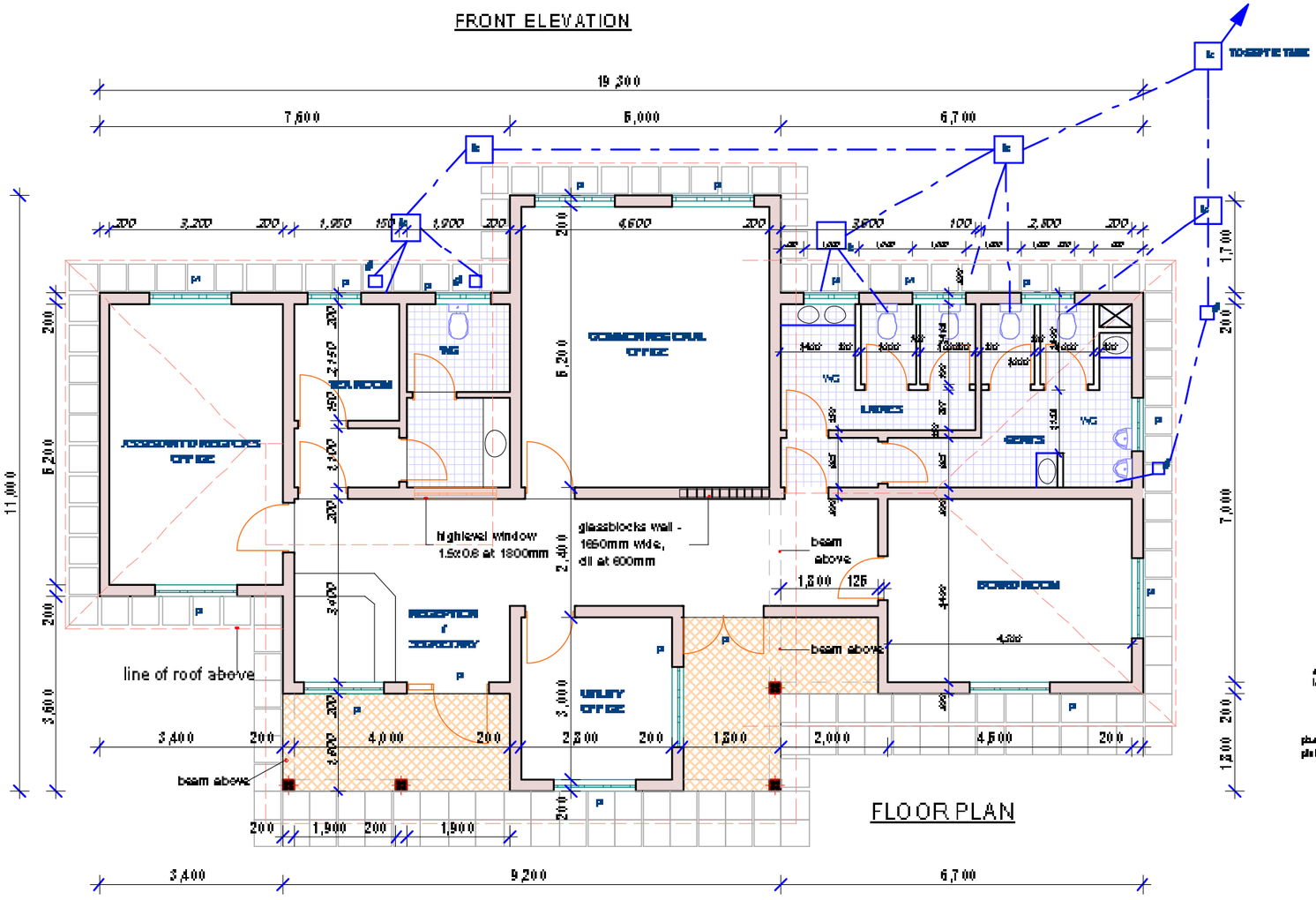
FRONT ELEVATION



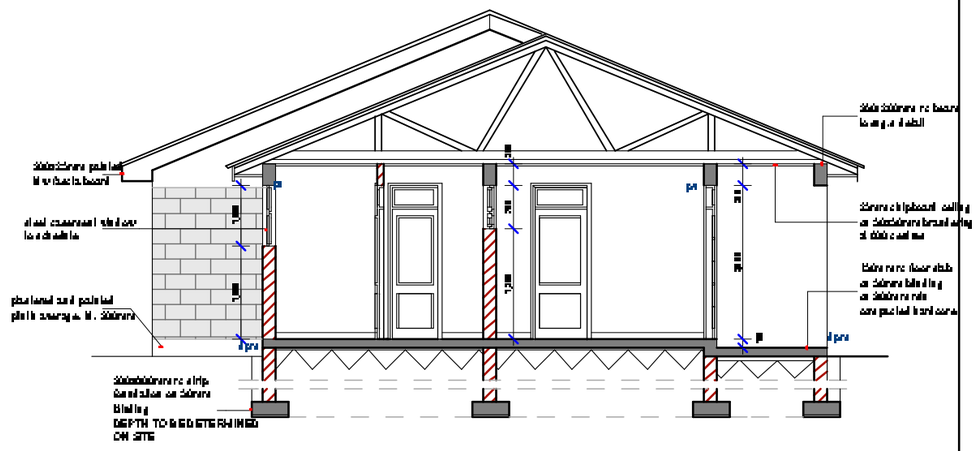
RADIO RM SIDE ELEVATION



OFFICE SIDE ELEVATION



FLOOR PLAN



PROPOSED OFFICE BLOCK AT KWS MARSABIT TOWN