



REPUBLIC OF KENYA



NACADA

FOR A NATION FREE FROM ALCOHOL AND DRUG ABUSE

TENDER DOCUMENT

FOR

**PROPOSED CONSTRUCTION OF NATIONAL MULTI-PURPOSE FACILITY FOR DRUG USE DISORDERS - PHASE ONE TO DEVELOP KITCHEN; DINING HALL AND SOCIAL HALL AT MIRITINI REHABILITATION CENTRE IN MOMBASA
(Re-Advertisement)**

NAC/OT/17/2020-2021

**THE CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE CAMPAIGN AGAINST
ALCOHOL AND DRUG ABUSE
BOX 10774-00100 NAIROBI**

CLOSING DATE: Monday, 22nd February 2021 at 11.30 AM

FEBRUARY 2021

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 10774 - 00100
NAIROBI
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SECTION I- INVITATION FOR TENDERS

Tender Ref: NAC/OT/17/2020-2021

Tender Name: Proposed Construction of National Multi-Purpose Facility for Drug Use Disorders – Phase One to Develop Kitchen; Dining Hall and Social Hall at Miritini Rehabilitation Centre in Mombasa. (Re- Advertisement)

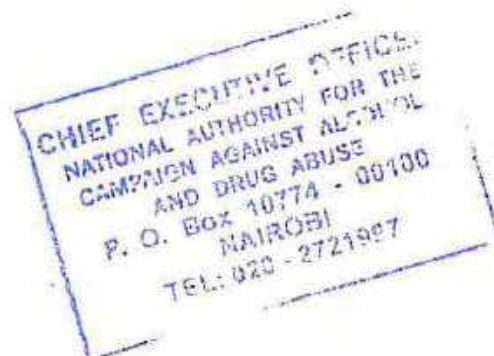
- 1.1 The National Authority for the Campaign against Alcohol and Drug Abuse (NACADA) invites sealed tenders for the **Proposed Construction of National Multi-Purpose Facility for Drug Use Disorders - Phase One to Develop Kitchen; Dining Hall and Social Hall at Miritini Rehabilitation Centre in Mombasa**
- 1.2 Interested eligible candidates may inspect tender documents downloading it from Nacada website www.nacada.go.ke/tenders or PPIP website www.tenders.go.ke
- 1.3 A complete set of tender documents will be downloaded free of charge
- 1.4 Prices quoted should be net inclusive of all taxes, must be in Kenya shillings and shall remain valid for (120) days from the closing date of tender.
- 1.5 Completed tender documents are to be enclosed in plain sealed envelopes marked with Tender name and reference number and deposited in the Tender Box at **NACADA head office located in NSSF Building, Block A, 18th Floor, Eastern wing, Bishop Road** or to be addressed to:

**The Chief Executive Officer
National Authority for the Campaign against Alcohol and Drug Abuse
P.O Box 10774-00100
Nairobi**

so as to be received on or before **Monday, 22nd February 2021 at 11.30am**

- 1.6 Tenders will be opened immediately thereafter in the presence of the candidates or their representatives who choose to attend at NACADA boardroom

Victor G. Okioma
**Chief Executive Officer
NACADA**



SECTION II- INSTRUCTIONS TO TENDERERS

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INSTRUCTIONS TO TENDERERS.

1. General/Eligibility/Qualifications/Joint venture/Cost of tendering

- 1.1 The Employer as defined in the Appendix to Conditions of Contract invites tenders for Works Contract as described in the tender documents. The successful tenderer will be expected to complete the Works by the Intended Completion Date specified in the tender documents.
- 1.2 All tenderers shall provide the Qualification Information, a statement that the tenderer (including all members of a joint venture and subcontractors) is not associated, or has not been associated in the past, directly or indirectly, with the Consultant or any other entity that has prepared the design, specifications, and other documents for the project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation or supervision of the Works, and any of its affiliates, shall not be eligible to tender.
- 1.3 All tenderers shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
- 1.4 In the event that pre-qualification of potential tenderers has been undertaken, only tenders from pre-qualified tenderers will be considered for award of Contract. These qualified tenderers should submit with their tenders any information updating their original pre-qualification applications or, alternatively, confirm in their tenders that the originally submitted pre-qualification information remains essentially correct as of the date of tender submission.
- 1.5 Where no pre-qualification of potential tenderers has been done, all tenderers shall include the following information and documents with their tenders, unless otherwise stated:
 - (a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the tender to commit the tenderer;
 - (b) total monetary value of construction work performed for each of the last five years;
 - (c) experience in works of a similar nature and size for each of the last five years, and details of work under way or contractually committed; and names and addresses of clients who may be contacted for further information on these contracts.

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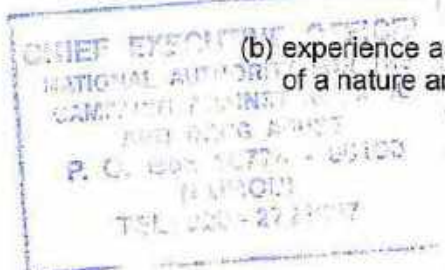
- (d) major items of construction equipment proposed to carry out the Contract and an undertaking that they will be available for the Contract.
- (e) qualifications and experience of key site management and technical personnel proposed for the Contract and an undertaking that they shall be available for the Contract.
- (f) reports on the financial standing of the tenderer, such as profit and loss statements and auditor's reports for the past five years.
- (g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);
- (h) authority to seek references from the tenderer's bankers.
- (i) information regarding any litigation, current or during the last five years, in which the tenderer is involved, the parties concerned and disputed amount; and
- (j) proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price.

1.6 Tenders submitted by a joint venture of two or more firms as partners shall comply with the following requirements, unless otherwise stated:

- (a) the tender shall include all the information listed in clause 1.5 above for each joint venture partner.
- (b) the tender shall be signed so as to be legally binding on all partners.
- (c) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms.
- (d) one of the partners will be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of all partners of the joint venture; and
- (e) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

1.7 To qualify for award of the Contract, tenderers shall meet the following minimum qualifying criteria.

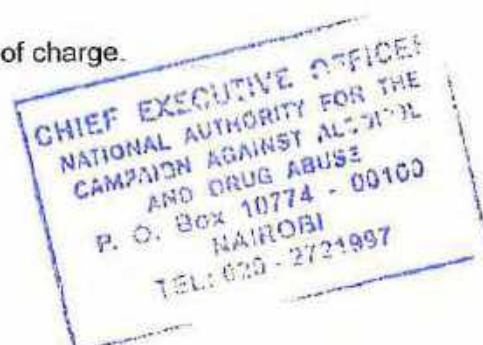
- (a) annual volume of construction work of at least 2.5 times the estimated annual cashflow for the Contract.
- (b) experience as main contractor in the construction of at least two works of a nature and complexity equivalent to the Works over the last 10



years (to comply with this requirement, works cited should be at least 70 percent complete);

- (c) proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment listed as required for the Works.
- (d) a Contract manager with at least five years' experience in works of an equivalent nature and volume, including no less than three years as Manager; and
- (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.

- 1.8 The figures for each of the partners of a joint venture shall be added together to determine the tenderer's compliance with the minimum qualifying criteria of clause 1.7 (a) and (e); however, for a joint venture to qualify, each of its partners must meet at least 25 percent of minimum criteria 1.7 (a), (b) and (e) for an individual tenderer, and the partner in charge at least 40 percent of those minimum criteria. Failure to comply with this requirement will result in rejection of the joint venture's tender. Subcontractors' experience and resources will not be taken into account in determining the tenderer's compliance with the qualifying criteria, unless otherwise stated.
- 1.9 Each tenderer shall submit only one tender, either individually or as a partner in a joint venture. A tenderer who submits or participates in more than one tender (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the tenderer's participation to be disqualified.
- 1.10 The tenderer shall bear all costs associated with the preparation and submission of his tender, and the Employer will in no case be responsible or liable for those costs.
- 1.11 The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine the Site of the Works and its surroundings and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the tenderer's own expense.
- 1.12 The procuring entity's employees, committee members, board members and their relative (spouse and children) are not eligible to participate in the tender.
- 1.13 The tender document will be free of charge.



2. Tender Documents

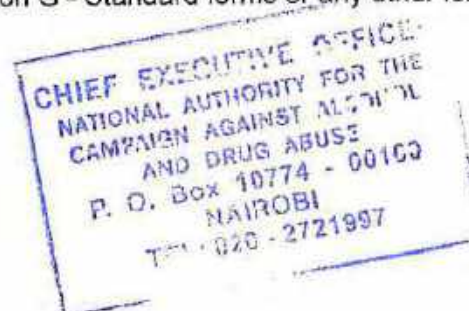
- 2.1 The complete set of tender documents comprises the documents listed below, and any addenda issued in accordance with Clause 2.4.
- (a) These Instructions to Tenderers
 - (b) Form of Tender and Qualification Information
 - (c) Conditions of Contract
 - (d) Appendix to Conditions of Contract
 - (e) Specifications
 - (f) Drawings
 - (g) Bills of Quantities
 - (h) Forms of Securities
- 2.2 The tenderer shall examine all Instructions, Forms to be filled and Specifications in the tender documents. Failure to furnish all information required by the tender documents, or submission of a tender not substantially responsive to the tendering documents in every respect will be at the tenderer's risk and may result in rejection of his tender.
- 2.3 A prospective tenderer making an inquiry relating to the tender documents may notify the Employer in writing or by cable, telex or facsimile at the address indicated in the letter of invitation to tender. The Employer will only respond to requests for clarification received earlier prior to the deadline for submission of tenders. Copies of the Employer's response will be forwarded to all persons issued with tendering documents, including a description of the inquiry, but without identifying its source.
- 2.4 Before the deadline for submission of tenders, the Employer may modify the tendering documents by issuing addenda. Any addendum thus issued shall be part of the tendering documents and shall be communicated in writing or by cable, telex or facsimile to all tenderers. Prospective tenderers shall acknowledge receipt of each addendum in writing to the Employer.
- 2.5 To give prospective tenderers reasonable time in which to take an addendum into account in preparing their tenders, the Employer shall extend, as necessary, the deadline for submission of tenders, in accordance with Clause 4.2 here below.

3. Preparation of Tenders

- 3.1 All documents relating to the tender and any correspondence shall be in English language.
- 3.2 The tender submitted by the tenderer shall comprise the following:

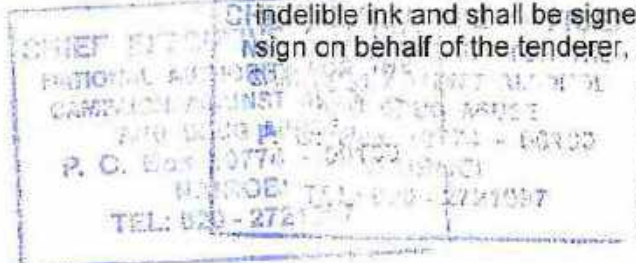


- (a) These Instructions to Tenderers, Form of Tender, Conditions of Contract, Appendix to Conditions of Contract and Specifications.
 - (b) Tender Security.
 - (c) Priced Bill of Quantities.
 - (d) Qualification Information Form and Documents.
 - (e) Alternative offers where invited; and
 - (f) Any other materials required to be completed and submitted by the tenderers.
- 3.3 The tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items for which no rate or price is entered by the tenderer will not be paid for when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause relevant to the Contract, as of 30 days prior to the deadline for submission of tenders, shall be included in the tender price submitted by the tenderer.
- 3.4 The rates and prices quoted by the tenderer shall only be subject to adjustment during the performance of the Contract if provided for in the Appendix to Conditions of Contract and provisions made in the Conditions of Contract.
- 3.5 The unit rates and prices shall be in Kenya Shillings.
- 3.6 Tenders shall remain valid for a period of One Hundred and Twenty (120) days from the date of submission. However, in exceptional circumstances, the Employer may request that the tenderers extend the period of validity for a specified additional period. The request and the tenderers' responses shall be made in writing. A tenderer may refuse the request without forfeiting the Tender Security. A tenderer agreeing to the request will not be required or permitted to otherwise modify the tender but will be required to extend the validity of Tender Security for the period of the extension, and in compliance with Clause 3.7 - 3.11 in all respects.
- 3.7 The tenderer shall furnish, as part of the tender, a Tender Security in the amount and form specified in the appendix to invitation to tenderers. This shall be in the amount not exceeding 2 percent of the tender amount as valued by the procuring entity.
- 3.8 The format of the Tender Security should be in accordance with the form of Tender Security included in Section G - Standard forms or any other form acceptable to the Employer.



- 3.9 Any tender not accompanied by an acceptable Tender Security shall be rejected. The Tender Security of a joint venture must define as "Tenderer" all joint venture partners and list them in the following manner: a joint venture consisting of ".....", ".....", and ".....".
- 3.10 The Tender Securities of unsuccessful tenderers will be returned before the end of the tender validity period specified in Clause 3.6.
- 3.11 The Tender Security of the successful tenderer will be discharged when the tenderer has signed the Contract Agreement and furnished the required Performance Security.
- 3.12 The Tender Security may be forfeited
- (a) if the tenderer withdraws the tender after tender opening during the period of tender validity.
 - (b) in the case of a successful tenderer, if the tenderer fails within the specified time limit to
 - (i) sign the Agreement, or
 - (ii) furnish the required Performance Security.
- 3.13 Tenderers shall submit offers that comply with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. Alternatives will not be considered, unless specifically allowed in the invitation to tender. If so allowed, tenderers wishing to offer technical alternatives to the requirements of the tendering documents must also submit a tender that complies with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. In addition to submitting the basic tender, the tenderer shall provide all information necessary for a complete evaluation of the alternative, including design calculations, technical specifications, breakdown of prices, proposed construction methods and other relevant details. Only the technical alternatives, if any, of the lowest evaluated tender conforming to the basic technical requirements shall be considered.
- 3.14 The tenderer shall prepare one original of the documents comprising the tender documents as described in Clause 3.2 of these Instructions to Tenderers, bound with the volume containing the Form of Tender, and clearly marked "ORIGINAL". In addition, the tenderer shall submit copies of the tender, in the number specified in the invitation to tender, and clearly marked as "COPIES". In the event of discrepancy between them, the original shall prevail.
- 3.15 The original and all copies of the tender shall be typed or written in

indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the tenderer, pursuant to Clause 1.5 (a) or 1.6 (b), as the

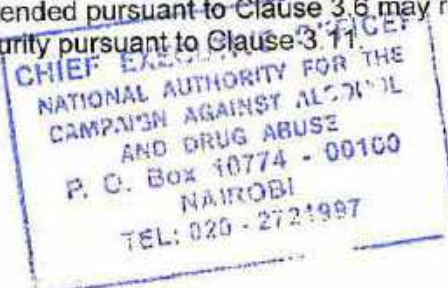


case may be. All pages of the tender where alterations or additions have been made shall be initialed by the person or persons signing the tender.

- 3.16 Clarification of tenders shall be requested by the tenderer to be received by the procuring entity prior to the deadline for submission of tenders.
- 3.17 The procuring entity shall reply to any clarifications sought by the tenderer within 3 days of receiving the request to enable the tenderer to make timely submission of its tender.
- 3.18 The tender security shall be in the amount of **Kshs. 1,750,000/=**

4. Submission of Tenders

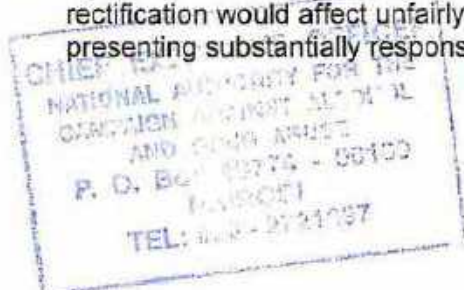
- 4.1 The tenderer shall seal the original and all copies of the tender in two inner envelopes and one outer envelope, duly marking the inner envelopes as **"ORIGINAL"** and **"COPIES"** as appropriate. The inner and outer envelopes shall:
 - (a) be addressed to the Employer at the address provided in the invitation to tender.
 - (b) bear the name and identification number of the Contract as defined in the invitation to tender; and
 - (c) provide a warning not to open before the specified time and date for tender opening.
- 4.2 Tenders shall be delivered to the Employer at the address specified above not later than the time and date specified in the invitation to tender. However, the Employer may extend the deadline for submission of tenders by issuing an amendment in accordance with Sub-Clause 2.5 in which case all rights and obligations of the Employer and the tenderers previously subject to the original deadline will then be subject to the new deadline.
- 4.3 Any tender received after the deadline prescribed in clause 4.2 will be returned to the tenderer un-opened.
- 4.4 Tenderers may modify or withdraw their tenders by giving notice in writing before the deadline prescribed in clause 4.2. Each tenderer's modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with clause 3.13 and 4.1, with the outer and inner envelopes additionally marked **"MODIFICATION"** and **"WITHDRAWAL"**, as appropriate. No tender may be modified after the deadline for submission of tenders.
- 4.5 Withdrawal of a tender between the deadline for submission of tenders and the expiration of the period of tender validity specified in the invitation to tender or as extended pursuant to Clause 3.6 may result in the forfeiture of the Tender Security pursuant to Clause 3.11



- 4.6 Tenderers may only offer discounts to, or otherwise modify the prices of their tenders by submitting tender modifications in accordance with Clause 4.4 or be included in the original tender submission.

5. Tender Opening and Evaluation

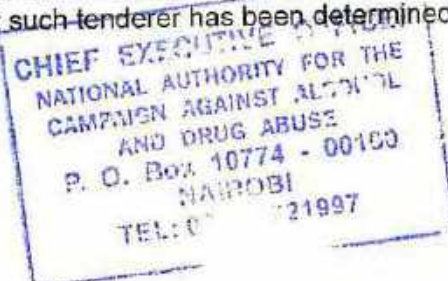
- 5.1 The tenders will be opened by the Employer, including modifications made pursuant to Clause 4.4, in the presence of the tenderers' representatives who choose to attend at the time and in the place specified in the invitation to tender. Envelopes marked "WITHDRAWAL" shall be opened and read out first. Tenderers' and Employer's representatives who are present during the opening shall sign a register evidencing their attendance.
- 5.2 The tenderers' names, the tender prices, the total amount of each tender and of any alternative tender (if alternatives have been requested or permitted), any discounts, tender modifications and withdrawals, the presence or absence of Tender Security, and such other details as may be considered appropriate, will be announced by the Employer at the opening. Minutes of the tender opening, including the information disclosed to those present will be prepared by the Employer.
- 5.3 Information relating to the examination, clarification, evaluation, and comparison of tenders and recommendations for the award of Contract shall not be disclosed to tenderers or any other persons not officially concerned with such process until the award to the successful tenderer has been announced. Any effort by a tenderer to influence the Employer's officials, processing of tenders or award decisions may result in the rejection of his tender.
- 5.4 To assist in the examination, evaluation, and comparison of tenders, the Employer at his discretion, may ask any tenderer for clarification of the tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, telex or facsimile but no change in the price or substance of the tender shall be sought, offered, or permitted, except as required to confirm the correction of arithmetic errors discovered in the evaluation of the tenders in accordance with Clause 5.7.
- 5.5 Prior to the detailed evaluation of tenders, the Employer will determine whether each tender (a) meets the eligibility criteria defined in Clause 1.7; (b) has been properly signed; (c) is accompanied by the required securities; and (d) is substantially responsive to the requirements of the tendering documents. A substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tendering documents, without material deviation or reservation. A material deviation or reservation is one (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 tendering documents, the Employer's rights or the tenderer's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other tenderers presenting substantially responsive tenders.



- 5.6 If a tender is not substantially responsive, it will be rejected, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.
- 5.7 Any errors in the submitted tender arising from a miscalculation of unit price, quantity, subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive
- 5.8 The Employer will evaluate and compare only the tenders determined to be substantially responsive in accordance with Clause 5.5.
- 5.9 In evaluating the tenders, the Employer will determine for each tender the evaluated tender price by adjusting the tender price as follows:
- (a) excluding provisional sums and the provision, if any, for contingencies in the Bill of Quantities, but including Dayworks where priced competitively.
 - (b) making an appropriate adjustment for any other acceptable variations, deviations, or alternative offers submitted in accordance with clause 3.12; and
 - (c) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with clause 4.6
- 5.10 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the tender documents or otherwise result in unsolicited benefits for the Employer will not be taken into account in tender evaluation.
- 5.11 The tenderer shall not influence the Employer on any matter relating to his tender from the time of the tender opening to the time the Contract is awarded. Any effort by the Tenderer to influence the Employer or his employees in his decision on tender evaluation, tender comparison or Contract award may result in the rejection of the tender.
- 5.12 Firms incorporated in Kenya where indigenous Kenyans own 51% or more of the share capital shall be allowed a 10% preferential bias provided that they do not sub-contract work valued at more than 50% of the Contract Price excluding Provisional Sums to a non-indigenous sub-contractor.

6. Award of Contract

- 6.1 Subject to Clause 6.2, the award of the Contract will be made to the tenderer whose tender has been determined to be substantially responsive to the tendering documents and who has offered the lowest evaluated tender price, provided that such tenderer has been determined to be (a)



eligible in accordance with the provision of Clauses 1.2, and (b) qualified in accordance with the provisions of clause 1.7 and 1.8.

- 6.2 Notwithstanding clause 6.1 above, the Employer reserves the right to accept or reject any tender, and to cancel the tendering process and reject all tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected tenderer or tenderers or any obligation to inform the affected tenderer or tenderers of the grounds for the action.
- 6.3 The tenderer whose tender has been accepted will be notified of the award prior to expiration of the tender validity period in writing or by cable, telex or facsimile. This notification (hereinafter and in all Contract, documents called the "Letter of Acceptance") will state the sum (hereinafter and in all Contract, documents called the "Contract Price") that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract. At the same time the other tenderers shall be informed that their tenders have not been successful.

The contract shall be formed on the parties signing the contract.

- 6.4 The Agreement will incorporate all agreements between the Employer and the successful tenderer. Within 14 days of receipt the successful tenderer will sign the Agreement and return it to the Employer.
- 6.5 Within 21 days after receipt of the Letter of Acceptance, the successful tenderer shall deliver to the Employer a Performance Security in the amount stipulated in the Appendix to Conditions of Contract and in the form stipulated in the Tender documents. The Performance Security shall be in the amount and specified form
- 6.6 Failure of the successful tenderer to comply with the requirements of clause 6.5 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Tender Security.
- 6.7 Upon the furnishing by the successful tenderer of the Performance Security, the Employer will promptly notify the other tenderers that their tenders have been unsuccessful.
- 6.8 Preference where allowed in the evaluation of tenders shall not be allowed for contracts not exceeding one year (12 months)
- 6.9 The tender evaluation committee shall evaluate the tender within 30 days of the validity period from the date of opening the tender.
- 6.10 The parties to the contract shall have it signed within 30 days from the date of notification of contract award unless there is an administrative review request.



- 6.11 Contract price variations shall not be allowed for contracts not exceeding one year (12 months)
- 6.12 Where contract price variation is allowed, the valuation shall not exceed 25% of the original contract price.
- 6.13 Price variation request shall be processed by the procuring entity within 30 days of receiving the request.
- 6.14 The procuring entity may at any time terminate procurement proceedings before contract award and shall not be liable to any person for the termination.
- 6.15 The procuring entity shall give prompt notice of the termination to the tenderers and on request give its reasons for termination within 14 days of receiving the request from any tenderer.
- 6.16 A tenderer who gives false information in the tender document about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future public procurement.

7. Corrupt and Fraudulent practices

- 7.1 The procuring entity requires that tenderers observe the highest standards of ethics during procurement process and execution of contracts. A tenderer shall sign a declaration that he has not and will not be involved in corrupt and fraudulent practices.

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TEL 29-2721987

APPENDIX TO INSTRUCTION TO TENDERERS

The following appendix to instruction to tenderers shall complement or amend the provisions of the instructions to tenderers (section II). Wherever there is a conflict between the provisions of the instructions to tenderers and the provisions of the appendix, the provisions of the appendix herein will prevail over those of the instructions to tenderers.

Instruction to Tenderers Reference	Particulars of Appendix to instruction to Tenderers
Clause 1.4	Delete the entire clause since it does not apply to this tender
Clause 1.5; 1.6; 1.7	The details are as per the evaluation criteria provided
Clause 1.9	Tenderer should not participate in more than one tender either as director or a partner in a joint venture.
Clause 1.11	There will be no mandatory pre-site tender visit.
Clause 1.13	The tender document will be download free of charge from www.nacada.go.ke/tender or www.tenders.go.ke
Clause 3.6	The tender validity period is 120 days
Clause 3.7	Tender security should be from the bank in the format provided
Clause 3.14	Submit only One Original tender document
Clause 3. 18	The tender security amount is Kshs. 1,750,000/-
Clause 4.2	Submission deadline is Monday, 22nd February 2021 at 11.30 am
Clause 5.5	Will be as per the evaluation criteria
Clause 6.1	Award will be made to the lowest evaluated bidder as per section 86 (1)(a) of the PPAD act 2015
Clause 6.5	The successful bidder will submit the performance Security of 10% of the Contract Amount from the bank.
Clause 6.11	Price variation will only be allowed after 12 months.



TENDER EVALUATION CRITERIA

The tenders will be evaluated in three (3) Stages, Namely:

- 1) Preliminary Evaluation
- 2) Technical Evaluation
- 3) Financial Evaluation

Stage 1(a): Preliminary Evaluation for Builders Work (Main Contractor)

This stage shall involve confirmation of the completeness and responsiveness of the tender as per the mandatory requirements provided in the tender document. The Mandatory Requirements are as indicated below: -

MR No	Description of Mandatory Requirement
MR1	Submit a certified copy of Certificate of Business Registration or Incorporation.
MR 2	Submit a Certified copy of CR12/ CR13 Issued not earlier than 6 months from date of tender Opening.
MR 3	Provide Current Registration with National Construction Authority (NCA) in Building works – NCA 4 and Above (Main Contractor)
MR 4	Provide Current Annual Contractors practicing license from NCA for Building works- NCA 4 and above (Main Contractor)
MR 5	Main Contractor must attach a Pre-Contract Agreement of each works to be Sub- contracted witnessed by the commissioner of oaths, an advocate or a magistrate;
MR 6	Provide an original Bid Security of Kshs. 1,750,000/- from a reputable Bank or an approved insurance firm by PPRA in the format provided
MR 7	Submit Current Copy of Single Business Permit
MR 8	Submit Valid Tax Compliance Certificate
MR 9	Submit a dully filled, signed and stamped Confidential Business Questionnaire provided
MR 10	Submit a dully filled, Signed and Stamped Form of Tender provided.
MR 11	Submit a dully filled, Signed and Stamped Self-declaration form that you are not debarred to participate in public procurement in the format provided.
MR 12	Submit a dully filled, Signed and Stamped Self-declaration form that you will not participate in Corrupt practices in the format provided.
MR 13	Submit Power of Attorney witnessed by a magistrate or commissioner of oaths indicating the Authorized signatory for the documents of the bidder if the signatory is other than the director(s).
MR 14	Submit the bid in Tape Bound Form and sequentially paginated including all the attachments.
MR 15	Must Sign and stamp the Grand Summary page of the works

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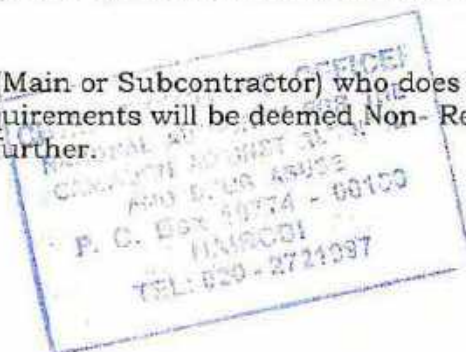
Stage 1(b): Preliminary Evaluation for Electrical Works

MR No	Description of Mandatory Requirement
MR 1	Submit a certified copy of Certificate of Business Registration or Incorporation.
MR 2	Submit a Certified copy of CR12 Issued not earlier than 12 months from date of tender Opening or National Identity Card for Sole Proprietorship / Partnership
MR 3	Submit Valid Tax Compliance Certificate
MR 4	Provide Current Registration with National Construction Authority (NCA) in Electrical Works - NCA 5 and above in Structured Cabling works; Security Installation works; Electrical Installation works and Generator Installation works.
MR 4	Provide Current Annual Contractors practicing license from NCA for Electrical Works - NCA 5 and above.
MR 5	Submit current license in Electrical installation works class B and above; Generator Installation works Class A2 or A1 from EPRA
MR 6	Provide Current License from Communication Authority of Kenya (CA)
MR 7	Domestic Sub- Contractors Must sign and Stamp the Summary page of their Respective Specialist works on the tender document

Stage 1(c): Preliminary Evaluation for Mechanical Works

MR No	Description of Mandatory Requirement
MR 1	Submit a certified copy of Certificate of Business Registration or Incorporation.
MR 2	Submit a Certified copy of CR12 Issued not earlier than 12 months from date of tender Opening or National Identity Card for Sole Proprietorship / Partnership
MR 3	Submit Valid Tax Compliance Certificate
MR 4	Provide Current Registration with National Construction Authority (NCA) in Mechanical work – NCA 4 and above in Plumbing, Drainage, Firefighting Equipment, Kitchen Equipment, LPG Installation, Kitchen Extract & Cold room Works
MR 5	Provide Current Annual Contractors practicing license from NCA for Mechanical works – NCA 4 and above.
MR 6	Provide Current License with the Energy and Petroleum Regulatory Authority (EPRA)
MR 7	Domestic Sub- Contractors Must sign and Stamp the Summary page of their Respective Specialist works on the tender document

The tenderer (Main or Subcontractor) who does not satisfy or conform to any of the above Requirements will be deemed Non- Responsive and the tender will not be evaluated further.



Stage 2: Technical Evaluation

Assessment of Eligibility

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

'In accordance with clause 2.2 of the instruction to tenderers, the tenderers will be required to provide evidence for eligibility of the award of the tender by satisfying the employer of their eligibility under sub clause 2.1 of instruction to tenderers and adequacy of resources to effectively carry out the subject contract. The tenderers shall be required to fill the standard forms provided for the purpose of providing the required information. The tenderers may also attach the required information if they so desire'.

The award of points for the STANDARD FORMS considered in this section shall be as shown below:

<u>PARAMETER</u>	<u>MAXIMUM POINTS</u>
i. Key Personnel	20
ii. Contract Completed in the last Five (5) Years	20
iii. Schedule of on-going projects	3
iv. Schedule of Contractors equipment	20
v. Audited financial report for the last 3 years	15
vi. Evidence of Financial Resources	15
vii. Name, address and telephone of banks	2
viii. Litigation History	5
TOTAL	<u>100</u>

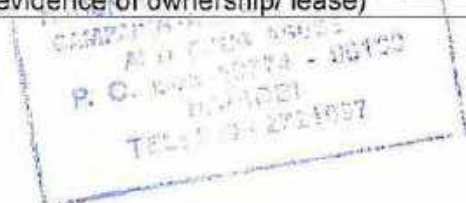
The detailed scoring plan shall be as shown in table 1 below:

Table 1: Assessment for Eligibility

Item	Description	Max. Points	
1	Key Personnel (Attach evidence)		
	Director of the firm (Building and Civil Engineering Construction Related Field)		
	▪ Holder of degree in relevant engineering field	4	25
	▪ Holder of diploma in relevant engineering field	3	
	▪ Holder of certificate in relevant engineering field	2	
	▪ Holder of trade test certificate in relevant engineering field	1	
	▪ No relevant Certificate		

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	At least 1no. degree /diploma holder of key personnel in relevant engineering field (building and civil engineering construction related field)	6	
	<ul style="list-style-type: none"> With over 10 years relevant experience 6 With over 5 years relevant experience 5 With under 5 years relevant experience 4 No relevant experience 0 		
	At least 1no. certificate holder of key personnel in relevant engineering field (Building and Civil engineering construction related field)	5	
	<ul style="list-style-type: none"> With over 10 years relevant experience 5 With over 5 years relevant experience 4 With under 5 years relevant experience 3 No relevant experience 0 		
	At least 2no. artisan (trade test certificate in relevant engineering field) – Building and Civil Engineering Construction related field)	4	
	<ul style="list-style-type: none"> Artisan with over 10 years relevant experience - 2 each Artisan with under 10 years relevant experience - 1 each Non-skilled worker with over 10 years relevant experience 1 each No relevant experience 0 		
	At least 1no diploma/ certificate holder in Electrical engineering or related field	3	
	<ul style="list-style-type: none"> With over 5 years relevant experience 3 With under 5 Years relevant experience 2 No relevant experience 0 		
	At least 1no diploma /certificate holder in relevant mechanical Engineering or related field	3	
	<ul style="list-style-type: none"> With over 5 years relevant experience 3 With under 5 years relevant experience 2 No relevant experience 0 		
2	Contracts completed in the last five (5) years (max of 5no. projects) provide evidence (attach award letter, contract agreement and completion certificate)	20	
	<ul style="list-style-type: none"> Project of similar nature, complexity or magnitude --- 4 Project of similar nature but of lower value than the one in consideration 2 No completed project of similar nature 0 		
3	On-going projects- provide evidence (Award letter and Contract Agreement)	3	
	<ul style="list-style-type: none"> No project of similar nature, complexity and magnitude attach proof 3 Three and below projects of similar nature, complexity and magnitude 2 Four and above projects of similar nature, complexity and magnitude 1 		
4	Schedule of contractor's equipment and transport (proof or evidence of ownership/ lease)	9	18



	a) Relevant transport (Pick-ups, lorries, Trucks – at least 2no.) ▪ Means of transport available ----- 9 ▪ No means of transport ----- 0		
	b) Relevant tools and equipment (Excavators, Tractors, Hoists/cranes, scaffolds, drills, welding machines – at least 5no.) ▪ Has relevant equipment for work being tendered----- 9 ▪ No relevant equipment for work being tendered ----- 0	9	
5	Financial Report a) Attach Audited financial report (last three years) – 2019, 2018 and 2017 signed and stamped by Auditors----- 3 b) Average Annual Turnover ▪ Average annual turn-over equal to or greater than the cost of the project ----- 10 ▪ Average annual turn-over above 50% but below 100% the cost of the project ----- 6 ▪ Average annual turn-over below 50% of the cost of the project ----- 3 ▪ No audited financial statements attached ----- 0	13	
	Evidence of financial Resources (cash in Hand, line of credit, overdraft facility etc.) – bank/ creditors/ letters dated not earlier than January 2020 ▪ Has financial resources to finance the projected monthly cash flow* for three months ----- 13 ▪ Has financial resources equal to the projected monthly cash flow* ----- 10 ▪ Has financial resources less than projected monthly cash flow* ----- 5 ▪ Has not indicated sources of financial resources ----- 0	13	
6	Bank Details ▪ Attached ----- 3 ▪ Not attached ----- 0	3	
7	Litigation History/ affidavit signed and stamped by an Attorney/ Commissioner for oaths ▪ Attached ----- 5 ▪ Not Attached ----- 0	5	
	TOTAL	100	

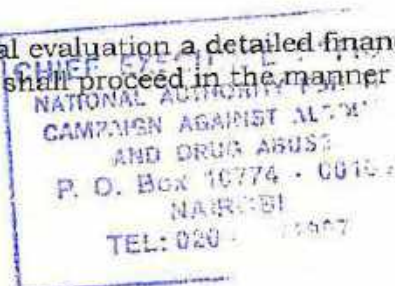
Any bidder who scores 80 points and above shall be considered for financial evaluation.

NB:

*monthly cash flow = Tender sum/ Contract period

Stage 3: Financial Evaluation

Upon completion of the technical evaluation a detailed financial evaluation shall follow. The financial evaluation shall proceed in the manner described in the



public Procurement and Asset Disposal act 2015. At this stage comparison of the rates for major components of works will be done and well as checking the consistency of the rates. Thereafter, the comparison of the tender sum will be made to determine the lowest evaluated bidder.

The Bidder with the lowest evaluated tender price will be recommended for award by the evaluation committee.



SECTION III

CONDITIONS OF CONTRACT

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CONDITIONS OF CONTRACT

1. Definitions

- 1.1 In this Contract, except where context otherwise requires, the following terms shall be interpreted as indicated.

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

"Compensation Events" are those defined in Clause 24 hereunder.

"The Completion Date" means the date of completion of the Works as certified by the Project Manager, in accordance with Clause 31.

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

"The Contractor" refers to the person or corporate body whose tender to carry out the Works has been accepted by the Employer.

"The Contractor's Tender" is the completed tendering document submitted by the Contractor to the Employer.

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

"Days" are calendar days; **"Months"** are calendar months.

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

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

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

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

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

"Employer", or the **"Procuring entity"** as defined in the Public Procurement Regulations (i.e. Central or Local Government administration,

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Universities, Public Institutions and Corporations, etc) is the party who employs the Contractor to carry out the Works.

"Equipment" is the Contractor's machinery and vehicles brought temporarily to the Site for the execution of the Works.

"The Intended Completion Date" is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

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

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

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

"Site" is the area defined as such in the Appendix to Condition of Contract.

"Site Investigation Reports" are those reports that may be included in the tendering documents which are factual and interpretative about the surface and subsurface conditions at the Site.

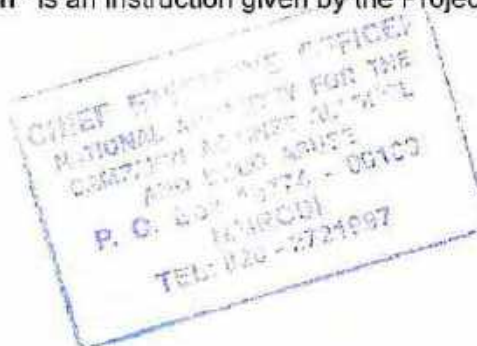
"Specifications" means the Specifications of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

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

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

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

"A Variation" is an instruction given by the Project Manager which varies the Works.

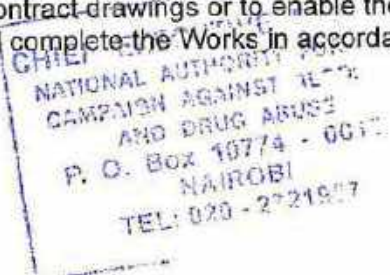


"The Works" are what the Contract requires the Contractor to construct, install, and turnover to the Employer, as defined in the Appendix to Conditions of Contract.

2. Interpretation

- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning in English Language unless specifically defined. The Project Manager will provide instructions clarifying queries about these Conditions of Contract.
- 2.2 If sectional completion is specified in the Appendix to Conditions of Contract, reference in the Conditions of Contract to the Works, the Completion Date and the Intended Completion Date apply to any section of the Works (other than references to the Intended Completion Date for the whole of the Works).
- 2.3 The following documents shall constitute the Contract documents and shall be interpreted in the following order of priority.
- (1) Agreement,
 - (2) Letter of Acceptance,
 - (3) Contractor's Tender,
 - (4) Appendix to Conditions of Contract,
 - (5) Conditions of Contract,
 - (6) Specifications,
 - (7) Drawings,
 - (8) Bill of Quantities,
 - (9) Any other documents listed in the Appendix to Conditions of Contract as forming part of the Contract.

Immediately after the execution of the Contract, the Project Manager shall furnish both the Employer and the Contractor with two copies each of all the Contract documents. Further, as and when necessary the Project Manager shall furnish the Contractor [always with a copy to the Employer] with three [3] copies of such further drawings or details or descriptive schedules as are reasonably necessary either to explain or amplify the Contract drawings or to enable the Contractor to carry out and complete the Works in accordance with these Conditions.



3. Language and Law

- 3.1 Language of the Contract and the law governing the Contract shall be English language and the Laws of Kenya respectively unless otherwise stated.

4 Project Manager's Decisions

- 4.1 Except where otherwise specifically stated, the Project Manager will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5 Delegation

- 5.1 The Project Manager may delegate any of his duties and responsibilities to others after notifying the Contractor.

6 Communications

- 6.1 Communication between parties shall be effective only when in writing. A notice shall be effective only when it is delivered.

7 Subcontracting

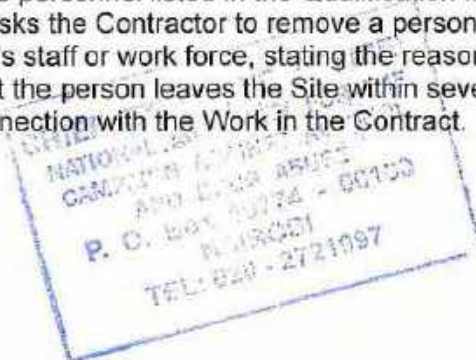
- 7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.

8 Other Contractors

- 8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities etc. as listed in the Appendix to Conditions of Contract and also with the Employer, as per the directions of the Project Manager. The Contractor shall also provide facilities and services for them. The Employer may modify the said List of Other Contractors etc., and shall notify the Contractor of any such modification.

9 Personnel

- 9.1 The Contractor shall employ the key personnel named in the Qualification Information, to carry out the functions stated in the said Information or other personnel approved by the Project Manager. The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the Qualification Information. If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the Work in the Contract.



10 Works

- 10.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings. The Works may commence on the Start Date and shall be carried out in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

11 Safety and Temporary Works

- 11.1 The Contractor shall be responsible for the design of temporary works. However before erecting the same, he shall submit his designs including specifications and drawings to the Project Manager and to any other relevant third parties for their approval. No erection of temporary works shall be done until such approvals are obtained.
- 11.2 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary works and all drawings prepared by the Contractor for the execution of the temporary or permanent Works, shall be subject to prior approval by the Project Manager before they can be used.
- 11.3 The Contractor shall be responsible for the safety of all activities on the Site.

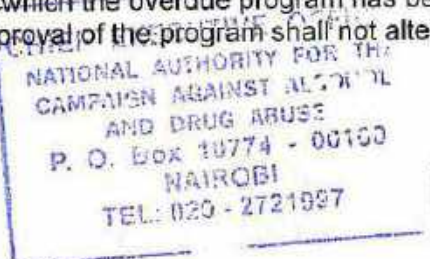
12. Discoveries

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

13. Work Program

- 13.1 Within the time stated in the Appendix to Conditions of Contract, the Contractor shall submit to the Project Manager for approval a program showing the general methods, arrangements, order, and timing for all the activities in the Works. An update of the program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining Work, including any changes to the sequence of the activities.

The Contractor shall submit to the Project Manager for approval an updated program at intervals no longer than the period stated in the Appendix to Conditions of Contract. If the Contractor does not submit an updated program within this period, the Project Manager may withhold the amount stated in the said Appendix from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue program has been submitted. The Project Manager's approval of the program shall not alter the



Contractor's obligations. The Contractor may revise the program and submit it to the Project Manager again at any time. A revised program shall show the effect of Variations and Compensation Events.

14. Possession of Site

- 14.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Appendix to Conditions of Contract, the Employer will be deemed to have delayed the start of the relevant activities, and this will be a Compensation Event.

15. Access to Site

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

16. Instructions

- 16.1 The Contractor shall carry out all instructions of the Project Manager which are in accordance with the Contract.

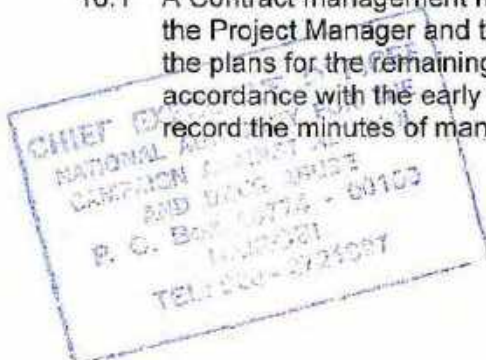
17. Extension or Acceleration of Completion Date

- 17.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a variation is issued which makes it impossible for completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining Work, which would cause the Contractor to incur additional cost. The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager in writing for a decision upon the effect of a Compensation Event or variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay caused by such failure shall not be considered in assessing the new (extended) Completion Date.

- 17.2 No bonus for early completion of the Works shall be paid to the Contractor by the Employer.

18. Management Meetings

- 18.1 A Contract management meeting shall be held monthly and attended by the Project Manager and the Contractor. Its business shall be to review the plans for the remaining Work and to deal with matters raised in accordance with the early warning procedure. The Project Manager shall record the minutes of management meetings and provide copies of the



same to those attending the meeting and the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

19. Early Warning

- 19.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the Work, increase the Contract Price or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 19.2 The Contractor shall cooperate with the Project Manager in making and considering proposals on how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the Work and in carrying out any resulting instructions of the Project Manager.

20. Defects

- 20.1 The Project Manager shall inspect the Contractor's work and notify the Contractor of any defects that are found. Such inspection shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a defect and to uncover and test any Work that the Project Manager considers may have a defect. Should the defect be found, the cost of uncovering and making good shall be borne by the Contractor. However, if there is no defect found, the cost of uncovering and making good shall be treated as a variation and added to the Contract Price.
- 20.2 The Project Manager shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Appendix to Conditions of Contract. The Defects Liability Period shall be extended for as long as defects remain to be corrected.
- 20.3 Every time notice of a defect is given, the Contractor shall correct the notified defect within the length of time specified by the Project Manager's notice. If the Contractor has not corrected a defect within the time specified in the Project Manager's notice, the Project Manager will assess the cost of having the defect corrected by other parties and such cost shall be treated as a variation and be deducted from the Contract Price.

21. Bills Of Quantities

- 21.1 The Bills of Quantities shall contain items for the construction, installation, testing and commissioning of the Work to be done by the Contractor. The

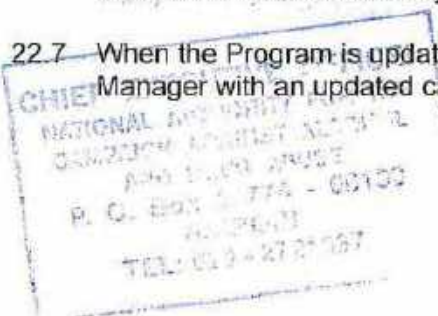
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Contractor will be paid for the quantity of the Work done at the rate in the Bills of Quantities for each item.

- 21.2 If the final quantity of the Work done differs from the quantity in the Bills of Quantities for the particular item by more than 25 percent and provided the change exceeds 1 percent of the Initial Contract price, the Project Manager shall adjust the rate to allow for the change.
- 21.3 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bills of Quantities.

22. Variations

- 22.1 All variations shall be included in updated programs produced by the Contractor.
- 22.2 The Contractor shall provide the Project Manager with a quotation for carrying out the variations when requested to do so. The Project Manager shall assess the quotation, which shall be given within seven days of the request or within any longer period as may be stated by the Project Manager and before the Variation is ordered.
- 22.3 If the work in the variation corresponds with an item description in the Bills of Quantities and if in the opinion of the Project Manager, the quantity of work is not above the limit stated in Clause 21.2 or the timing of its execution does not cause the cost per unit of quantity to change, the rate in the Bills of Quantities shall be used to calculate the value of the variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the variation does not correspond with items in the Bills of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of Work.
- 22.4 If the Contractor's quotation is unreasonable, the Project Manager may order the variation and make a change to the Contract price, which shall be based on the Project Manager's own forecast of the effects of the variation on the Contractor's costs.
- 22.5 If the Project Manager decides that the urgency of varying the Work would prevent a quotation being given and considered without delaying the Work, no quotation shall be given and the variation shall be treated as a Compensation Event.
- 22.6 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.
- 22.7 When the Program is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast.



23. Payment Certificates, Currency of Payments and Advance Payments

- 23.1 The Contractor shall submit to the Project Manager monthly applications for payment giving sufficient details of the Work done and materials on Site and the amounts which the Contractor considers himself to be entitled to. The Project Manager shall check the monthly application and certify the amount to be paid to the Contractor within 14 days. The value of Work executed and payable shall be determined by the Project Manager.
- 23.2 The value of Work executed shall comprise the value of the quantities of the items in the Bills of Quantities completed, materials delivered on Site, variations and compensation events. Such materials shall become the property of the Employer once the Employer has paid the Contractor for their value. Thereafter, they shall not be removed from Site without the Project Manager's instructions except for use upon the Works.
- 23.3 Payments shall be adjusted for deductions for retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of issue of each certificate. If the Employer makes a late payment, the Contractor shall be paid simple interest on the late payment in the next payment. Interest shall be calculated on the basis of number of days delayed at a rate three percentage points above the Central Bank of Kenya's average rate for base lending prevailing as of the first day the payment becomes overdue.
- 23.4 If an amount certified is increased in a later certificate or as a result of an award by an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 23.5 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.
- 23.6 The Contract Price shall be stated in Kenya Shillings. All payments to the Contractor shall be made in Kenya Shillings and foreign currency in the proportion indicated in the tender, or agreed prior to the execution of the Contract Agreement and indicated therein. The rate of exchange for the calculation of the amount of foreign currency payment shall be the rate of exchange indicated in the Appendix to Conditions of Contract. If the Contractor indicated foreign currencies for payment other than the currencies of the countries of origin of related goods and services, the Employer reserves the right to pay the equivalent at the time of payment in the currencies of the countries of such goods and services. The Employer and the Project Manager shall be notified promptly by the Contractor of a changes in the expected foreign currency requirements of the Contractor during the execution of the Works as indicated in the Schedule of Foreign Currency Requirements and the foreign and local currency portions of the



balance of the Contract Price shall then be amended by agreement between Employer and the Contractor in order to reflect appropriately such changes.

23.7 In the event that an advance payment is granted, the following shall apply:-

- a) On signature of the Contract, the Contractor shall at his request, and without furnishing proof of expenditure, be entitled to an advance of 10% (ten percent) of the original amount of the Contract. The advance shall not be subject to retention money.
- b) No advance payment may be made before the Contractor has submitted proof of the establishment of deposit or a directly liable guarantee satisfactory to the Employer in the amount of the advance payment. The guarantee shall be in the same currency as the advance.
- c) Reimbursement of the lump sum advance shall be made by deductions from the Interim payments and where applicable from the balance owing to the Contractor. Reimbursement shall begin when the amount of the sums due under the Contract reaches 20% of the original amount of the Contract. It shall have been completed by the time 80% of this amount is reached.

The amount to be repaid by way of successive deductions shall be calculated by means of the formula:

$$R = \frac{A(x^I - x^{II})}{80 - 20}$$

Where:

R = the amount to be reimbursed

A = the amount of the advance which has been granted

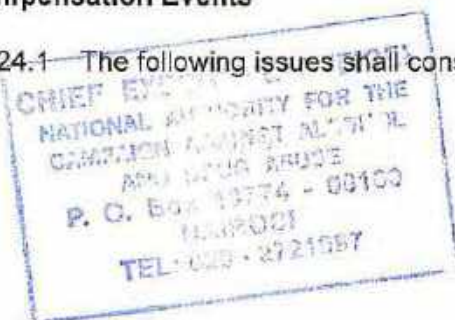
X^I = the amount of proposed cumulative payments as a percentage of the original amount of the Contract. This figure will exceed 20% but not exceed 80%.

X^{II} = the amount of the previous cumulative payments as a percentage of the original amount of the Contract. This figure will be below 80% but not less than 20%.

- d) with each reimbursement the counterpart of the directly liable guarantee may be reduced accordingly.

24. Compensation Events

24.1 The following issues shall constitute Compensation Events:



- (a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Appendix to Conditions of Contract.
- (b) The Employer modifies the List of Other Contractors, etc., in a way that affects the Work of the Contractor under the Contract.
- (c) The Project Manager orders a delay or does not issue drawings, specifications or instructions required for execution of the Works on time.
- (d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon the Work, which is then found to have no defects.
- (e) The Project Manager unreasonably does not approve a subcontract to be let.
- (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to tenderers (including the Site investigation reports), from information available publicly and from a visual inspection of the Site.
- (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer or additional work required for safety or other reasons.
- (h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- (i) The effects on the Contractor of any of the Employer's risks.
- (j) The Project Manager unreasonably delays issuing a Certificate of Completion.
- (k) Other compensation events described in the Contract or determined by the Project Manager shall apply.

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

24.3 As soon as information demonstrating the effect of each compensation event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed

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unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager will assume that the Contractor will react competently and promptly to the event.

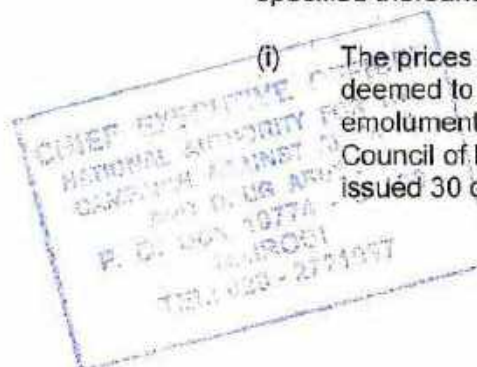
- 24.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having co-operated with the Project Manager.
- 24.5 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the Appendix to Conditions of Contract.
- 24.6 The Contractor shall give written notice to the Project Manager of his intention to make a claim within thirty days after the event giving rise to the claim has first arisen. The claim shall be submitted within thirty days thereafter.

Provided always that should the event giving rise to the claim of continuing effect, the Contractor shall submit an interim claim within the said thirty days and a final claim within thirty days of the end of the event giving rise to the claim.

25. Price Adjustment

- 25.1 The Project Manager shall adjust the Contract Price if taxes, duties and other levies are changed between the date 30 days before the submission of tenders for the Contract and the date of Completion. The adjustment shall be the change in the amount of tax payable by the Contractor.
- 25.2 The Contract Price shall be deemed to be based on exchange rates current at the date of tender submission in calculating the cost to the Contractor of materials to be specifically imported (by express provisions in the Contract Bills of Quantities or Specifications) for permanent incorporation in the Works. Unless otherwise stated in the Contract, if at any time during the period of the Contract exchange rates shall be varied and this shall affect the cost to the Contractor of such materials, then the Project Manager shall assess the net difference in the cost of such materials. Any amount from time to time so assessed shall be added to or deducted from the Contract Price, as the case may be.
- 25.3 Unless otherwise stated in the Contract, the Contract Price shall be deemed to have been calculated in the manner set out below and in sub-clauses 25.4 and 25.5 and shall be subject to adjustment in the events specified thereunder;

- (i) The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the rates of wages and other emoluments and expenses as determined by the Joint Building Council of Kenya (J.B.C.) and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of



the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.

- (ii) Upon J.B.C. determining that any of the said rates of wages or other emoluments and expenses are increased or decreased, then the Contract Price shall be increased or decreased by the amount assessed by the Project Manager based upon the difference, expressed as a percentage, between the rate set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of labour incorporated within the amount of Work remaining to be executed at the date of publication of such increase or decrease.
- (iii) No adjustment shall be made in respect of changes in the rates of wages and other emoluments and expenses which occur after the date of Completion except during such other period as may be granted as an extension of time under clause 17.0 of these Conditions.

25.4 The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the basic prices of materials to be permanently incorporated in the Works as determined by the J.B.C. and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.

25.5 Upon the J.B.C. determining that any of the said basic prices are increased or decreased then the Contract Price shall be increased or decreased by the amount to be assessed by the Project Manager based upon the difference between the price set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of the relevant materials which have not been taken into account in arriving at the amount of any interim certificate under clause 23 of these Conditions issued before the date of publication of such increase or decrease.

25.6 No adjustment shall be made in respect of changes in basic prices of materials which occur after the date for Completion except during such other period as may be granted as an extension of time under clause 17.0 of these Conditions.

25.7 The provisions of sub-clause 25.1 to 25.2 herein shall not apply in respect of any materials included in the schedule of basic rates.

26. Retention

- 26.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the Appendix to Conditions of Contract until Completion of the whole of the Works. On Completion of the whole of the

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

27. Liquidated Damages

- 27.1 The Contractor shall pay liquidated damages to the Employer at the rate stated in the Appendix to Conditions of Contract for each day that the actual Completion Date is later than the Intended Completion Date. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not alter the Contractor's liabilities.
- 27.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rate specified in Clause 23.30

28. Securities

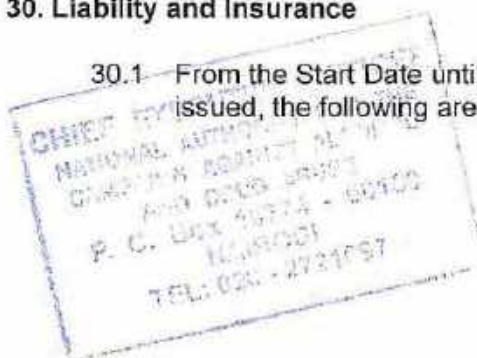
- 28.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a reputable bank acceptable to the Employer, and denominated in Kenya Shillings. The Performance Security shall be valid until a date 30 days beyond the date of issue of the Certificate of Completion.

29. Dayworks

- 29.1 If applicable, the Dayworks rates in the Contractor's tender shall be used for small additional amounts of Work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.
- 29.2 All work to be paid for as Dayworks shall be recorded by the Contractor on Forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the Work being done.
- 29.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

30. Liability and Insurance

- 30.1 From the Start Date until the Defects Correction Certificate has been issued, the following are the Employer's risks:



- (a) The risk of personal injury, death or loss of or damage to property (excluding the Works, Plant, Materials and Equipment), which are due to;
 - (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works, or
 - (ii) negligence, breach of statutory duty or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.
 - (b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in Employer's design, or due to war or radioactive contamination directly affecting the place where the Works are being executed.
- 30.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is the Employer's risk except loss or damage due to;
- (a) a defect which existed on or before the Completion Date.
 - (b) an event occurring before the Completion Date, which was not itself the Employer's risk
 - (c) the activities of the Contractor on the Site after the Completion Date.
- 30.3 From the Start Date until the Defects Correction Certificate has been issued, the risks of personal injury, death and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer's risk are Contractor's risks.
- The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts stated in the Appendix to Conditions of Contract for the following events;
- (a) loss of or damage to the Works, Plant, and Materials;
 - (b) loss of or damage to Equipment;
 - (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract, and
 - (d) personal injury or death.
- 30.4 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation required to rectify the loss or damage incurred.
- 30.5 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums from payments otherwise

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due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

- 30.6 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager. Both parties shall comply with any conditions of insurance policies.

31. Completion and taking over

- 31.1 Upon deciding that the Works are complete, the Contractor shall issue a written request to the Project Manager to issue a Certificate of Completion of the Works. The Employer shall take over the Site and the Works within seven [7] days of the Project Manager's issuing a Certificate of Completion.

32. Final Account

- 32.1 The Contractor shall issue the Project Manager with a detailed account of the total amount that the Contractor considers payable to him by the Employer under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 30 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 30 days a schedule that states the scope of the corrections or additions that are necessary. If the final account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a Payment Certificate. The Employer shall pay the Contractor the amount due in the Final Certificate within 60 days.

33. Termination

- 33.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract. These

fundamental breaches of Contract shall include, but shall not be limited to, the following;

- (a) the Contractor stops work for 30 days when no stoppage of work is shown on the current program and the stoppage has not been authorized by the Project Manager;
- (b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;
- (c) the Contractor is declared bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

- (d) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 30 days (for Interim Certificate) or 60 days (for Final Certificate) of issue.



- (e) the Project Manager gives notice that failure to correct a particular defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;
 - (f) the Contractor does not maintain a security, which is required.
- 33.2 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under Clause 33.1 above, the Project Manager shall decide whether the breach is fundamental or not.
- 33.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.
- 33.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible. The Project Manager shall immediately thereafter arrange for a meeting for the purpose of taking record of the Works executed and materials, goods, equipment and temporary buildings on Site.

34. Payment Upon Termination

- 34.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the Work done and materials ordered and delivered to Site up to the date of the issue of the certificate. Additional liquidated damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable by the Contractor.
- 34.2 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the Work done, materials ordered, the reasonable cost of removal of equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works.
- 34.3 The Employer may employ and pay other persons to carry out and complete the Works and to rectify any defects and may enter upon the Works and use all materials on the Site, plant, equipment and temporary works.
- 34.4 The Contractor shall, during the execution or after the completion of the Works under this clause remove from the Site as and when required, within such reasonable time as the Project Manager may in writing specify, any temporary buildings, plant, machinery, appliances, goods or materials belonging to or hired by him, and in default the Employer may (without being responsible for any loss or damage) remove and sell any such

property of the Contractor, holding the proceeds less all costs incurred to the credit of the Contractor.

Until after completion of the Works under this clause the Employer shall not be bound by any other provision of this Contract to make any payment to the Contractor, but upon such completion as aforesaid and the verification within a reasonable time of the accounts therefore the Project Manager shall certify the amount of expenses properly incurred by the Employer and, if such amount added to the money paid to the Contractor before such determination exceeds the total amount which would have been payable on due completion in accordance with this Contract the difference shall be a debt payable to the Employer by the Contractor; and if the said amount added to the said money be less than the said total amount, the difference shall be a debt payable by the Employer to the Contractor.

35. Release from Performance

- 35.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop Work as quickly as possible after receiving this certificate and shall be paid for all Work carried out before receiving it.

36. Corrupt gifts and payments of commission

The Contractor shall not;

- (a) Offer or give or agree to give to any person in the service of the Employer any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other Contract for the Employer or for showing or forbearing to show favour or disfavor to any person in relation to this or any other contract for the Employer.
- (b) Enter into this or any other contract with the Employer in connection with which commission has been paid or agreed to be paid by him or on his behalf or to his knowledge, unless before the Contract is made particulars of any such commission and of the terms and conditions of any agreement for the payment thereof have been disclosed in writing to the Employer.

Any breach of this Condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the provisions of the Public Procurement Regulations issued under The Exchequer and Audit Act Cap 412 of the Laws of Kenya.

37. Settlement of Disputes



37.1 In case any dispute or difference shall arise between the Employer or the Project Manager on his behalf and the Contractor, either during the progress or after the completion or termination of the Works, such dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed by the Chairman or Vice Chairman of any of the following professional institutions;

- (i) Architectural Association of Kenya
- (ii) Institute of Quantity Surveyors of Kenya
- (iii) Association of Consulting Engineers of Kenya
- (iv) Chartered Institute of Arbitrators (Kenya Branch)
- (v) Institution of Engineers of Kenya

On the request of the applying party. The institution written to first by the aggrieved party shall take precedence over all other institutions.

37.2 The arbitration may be on the construction of this Contract or on any matter or thing of whatsoever nature arising thereunder or in connection therewith, including any matter or thing left by this Contract to the discretion of the Project Manager, or the withholding by the Project Manager of any certificate to which the Contractor may claim to be entitled to or the measurement and valuation referred to in clause 23.0 of these conditions, or the rights and liabilities of the parties subsequent to the termination of Contract.

37.3 Provided that no arbitration proceedings shall be commenced on any dispute or difference where notice of a dispute or difference has not been given by the applying party within ninety days of the occurrence or discovery of the matter or issue giving rise to the dispute.

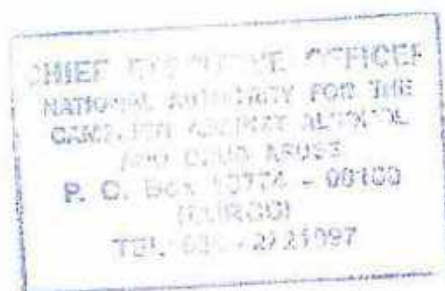
37.4 Notwithstanding the issue of a notice as stated above, the arbitration of such a dispute or difference shall not commence unless an attempt has in the first instance been made by the parties to settle such dispute or difference amicably with or without the assistance of third parties. Proof of such attempt shall be required.

37.5 Notwithstanding anything stated herein the following matters may be referred to arbitration before the practical completion of the Works or abandonment of the Works or termination of the Contract by either party:

37.5.1 The appointment of a replacement Project Manager upon the said person ceasing to act.

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- 37.5.2 Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.
- 37.5.3 Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
- 37.5.4 Any dispute or difference arising in respect of war risks or war damage.
- 37.6 All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless the Employer and the Contractor agree otherwise in writing.
- 37.7 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.
- 37.8 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.
- 37.9 The award of such Arbitrator shall be final and binding upon the parties.



SECTION IV – APPENDIX TO CONDITIONS OF CONTRACT

THE EMPLOYER IS

Name: **National Authority for The Campaign Against Alcohol and Drug Abuse**

Address: **P.O BOX 10774-00100, Nairobi**

Name of Authorised Representative: **Chief Executive Officer**

Telephone: **020-2721997**

Email: info@nacada.co.ke

The Project Manager is

Name: **Works Secretary – Ministry of Transport Infrastructure, Public Works, Housing & Urban Development- State Department for Public Works**

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

Telephone: **+254-02723101**

The name (and identification number) of the Contract is **Proposed Construction of Multi-Purpose Facility (Kitchen / Dining / Social Hall) At Miritini Rehabilitation Centre In Mombasa- Phase One - NAC/OT/13/2020-2021**

The Works consist of **general construction works of a ground floor up to first floor, associated Electrical and Mechanical works.**

The Start Date shall be **the date of site handing over**

The Intended Completion Date for the whole of the Works shall be **Fifty-Two (52) weeks after commencement date**

The following documents also form part of the Contract: **As per the Documents listed in Clause 2.3 of condition of contract**

The Contractor shall submit a revised program for the Works within **Seven (7) days** of delivery of the Letter of Acceptance.

The Site Possession Date shall be **Immediately after contract signing**

The Site is located at Miritini – **Mombasa County** and is defined in drawings nos.

The Defects Liability period is **180 days.**

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Other Contractors, utilities etc., to be engaged by the Employer on the Site include those for the execution of. **N/A**

The minimum insurance covers shall be:

1. The minimum cover for insurance of the Works and of Plant and Materials in respect of the Contractor's faulty design is **the entire contract**
2. The minimum cover for loss or damage to Equipment is **Ksh. 3,000,000/-**
3. The minimum for insurance of other property is **Kshs. 5,000,000/-**
4. The minimum cover for personal injury or death insurance
 - For the Contractor's employees is **as per the applicable laws of Kenya**
 - And for other people is **Kshs. 5,000,000/-**

The following events shall also be Compensation Events: **Those listed in the conditions of contract**

The period between Program updates is **thirty (30) days**.

The amount to be withheld for late submission of an updated Program is **N/A**

The proportion of payments retained is **Ten (10) percent**.

The Price Adjustment Clause **Shall not** apply

The liquidated damages for the whole of the Works are **Kshs. 50,000/- (per Week)**

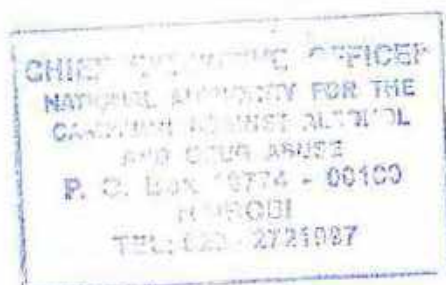
The Performance Security shall be for the following minimum amounts equivalent as a percentage of the Contract Price **Ten (10) percent (%)**

The Completion Period for the Works is **Fifty-Two (52) Weeks**.

The rate of exchange for calculation of foreign currency payments is **N/A**

The schedule of basic rates used in pricing by the Contractor is as attached *[Contractor to attach]*.

Advance Payment **shall not** be granted.



SECTION V - SPECIFICATIONS

Notes for preparing Specifications

- 1.0 Specifications must be drafted to present a clear and precise statement of the required standards of materials, and workmanship for tenderers to respond realistically and competitively to the requirements of the Employer and ensure responsiveness of tenders. The Specifications should require that all materials, plant, and other supplies to be permanently incorporated in the Works be new, unused, of the most recent or current models, and incorporating all recent improvements in design and materials unless provided otherwise in the Contract. Where the Contractor is responsible for the design of any part of the permanent Works, the extent of his obligations must be stated.
- 2.0 Specifications from previous similar projects are useful and may not be necessary to re-write specifications for every Works Contract.
- 3.0 There are considerable advantages in standardizing **General Specifications** for repetitive Works in recognized public sectors, such as highways, urban housing, irrigation and water supply. The General Specifications should cover all classes of workmanship, materials and equipment commonly involved in constructions, although not necessarily to be used in a particular works contract. Deletions or addenda should then adapt the General Specifications to the particular Works.
- 4.0 Care must be taken in drafting Specifications to ensure they are not restrictive. In the Specifications of standards for materials, plant and workmanship, existing Kenya Standards should be used as much as possible, otherwise recognized international standards may also be used.
- 5.0 The Employer should decide whether technical solutions to specified parts of the Works are to be permitted. Alternatives are appropriate in cases where obvious (and potentially less costly) alternatives are possible to the technical solutions indicated in tender documents for certain elements of the Works, taking into consideration the comparative specialized advantage of potential tenderers.

The Employer should provide a description of the selected parts of the Works with appropriate reference to Drawings, Specifications, Bills of Quantities, and Design or Performance criteria, stating that the alternative solutions shall be at least

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structurally and functionally equivalent to the basic design parameters and Specifications.

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



SECTION VI - DRAWINGS

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

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SECTION VII - BILL OF QUANTITIES

Notes for preparing Bills of Quantities

1.0 The objectives of the Bills of Quantities are;

- (a) to provide sufficient information on the quantities of Works to be performed to enable tenders to be prepared efficiently and accurately; and
- (b) when a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

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

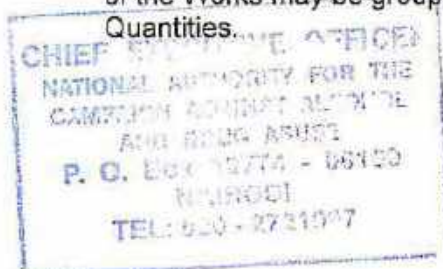
(a) **Preliminaries.**

The preliminaries should indicate the inclusiveness of the unit prices, and should state the methods of measurement which have been adopted in the preparation of the Bill of Quantities and which are to be used for the measurement of any part of the Works.

The number of preliminary items to be priced by the tenderer should be limited to tangible items such as site office and other temporary works, otherwise items such as security for the Works which are primarily part of the Contractor's obligations should be included in the Contractor's rates.

(b) **Work Items**

- (i) The items in the Bills of Quantities should be grouped into sections to distinguish between those parts of the Works which by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, or phasing of the Works, or considerations of cost. General items common to all parts of the Works may be grouped as a separate section in the Bill of Quantities.



- (ii) Quantities should be computed net from the Drawings, unless directed otherwise in the Contract, and no allowance should be made for bulking, shrinkage or waste. Quantities should be rounded up or down where appropriate.
- (iii) The following units of measurement and abbreviations are recommended for use.

Unit	Abbreviation	Unit	Abbreviation
cubic meter	m ³ or cu m	millimeter	mm
hectare	ha	month	mon
hour	h	number	nr
kilogram	kg	square meter	m ² or sq m
lump sum	sum	square millimeter	mm ² or sq mm
meter	m	week	wk
metric ton (1,000 kg)	t		

- (iv) The commencing surface should be identified in the description of each item for Work involving excavation, boring or drilling, for which the commencing surface is not also the original surface. The excavated surface should be identified in the description of each item for Work involving excavation for which the excavated surface is not also the final surface. The depths of Work should be measured from the commencing surface to the excavated surface, as defined.

(c) Day work Schedule

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

- (i) a list of the various classes of labour, and materials for which basic Day work rates or prices are to be inserted by the tenderer, together with a statement of the conditions under which the Contractor will be paid for Work executed on a Day work basis; and
- (ii) a percentage to be entered by the tenderer against each basic Day work Subtotal amount for labour, materials and plant representing the Contractor's profit, overheads, supervision and other charges.

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P. O. Box 10774 - 00100
NAIROBI
TEL: 020 - 2721997

(d) Provisional Quantities and Sums

- i. Provision for quantity contingencies in any particular item or class of Work with a high expectation of quantity overrun should be made by entering specific "Provisional Quantities" or "Provisional Items" in the Bill of Quantities, and *not* by increasing the quantities for that item or class of Work beyond those of the Work normally expected to be required. To the extent not covered above, a general provision for physical contingencies (quantity overruns) should be made by including a "Provisional Sum" in the Summary of the Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a "Provisional Sum" in the Summary of the Bill of Quantities. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises.
- ii. Provisional sums to cover specialized works normally carried out by Nominated Sub Contractors should be avoided and instead Bills of Quantities of the specialized Works should be included as a section of the main Bills of Quantities to be priced by the Main Contractor. The Main Contractor should be required to indicate the name (s) of the specialized firms he proposes to engage to carry out the specialized Works as his approved domestic sub-contractors. Only provisional sums to cover specialized Works by statutory authorities should be included in the Bills of Quantities.

(e) Summary

The Summary should contain a tabulation of the separate parts of the Bills of Quantities carried forward, with provisional sums for Daywork, for physical (quantity) contingencies, and for price contingencies (upward price adjustment) where applicable.



SECTION VIII – STANDARD FORM

- (i) Form of Invitation for Tenders
- (ii) Form of Tender
- (iii) Letter of Acceptance
- (iv) Form of Agreement
- (v) Form of Tender Security
- (vi) Performance Bank Guarantee
- (vii) Bank Guarantee for Advance Payment
- (viii) Qualification Information
- (ix) Tender Questionnaire
- (xi) Confidential Business Questionnaire
- (x) Statement of Foreign Currency Requirement
- (xi) Details of Sub-Contractors
- (x)

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P. O. Box 10774 - 00107
NAIROBI
TEL: 020 - 2721997

FORM OF INVITATION FOR TENDERS

_____ [date]

To: _____ [name of Contractor]
_____ [address]

Dear Sirs:

Reference: _____ [Contract Name]

You have been prequalified to tender for the above project.

We hereby invite you and other prequalified tenderers to submit a tender for the execution and completion of the above Contract.

A complete set of tender documents may be purchased by you from _____

_____ [mailing address, cable/telex/facsimile numbers].

Upon payment of a non-refundable fee of Kshs _____

All tenders must be accompanied by _____ number of copies of the same and a security in the form and amount specified in the tendering documents, and must be delivered to

_____ [address and location]

at or before _____ (time and date). Tenders will be opened immediately thereafter, in the presence of tenderers' representatives who choose to attend.

Please confirm receipt of this letter immediately in writing by cable/facsimile or telex.

Yours faithfully,

_____ Authorised Signature

_____ Name and Title



FORM OF TENDER

TO: _____ [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 Conditions of Contract.
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 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 Employer]
of _____ [Address of Employer]

Witness; Name _____

Address _____

Signature _____

Date _____

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AND DRUG ABUSE
P. O. Box 10774 - 00100
NAIROBI
TEL: 020 - 2721119

LETTER OF ACCEPTANCE

[letterhead paper of the Employer]

_____ [date]

To: _____
[name of the Contractor]

[address of the Contractor]

Dear Sir,

This is to notify you that your Tender dated _____
for the execution of _____
[name of the Contract and identification number, as given in the Tender documents] for
the Contract Price of Kshs. _____ [amount in figures] [Kenya
Shillings _____ (amount in words)] in accordance with
the Instructions to Tenderers is hereby accepted.

You are hereby instructed to proceed with the execution of the said Works in accordance
with the Contract documents.

Authorized Signature

Name and Title of Signatory

Attachment : Agreement



FORM OF AGREEMENT

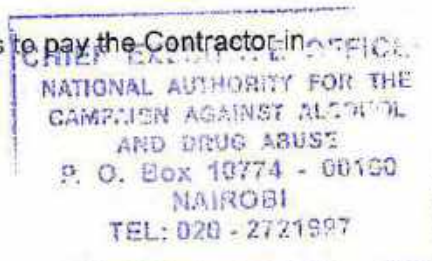
THIS AGREEMENT, made the _____ day of _____ 20____
between _____ of [or whose
registered office is situated at] _____
(hereinafter called "the Employer") of the one part AND
_____ of [or whose
registered office is situated at] _____
(hereinafter called "the Contractor") of the other part.

WHEREAS THE Employer is desirous that the Contractor executes

_____ (name and identification number of Contract) (hereinafter called "the Works") located
at _____ [Place/location of the Works] and the Employer
has accepted the tender submitted by the Contractor for the execution and completion of
such Works and the remedying of any defects therein for the Contract Price of
Kshs _____ [Amount in figures], Kenya
Shillings _____ [Amount in words].

NOW THIS AGREEMENT WITNESSETH 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 shall be read and construed as part of this Agreement i.e.
 - (i) Letter of Acceptance
 - (ii) Form of Tender
 - (iii) Conditions of Contract Part I
 - (iv) Conditions of Contract Part II and Appendix to Conditions of Contract
 - (v) Specifications
 - (vi) Drawings
 - (vii) Priced Bills of Quantities
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, 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 the 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 thereto have caused this Agreement to be executed the day and year first before written.

The common Seal of _____

Was hereunto affixed in the presence of _____

Signed Sealed, and Delivered by the said _____

Binding Signature of Employer _____

Binding Signature of Contractor _____

In the presence of (i) Name _____

Address _____

Signature _____

[ii] Name _____

Address _____

Signature _____



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 of20.....

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]

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 10774 - 00102
NAIROBI
TEL: 020 - 272

PERFORMANCE BANK GUARANTEE

To: _____ (Name of Employer) _____ (Date)
_____ (Address of Employer)

Dear Sir,

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

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognised 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 Kshs. _____ (amount of Guarantee in figures) Kenya Shillings _____ (amount of Guarantee in words), and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of Kenya Shillings _____ (amount of Guarantee in words) 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, addition 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 change, addition, or modification.

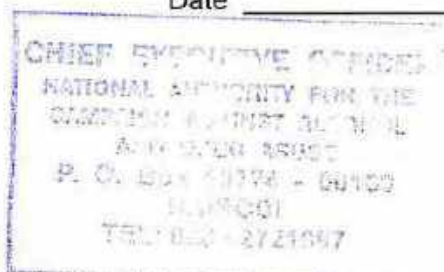
This guarantee shall be valid until the date of issue of the Certificate of Completion.

SIGNATURE AND SEAL OF THE GUARANTOR _____

Name of Bank _____

Address _____

Date _____



BANK GUARANTEE FOR ADVANCE PAYMENT

To: _____ [name of Employer] _____ (Date)
_____ [address of Employer]

Gentlemen,

Ref: _____ [name of Contract]

In accordance with the provisions of the Conditions of Contract of the above-mentioned Contract, We, _____ [name and Address of Contractor] (hereinafter called "the Contractor") shall deposit with _____ [name of Employer] a bank guarantee to guarantee his proper and faithful performance under the said Contract in an amount of Kshs. _____ [amount of Guarantee in figures] Kenya Shillings _____ [amount of Guarantee in words].

We, _____ [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 _____ [name of Employer] 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 _____ [amount of Guarantee in figures] Kenya Shillings _____ [amount of Guarantee in words], such amount to be reduced periodically by the amounts recovered by you from the proceeds of the Contract.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between _____ [name of Employer] and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

No drawing may be made by you under this guarantee until we have received notice in writing from you that an advance payment of the amount listed above has been paid to the Contractor pursuant to the Contract.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until _____ (name of Employer) receives full payment of the same amount from the Contract.

Yours faithfully,

Signature and Seal _____



Name of the Bank or financial institution _____

Address _____

Date _____

Witness: Name: _____

Address: _____

Signature: _____

Date: _____



QUALIFICATION INFORMATION

1. Individual Tenderers or Individual Members of Joint Ventures

- 1.1 Constitution or legal status of tenderer (attach copy of Incorporation Certificate):

Place of registration: _____

Principal place of business _____

Power of attorney of signatory of tender _____

- 1.2 Total annual volume of construction work performed in the last five years

Year	Volume	
	Currency	Value

- 1.3 Work performed as Main Contractor on works of a similar nature and volume over the last five years. Also list details of work under way or committed, including expected completion date.

Project name	Name of client and contact person	Type of work performed and year of completion	Value of Contract
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	

- | | |
|-----|--|
| 1.4 | Major items of Contractor's Equipment proposed for carrying out the Works. List all information requested below. |
|-----|--|

Item of Equipment	Description, Make and age (years)	Condition(new, good, poor) and number available	Owned, leased (from whom?), or to be purchased (from whom?)
_____ _____ _____(et c.)	_____ _____ _____	_____ _____ _____	

- 1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data.

Attach biographical data
CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 18774 - 00160
TEL: 1

Position	Name	Years of experience (general)	Years of experience in proposed position
Project Manager			
—			
—			
(etc.)			

- 1.6 Financial reports for the last five years: balance sheets, profit and loss statements, auditor's reports, etc. List below and attach copies.

- 1.7 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List below and attach copies of supportive documents.

- 1.8 Name, address and telephone, telex and facsimile numbers of banks that may provide reference if contacted by the Employer.

- 1.9 Statement of compliance with the requirements of Clause 1.2 of the Instructions to Tenderers.

- 1.10 Proposed program (work method and schedule) for the whole of the Works.

2 Joint Ventures

- 2.4 The information listed in 1.1 – 1.10 above shall be provided for each partner of the joint venture.



- 2.5 The information required in 1.11 above shall be provided for the joint venture.
- 2.6 Attach the power of attorney of the signatory(ies) of the tender authorizing signature of the tender on behalf of the joint venture
- 2.7 Attach the Agreement among all partners of the joint venture (and which is legally binding on all partners), which shows that:
- a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
 - b) one of the partners will be nominated as being in charge, authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture; and
 - c) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

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AND DRUG ABUSE
P. O. Box 10774 - 00100
NAIROBI
TEL: 020 - 2721

TENDER QUESTIONNAIRE

Please fill in block letters.

1. Full names of tenderer

.....

2. Full address of tenderer to which tender correspondence is to be sent (unless an agent has been appointed below)

.....

3. Telephone number (s) of tenderer

.....

4. Telex address of tenderer

.....

5. Name of tenderer's representative to be contacted on matters of the tender during the tender period

.....

6. Details of tenderer's nominated agent (if any) to receive tender notices. This is essential if the tenderer does not have his registered address in Kenya (name, address, telephone, telex)

.....

.....

Signature of Tenderer

Make copy and deliver to: _____ (Name of Employer)



CONFIDENTIAL BUSINESS QUESTIONNAIRE

You are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2 (b) or 2 (c) and 2 (d) 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; Country/Town.....

Plot No..... Street/Road

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

Nature of Business.....

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

Maximum value of business which you can handle at any time: K.
pound.....

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 in full	Nationality	Citizenship Details	Shares
1.....				
2.....				
3.....				

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 in full Nationality Citizenship Details*. Shares.

1.
.....
2.
.....
3.
.....
4.
.....

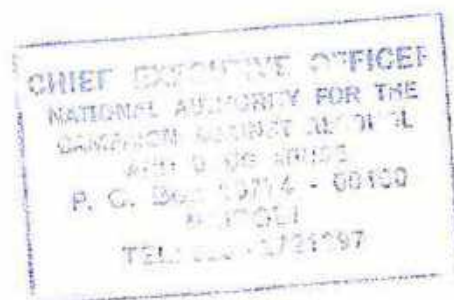
Part 2(d) – Interest in the Firm:

Is there any person / persons in (Name of Employer) who has
interest in this firm? Yes/No (Delete as necessary)

I certify that the information given above is correct.

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

- Attach proof of citizenship



STATEMENT OF FOREIGN CURRENCY REQUIREMENTS

(See Clause 23] of the Conditions of Contract)

In the event of our Tender for the execution of _____
_____ (name of Contract) being accepted, we would
require in accordance with Clause 21 of the Conditions of Contract, which is
attached hereto, the following percentage:

(Figures)..... (Words).....

of the Contract Sum, (Less Fluctuations) to be paid in foreign currency.

Currency in which foreign exchange element is required:

.....
Date: The Day of 20.....

Enter 0% (zero percent) if no payment will be made in foreign currency.

Maximum foreign currency requirement shall be _____ (percent) of the
Contract Sum, less Fluctuations.

(Signature of Tenderer)

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 10774 - 00100
NAIROBI
TEL: 020 - 2721997

DETAILS OF SUB-CONTRACTORS

If the Tenderer wishes to sublet any portions of the Works under any heading, he must give below details of the sub-contractors he intends to employ for each portion.

Failure to comply with this requirement may invalidate the tender.

(1) Portion of Works to be sublet:

(i) Full name of Sub-contractor
and address of head office:

.....

(ii) Sub-contractor's experience
of similar works carried out
in the last 3 years with
Contract value:

.....

.....

(2) Portion of Works to sublet:

(i) Full name of sub-contractor
and address of head office:

.....

.....

(ii) Sub-contractor's experience
of similar works carried out
in the last 3 years with
contract value:

.....

[Signature of Tenderer]

Date



LETTER OF NOTIFICATION OF AWARD

Address of Procuring Entity

To: _____

RE: Tender No. _____

Tender Name _____

This is to notify that the contract/s stated below under the above mentioned tender have been awarded to you.

1. Please acknowledge receipt of this letter of notification signifying your acceptance.
2. The contract/contracts shall be signed by the parties within 30 days of the date of this letter but not earlier than 14 days from the date of the letter.
3. You may contact the officer(s) whose particulars appear below on the subject matter of this letter of notification of award.

(FULL PARTICULARS) _____

SIGNED FOR ACCOUNTING OFFICER

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 19774 - 00100
NAIROBI
TEL: 020 - 2721097

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

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

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

2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred
from participating in procurement proceeding under Part IV of the Act.

3. THAT what is deponed to hereinabove is true to the best of my knowledge,
information and belief.

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

.....
Bidder Official Stamp



**SELF DECLARATION THAT THE PERSON/TENDERER WILL NOT ENGAGE IN ANY
CORRUPT OR FRAUDULENT PRACTICE.**

I, of P. O. Box being a resident of
..... in the Republic of do hereby make a
statement as follows: -

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

2. THAT the aforesaid Bidder, its servants and/or agents /subcontractors will not engage
in any corrupt or fraudulent practice and has not been requested to pay any inducement
to any member of the Board, Management, Staff and/or employees and/or agents of
..... (insert name of the Procuring entity) which is the procuring entity.

3. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered
any inducement to any member of the Board, Management, Staff and/or employees and/or
agents of(name of the procuring entity)

4. THAT the aforesaid Bidder will not engage /has not engaged in any corrosive practice
with other bidders participating in the subject tender.

5. THAT what is deponed to hereinabove is true to the best of my knowledge information
and belief.

.....
(Title) (Signature) (Date
Stamp

.....
Bidder's Official



PRELIMINARIES

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 10774 - 00100
NA 00101
TEL: 01 1200

PARTICULAR PRELIMINARIES

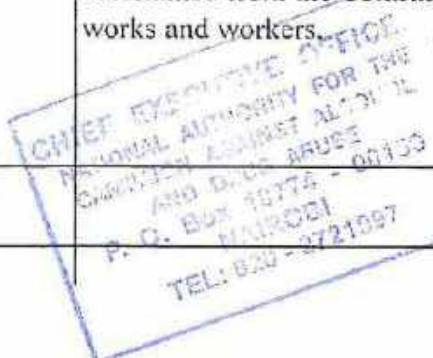
ITEM	DESCRIPTION	AMOUNT (Kshs)
A	PRICING ITEMS OF PRELIMINARIES Prices SHALL BE INSERTED against items of "preliminaries" in the tenderer's priced Bills of Quantities. The Contractor shall be deemed to have included in his prices or rates for the various items in the Bills of Quantities or Specification for all costs involved in complying with all the requirements for the proper execution of the whole of the works in the Contract. The contractor is advised to read and understand all preliminary items.	
B	SCOPE OF THE CONTRACT The works to be carried out under this contract comprise of construction of Kitchen/Dining/Social Hall as per these Bills of Quantities.	
C	FLOOR AREA Total gross floor area is approximately One Thousand Four Hundred and Eighty Nine Square metres for Kitchen/Dining Block. The total gross area is given without warranty but for guidance only. <u>Clinic Block</u> Ground Floor 1229SM First Floor 260SM Total Approx Floor area <u>1489SM</u>	
D	LOCATION OF SITE The site is located at Miritini in Mombasa County. The Contractor is advised to visit the site, to familiarize with the nature and position of the site. No claims arising from the Contractor's failure to do so will be entertained. The Contractor is advised to visit the site, to familiarize with the nature and position of the site. No claims arising from the Contractor's failure to do so will be entertained.	
E	DESCRIPTION OF THE WORKS The works to be carried out under this contract involves construction of Kitchen/Dining Block comprised of substructures, superstructures, walling, roofing, finishes, windows, Doors, fitting and fixtures, balustrading and associated Mechanical and Electrical works.	
	Carried to Collection	

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
CONTROL OF DRUG ABUSE
P. O. BOX 54774 - 60100
TEL: 020 - 2721007

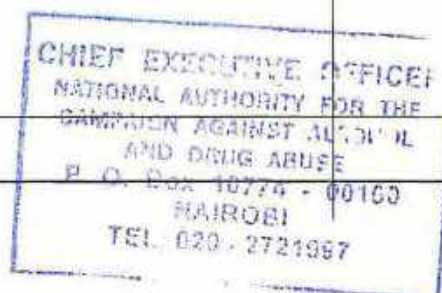
ITEM	DESCRIPTION	AMOUNT (Kshs)
A	<p>MEASUREMENTS</p> <p>In the event of any discrepancies arising between the Bills of Quantities and the actual works, the site measurements shall generally take precedence. However, such discrepancies between any contract documents shall immediately be referred to the PROJECT MANAGER in accordance with Clause 22 of the Conditions of Contract. The discrepancies shall then be treated as a variation and be dealt with in accordance with Clause 22 of the said Conditions.</p>	
B	<p>CLEARING AWAY</p> <p>The Contractor shall remove all temporary works, rubbish, debris and surplus materials from the site as they accumulate and upon completion of the works, remove and clear away all plant, equipment, rubbish, unused materials and stains and leave in a clean and tidy state to the reasonable satisfaction of the Project Manager.</p> <p>The whole of the works shall be delivered up clean, complete and in perfect condition in every respect to the satisfaction of the Project Manager.</p>	
C	<p>CLAIMS</p> <p>It shall be a condition of this contract that upon it becoming reasonably apparent to the Contractor that he has incurred losses and/or expenses due to any of the contract conditions, or by any other reason whatsoever, he shall present such claim or intent to claim notice to the PROJECT MANAGER within the contract period. No claims shall be entertained upon the expiry of the said contract period.</p>	
D	<p>PAYMENTS</p> <p>The tenderer's attention is drawn to the fact that the GOVERNMENT DOES NOT MAKE ADVANCE PAYMENTS but pays for work done and materials delivered to site: all in accordance with Clause 23 of the Conditions of Contract Agreement. In order to facilitate this, a list of the general component elements for the works is given at the summary page of these specifications and the tenderer is requested to break down his tender sum commensurate to the said elements</p>	
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TEL: 020 - 2721997

ITEM	DESCRIPTION	AMOUNT (Kshs)
A	<p>PREVENTION OF ACCIDENT, DAMAGE OR LOSS</p> <p>The Contractor is notified that these works are to be carried out on a restricted site where the client is going on with other normal activities. The Contractor is instructed to take reasonable care in the execution of the works as to prevent accidents, damage or loss and disruption of normal activities being carried out by the Client. The Contractor shall allow in his rates any expense he deems necessary by taking such care within the site.</p>	
B	<p>WORKING CONDITIONS</p> <p>The contractor must control noise and dust throughout the course of the contract.</p>	
C	<p>SIGNBOARD</p> <p>Allow for providing, erecting, maintaining throughout the course of the Contract and afterwards clearing away a signboard as designed, specified and approved by the Project Manager.</p>	
D	<p>LABOUR CAMPS</p> <p>The Contractor shall not be allowed to house labour on site. Allow for transporting workers to and from the site during the tenure of the contract.</p>	
E	<p>MATERIALS FROM DEMOLITIONS</p> <p>Any materials arising from demolitions and not re-used shall become the property of the government. The Contractor shall allow in his rates the cost of transporting the demolished materials to the County Works Offices, Industrial Area, Nairobi.</p>	
F	<p>PRICING RATES</p> <p>The tenderer shall include for all costs in executing the whole of the works, including transport, replacing damaged items, fixing, all to comply with the said Conditions of Contract.</p>	
G	<p>SECURITY</p> <p>The Contractor shall allow for providing adequate security for all the works stores, materials, plant, personnel, etc., both his own and sub-contractors' and must provide all necessary watching, lighting and other precautions as necessary to ensure security against theft, loss or damage and the protection of the public and the workers in the course of execution of this contract. No claim will be entertained from the Contractor for not maintaining adequate security for both the works and workers.</p>	
	Carried to Collection	



ITEM	DESCRIPTION	AMOUNT (Kshs)
A	<p>URGENCY OF THE WORKS</p> <p>The Contractor is notified that these "works are urgent" and should be completed within the period stated in these Particular Preliminaries. The Contractor shall allow in his rates for any costs he deems that he may incur by having to complete the works within the stipulated contract period.</p>	
B	<p>PAYMENT FOR MATERIALS ON SITE</p> <p>All materials for incorporation in the works must be stored on site before payment is effected, unless specifically exempted by the Project Manager. This is to include materials of the Contractor, nominated sub-Contractors and nominated suppliers.</p>	
C	<p>EXISTING SERVICES</p> <p>Prior to the commencement of any work, the Contractor is to ascertain from the relevant authority the exact position, depth and level of all existing services in the area and he/she shall make whatever provisions may be required by the authorities concerned for the support, maintenance and protection of such services.</p>	
D	<p>BID SECURITY</p> <p>The Bidder shall furnish, as part of his bid, a security as specified in the tender advertisement.</p> <p>The bid security shall, at the bidder's option, be in the form of a certified cheque, bank draft, standby letter of credit or guarantee from a reputable bank located in Kenya or foreign bank which has been determined by the bidder to be acceptable to the Government. The format of the bank guarantee shall be in accordance with the sample forms of bid security included in the post qualification forms, other formats may be permitted, subject to the prior approval of the Government. Letters of credit, bank</p> <p>Guarantees issued as surety for the bid shall be valid for a period of One Hundred and Fifty <u>(150)</u> days from the date of Tender Opening.</p>	
	Carried to Collection	




ITEM	DESCRIPTION	AMOUNT (Kshs)
A	VALUE ADDED TAX	
B	PERFORMANCE BOND The Contractor shall find and submit on the Form of Tender an approved bank and who will be willing to be bound with the Government in and amount equal to five per cent (5%) of the Contract amount for the due performances of the Contract up to the date of completion as certified by the PROJECT MANAGER and who will when and if called upon, sign a Bond to that effect on the relevant standard form included herein. (without the addition of any limitations) on the same day as the Contract Agreement is signed, by the Government, the Contractor shall furnish within seven days another Surety to the approval of the Government. No payment on account for the works executed will be made to the contractor until he has submitted the Performance Bond to the Project Manager duly signed, sealed and stamped from an approved Bank	
C	TENDER DOCUMENTS Tender documents are as listed in Clause 2.1 of the Instruction to Tenderer's Page 7	
D	DELIVERY OF TENDER Tenders will be opened at the time specified in the letter accompanying these Tender Documents or as indicated in the advertisement. Tenders delivered/received later than the above time will not be opened. The Contractor's attention is drawn to the Legal Notice in the Finance Act part 3 Section 21(b) operative from 1 st September, 1993 which requires payment of VAT on all contracts. The Contractor should therefore include allowance in his rates and prices for prices for VAT and any other Government taxes currently in force. NB: VAT SHALL BE INCLUDED IN THE RATES	
E	FIRM PRICE CONTRACT Unless otherwise specifically stated, this is a firm price contract and the Contractor must allow in his tender rates for any increase in the cost of labour and/or materials during the currency of the contract.	
	Carried to Collection	



ITEM	DESCRIPTION	AMOUNT (Kshs)
	<u>SPECIAL PRELIMINARIES</u>	
	<u>PROJECT MANAGER'S SUPERVISION EXPENSES</u>	
	<i><u>Transport for supervision team from state department of public works</u></i>	
	<u>Provide a 14.seater Van (in good supervised condition) for transporting 8No. Ministry of Transport,Infrastructure,Public Works,Housing and Urban Development. (State Department for Public Works) Officers to Miritini in Mombasa County and back to Public Works Headquarters for 20 No. trips approximately 946 kilometres per trip including a competent and qualified driver, fuel and lubricants and comprehensive insurance.</u>	
A	Allow for provision of vehicle as described including, drivers, maintenance, fuel, oil and lubricant, licences and comprehensive insurance Allow rate of Ksh..... per visit X 20 no visits	
	<u>Project Manager's Subsistence Allowance</u>	
B	Provisional sum of Kenya shillings, Two Million (KShs.2,000,000.00) only for Subsistence allowances for Project Manager's Supervision Team.	
C	Allow for profits and attendance ----- %	
	<u>Clerk of Works Expenses</u>	
D	Allow a sum of Kenya Shillings Five Hundred Thousand (KShs.500,000.00) only for Clerk of Works allowances	
E	Allow for profits and attendance ----- %	
F	Allow a sum of Kenya Shillings Two Hundred Thousand (Kshs. 200,000.00) only for Project Manager's Supervision team Stationery	
G	Allow for profits and attendance ----- %	
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ITEM	DESCRIPTION	AMOUNT (Kshs)
	<p align="center"><u>PARTICULARS OF INSERTIONS TO BE MADE IN APPENDIX TO CONTRACT AGREEMENT</u></p> <p>The following are the insertions to be made in the appendix to the contract Agreement:-</p> <p>A Period of Final Measurement.....3 Months from Practical Completion</p> <p>B Defects Liability Period.....6 Months from Practical Completion</p> <p>C Date for Possession..... To be agreed with the Project Manager</p> <p>D Date for Completion.....52 WEEKS from the Date of possession</p> <p>E Liquidated and Ascertained Damages. At a rate of KSh 50,000 Per week or part thereof</p> <p>F Period of Interim Certificates.....Monthly</p> <p>G Period of Honouring Certificates.....30 Days</p> <p>H Percentage of Certified Value Retained 10%</p>	
		
	Carried to Collection	

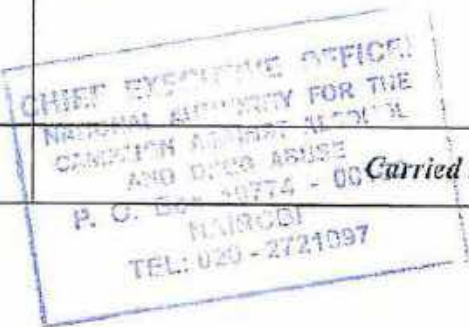
ITEM	DESCRIPTION	AMOUNT (Kshs)
	<p style="text-align: center;"><u>COLLECTION</u></p> <p>Brought forward from page PP/1</p> <p>Brought forward from page PP/2</p> <p>Brought forward from page PP/3</p> <p>Brought forward from page PP/4</p> <p>Brought forward from page PP/5</p> <p>Brought forward from page PP/6</p> <p>Brought forward from page PP/7</p>	
	<div style="border: 1px solid black; padding: 5px; text-align: center;"> CHIEF EXECUTIVE OFFICER NATIONAL AUTHORITY FOR THE CAMPAIGN AGAINST ALCOHOL AND DRUG ABUSE P. O. Box 19774 - 00100 NAIROBI TEL: 020 - 2721987 </div>	
	TOTAL FOR PARTICULAR PRELIMINARIES CARRIED TO GRAND SUMMARY	

ITEM	DESCRIPTION	AMOUNT (Kshs).
	GENERAL PRELIMINARIES	
A.	PRICING OF ITEMS OF PRELIMINARIES AND PREAMBLES	
	Prices will be inserted against items of Preliminaries in the Contractor's priced Bills of Quantities and Specification.	
	The Contractor shall be deemed to have included in his prices or rates for the various items in the Bills of Quantities or Specification for all costs involved in complying with all the requirements for the proper execution of the whole of the works in the Contract.	
B.	ABBREVIATIONS	
	Throughout these Bills, units of measurement and terms are abbreviated and shall be interpreted as follows:-	
	<i>C.M.</i> Shall mean cubic metre	
	<i>S.M.</i> Shall mean square metre	
	<i>L.M.</i> Shall mean linear metre	
	<i>MM</i> Shall mean Millimetre	
	<i>Kg.</i> Shall mean Kilogramme	
	<i>No.</i> Shall mean Number	
	<i>Prs.</i> Shall mean Pairs	
	<i>B.S.</i> Shall mean the British Standard Specification Published by the British Standards Institution, 2 Park Street, London W.I., England.	
	<i>Ditto</i> Shall mean the whole of the preceding description except as qualified in the description in which it occurs.	
	<i>m.s.</i> Shall mean measured separately.	
	<i>a.b.d</i> Shall mean as before described.	
	<i>Carried to collection</i>	



ITEM	DESCRIPTION	AMOUNT (Kshs).
A.	<p>EXCEPTION TO THE STANDARD METHOD OF MEASUREMENT</p> <p><i>Attendance</i> ; Clause B19(a) of the Standard Method of Measurement is deleted and the following clause is substituted:-</p> <p>Attendance on nominated Sub-Contractors shall be given as an item in each case shall be deemed to include: allowing use of standing scaffolding, mess rooms, sanitary accommodation and welfare facilities; provision of special scaffolding where necessary;providing space for office accommodation and for storage of plant and materials;providing light and water for their work; clearing away rubbish; unloading checking and hoisting; providing electric power and removing and replacing duct covers, pipe casings and the like necessary for the execution and testing of Sub- Contractors' work and being responsible for the accuracy of the same.</p> <p><i>Fix Only:-</i></p> <p>"Fix Only" shall mean take delivery at nearest railway station (Unless otherwise stated), pay all demurrage charges, load and transport to site where necessary, unload, store, unpack, assemble as necessary, distribute to position, hoist and fix only.</p>	
B.	<p>EMPLOYER</p> <p>The "Employer" is MINISTRY OF HEALTH</p> <p>The term "Employer" and "Government" wherever used in the contract document shall be synonymous</p>	
C.	<p>PROJECT MANAGER</p> <p>The term "P.M." wherever used in these Bills of Quantities shall be deemed to imply the Project Manager as defined in Condition 1 of the Conditions of Contract or such person or persons as may be duly authorised to represent him on behalf of the Government.</p>	
D.	<p>ARCHITECT</p> <p>The term "Architect" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is State Department for Public Works, P.O. Box 30743, NAIROBI.</p>	
	<i>Carried to collection</i>	

PROPOSED NATIONAL MULTI PURPOSE FACILITY FOR DRUG USE DISORDERS IN MOMBASA-KITCHEN/DINING/SOCIAL HALL

ITEM	DESCRIPTION	AMOUNT (Kshs).
A	QUANTITY SURVEYOR The term "Quantity Surveyor" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is State Department for Public Works, P.O. Box 30743, NAIROBI.	
B	ELECTRICAL ENGINEER The term "Electrical Engineer" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is State Department for Public Works, P.O. Box 30743, NAIROBI.	
C	MECHANICAL ENGINEER The term "Mechanical Engineer" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is State Department for Public Works, P.O. Box 30743, NAIROBI.	
D	STRUCTURAL ENGINEER The term "Structural Engineer" shall be deemed to mean "The P.M." as defined above whose address unless otherwise notified is State Department for Public Works, P.O. Box 30743, NAIROBI.	
E	FORM OF CONTRACT The Form of Contract shall be as stipulated in the Republic of Kenya's Standard Tender Document for Procurement of Building Works(2006 Edition) included herein The Conditions of Contract are also included herein Conditions of Contract These are numbered from 1 to 37 as set out in pages 20 to 48 of these tender documents.Particulars of insertions to be made in the Appendix to the Contract Agreement will be found in the Particular Preliminaries part of these Bills of Quantities	
		<i>Carried to collection</i>

ITEM	DESCRIPTION	AMOUNT (Kshs).
A.	<p>PLANT, TOOLS AND VEHICLES</p> <p>Allow for providing all scaffolding, plant, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for the use of nominated Sub-Contractors as described herein. No timber used for scaffolding, formwork or temporary works of any kind shall be used afterwards in the permanent work.</p>	
B	<p>MATERIALS AND WORKMANSHIP.</p> <p>All materials and workmanship used in the execution of the work shall be of the best quality and description unless otherwise stated. The Contractor shall order all materials to be obtained from overseas immediately after the Contract is signed and shall also order materials to be obtained from local sources as early as necessary to ensure that they are onsite when required for use in the works. The Bills of Quantities shall not be used for the purpose of ordering materials.</p>	
C	<p>SIGN FOR MATERIALS SUPPLIED.</p> <p>The Contractor will be required to sign a receipt for all articles and materials supplied by the PROJECT MANAGER at the time of taking deliver thereof, as having received them in good order and condition, and will thereafter be responsible for any loss or damage and for replacements of any such loss or damage with articles and/or materials which will be supplied by the PROJECT MANAGER at the current market prices including Customs Duty and V.A.T., all at the Contractor's own cost and expense, to the satisfaction of the PROJECT MANAGER.</p>	
D	<p>STORAGE OF MATERIALS</p> <p>The Contractor shall provide at his own risk and cost where directed on the site weather proof lock-up sheds and make good damaged or disturbed surfaces upon completion to the satisfaction of the PROJECT MANAGER Nominated Sub-Contractors are to be made liable for the cost of any storage accommodation provided especially for their use.</p>	
	Carried to collection	

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

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ITEM	DESCRIPTION	AMOUNT (Kshs).
A.	<p>PUBLIC AND PRIVATE ROADS.</p> <p>Maintain as required throughout the execution of the works and make good any damage to public or private roads arising from or consequent upon the execution of the works to the satisfaction of the local and other competent authority and the PROJECT MANAGER</p>	
B.	<p>EXISTING PROPERTY.</p> <p>The Contractor shall take every precaution to avoid damage to all existing property including roads, cables, drains and other services and he will be held responsible for and shall make good all such damage arising from the execution of this contract at his own expense to the satisfaction of the PROJECT MANAGER</p>	
C.	<p>VISIT SITE AND EXAMINE DRAWINGS.</p> <p>The Contractor is recommended to examine the drawings and visit the site the location of which is described in the Particular Preliminaries hereof. He shall be deemed to have acquainted himself therewith as to its nature, position, means of access or any other matter which, may affect his tender. No claim arising from his failure to comply with this recommendation will be considered.</p>	
D.	<p>ACCESS TO SITE AND TEMPORARY ROADS.</p> <p>Means of access to the Site shall be agreed with the PROJECT MANAGER prior to commencement of the work and Contractor must allow for building any necessary temporary access roads for the transport of the materials, plant and workmen as may be required for the complete execution of the works including the provision of temporary culverts, crossings, bridges, or any other means of gaining access to the Site. Upon completion of the works, the Contractor shall remove such temporary access roads; temporary culverts, bridges, etc., and make good and reinstate all works and surfaces disturbed to the satisfaction of the PROJECT MANAGER</p>	
E.	<p>AREA TO BE OCCUPIED BY THE CONTRACTOR</p> <p>The area of the site which may be occupied by the Contractor for use of storage and for the purpose of erecting workshops, etc., shall be defined on site by the PROJECT MANAGER</p>	
	<i>Carried to collection</i>	

ITEM	DESCRIPTION	AMOUNT (Kshs).
A.	<p>OFFICE ETC. FOR THE PROJECT MANAGER</p> <p>The Contractor shall provide, erect and maintain where directed on site and afterwards dismantle the site office of the type noted in the Particular Preliminaries, complete with Furniture. He shall also provide a strong metal trunk complete with strong hasp and staple fastening and two keys. He shall provide, erect and maintain a lock-up type water or bucket closet for the sole use of the PROJECT MANAGER including making temporary connections to the drain where applicable to the satisfaction of Government and Medical Officer of Health and shall provide services of cleaner and pay all conservancy charges and keep both office and closet in a clean and sanitary condition from commencement to the completion of the works and dismantle and make good disturbed surfaces. The office and closet shall be completed before the Contractor is permitted to commence the works. The Contractor shall make available on the Site as and when required by the "PROJECT MANAGER" a modern and accurate level together with levelling staff, ranging rods and 50 metre metallic or linen tape.</p>	
B.	<p>WATER AND ELECTRICITY SUPPLY FOR THE WORKS</p> <p>The Contractor shall provide at his own risk and cost all necessary water, electric light and power required for use in the works. The Contractor must make his own arrangements for connection to the nearest suitable water main and for metering the water used. He must also provide temporary tanks and meters as required at his own cost and clear away when no longer required and make good on completion to the entire satisfaction of the PROJECT MANAGER. The Contractor shall pay all charges in connection herewith. No guarantee is given or implied that sufficient water will be available from mains and the Contractor must make his own arrangements for augmenting this supply at his own cost. Nominated Sub-contractors are to be made liable for the cost of any water or electric current used and for any installation provided especially for their own use.</p>	
C.	<p>SANITATION OF THE WORKS</p> <p>The Sanitation of the works shall be arranged and maintained by the Contractor to the satisfaction of the Government and/or Local Authorities, Labour Department and the PROJECT MANAGER</p>	
	<i>Carried to collection</i>	

ITEM	DESCRIPTION	AMOUNT (Kshs).
A	<p>SUPERVISION AND WORKING HOURS</p> <p>The works shall be executed under the direction and to the entire satisfaction in all respects of the PROJECT MANAGER who shall at all times during normal working hours have access to the works and to the yards and workshops of the Contractor and sub-Contractors or other places where work is being prepared for the contract.</p>	
B	<p>PROVISIONAL SUMS.</p> <p>The term "Provisional Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7(i) of the Standard Method of Measurement. Such sums are net and no addition shall be made to them for profit.</p>	
C	<p>PRIME COST (OR P.C.) SUMS.</p> <p>The term "Prime Cost Sum" or "P.C. Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7 (ii) of the Standard Method of Measurement . Persons or firms nominated by the PROJECT MANAGER to execute work or to provide and fix materials or goods are described herein as Nominated Sub-Contractors. Persons or firms so nominated to supply goods or materials are described herein as Nominated Suppliers.</p>	
D	<p>PROGRESS CHART.</p> <p>The Contractor shall provide ,before signing the contract and in agreement with the PROJECT MANAGER, a Progress Chart for the whole of the works including the works of Nominated Sub-Contractors ; one copy to be handed to the PROJECT MANAGER and a further copy to be retained on Site. Progress to be recorded and chart to be amended as necessary as the work proceeds.</p>	
	<p><i>Carried to collection</i></p>	<p>CHIEF EXECUTIVE OFFICE NATIONAL AUTHORITY FOR THE CAMPAIGN AGAINST ALCOHOL AND DRUG ABUSE P. O. Box 10774 - 00100 NAIROBI TEL: 020 - 2721997</p>

ITEM	DESCRIPTION	AMOUNT (Kshs).
A	<p>ADJUSTMENT OF P.C. SUMS.</p> <p>In the final account all P.C. Sums shall be deducted and the amount properly expended upon the PROJECT MANAGER'S order in respect of each of them added to the Contract sum. The Contractor shall produce to the PROJECT MANAGER such quotations, invoices or bills, properly receipted, as may be necessary to show the actual details of the sums paid by the Contractor. Items of profit upon P.C. Sums shall be adjusted in the final account pro-rata to the amount paid. Items of "attendance" (as previously described) following P.C. Sums shall be adjusted pro-rata to the physical extent of the work executed (not pro-rata to the amount paid) and this shall apply even though the Contractor's priced Bill shows a percentage in the rate column in respect of them. Should the Contractor be permitted to tender and his tender be accepted of any work for which a P.C. Sum is included in these Bill of Quantities profit and attendance will be allowed at the same rate as it would be if the work were executed by a Nominated Sub-Contractor.</p> <div> <p>CHIEF EXECUTIVE OFFICER NATIONAL AGENCY FOR THE CONTROL OF DRUG ABUSE P. O. BOX 10734 - DODD DAR ES SALAM TEL: 810-2731997</p> </div>	
	<i>Carried to collection</i>	
A.	ADJUSTMENT OF PROVISIONAL SUMS.	

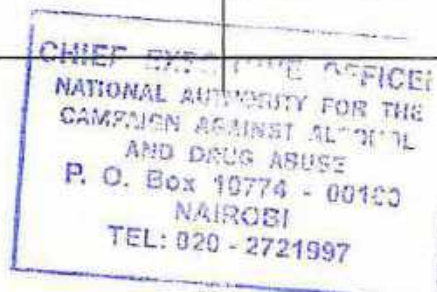
ITEM	DESCRIPTION	AMOUNT (Kshs).
	<p>In the final account all Provisional Sums shall be deducted and the value of the work properly executed in respect of them upon the PROJECT MANAGER's order added to the Contract Sum. Such work shall be valued, but should any part of the work be executed by a Nominated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


GP/10

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TEL: 020 - 2721997

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

ITEM	DESCRIPTION	AMOUNT (Kshs).
A	<p>BLASTING OPERATIONS</p> <p>Blasting will only be allowed with the express permission of the PROJECT MANAGER in writing. All blasting operations shall be carried out at the Contractor's sole risk and cost in accordance with any Government regulations in force for the time being, and any special regulations laid down by the PROJECT MANAGER governing the use and storage of explosives.</p>	
B	<p>MATERIALS ARISING FROM EXCAVATIONS</p> <p>Materials of any kind obtained from the excavations shall be the property of the Government. Unless the PROJECT MANAGER directs otherwise such materials shall be dealt with as provided in the Contract. Such materials shall only be used in the works, in substitution of materials which the Contractor would otherwise have had to supply with the written permission of the PROJECT MANAGER Should such permission be given, the Contractor shall make due allowance for the value of the materials so used at a price to be agreed.</p>	
C	<p>PROTECTION OF THE WORKS.</p> <p>Provide protection of the whole of the works contained in the Bills of Quantities, including casing, casing up, covering or such other means as may be necessary to avoid damage to the satisfaction of the PROJECT MANAGER and remove such protection when no longer required and make good any damage which may nevertheless have been done at completion free of cost to the Government.</p>	
D	<p>REMOVAL OF RUBBISH ETC.</p> <p>Removal of rubbish and debris from the Buildings and site as it accumulates and at the completion of the works and remove all plant, scaffolding and unused materials at completion.</p>	
	<i>Carried to collection</i>	



ITEM	DESCRIPTION	AMOUNT (Kshs).
A	<p>WORKS TO BE DELIVERED UP CLEAN</p> <p>Clean and flush all gutters, rainwater and waste pipes, manholes and drains, wash (except where such treatment might cause damage) and clean all floors, sanitary fittings, glass inside and outside and any other parts of the works and remove all marks, blemishes, stains and defects from joinery, fittings and decorated surfaces generally, polish door furniture and bright parts of metalwork and leave the whole of the buildings watertight, clean, perfect and fit for occupation to the approval of the PROJECT MANAGER</p>	
B	<p>GENERAL SPECIFICATIONS</p> <p>For the full description of materials and workmanship, method of execution of the work and notes for pricing, the Contractor is referred to the Ministry of Roads and Public Works and Housing General Specification dated 1976 or any subsequent revision thereof which is issued as a separate document, and which shall be allowed in all respects unless it conflicts with the General Preliminaries, Trade Preambles or other items in these Bills of Quantities.</p>	
C	<p>TRAINING LEVY</p> <p>The Contractor's attention is drawn to legal notice No. 237 of October, 1971, which requires payment by the Contractor of a Training Levy at the rate of 1/4 % of the Contract sum on all contracts of more than Kshs. 50,000.00 in value.</p>	
D	<p>MATERIALS ON SITE</p> <p>All materials for incorporation in the works must be stored on or adjacent to the site before payment is effected unless specifically exempted by the PROJECT MANAGER. This includes the materials of the Main Contractor, Nominated Sub-Contractors and Nominated Suppliers.</p>	
	<p style="text-align: center;"></p> <p style="text-align: center;"><i>Carried to Collection</i></p>	

ITEM	DESCRIPTION	AMOUNT (Kshs).
A	<p>HOARDING</p> <p>The Contractor shall enclose the site or part of the works under construction with a hoarding 2400 mm high consisting of iron sheets on 100 x 50 mm timber posts firmly secured at 1800 mm centres with two 75 x 50 mm timber rails for a total length of approximately three hundred meters. The Contractor is in addition required to take all precautions necessary for the safe custody of the works, materials, plant, public and Employer's property on the site.</p> <p>B CONTRACTOR'S SUPERINTENDENCE/SITE AGENT</p> <p>The Contractor shall constantly keep on the works a literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the Project Manager and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.</p>	
	<i>Carried to Collection</i>	

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. BOX 10774 - 00100
NAIROBI
TEL: 020 - 2721997

ITEM	DESCRIPTION	AMOUNT (Kshs).
	<p style="text-align: center;"><u>COLLECTION</u></p> <p>Brought Forward From Page GP/1</p> <p>Brought Forward From Page GP/2</p> <p>Brought Forward From Page GP/3</p> <p>Brought Forward From Page GP/4</p> <p>Brought Forward From Page GP/5</p> <p>Brought Forward From Page GP/6</p> <p>Brought Forward From Page GP/7</p> <p>Brought Forward From Page GP/8</p> <p>Brought Forward From Page GP/9</p> <p>Brought Forward From Page GP/10</p> <p>Brought Forward From Page GP/11</p> <p>Brought Forward From Page GP/12</p> <p>Brought Forward From Page GP/13</p> <p>Brought Forward From Page GP/14</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>CHIEF EXECUTIVE OFFICES NATIONAL AUTHORITY FOR THE CONTROL OF DRUG ABUSE P. O. BOX 10774 - 00100 NAIROBI TEL: 010 - 2721097</p> </div>	
	TOTAL FOR GENERAL PRELIMINARIES CARRIED TO GRAND SUMMARY	

PREAMBLES AND PRICING NOTES

A. GENERALLY

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

B. MANUFACTURERS' NAMES

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

C. WALLING

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

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

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

D. CARPENTRY

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

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

Prices must also include for all nails and fasteners.



A. PLASTERWORK AND OTHER FINISHES

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

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

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

B. GLAZING

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

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

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

C. PAINTING

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

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

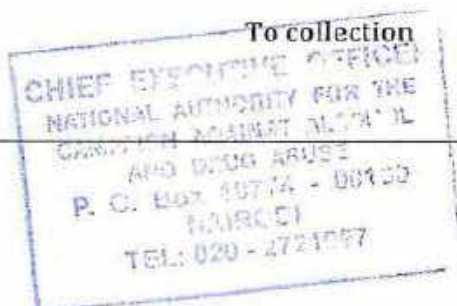
Prices for painting are to include for scaffolding, preparatory work, priming coats, protection of other works and for cleaning up on completion. Prices for painting on galvanized metal are to include for mordant solution as necessary.



MEASURED WORKS

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
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AND DRUG ABUSE
P. O. Box 19774 - 00100
NAIROBI
TEL: 020 - 2721997

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED NATIONAL MULTI-PURPOSE FACILITY FOR DRUG USE DISORDERS IN MOMBASA. KITCHEN/DINING/SOCIAL HALL ELEMENT NO. 1 SUBSTRUCTURE (ALL PROVISIONAL) <u>Site clearance</u> A Clear site of works off grass, shrubs, small trees and grub up roots and burn the arising debris.	SM	1229		
	<u>Excavations</u> <u>Excavations including maintaining and supporting sides of excavations from fallen soil, mud by plunking or strutting and sub-surface water by baling, pumping or otherwise</u> B For mass excavation, 0-1500mm to reduce levels from the ground level and load and cart away.	CM	430		
	C For strip foundations, 0-1500mm deep in murram from the stripped levels.	CM	219		
	D For column bases ditto	CM	204		
	F Excavation in soft rock class I	CM	63		
	G Excavation in Medium hardrock class II	CM	42		
	H Excavation in hard rock class III	CM	21		
	<u>Disposal</u> I Return, fill in and ram selected excavated material around foundation walls and columns.	CM	160		
	J Load and cart away surplus excavated materials away from site of work and dispose off as per local authority directives	CM	263		
	<u>Imported filling</u> K Approved imported hardcore filling to make up levels handpacked and well compacted in 150mm thick layers to Structural Engineer's approval.	CM	1040		
	L 50mm Thick quarry dust blinding spread over hardcore bed and ram over by roller while moist for proper consolidation.	SM	1155		
				Kshs.	

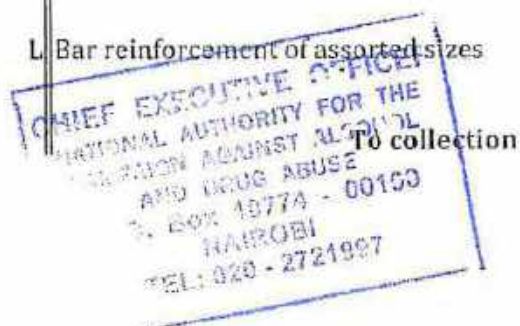


KB/1

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>Anti-termite treatment</u>				
A	Chemical anti- termite treatment as "Gladiator TC" or other equal and approved termicide sprayed over surfaces of hardcore bed and walls.	SM	1,229		
	<u>Damp proof membrane.</u>				
B	1000 Gauge polythene sheeting damp proof membrane spread over hardcore bed and walls with 300mm side laps and end laps (measured nett with no allowance for overlaps).	SM	1,229		
	<u>Concrete Works</u>				
	<u>Mass concrete class 15/20 aggregates as described in:-</u>				
C	100mm thick blinding under strip footing	SM	190		
D	Ditto under column bases	SM	177		
	<u>Vibrated reinforced concrete class 25/20 aggregates as described in:-</u>				
E	Strip footing	CM	38		
F	Column bases	CM	71		
G	Entrance steps and ramp	CM	1		
H	Columns	CM	5		
I	Ground Beams	CM	36		
J	150mm Thick ground floor slab	SM	1,229		
	<u>Reinforcement</u>				
	<u>Fabric mesh reinforcement to B.S 4483 as described in:-</u>				
K	B.R.C fabric mesh reinforcement to Ref No. A142 laid in surface bed with minimum 200 mm side and end laps (measured net with no allowance for overlaps) with and including precast concrete spacer blocks	SM	1,229		
	<u>Bar reinforcement to B.S 4449 complete with precast spacer blocks supplied, cut, bent and fixed as described in:-</u>				
L	Bar reinforcement of assorted sizes	KG	18120		

Kshs.

KB/2



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>Formwork</u>				
	<u>Marine ply formwork as described to:-</u>				
A	Sides of strip footing	SM	126		
B	Sides of column bases	SM	120		
C	Sides of columns	SM	65		
D	Sides and soffits of ground beam	SM	284		
E	Edges of ground floor slabs, 75-150mm girth	LM	210		
F	Edges of steps risers, ditto	LM	28		
	<u>Foundation walling</u>				
	<u>Approved natural load bearing square shaped quarry stone wall of minimum crushing strength of 7.5/mm² built to courses of cement/sand (1:3) mortar mix as described in:-</u>				
G	200mm thick coral block walling reinforced at each alternate course with and including 24 gauge galvanized mild steel hoop iron and staggered.	SM	456		
	<u>Damp proof course</u>				
H	200 mm Wide 3-ply Hessian based bituminous felt damp proof course laid on and including 200mm cement/sand (1:4) setting screed under external walling	LM	242		
I	Ditto 150mm thick walling, ditto	LM	23		
	<u>Plinth finishes</u>				
	<u>Cement/sand (1:3) render as described to:-</u>				
J	16mm Thick render to plinths.	SM	50		
	<u>Prepare and apply three coats bituminous emulsion paint from Crown Paints or other equal and approved sources to:-</u>				
K	General surfaces of rendered plinths	SM	50		
	To collection			Kshs.	

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
COMBINATION AGAINST ALCOHOL
AND DRUG ABUSE
P. O. BOX 10772 - 00103
Nairobi
TEL: 020-2721997

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS CT
	<u>Precast concrete units as described in:-</u>				
A	600 x 600 x 50mm Thick precast concrete paving slabs, laid on and including 100mm thick bed of sand and pointed at the joints with cement/sand (1:3) mortar.	SM	86		
	To collection below			Kshs.	
	<u>COLLECTION</u>				
	From page : KB/1				
	: KB/2				
	: KB/3				
	From above:				
	<u>TOTAL TO KITCHEN BLOCK SUMMARY</u>			KSHS.	

CHIEF EXECUTIVE OFFICER
 NATIONAL AUTHORITY FOR THE
 CONTROL OF ALCOHOL
 AND DRUG ABUSE
 P. O. Box 19774 - 00100
 NAIROBI
 TEL: 020 - 2721997

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUN
	ELEMENT NO. 2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	<i>Vibrated reinforced concrete class 25/20 aggregates as described in:-</i>				
A	Ring beams	CM	33		
B	Beams	CM	33		
C	Columns	CM	20		
D	Staircase	CM	2		
E	175mm Thick suspended floor slab and landings	SM	260		
F	Ditto suspended roof slab (Tanks)	SM	15		
G	200mm thick x 400mm wide precast reinforced concrete horizontal sun shading fins fixed to columns.	LM	234		
H	300 x200mm thick Precast Reinforced concrete lintels including all necessary formwork and steel reinforcement	LM	36		
	<i>Bar reinforcement to B.S 4449 complete with precast spacer blocks supplied, cut, bent and fixed as described in:-</i>				
I	Bar reinforcement of assorted sizes	KG	16335		
	<i>Marine ply formwork as described to:-</i>				
J	Sides of columns	SM	276		
K	Sides and soffits of beams	SM	323		
L	Sides and soffits of ring beams	SM	323		
M	Sloping soffits of staircase	SM	6		
N	Soffits of horizontal suspended floor slabs and roof slab	SM	260		
O	Open string of staircase , 225-300mm girth	LM	13		
P	Edges of suspended floor slabs, landing and roof slabs, 75-150mm girth	LM	105		
Q	Edges of staircase risers, ditto	LM	22		
	TOTAL TO KITCHEN BLOCK SUMMARY			KSHS.	

TOTAL TO KITCHEN BLOCK SUMMARY

KSHS.

CHIEF EXECUTIVE OFFICER
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AND DRUG ABUSE
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NAIROBI
TEL: 020 - 2721057

KB/5

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO. 3				
	WALLING				
	<u>External Walling</u>				
	<u>Approved natural load bearing quarry stone wall of minimum crushing strength of 7.5N/mm² built to courses in cement/sand (1:3) mortar mix as described in:-</u>				
A	200mm thick machine cut coral stone walling reinforced at each alternate course with and including 24 gauge galvanized mild steel hoop iron and staggered.	SM	727		
	<u>Internal Walling</u>				
	<u>Approved natural load bearing stone wall of minimum crushing strength of 5N/mm² built in courses of cement/sand (1:3) mortar mix.</u>				
B	200mm thick machine cut coral stone walling reinforced at each alternate course with and including 24 gauge galvanized mild steel hoop iron and staggered.	SM	384		
C	150mm thick walling , ditto	SM	74		
	<u>Precast Concrete Louver Vent blocks</u>				
D	200mm thick approved precast Concrete louvred Vent blocks laid with cement /sand (1:4) mortar, complete with wire gauze.	SM	19		
	<u>TOTAL TO KITCHEN BLOCK SUMMARY</u>			KSHS.	

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AND DRUG ABUSE
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NAIROBI
TEL: 020 - 2721987

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS CT
	ELEMENT NO. 4				
	ROOFING AND RAIN WATER DISPOSAL				
	<u>Rainwater disposal</u>				
	<u>R.C Gutters</u>				
	<u>Reinforced concrete class 25/20 aggregates as described in:-</u>				
A	Gutters	CM	25		
	<u>Bar reinforcement</u>				
	<u>Bar reinforcement to B.S 4461 as described complete with spacer blocks and tying wires.</u>				
B	Bar reinforcement of assorted sizes	KG	3057		
	<u>Formwork</u>				
	<u>Marine board formwork as described to:-</u>				
C	Vertical sides and horizontal soffits of concrete gutters	SM	276		
	<u>Cement/sand (1:3) waterproof screed as described to:-</u>				
D	20mm Thick pavings to gutter slab to receive APP membrane (m.s) laid to falls.	SM	142		
E	Ditto to roof slab to receive APP membrane (m.s) laid to falls.	SM	15		
	<u>Water proofing to roof slab and concrete gutters</u>				
F	3mm Thick APP membrane laid over screeded gutters, (m.s) with and including all labours for gas heating and rolling	SM	142		
G	Ditto to screeded roof slab	SM	15		
	<u>Roof covering</u>				
H	26 gauge prepainted aluminium roofing sheets as 'Tower metcoppo' from Kaluworks or any other equal and approved by the project manager; fixed to steel roof members (m.s) with and including 'I' bolts.	SM	1658		
I	Extra over for ridge caps to match	LM	32		
J	Ditto for hip caps	LM	101		
K	Ditto for valley caps.	LM	91		
L	Extra over for raking cutting on sheets	LM	448		
	To collection			Kshs.	



ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS.	C7
	<u>Steel roof Structure (Provisional)</u>					
	<u>Roof structures in structural steelworks in accordance B.S 5950 of quality 43C to B.S 4360 with and including all fasteners and hardware of quality grade 46 to B.S 4360, steel pipes to B.S 534 and including labours of hoisting to heights, 7000mm above ground primed with three coats of grey oxide as described in:</u>					
A	100 x 50 x 3mm RHS top and bottom cords.	KG	9288			
B	50 x 40 x 3mm RHS internal members	KG	3938			
C	152.4 x 50.8 x 2mm Thick zed purlins.	KG	4351			
D	10mm diameter sag rods	LM	664			
	<u>Rainwater disposal</u>					
	<u>Medium gauge UPVC pipes as described in:-</u>					
E	100mm Diameter grey downpipes held onto walls with approved mild steel holder bats.	LM	168			
F	Extra over for swan neck bends, 800mm long	No.	10			
G	Ditto for shoes, 300mm long	No.	10			
	To collection below					
	<u>COLLECTION</u>					
	From page : KB/7					
	From Above					
	<u>TOTAL TO KITCHEN BLOCK SUMMARY</u>				KSHS.	

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO. 5				
	FINISHES				
	<u>Internal finishes</u>				
	<u>Floor finishes</u>				
	<u>In situ cement/sand (1:4) screed as described in:-</u>				
A	32mm Thick pavings to receive porcelain tiles	SM	275		
B	Ditto to treads of stairs and steps, 300mm girth ditto	LM	47		
C	Ditto to risers of stairs and steps, 150mm girth ditto	LM	57		
D	32mm Thick pavings to receive non-slip ceramic tiles	SM	236		
E	38mm Thick pavings to receive epoxy floor finish	SM	784		
	<u>Porcelain floor tiles from approved sources as described to:-</u>				
F	600 x 300 x 8mm Thick matt porcelain floor tiles laid in 6mm thick continuous joints both ways with and including spacers and approved adhesive and grouted.	SM	275		
G	Ditto to risers, 150mm high ditto.	LM	57		
H	Ditto to treads, 300mm wide ditto with non-slip grooves.	LM	47		
I	600 x 100 x 10mm Thick to skirting ditto	LM	91		
J	Extra over for non-slip aluminium edging angles 50 x 50mm at the top of risers	LM	57		
	<u>Ceramic floor tiles as "SAJ" or other equal and approved as described in:-</u>				
K	600 x 300 x 8mm Thick coloured ceramic tiles laid in 6mm thick continuous joints both ways and fixed with and including spacers and cement/sand (1:4) mortar mix backing and grouted.	SM	236		
	<u>Epoxy floor finish as described in:-</u>				
L	2mm Thick Epoxy floor finish in approved pigmentation poured on screed bed(m.s) and polished to client's approval	SM	784		
	To collection			Kshs.	

CHIEF EXECUTIVE
NATIONAL AUTHORITY FOR THE
ERADICATION OF DRUG ABUSE
AND DEPENDENCY
P. O. BOX 10774
Nairobi
TEL: 020 - 474

PROPOSED NATIONAL MULTI PURPOSE FACILITY FOR DRUG USE DISORDERS IN MOMBASA-KITCHEN/DINING/SOCIAL HALL

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>Wall finishes</u>				
	<u>Plaster</u>				
A	Apply 9mm thick first coat of cement/sand (1:3) plaster and then 3mm thick second coat of cement /lime (1:5) putty steel trowelled smooth to walls including skimming.	SM	1048		
B	Extra over plaster to window reveals and doors openings	SM	123		
	<u>Ceramic wall tiles as "SAI" or other equal and approved as described in:-</u>				
C	600 x 300 x 10mm Thick coloured glazed ceramic wall tiles fixed to keyed rendered wall with and including cement mortar mix and grouted complete with chrome edging strips.	SM	322		
	<u>Ceiling finishes</u>				
	<u>Plaster</u>				
D	Apply 9mm thick first coat of cement/sand (1:3) plaster and then 3mm thick second coat of cement /lime (1:5) putty steel trowelled smooth to soffits of slabs including skimming.	SM	260		
E	Ditto to sloping soffits of staircases, ditto.	SM	6		
	<u>Acoustic ceiling</u>				
F	20mm thick acoustic minatone ceilings in 600 x 600mm panels suspended from roof structure with metal hangers including taping as required.	SM	276		
	<u>Prepare, touch up one coat universal undercoat and three coats vinyl matt emulsion paint from Crown Paints or other equal approved sources to:-</u>				
G	Plastered wall surfaces	SM	1171		
H	Plastered soffits of suspended slabs and staircase	SM	260		
I	Ditto but sloping soffits of Staircase.	SM	6		
	<u>External finishes</u>				
	<u>Gauged cement/sand (1:4) render as described in:-</u>				
J	16mm Thick render to external walls, beams and columns finished with wood float.	SM	727		
	<u>Painting and decorating</u>				
	<u>Prepare and apply one universal undercoat and three coats of Permaplast exterior quality paint from Crown Paints or other equal approved sources to:-</u>				
K	Rendered surfaces of external walls, beams and columns.	SM	727		
	To collection				

KB/10



PROPOSED NATIONAL MULTI PURPOSE FACILITY FOR DRUG USE DISORDERS IN MOMBASA-KITCHEN/DINING/SOCIAL HALL

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p><u>COLLECTION</u></p> <p>From page : KB/9</p> <p>: KB/10</p> <p><u>TOTAL TO KITCHEN BLOCK SUMMARY</u></p>			KSHS.	



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 6</u>				
	<u>WINDOWS</u>				
	<u>Window Cills</u>				
A	Precast concrete window cills size 150 x 50mm one side weathered and throated, bedded and jointed in cement/sand (1:3) mortar mix.	LM	115		
	<u>Wrot prime grade mahogany as described in:</u>				
B	Ex 200 x 20mm Bull nosed window boards, plugged.	LM	90		
	<u>Curtain rods</u>				
C	25mm Ø Upvc curtain rods with moulded ends complete with rings and a pair of wrot iron moulded brackets fixed to walls.	LM	98		
	<u>Aluminium Windows</u>				
	<u>Purpose made powder coated aluminium framed windows of frame size 100 x 50mm complete with fixing lugs, stays, permanent vents, locking mechanisms and building into masonry works.</u>				
D	Window size 900 x 600mm high	No.	11		
E	Ditto size 1200 x 900mm high	No.	4		
K	Ditto size 1000 x 2400mm high	No.	2		
J	Ditto size 1200 x 2400mm high	No.	4		
F	Ditto size 2000 x 1500mm high	No.	5		
N	Ditto size 1500 x 2400mm high	No.	2		
G	Ditto size 2000 x 2000mm high	No.	4		
M	Ditto size 2000 x 2400mm high	No.	4		
L	Ditto size 2800 x 2400mm high	No.	2		
I	Ditto size 3300 x 2400mm high	No.	8		
H	Ditto size 4300 x 2400mm high	No.	4		
O	Ditto size 5000 x 2400mm high	No.	2		
	To collection			Kshs.	

NEP EXECUTIVE OFFICE
 NATIONAL AUTHORITY FOR THE
 COMBAT AGAINST ALCOHOL
 AND DRUG ABUSE
 P. O. Box 40774 - 00100
 NAIROBI
 TEL: 020-27210

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUN
	<u>Glazing</u>				
A	<u>Provide size as per details</u> x 5 mm thick clear glass. Glazing units installed with and including 15 x 15mm anodized aluminium glazing beads and rubber gaskets.	SM	216		
B	<u>Provide size as per details</u> x 5mm thick obscured glass, ditto	SM	10		
	<u>Painting and decoration</u>				
	<u>Prepare and apply three coats stained polyurethane varnish from approved sources to:-</u>				
C	Surface of woodwork, 100-200mm girth	LM	90		
	To collection below			Kshs.	
	<u>COLLECTION</u>				
	From page : KB/11				
	From above:				
	<u>TOTAL TO KITCHEN BLOCK SUMMARY</u>			KSHS.	



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 7</u>				
	<u>DOORS</u>				
	<i><u>Door frames and fittings in wrot mahogany as described in:-</u></i>				
A	Ex 50 x 15mm Moulded architrave with three labours	LM	194		
B	Ex 25mm Quadrant.	LM	194		
C	Ex 15 x 15mm Glazing beads.	LM	35		
D	Ex 150 x 50mm Frames with three labours.	LM	145		
E	Ex 100 x 50mm Ditto	LM	63		
	<i><u>Solid mahogany panel doors</u></i>				
F	50mm thick solid mahogany panel double door, size 1400 x 2400mm high in 2 No. equal openable door leaves, comprising of 100 x 50mm top and middle rails, lock and hinges stiles, curved mullions. All to architect details.	No.	7		
G	Ditto double door size 1200 x 2100mm high, ditto.	No.	5		
H	Ditto size 900 x 2100mm high, ditto.	No.	10		
I	Ditto size 850 x 2100mm high, ditto.	No.	15		
	<i><u>Supply and fix the following ironmongery with screws to match 'Union' Catalogue or equal and approved:</u></i>				
J	3-Lever mortice lock complete with handles	No.	12		
K	2-lever ditto.	No.	10		
G	Vacant/Engaged door locks	No.	15		
L	100mm Long stainless steel butt hinges	Prs.	73.5		
M	40mm Diameter half moon chrome door stops with rawl bolts	No.	49		
N	Stainless steel "Male/Female" door signages	No.	9		
	<i><u>Fanlight glazing</u></i>				
O	<i><u>Provide size as per details</u></i> x 4mm thick clear glass. Glazing units installed with timber beads (m.s)	SM	5		
	<i><u>Prepare and apply three coats stained polyurethane varnish from approved sources to:-</u></i>				
P	Surfaces of woodwork, 0-100mm girth	LM	388		
Q	Ditto, 200-300mm girth	LM	208		
R	General surfaces of flush and panel doors	SM	164		
	<u>TOTAL TO KITCHEN BLOCK SUMMARY</u>			KSHS.	

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NAIROBI
TEL: 020 - 2721997

KB/14

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 8</u>				
	<u>FITTINGS AND FIXTURES</u>				
G	High level cupboard overall size 5000 x 450 x 600mm high comprising of 20mm thick block boards to sides, shelvings, doors and divisions and all necessary ironmongery, well furnished. All to Architects details (Kitchen)	No.	2		
H	Ditto size 3000 x 450 x 600mm high, ditto. (Kitchen manager office)	No.	1		
J	Store shelves in 5No. Tiers size 4600 x 450mm in 20mm thick block boards to shelves, fixed to 50 x 25mm wrot prime grade cypress bearers, painted and 100mm thick mass concrete class 15/20 plinths including formwork to edges, 75-150mm girth. (Dry food store, vegetable & meat store)	No.	2		
K	Ditto size 3600 x 450mm, ditto (Cutlery store)	No.	1		
K	Ditto size 6000 x 450mm, ditto (Equipment store)	No.	1		
L	600mm wide x 75mm thick reinforced concrete vanity tops comprising of bar reinforcement as approved and finished in 8mm thick glazed granito tiles to details. (Washroom)	LM	8		
	<u>TOTAL TO KITCHEN BLOCK SUMMARY</u>			KSHS.	



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 9</u>				
	<u>BALUSTRADING</u>				
	<u>Staircase Balustrading</u>				
	A Stainless steel balustrading comprising 50mm diameter x 1.5mm thick handrails and balusters, 4No. 16mm diameter evenly spaced intermediate rails, overall height 900mm high.	LM	6		
	<u>TOTAL TO KITCHEN BLOCK SUMMARY</u>			KSHS.	

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TEM	DESCRIPTION	AMOUNT
	<u>PROPOSED NATIONAL MULTI PURPOSE FACILITY FOR DRUG USE DISORDERS IN MOMBASA.</u>	
	DINING,KITCHEN & SOCIAL HALL	
	<u>SUMMARY</u>	<u>PAGE No.</u>
1.0	SUBSTRUCTURE <i>(ALL PROVISIONAL)</i>	KB/4
2.0	REINFORCED CONCRETE SUPERSTRUCTURE	KB/5
3.0	WALLING	KB/6
4.0	ROOFING AND RAINWATER DISPOSAL	KB/7
5.0	FINISHES	KB/10
6.0	WINDOWS	KB/12
7.0	DOORS	KB/14
8.0	FITTINGS AND FIXTURES	KB/15
9.0	BALUSTRADING	KB/16
	<u>TOTAL TO GRAND SUMMARY</u>	KSHS.



EXTERNAL WORKS
LANDSCAPING

CHIEF EXECUTIVE OFFICE
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CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 19774 - 00100
NAIROBI
TEL: 020 - 2721997

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSH
	<u>SOFT LANDSCAPING</u>				
A	<u>Site Clearance and Excavations</u> i) Clear the site of all existing unwanted plant materials and excavate over site commencing from ground level, average 150 mm deep top soil to remove all turf, weeds and any deleterious materials; including carting away all arising wastes, raking and fine levelling of the ground.	2,710	SM		
	ii) Tree felling and cutting away of dead trees and branches as directed by the project Landscape Architect				
B	<u>Supply and Application of Red/Loam soil.</u> Supply approved good quality red/ Loam soil and spread over all areas to be landscaped. Average depth 100mm	271	CM		
C	<u>Supply and application of Fertilizer</u> Supply and install organic manure as "Mazao" or equally approved to manufacturers specification to all landscape areas.	121	KG		
	Supply and install organic foliar fertilizer as "Enhance" or equally approved to all landscaped areas 4 weeks after planting.	5	LTS		
	Supply and install to all landscaped areas Gibberelic Acid Based plant growth regulators " Mega Grow" or equally approved to manufacturers specifications.	136	grams		
D	<u>INSTALLATION OF GRASS:</u> <u>Supply, plant, water, weed and tend well under mentioned grass species till full establishment. Grass should also be rolled with a light weight roller to even out 'bumpy' areas. This should be carried out one to two weeks after installation</u> i) Pemba grass sprigs planted BOX80mm centre to centre	2,439	SM		
L/1	Total carried to Grand Summary				

CHIEF ESTIMATE OFFICER
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CAMPAIGN AGAINST MALARIA
AND OTHER DISEASES
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ITEM	DESCRIPTION	QTY	UNIT	RATE	KSH
	<u>INSTALLATION OF GROUNDCOVERS:</u>				
A	<u>Pits excavation for Groundcovers - (Approx. 687 No.)</u> Excavate circular pits, average 300mm diameter, commencing at existing ground level but not exceeding 0.5 metres depth average 350mm deep and spread risings evenly around.	68	CM		
B	<u>Backfilling of Planting pits</u> Backfill excavated planting pits with Approved imported Red soil mixed with organic manure as per manufacturer's specification.	68	CM		
	<u>Ground Covering Plants</u>				
C	<i>snaw mountain</i>	132	NO		
D	<i>clivea minifata</i>	35	NO		
E	<i>Sedum spp. (STONE PLANT ASSORTED)</i>	32	SM		
F	<i>Liriope Muscari</i>	104	NO		
G	<i>Chlorophytum comosum</i>	51	NO		
H	<i>echeveria elegans</i>	86	NO		
I	<i>Lantana selkum spp</i>	80	NO		
J	<i>Rhoe discolor</i>	32	NO		
K	<i>Aithernanthera ficoidea</i>	20	NO		
L	<i>Diffenbachia</i>	24	NO		
M	<i>Lantana montevidensis</i>	80	NO		
N	<i>vinca Rosea</i>	11	NO		
L/2	Total carried to Grand Summary				

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
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NAIROBI
TEL: 020 - 2721987

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSH
	<u>INSTALLATION OF SHRUBS:</u>				
	<u>Pits excavation for Shrubs - (Approx. 137 No.)</u>				
A	Excavate pits of size 600 x 600 mm diameter, commencing at existing ground level but not exceeding 0.6 metres depth average 600mm deep and put aside arising good quality soils for later backfilling of planting pits	23	CM		
	<u>Backfilling of Planting pits</u>				
B	Backfill excavated planting pits with Approved imported Red soil mixed with organic manure as per manufacturers specifications.	23	CM		
	<u>Planting of Shrubs (Approx. 137 No.)</u>				
	<u>Supply, plant, weed, water and tend well under-mentioned assorted species of Shrubs till full establishment.</u>				
C	<i>Alpinia Zerumbet</i>	16	NO		
D	<i>Streitzia reginae</i>	14	NO		
E	<i>curculigo capitulata</i>	9	NO		
F	<i>canna lily</i>	22	NO		
G	<i>Gold dust croton</i>	7	NO		
H	<i>Zanzibar croton</i>	5	NO		
I	<i>Crinum asiaticum</i>	35	NO		
J	<i>Nephrolepis exaltata (Boston fern)</i>	14	NO		
K	<i>Acalypha wilkesiana</i>	1	NO		
L	<i>Heliconia caribae</i>	14	NO		
M	<i>Acalypha tricolor</i>	3	NO		
N	<i>slappy painter Garden croton</i>	10	NO		
O	<i>Aloe ciliaris</i>	22	NO		
P	<i>Acalypha amentaceae</i>	5	NO		
Q	<i>No Tibouchina urvilleana</i>	12	NO		
R	<i>agave attenuata</i>	6	NO		
S	<i>penisetum setaceum green</i>	6	NO		

CHIEF EXTENSIVE OFFICE
NATIONAL AGENCY FOR THE
CAMPAIGN AGAINST SLAVIL
AND DRUG ABUSE
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Nairobi
TEL: 020 - 2721067

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSH
	POTTED PLANTS				
	Supply under-mentioned potted plants in well-polished or painted circular circular / round diameter concrete or any other approved (top dia. abt 600mm). Each pot should comprise of one (1) main plant and atleast one or two different species of 'groundcovers'	8	NO		
T	circular / round diameter concrete or any other approved (top c	2	NO		
U	<i>Monstera deliciosa</i> + <i>Asperogus densiflorus</i> 'nives'	2	NO		
V	<i>Chrysallidocarpus lutescens</i> + <i>syngonium podophyllum</i>	4	NO		
W	Supply and install coarse pumice medium mixed with garden compost at a ratio of 3:1	30	KG		
L3	Total carried to Grand Summary				
ITEM	DESCRIPTION	QTY	UNIT	RATE	KSH
	INSTALLATION OF TREES:				
	Pits excavation for Trees - (Approx. 32 No. Pits)				
A	Excavate pits, 1000x1000mm, commencing at existing ground level but not exceeding 1.5 metres depth over 1000mm deep and and cart away excavated material arising	16	CM		
	Backfilling of Planting Pits				
B	Backfill excavated planting pits with approved imported red/loam soil mixed with organic manure to manufacturers specifications.	16	CM		
	Planting of Trees				
C	Supply, plant, weed, water and tend well undermentioned <u>50 No. trees/large shrubs till full establishment and support the same with strong bamboo stakes, adequate in thickness, for each tree (generally between 30mm and 50mm diameter):</u>				
	<u>Ordinary Trees/Large Shrubs (28No.)</u>				
D	<i>Delonix regia</i>	3	NO		
F	<i>Thevetia thevetioides</i>	3	NO		
G	<i>Frangipani</i>	6	NO		
H	<i>Polyalthia longifolia</i>	16	NO		
	PALM TREES (4 No.)				
I	<i>Roystonea regia</i> (Royal palm)	2	NO		
J	<i>Chrysallidocarpus lutescens</i> (Golden palm)	2	NO		
L4	Total carried to Grand Summary				

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NAIROBI
TEL: 020 - 2721997

ITEM	DESCRIPTION	QTY	UNIT	RATE	ISH
	<u>Water fountain and sculpture</u>				
K	Water fountain & sculpture	1	NO		
1.	Concrete bench (Terrazzo)	8	NO		
L/5	<u>Total carried to Grand Summary</u>				
A	<u>Landscape Maintenance:</u> Provide landscape maintenance service to the landscaped garden for six (6) months upon practical completion in order to monitor plants growth; Maintenance works for plants and grass shall include; watering, weeding, spraying against pests and diseases, and mowing grass to acceptable height as outlined in the Landscape Specification document.	2,710	SM		
L/6	<u>Total carried to Grand Summary</u>				



ITEM	DESCRIPTION	QTY	UNIT	RATE	KSH
	<u>GRAND SUMMARY:</u>				
A	Ground Preparation and grassing	L/1			
B	Ground covers	L/2			
C	Shrubs & Climbers	L/3			
D	Trees	L/4			
E	Water fountain and sculpture	L/5			
F	Maintenance & Other requirements	L/6			
	TOTAL CARRIED TO SUMMARY OF EXTERNAL WORKS				

L7

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ITEM	DESCRIPTION	KSHS.	CT
	<p><u>PROPOSED NATIONAL MULTI PURPOSE FACILITY FOR DRUG USE DISORDERS IN MOMBASA.</u></p> <p>EXTERNAL WORKS</p> <p><u>SUMMARY</u> <u>PAGE No.</u></p>		
1.0	LANDSCAPING WORK	L/7	
	<p><u>TOTAL TO GRAND SUMMARY</u></p>	KSHS.	

JOINT EXECUTIVE OFFICES
NATIONAL AUTHORITY FOR THE
COMB-ION AGAINST ALTH'L
AND ODRG ABUSE
P. O. Box 18774 - 00100
NAIROBI
TEL:020-2721097

SECTION B

GENERAL SPECIFICATIONS

OF

MATERIALS AND WORKS

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. BOX 10774 - 00100
NEWARK, NJ
TEL: 020

PART A ELECTRICAL WORKS

PART 1. GENERAL SPECIFICATIONS OF WORKS

- 1.1 General
- 1.2 Standard of Materials
- 1.3 Workmanship
- 1.4 Procurement of Materials
- 1.5 Shop Drawings
- 1.6 Record Drawings
- 1.7 Regulations and Standards
- 1.8 Setting out Works

PART 2. GENERAL SPECIFICATIONS OF ELECTRICAL WORKS

- 2.1 Position of Electrical Plant and Apparatus
- 2.2 M.C.B Distribution Panels and Consumer Units
- 2.3 Fused Switchgear and Isolators
- 2.4 Conduits and Conduit Runs
- 2.5 Conduit Boxes and Accessories
- 2.6 Labels
- 2.7 Earthing
- 2.8 Cables and Flexible Cords
- 2.9 Armoured PVC Insulated and Sheathed Cables
- 2.10 Cable Supports; Markers and Tiles
- 2.11 PVC Insulated Cables
- 2.12 Heat Resisting Cables
- 2.13 Flexible Cords
- 2.14 Cable Ends and phase Colours
- 2.15 Cable Insulation Colours

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- 2.16 Sub-circuit Wiring
- 2.17 Space Factor
- 2.18 Insulation
- 2.19 Lighting Switches
- 2.20 Sockets and Switched sockets
- 2.21 Fused Spur Boxes
- 2.22 Cooker Outlets
- 2.23 Connectors
- 2.24 Lamp holders
- 2.25 LED Lamps
- 2.26 lighting Fittings Street lighting Lanterns
- 2.27 Position of Points and Switches
- 2.28 Street/Security Lighting Columns
- 2.29 Timing Control Switch
- 2.30 Wiring System for Street Lighting
- 2.31 Metal control Pillar
- 2.32 Current Operated Earth leakage circuit breaker
- 2.33 MV Switchboard
- 2.34 Steel Conduits and Steel Trunking
- 2.35 Testing on Site
- 2.36 Solar panel
- 2.37 Inverter

Elect-B/2



PART 1. GENERAL SPECIFICATIONS OF WORKS

1.1 GENERAL

This specification is to be read in conjunction with the drawings which are issued with it. Bills of quantities shall be the basis of all additions and omissions during the progress of the works.

1.2 STANDARD OF MATERIALS

Where the material and equipment are specifically described and named in the Specification followed by approved equal, they are so named or described for the purpose of establishing a standard to which the sub-contractor shall adhere.

Should the Sub-contractor install any material not specified herein before receiving approval from the proper authorities, the Engineer shall direct the Sub-contractor to remove the material in question immediately. The fact that this material has been installed shall have no bearing or influence on the decision by the Engineer.

All materials condemned by the Engineer as not approved for use, are to be removed from the premises and suitable materials delivered and installed in their place at the expense of the Sub-contractor. All materials required for the works shall be new and the best of the respective kind and shall be of a uniform pattern.

1.3 WORKMANSHIP

The workmanship and method of installation shall conform to the best standard practice. All work shall be performed by a skilled tradesman and to the satisfaction of the Engineer. Helpers shall have qualified supervision.

Any work that does not in the opinion of the Engineer conform to the best standard practice will be removed and reinstated at the Sub-contractors expense.

Permits, Certificates or Licenses must be held by all tradesmen for the type of work; in which they are involved where such permits, certificates or licenses exist under Government legislation.

1.4 PROCUREMENT OF MATERIALS

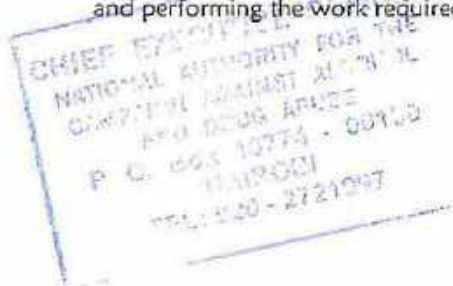
The sub-contractor is advised that no assistance can be given in the procurement or allotment of any materials or products to be used in and necessary for the construction and completion of the work.

Sub-contractors are warned that they must make their own arrangements for the supply of materials and/or products specified or required.

1.5 SHOP DRAWINGS

Before manufacture or Fabrication is commenced the sub-contractor shall submit Two copies of detailed drawings of all control pillars, meter cubicles, medium voltage switchboards including their components showing all pertinent information including sizes, capacities, construction details, etc, as may be required to determine the suitability of the equipment for the approval of the Engineer.

Approval of the detailed drawings shall not relieve the sub-contractor of the full responsibility of errors or the necessity of checking the drawings himself or of furnishing the materials and equipment and performing the work required by the plans and specifications.



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1.6 RECORD DRAWINGS

These diagrams and drawings shall show the completed installation including sizes, runs and arrangements of the installation. The drawings shall be to scale not less than 1:50 and shall include plan views and section.

The drawings shall include all the details which may be useful in the operation, maintenance or subsequent modifications or extensions to the installation.

Three sets of diagrams and drawings shall be provided, all to the approval of the Engineer.

One coloured set of line diagrams relating to operating and maintenance instructions shall be framed and, mounted in a suitable location.

1.7 REGULATIONS AND STANDARDS

All work executed by the Sub-contractor shall comply with the current edition of the "Regulations" for the Electrical Equipment of Buildings, issued by the Institution of Electrical Engineers, and with the Regulations of the Local Electricity Authority.

Where the two sets of regulations appear to conflict, they shall be clarified with the Engineers. All materials used shall comply with relevant Kenya Bureau of Standards Specification.

1.8 SETTING OUT WORK

The sub-contractor at his own expenses: is to set out works and take all measurements and dimensions required for the erection of his materials on site; making any modifications in details as may be found necessary during the progress of the works, submitting any such modifications or alterations in detail to the Engineer before proceeding and must allow in his Tender for all such modifications and for the provision of any such sketches or drawings related thereto.

Elect-B/4



PART 2. GENERAL SPECIFICATIONS OF ELECTRICAL WORKS

2.1 POSITIONS OF ELECTRICAL PLANT AND APPARATUS

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

2.2 MCB DISTRIBUTION PANELS AND CONSUMER UNITS

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

Removable undrilled gland plates shall be provided on the top and bottom of the cases. Miniature circuit breakers shall be enclosed in moulded plastic with the tripping mechanism and arc chambers separated and sealed from the cable terminals.

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

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

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

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

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

2.3 FUSED SWITCHGEAR AND ISOLATORS

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

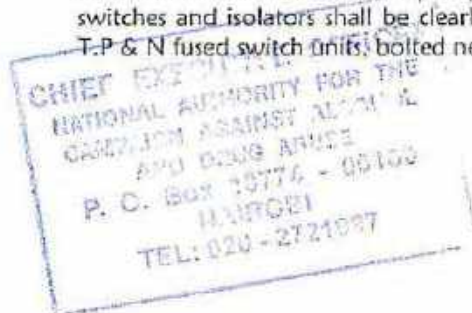
All contacts are to be fully shrouded and are to have a breaking capacity on manual operations as required by KS 04 – 182: 1980.

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

Isolators shall be load breaking/fault making isolators.

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

Elect-B/5



2.4 CONDUITS AND CONDUIT RUNS

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

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

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

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

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

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

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

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

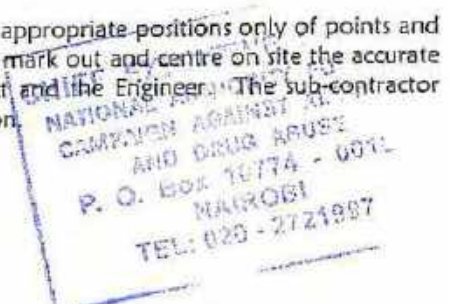
Runs between draw in boxes are not to have more than two right angle bends or their equivalent. The sub-contractor may be required to demonstrate to the Engineers that wiring in any particular run is easily withdrawable and the sub-contractor may, at no extra cost to the contract; be required to install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

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

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

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

Elect-B/6



2.5 CONDUIT BOXES AND ACCESSORIES

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

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

Boxes are to be not less than 50mm deep and of such dimensions as will enable the largest appropriate number of cables for the conduit sizes to be drawn in without excessive bending.

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

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

2.6 LABELS

Labels fitted to switches and fuse boards: -

- (i) Shall be Ivory engraved black on white.
- (ii) Shall be secured by R.H brass screws of same manufacturing throughout.
- (iii) Shall be indicated on switches: -
 - a) Reference number of switches
 - b) Special current rating
 - c) Item of equipment controlled
- (iv) Shall indicate on MCB panels
 - d) Reference number
 - e) Type of board, i.e., lighting, sockets, etc.,
 - f) Size of cable supplying panel
 - g) where to isolate feeder cable
- (v) Shall be generally not less than 75mm x 50mm.

2.7 EARTHING

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

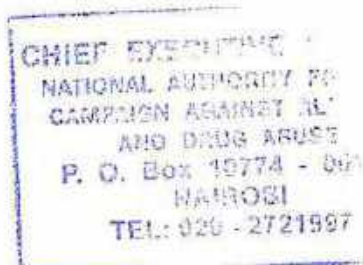
- (i) It shall be carried out in accordance with the appropriate sections of the current edition of the Regulations, for the Electrical Equipment of Buildings issued by Institute of Electrical Engineers of Great Britain.



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- (ii) At all main distribution panels and main service positions a 25mm x 3mm minimum cross-sectional area Copper tape shall be provided and all equipment including the lead sheath and armouring of cables, distribution boards and metal frames shall be bonded thereto.
- (iii) The earth tape in Sub-clause (ii) shall be connected by means of a copper tape or cable of suitable cross-sectional area to an earth electrode which shall be a copper earth rod (see later sub-clause).
- (iv) All tapes to be soft high conductivity copper, untinned except where otherwise specified and where run underground on or through walls, floors, etc., it shall be served with corrosion resisting tape or coated with corrosion compound and braided
- (v) Where the earth electrode is located outside the building a removable test link shall be provided inside the building as near as possible to the point of entry to the tape, for isolating the earth electrode for testing purposes.
- (vi) Earthing of sub-main equipment shall be deemed to be satisfactory where the sub-main cables are M.I.C.S. or conduit with separate earth wire, and installation is carried out in accordance with the figures stated in the current edition of the I.E.E Regulations.
- (vii) Where an earth rod is specified (see Sub-clause (iii)) it shall be proprietary manufacture, solid hand drawn copper of 15mm diameter driven into the ground to a minimum depth of 3.6M. It shall be made up to 1.2m sections with internal screw and socket joints and fitted with hardened steel tip and driving cap.
- (viii) Earth plates will not be permitted
- (ix) Where an earth rod is used the earth resistance shall be tested in the manner described in the current edition of the IEE Regulations, by the Sub-Contractor in the presence of the Engineer and the Sub-Contractor shall be responsible for the supply of all test equipment.
- (x) Where copper tape is fixed to the building structure it shall be by means of purpose made non-ferrous saddles which space the conductor away from the structure a minimum distance of 20mm. Fixings, shall be made using purpose made plugs; No fixings requiring holes to be drilled through the tape will be accepted.
- (xi) Joints in copper tape shall be tinned before assembly riveted with a minimum of two copper rivets and seated solid.
- (xii) Where holes are drilled in the earth tape for connection to items of equipment the effective cross sectional area must not be less than required to comply with the IEE regulations.
- (xiii) Bolts, nuts and washers for any fixing to the earth tape must be of non-ferrous material.
- (xiv) Attention is drawn to the need for the earthing metal parts of lighting fittings and for bonding ball joint suspension in lighting fittings.

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2.8 CABLES AND FLEXIBLE CORDS

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

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

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

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

2.9 ARMoured P.V.C. INSULATED AND SHEATHED CABLES:

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

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

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

2.10 CABLE SUPPORTS, MARKERS AND TILES

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

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

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

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



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

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

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

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

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

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

2.11 PVC INSULATED CABLES

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

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

2.12 HEAT RESISTING CABLES

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

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

2.13 FLEXIBLE CORDS

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

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

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

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2.14 CABLE ENDS AND PHASE COLOURS

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

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

2.15 CABLE INSULATION COLOURS

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

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

<u>SYSTEM</u>	<u>INSULATION COLOUR</u>	<u>CABLE END MARKER</u>
1) Main and Sub-Main		
a) Phase	Red	Red
b) Neutral	Black	Black
2) Sub-Circuits Single Phase		
a) Phase	Red	Red
b) Neutral	Black	Black

2.16 SUB-CIRCUIT WIRING

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

Lighting circuits P.V.C. cable.

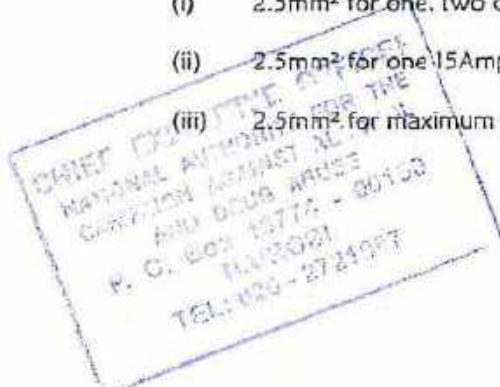
- (i) 1.5mm² for all lighting circuits indicated on the drawing.

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

- (i) 2.5mm² for one, two or three 5Amp sockets wired in parallel.

- (ii) 2.5mm² for one 15Amp socket.

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



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

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

2.17 SPACE FACTOR

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

2.18 INSULATION

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

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

2.19 LIGHTING SWITCHES

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

2.20 SOCKETS AND SWITCHED SOCKETS

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

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

2.21 FUSED SPUR BOXES

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

2.22 COOKER OUTLETS

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

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

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2.23 CONNECTORS

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

2.24 LAMPHOLDERS

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

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

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

2.25 LAMPS

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

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

Pearl lamps shall be used in all fittings unless otherwise specified.

2.26 LIGHTING FITTINGS AND STREET LIGHTING LANTERNS

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

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

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

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



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

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

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

2.27 POSITIONS OF POINTS AND SWITCHES

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

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

2.28 CURRENT OPERATED EARTH LEAKAGE CIRCUIT BREAKER

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

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

2.29 M.V. SWITCHBOARD AND SWITCHGEAR

The switchboard shall be manufactured in accordance with KS04-226 which co-ordinates the requirements for electrical power switchgear and associated apparatus. It is not intended that this K.S. should cover the requirements for specified apparatus for which separate Kenyan Standard exist. All equipment and material used in the switchboard shall be in accordance with the appropriate Kenya Standard.

The switchboard shall comprise the equipment shown on the drawings together with all current transformers, auxiliary fuses, labels, small wiring and interconnections necessary for the satisfactory operation of the switchboard.

The Switchboard shall be of the flush fronted, enclosed, metal clad type with full front or rear access as called for in the particular specifications, suitable for indoor use, sectionalized as necessary to facilitate transport and erection. The maximum height of the switchboard is to be approximately 2.0 metres. A suitable connection chamber containing all field terminals shall be provided at the top or bottom of the switchboard as appropriate.

Before manufacture, the Sub-Contractor shall submit to the consulting Engineer for approval of detailed drawings showing the layout, construction and connection of the switchboard.

All bus-bars and bus-bar connections shall consist of high conductivity copper and be provided in accordance with KS 04-226: 1985. The bus-bars shall be clearly marked with the appropriate phase and neutral colours which should be red, yellow, blue for the phases and black for neutral. The bus-bars shall be so arranged in the switchboard that the extensions to the left and right may be made in the future with ease should the need arise.

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Small wiring, which will be neatly arranged and cleated, shall be executed in accordance with B.S. 158 and the insulation of the wiring shall be coloured according to the phase or neutral connection. Switches and fuse switches, shall be in strict accordance with KS04-183:1978 Class 2 switches. Means of locking the switch in the "OFF" position shall be provided.

All fuse switches shall comply with KS04-183:1978, PARTS 2 and 3 a fault rating at least equal to the fault rating of the switchboard in which they are installed. Cartridge fuse links to KS 04-183:1978 category A.C. 46, class Q1 and fusing factor not exceeding 1.5 shall be supplied with each fused switch.

Mounting arrangements shall be such that individual complete fuse switches may be disconnected and withdrawn when necessary without extensive dismantling work.

When switches are arranged in their formation all necessary horizontal and vertical barriers shall be provided to ensure segregation from adjacent units. Means of locking the switch in the "OFF" position shall be provided.

2.30 STEEL CONDUITS AND STEEL TRUNKING

Conduits shall be of heavy gauge class "B" welded to Standard specification KS 04-180:1985. In no case will conduit smaller than 20mm diameter be used on the works. Conduits installed within buildings shall be black enamelled finish except where specified otherwise. Where installed externally or in damp conditions they shall be galvanised. Conduit fittings, accessories or equipment used in conjunction with galvanised conduits shall also be galvanised or otherwise as approved by the service engineer.

Metal trunking shall be fabricated from mild steel of not less than 18 swg. All sections of trunking shall be rigidly fixed together and attached to the framework or fabric or the building at intervals of not less than 1.2m. Joint trunking shall not overhang fixing points by more than 0.5m.

All trunking shall be made electrically continuous by means of 25 x 3mm copper links across each joint and where the trunking is galvanised, the links shall be made by galvanised flat iron strips.

All trunking fittings (i.e. Bends, tees, etc) shall leave the main through completely clear of obstructions and continuously open except through walls and floors at which points suitable fire resisting barriers shall be provided as may be necessary. The inner edge of bends and tees shall be chamfered where cables larger than 35mm² are employed.

Where trunking passes through ceilings and walls the cover shall be solidly fixed to 150mm either side of ceilings and floors and 50mm either side of walls.

Screws and bolts securing covers to trunking or sections of covers together shall be arranged so that damage to cables cannot occur either when fixing covers or when installing cables in the trough.

Where trunking is used to connect switchgear or fuseboards, such connections shall be made by trunking fittings manufactured for this purpose and not by multiple conduit couplings.

Where vertical sections of trunking are used which exceed 4.5m in length, staggered tie off points shall be provided at 4.5m intervals to support the weight of cables.

Unless otherwise stated, all trunking systems shall be painted as for conduit.

Where a wiring system incorporates galvanised conduit and trunking, the trunking shall be deemed to be galvanised unless specified otherwise.

The number of cables to be installed in trunking shall be such as to permit easy drawing in without damage to the cables, and shall in no circumstances be such that a space factor of 45% is exceeded.



Conduit and trunking shall be mechanically and electrically continuous. Conduit shall be tightly screwed between the various lengths so that they butt at the socketed joints. The internal edges of conduit and all fittings shall be smooth, free from burrs and other defects.

Oil and any other insulating substance shall be removed from the screw threads; where conduits terminate in fuse-gear, distribution boards, adaptable boxes, non-spouted switchboxes, etc., they shall, unless otherwise stated, be connected thereto by means of smooth bore male brass bushes, compression washers and sockets. All exposed threads and abrasions shall be painted using an oil paint for black enameled tubing and galvanizing paint for galvanised tubing immediately after the conduits are erected. All bends and sets shall be made cold without altering the section of the conduit.

The inner radius of the bend shall not be less than four (4) times the outside diameter of the conduit. Not more than two right angle bends will be permitted without the inter-position of a draw-in-box. Where straight runs of conduit are installed, draw-in-boxes shall be provided at distances not exceeding 15mm. No tees, elbows, sleeves, either of inspection or solid type, will be permitted.

Conduit shall be swabbed out prior to drawing in cables, and they shall be laid so as to drain of all condensed moisture without injury to end connections.

Conduits and trunking shall be run at least 150mm clear of hot water and steam pipes, and at least 75mm clear of cold water and other services unless otherwise approved by the services engineer.

All boxes shall conform to KS 04 - 668: 1986, to be of malleable iron, and black enameled or galvanised according to the type of conduit specified. All accessory boxes shall have threaded brass inserts.

Box lids where required shall be heavy gauge metal, secured by means of zinc plated or cadmium plated steel screws.

All adaptable boxes and lids of the same size shall be interchangeable.

Boxes used on surface work are to be tapped or drilled to line up with the conduit fixed in distance type saddles allowing clearance between the conduit and wall without the need for setting the conduit.

Where used in conjunction with mineral insulated copper sheathed cable, galvanized boxes shall be used and painted after erection.

Draw-in boxes in the floors are generally to be avoided but where they are essential they must be grouped in positions approved by the services engineer and covered and by the suitable floor traps, with non-ferrous trays and covers.

The floor trap covers are to be recessed and filled in with a material to match the floor surface.

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

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

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

2.31 TESTING ON SITE

The Sub-contractor shall conduct during and at the completion of the installation and, if required, again at the expiration of the maintenance period, tests in accordance with the relevant section of the

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current edition of the Regulations for the electrical equipment of buildings issued by the I.E.E of Great Britain, the Government Electrical Specification and the Electric Supply Company's By-Laws.

- (a) Tests shall be carried out to prove that all single pole switches are installed in the 'live' conductor.
- (b) Tests shall be carried out to prove that all socket outlets and switched socket outlets are connected to the 'live' conductor in the terminal marked as such, and that each earth pin is effectively bonded to the earth continuity system. Tests shall be carried out to verify the continuity of all conductors of each 'ring' circuit.
- (c) Phase tests shall be carried out on completion of the installation to ensure that correct phase sequence is maintained throughout the installation. Triplicate copies of the results of the above tests shall be provided within 14 days of the witnessed tests and the Sub-contractor will be required to issue to the service engineer the requisite certificate upon completion as required by the regulations referred to above.
- (d) Any faults, defects or omissions or faulty workmanship, incorrectly positioned or installed parts of the installation made apparently by such inspections or tests shall be rectified by the Sub-contractor at his own expense.
- (e) The Sub-contractor shall provide accurate instruments and apparatus and all labour required to carry out the above tests. The instruments and apparatus shall be made available to the services engineer to enable him to carry out such tests as he may require.
- (f) The Sub-contractor shall generally attend on other contractors employed on the project and carry out such electrical tests as may be necessary.
- (g) The Sub-contractor shall test to the services engineer's approval and as specified elsewhere in this specification or in standards and regulations already referred to, all equipment, plant and apparatus forming part of the works and before connecting to any power or other supply and setting to work.
- (h) Where such equipment, etc., forms part of or is connected to a system whether primarily or of an electrical nature or otherwise (e.g. air conditioning system) the Sub-contractor shall attend on and assist in balancing, regulating testing and commissioning, or if primarily an electrical or other system forming part of works, shall balance, regulate, test and commission the system to the service engineer's approval.



PART B - DIESEL ENGINE GENERATOR

DESCRIPTION

1. Extent of the Contract works
2. Regulation and Standards
3. Conformity with the Specification
4. Information required with Tenders
5. Site Conditions
6. Tropicalisation of Components
7. Surface Finish
8. Record of Drawings
9. Maintenance Manual
10. Factory Tests
11. Installation
12. Spare Parts
13. Tools
14. Maintenance Period
15. Maintenance Contract
16. Transport and Storage

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1. Extent of Contract Works

The work covered by this specification includes the supply, delivery, installation, setting to work, commissioning to the satisfaction of the engineer and maintenance for a period of twelve months, of a Diesel Engine Generating set complete with all necessary ancillary equipment and as indicated.

2. Regulations and Standards

The equipment shall comply with all relevant statutory instruments and regulations current at the date of tender and in particular the following:

1. I.E.E Wiring Regulations
2. Regulation under the Electric Power Act
3. Factories Act
4. Any special regulations issued by the local Electricity or Water Undertakings
5. Kenya Bureau of Standards (K.B.S)

The equipment and all components shall comply with all relevant KBS standards and codes of practice or other equal and approved standards specifications and codes. Where the equipment or part of it complies with other internationally recognized standards which are less stringent than British standards or Codes of practice, then the difference is to be stated in writing and must accompany the tender submission.

3. Conformity with the specification.

The equipment to be supplied shall conform in all respects to the specifications. Unless another standard is specifically mentioned in the specification, all materials and practices employed in the works must, where such standards exist be in accordance with the current KBS standards or code of practices or in accordance with such other authorized standard appropriate to the country of manufacture as in the opinion of the Engineer ensures equivalent or higher quality. .

Alternative which deviate in any respect from the specifications may only be submitted in addition to the main offer required by the Specification. Such alternative must be fully detailed and the price indicated may be considered for adoption after the comparison of quotation submitted in accordance with the Specifications.

4. Information required with Tenders

Each tender shall be accompanied by 2 sets of technical manual showing general arrangement and typical details of the equipment offered.

All tender documents and any communications thereof shall be in English language.

5. Site Conditions

The contractor is deemed to have visited the site and if unable to locate it to apply to the Engineer for directions to enable him to do so. The contractor is deemed to have acquainted himself therewith as to its nature, position, means of access, etc and no claim in the connection will be allowed. No claim will be allowed for traveling or other expenses which may be incurred by the contractor in visiting the site or preparing a tender for the contract works.

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6 Tropicalisation of Components

All components shall fully be tropicalised and protected against mould growth.

7 Surface finish

All ferrous metal work shall be either painted or processed to give a rust proof coating. Ferrous metal work to be painted shall first be either shot blasted or thoroughly wire brushed to remove all scale and oxide and immediately given one brushed coat or two sprayed coats of primer.

After not less than four hours, one brushed or two sprayed undercoats followed by one brushed or two sprayed finishing coats of heat and oil resisting quality paint shall be applied.

Successive coats of paint shall be slightly differing shades. Interior surfaces of electrical equipment enclosures shall be finished white and all external surfaces shall be finished grey (BS 2660, colour 9-097)

Engine crank cases shall not be painted internally unless the paint is resistant to the lubricating oil.

8. Recording Drawings

The Contractor shall provide to the engineer four sets of the following drawings:

- a) Where indicated a building drawing showing details of cable entries, pipe entries and ducts required, and the exhaust system.
- b) A general arrangement drawing showing the principal dimensions and weight of the set.
- c) A general arrangement of the diesel engine.
- d) A general arrangement of the alternator and exciter showing terminal markings, polarity and phase rotation
- e) A general arrangement of the electrical control panel(s).
- f) A schematic and wiring diagram of the electrical control panel (s)

9. Maintenance Manual

Upon practical completion of the Contract works the Contractor shall furnish to the Engineer four copies of Manuals. The manuals shall be printed on good quality paper International A4 size and shall have stiff covers of durable materials.

The Manual shall contain full operating and maintenance instructions for each item of equipment, plant and apparatus set out in a form dealing systematically with each system. It shall include, as may be applicable to the contract works, the following and any other items listed in the text of the specification hereinafter:

- a) System Description
- b) Plant
- c) Valve Operation
- d) Switch Operation
- e) Procedure of Fault Finding
- f) Emergency Procedures

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- g) Lubrication Requirement
- h) Maintenance and Servicing periods and Procedures
- i) Colour coding legend for all services
- j) Schematic and wiring Diagrams of plant, Apparatus and Switchgear
- k) Record Drawings, true too scale, reduced to international A4 size
- l) Lists of primary and secondary spares

The Manual is to be specially prepared for the contract works and Manufacture's standard descriptive literature and plant operating instruction cards will not be accepted for inclusion unless exceptionally approved by the engineer. The contractor shall, however, affix such cards, if suitable, adjacent to plant and apparatus. One spare set of all such cards shall be furnished to the electrical Engineer.

The maker's name, the rating of the set, the contract number, the location of the site and the year of installation shall appear on the front covers.

10. Factory Tests

The set shall be tested as a unit at the manufacturer's workshop (or elsewhere by agreement) for output and performance generally in accordance with the requirements of BS 649 and as 2613.

The Engineer shall be given adequate notice in writing of the date and time of the work tests and he, or his representative shall if he so desires, be present at such tests and given all reasonable facilities for his own inspections during the course of the tests.

Whether or not the Engineer or his representative attends the tests, he shall be furnished, by the Contractor, with copies of all relevant tests certificates.

11. Installation

Installation of all plant and equipment shall be carried out by the contractor under adequate supervision from skilled staff provided by the plant and equipments manufacturer or his appointed agent.

Plant or equipment which are shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the contractor's own risk and should the test certificate not be approved, new tests may be ordered by the Engineer at the contractor's expense.

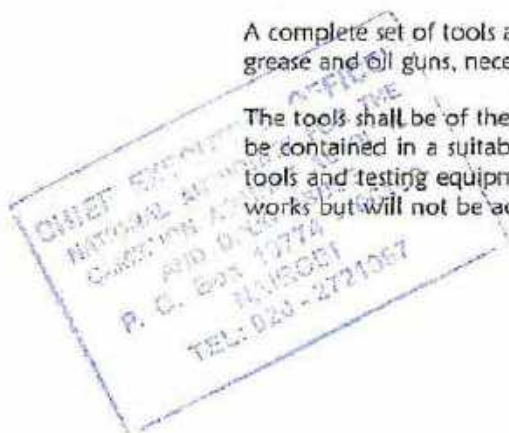
12. Spare parts

The contractor shall submit with his tender a separate priced list of recommended spare parts including any optional extras which he recommends should be purchased for the set and its control equipment and are not supplied as standard with the unit. The initial spares required at handover shall be deemed to have been included in the tender pricing.

13. Tools

A complete set of tools and general and special testing equipment shall be provided, including grease and oil guns, necessary for the normal maintenance of the set and its controls.

The tools shall be of the best quality, the spanners being of chrome vanadium steel, and shall be contained in a suitable robust steel tool box with lid fitted with a lock and two keys. All tools and testing equipment may be used by the Contractor in the execution of the contract works but will not be accepted as part of the Contract works by the Engineer unless they are



handed over in clean and undamaged condition, in perfect working order and effectively in new condition.

14. Maintenance period

The Contractor shall maintain the complete set and associated control equipment forming the unit for a period of twelve calendar months from the date that the unit is put into commission and regular use.

During this maintenance period, the contractor shall at his own expense:

- a) Make good any defects in the unit and replace any parts that fail or show signs of weakness or undue wear in consequences of faulty design, workmanship or materials.
- b) Visit the site with all diligence and attend to any such defect that arises within 48 hours of receiving notification of the defect.
- c) Carry out regular examination and services of the unit at the intervals laid down by the manufacturer, or every three months, whichever is the sooner, the service examination to include all necessary adjustments, greasing, oiling, cleaning, changing of lubricating oils (where necessary) to keep the unit in sound and efficient working order.
- d) Instruct the maintenance personnel in the proper operation, care and maintenance of the set and its equipment.

If during the maintenance period the unit is or is likely to be out of use for a period greater than 48 hours, due to the unit or part thereof developing a defect attributable to faulty design, workmanship or materials, or due to neglect of maintenance by the Contractor, the Contractor shall at his own expense immediately provide and install on free loan a suitable temporary unit for use until the required repair or replacement has been satisfactorily undertaken and the original set (or its replacement) put to proper working order.

At the end of the twelve months period of maintenance the Contractor shall (in addition to normal servicing work) carry out a compressive examination and test of the set and its auxiliaries, to ensure that the unit is in proper working order and in satisfactory condition for handing over to the Engineer whose representative shall be present at such examination and test.

15. Maintenance Contract.

The Contractor may be called upon to enter into maintenance contract with the Employer for the servicing the Generating sets after the expiry of the initial maintenance period. The Contractor shall indicate his willingness to carry out this service at the time of tendering and shall ensure that component personnel are available locally to be called at short notice to attend to Generator faults.

16. Transport and Storage

All plant equipment shall, during transportation, be suitably packed, crated and protected to minimize the possibility of damage, and prevent corrosion or other deterioration.

On arrival at site all plant and equipment shall be examined and any damage to parts and protective priming coats made good before storage or installation.

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APPENDIX TO GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

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

1. Government Electrical Specifications No. 1 and No. 2.
2. All requirements of Kenya Power Company Limited



SECTION C
PARTICULAR SPECIFICATIONS
OF
MATERIALS AND WORKS



ITEM	CONTENTS
1.1	LOCATION OF SITE
1.2	EXTENT OF WORKS
1.3	REGULATION AND STANDARDS
1.4	ELECTRICAL REQUIREMENTS
1.5	MANDATORY REQUIREMENTS
1.6	PART A - ELECTRICAL INSTALLATION WORKS
1.7	PART B - DATA INSTALLATION WORKS
	PART I – STRUCTURED CABLING WORKS
	PART II – CCTV INSTALLATION WORKS



PART A ELECTRICAL WORKS

1. SITE LOCATION

The site of the proposed works is at Miritini – Mombasa County..

2. SCOPE OF WORKS

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

a) Electrical Works

This shall include conduiting, cabling, fittings and accessories.

b) Telephone and data installation

This shall include conduiting and telephone/data outlet plates. *Telephone block-wiring, instruments and I.P.B.X shall also done.*

a) Fire Alarm System

This shall include fire alarm control panel, smoke/heat detectors, sounders, break glass and earthing.

3. MATERIALS FOR THE WORKS

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

4. BROCHURES FOR FIRE ALARM PANEL

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

MINIMUM TECHNICAL SPECIFICATIONS FOR LED LAMPS/ LIGHTING FITTINGS

LED TUBES, PANELS & BULBS LIGHT FITTING		
TECHNICAL SPECIFICATIONS		
IEC Compliant		
Item	Minimum Specifications	Proposed solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Operating	<ul style="list-style-type: none"> ➤ voltage range: 130-300 V ac ➤ frequency range: 50-60Hz ➤ Power factor ≥ 0.9 lagging ➤ Total Harmonic Distortion (THD)<15% ➤ Ambient temperature range -10 to +35 °Operating 	

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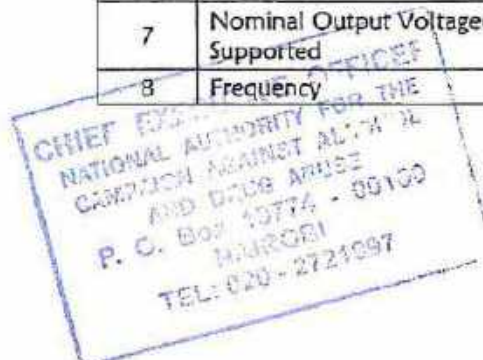
	<ul style="list-style-type: none"> ➤ Colour Consistency \leq 5SDCM 	
Performance	<ul style="list-style-type: none"> ➤ System efficacy $> 90\text{lm/W}$ ➤ Lamp colour temperature: Offices/Task areas: 4000K - 6500K Residential areas: 3000K – 4000K ➤ Colour Rendering Index ≥ 80 ➤ Median useful life $\geq 30000\text{ h}$ 	
Standards Compliance	CB/EMC/CE	
General	<ul style="list-style-type: none"> ➤ Driver/power unit/transformer - PSU-E ➤ Optical cover/lens type - Polystyrene bowl/cover prismatic ➤ Protection class IEC - Safety class II (II) 	

Bidders must provide technical brochures to determine technical compliance with these specifications

MINIMUM TECHNICAL SPECIFICATIONS FOR UNINTERRUPTIBLE POWER SUPPLY(UPS)

(A) OUTPUT

1	Output Volt Amp Capacity (VA)	As Specified in the Bills of Quantities in section H of this document
2	Output kVA Capacity (kVA)	As Specified in the Bills of Quantities in section H of this document
3	Output Watt Capacity (Watts)	As Specified in the Bills of Quantities in section H of this document
4	Output kW Capacity (kW)	As Specified in the Bills of Quantities in section H of this document
5	Power Factor	0.8
6	Crest Factor	3:01
7	Nominal Output Voltage(s) Supported	240/415V 3-PH Wye
8	Frequency	50 Hz



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9	Output Voltage Regulation (Line Mode)	+/-1%
10	Output Voltage Regulation (Battery Mode)	+/-1%
11	Output Receptacles	Hardwire
12	Output AC Waveform (AC Mode)	Sine wave
13	Output AC Waveform (Battery Mode)	Pure Sine wave

(B) INPUT

1	Nominal Input Voltage(s) Supported	240/415V 3-PH Wye
2	Nominal Input Voltage Description	3-Phase Wye, 4 wire (L1, L2, L3, N, G)
3	UPS Input Connection Type	Hardwire
4	Input Phase	3-Phase

(C) BATTERY

1	Expandable Battery Runtime	Shall be Capable of accepting additional Batteries
2	External Battery Pack Compatibility	Shall be Capable of accepting additional Batteries
3	Expandable Runtime Description	External battery pack wiring is contractor supplied
4	DC System Voltage (VDC)	+/- 240VDC
5	Battery Replacement Description	Hot-swappable, replaceable batteries
6	Expandable Runtime	Yes

(D) VOLTAGE REGULATION

1	Voltage Regulation Description	Online, double-conversion power conditioning
2	Overvoltage Correction	Capable of Maintaining continuous operation without using battery power during overvoltages to between 280-470 (3-phase, 4-wire, wye), reducing output within 1% of nominal

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3	Undervoltage Correction	Capable of Maintaining continuous operation without using battery power during brownout/undervoltage conditions to 175-300 (3-phase, 4-wire, wye)
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PART B

DATA, VOICE AND CCTV INSTALLATION WORKS

PARTICULAR SPECIFICATIONS OF MATERIALS AND WORKS

1. Location of site

The site is located in Miritini – Mombasa County.

2. Climate Conditions

The following climate conditions can apply at the site of the sub-contract works and all the plant, equipment, apparatus, materials and installations shall be suited for these conditions:

Maximum Temperature	:	32.6 °C
Minimum Temperature	:	15.1 °C
Relative humidity range	:	40% - 90%
Dust in Atmosphere	:	Relatively dusty conditions prevail
Longitude (approximately)	:	39.6682° E
Latitude (approximately)	:	4.0435° S
Altitude	:	50 m above sea level

Extremely heavy rains fall at certain periods of the year and the sub-contractor shall be deemed to have taken account of this factor both in his process and in his planning of the execution of the contract works.

Equipment de-rating factors for the temperature and altitude shall be stated.

It is intended that ventilation and air filtration, if any shall be provided by others. It is not intended that the accommodation shall be air conditioned. Any requirements of this nature upon which the tender is conditional shall be clearly stated in the tender.

3. Extent of The Works

The works to be carried out include the supply, delivery, installation, testing, commissioning and leaving in servicing condition the Structured Cabling, IP PBX System and Automatic Access Control systems in the proposed Site as herein described in this specification. The works shall include, but not limited to the supply and installation of the following:

- Structured Cabling

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- IP-PBX & Telephony Equipment
- Access Control System

4. Regulation and Standard

The works shall comply with the provisions of the following as necessary and relevant:

- ISO/IEC, CCK, ATM CENELEC 11801
- ANSI/EIA/TIA 56
- Latest Edition of IEE Regulation
- Kenya Bureau of Standards (KEBS)
- Institution of Electrical Engineers (I.E.E) Wiring Regulations
- Current recommendation of CCITT and CCIR
- Electric Power Act and Rules made there under.

5. ELECTRICAL REQUIREMENTS

The equipment to be supplied shall be capable of being operated from 240V AC 50Hz power supply.

6. MANDATORY REQUIREMENTS

- A. All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer's system.
- B. All systems and components shall have been thoroughly tested and proven in actual use.
- C. All systems and components shall be provided with the availability of a, 24-hour technical assistance program (TAP) from the manufacturer. The TAP shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge.
- D. All systems and components shall be provided with a one-day turn around repair express and 24-hour parts replacement. The repair and parts express shall be guaranteed by the manufacturer on warranty and non-warranty items.
- E. The supplier shall be the manufacturer, or the manufacturer appointed agent (proof to be submitted).
- F. The Offered system has been installed and commissioned by the supplier in other locations.

PART I: PARTICULAR SPECIFICATIONS FOR STRUCTURED CABLING WORKS

1. DESCRIPTION OF THE PROJECT

The works to be carried out comprise the following:

- i) Proposed supply, installation, testing and commissioning of a structured cabling system to cater for computer data points and telephone points.
- ii) Configure and set up the structured cabling system to be used on LAN.
- iii) Produce test result, warranty certification, reports and as installed drawings. The Network will be capable of supporting approximately 150 data/voice points.

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- iv) Supply, install telephone cables to interconnect the data cabinets to the IP-PBX to be located in the Server Room. The works shall include inter-wiring, programming and activating all voice points.

2. REGULATIONS

The contractor shall, in execution and completion of the works in the detailed design for which he is responsible, comply with the provisions of the following as necessary and relevant;

- ISO/IEC, CCK, ATM CENELEC 11801
- ANSI/EIA/TIA 56
- Latest Edition of IEE Regulation
- Kenya Bureau of Standards
- Electric Power Act and Rules made there under.

3. WORKING DRAWINGS

The Contractor shall submit to the Project Manager working drawings for the proposed system for approval. The drawings will show the locations of and identifiers for all cable routing and terminations, telecommunication outlets/connectors. Location of core switch and Edge switches.

4. NETWORK CABINETS

DATA CABINET AND ACCESSORIES		
RACKS TECHNICAL SPECIFICATIONS		
Standards: Comply with ANSI/EIA-310-D, CEA 310E, IEC60297-3		
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Product type	Ventilated rack with fans where applicable	
Construction	<ul style="list-style-type: none"> Detachable composite structure Material: SPCC quality cold rolled steel Thickness: Square hole strips 2.0mm, others 1.2mm 	
Power	<ul style="list-style-type: none"> Pre-wired 240V AC conditioned grounded power circuit Supplied with Earth Bond Kit and Cage nuts 	
Warranty	Comprehensive Manufacturer's Warranty (Attach Manufacturer's Warranty Statement) Minimum 3 Years	

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5. CABLES

i) HORIZONTAL CABLING & PATCH CORDS

	Category 6A STP 4-Pair Cable	
Item	Minimum specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	<ul style="list-style-type: none"> • STP • Solid (non-tinned) copper • Centre Isolation Member 	
Jacket	8.5mm with Sequential meter markings	
Industry Compliance	<ul style="list-style-type: none"> • ISO/IEC 11801 Ed. 2.2 (Class EA) • ISO/IEC 61156-5 (Category 6A) • TIA-568-C.2 (Category 6A) • LSOH: ISO/IEC 60332, IEC 60754, IEC 61034 • EN50399 Class Eca 	
Warranty	End-to-End Manufacturer's Warranty on Cabling System (Attach Manufacturer's Warranty Statement) Minimum 15 Years Warranty	

ii) CAT 6A PATCH PANELS

Item	Minimum specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Industry Compliance	STANDARDS COMPLIANCE <ul style="list-style-type: none"> • ANSI/TIA-568-C.2 • ISO/IEC 11801 Ed 2.2 • ETL Tested • IEC 60603-7 • IEC 60603-7-51 • IEEE 802.3an • IEEE 802.3af (PoE) • IEEE 802.3at (PoE+) • ANSI/TIA-1096-A 	
Warranty	End-to-End Manufacturer's Warranty on Cabling System (Attach Manufacturer's	

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	Warranty Statement)	
	Minimum 15Years	

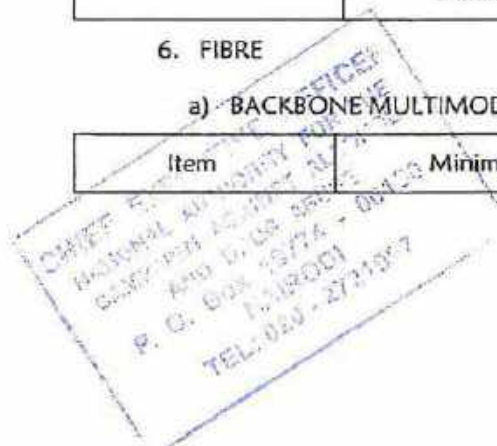
iii) FACE PLATES - COMPLETE WITH TWIN SCREENED MAX MODULES

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	Complete with Twin MAX RJ45 Modules <ul style="list-style-type: none"> • Double gang faceplates for each designated work area point. • UV resistant, high impact plastic 	
Wiring	T568A and T568B	
Face Plate Characteristics	<ul style="list-style-type: none"> • Twin 	
	<ul style="list-style-type: none"> • Label Covers- Faceplates include pressure-release designation label covers for quick, tool-less removal • With icon/label provision • With doors/shutters • British Standard (85mm x 85mm) • White 	
Module Characteristics	<ul style="list-style-type: none"> • 1000/100/10Gbs • Backward compatible 	
Standards	<ul style="list-style-type: none"> • ISO/IEC 11801: 2002 2nd Edition (Category 6) • ANSI/TIA/IEC 754 and IEC 1034 • IEC 61156-5 1st Edition • ISOH :IEC 754 and IEC 1034 • UL CMX • UL CMP and CSA FT6 	
Warranty	End-to-End Manufacturer's Warranty on Cabling System (Attach Manufacturer's Warranty Statement) Minimum 15 Years	

6. FIBRE

a) - BACKBONE MULTIMODE FIBRE OPTIC CABLE

Item	Minimum Specifications	Proposed Solution
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Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	Steel Tape armoured with Glass Yarn	
Armour	Corrugated Steel Tape Armour	
Cable characteristics	<ul style="list-style-type: none"> • Support for 10GBASE-T • Low Density Polyethylene Sheath • Gel Filled Loose Buffer Tube • Level 1 Rodent Protection • Crash(N) at least 2500 • Torsion (Turns/M) not more than 5 • Multimode 	
Industry Compliance	<ul style="list-style-type: none"> • RoHS compliant • ISO/IEC 11801:2002 OM3 • ANSI/TIA/EIA-568-B.3 • ANSI/TIA/EIA-568-B.3-1 • ANSI/TIA-598-C • Telcordia GR-409-CORE • LSOH: IEC 60332-1, IEC 61034, IEC 60754 • OFNR: Communications Type OFNR(UL) and FT4 c(UL) • TIA-492AAAC laser bandwidth DMD specification • IEC 60793-2-49 and TIA/EIA 455-220 DMD measurement test procedure 	
Warranty	<p>End-to-End Manufacturer's Warranty on Cabling System(<i>Attach Manufacturer's Warranty Statement</i>)</p> <p>Minimum 15 Years</p>	

ii) BACKBONE FIBRE CABLING INTERCONNECT

	Rack Mount Interconnect Center (RIC)	
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	<ul style="list-style-type: none"> • Spring loaded quick-release hinges 	
	<ul style="list-style-type: none"> • Include laser-printable labels, cable ties, rack mounting hardware and pre-installed 	

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	fiber management clips	
Industry Compliance	<ul style="list-style-type: none"> IEEE802.3ae, EMC/EMI Specifications 	
Warranty	End-to-End Manufacturer's Warranty on Cabling System (<i>Attach Manufacturer's Warranty Statement</i>) Minimum 15 Years	

iii) BACKBONE FIBRE CONNECT PANELS

	Fibre connect panels	
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	<ul style="list-style-type: none"> Lanced Tabs Front Fiber Clips Label Holder Rear Fiber Clips 	
Industry Compliance	Meets or exceeds IEEE802.3ae standard EMC/EMI Specifications	
Warranty	End-to-End Manufacturer's Warranty on Cabling System (<i>Attach Manufacturer's Warranty Statement</i>) Minimum 15 Years	

iv) BACKBONE DISTRIBUTION FIBRE PATCH CORDS

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	Precision cable assembly	
Features	<ul style="list-style-type: none"> Easy Identification- Connectors color coded per ANSI/TIA/EIA-568-B.3 Dust Caps- Dust caps included to protect polished ferrule from dirt and damage Polarity Connection- LC Duplexing clip for polarity correction 	

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Industry Compliance	<ul style="list-style-type: none"> • IEEE802.3ae standard • TIA/EIA and ISO/IEC requirements for aging, exposure to humidity, temperature extremes, impact, vibration, coupling strength, and cable resistance to stress and strain. • EMC/EMI Specifications 	
Warranty	<p>End-to-End Manufacturer's Warranty on Cabling System (<i>Attach Manufacturer's Warranty Statement</i>)</p> <p>Minimum 15 Years</p>	

7. ACTIVE DEVICES

i) SWITCH

Item	Minimum Specifications	Proposed solution
Brand	<p>State the brand, model and attach Technical Brochure (Mandatory).</p> <p>Item supplied Must currently be supported by the manufacturer and must be on sale life for not less than 5 years from date of tender.</p>	
Features	<ul style="list-style-type: none"> • 10/100/1000 Base-T port of full PoE+ capability • Uplink configuration: Modular uplink options (4 No. 10G SFP+) – 48/24 Port switch (2 No. 10G SFP+) – 16/8 Port switch • Fans: FRU redundant • AES-128 MACsec encryption • Layer 3 capabilities, including OSPF, EIGRP, ISIS, RIP, and routed access • Advanced network monitoring using Full Flexible NetFlow 	
Specs	<ul style="list-style-type: none"> • Virtual Networks: 4 • Power input: 100 to 240VAC, 50 to 60Hz • 24Port switch • Switching capacity: 17.6 Gbps • Forwarding rate: 13.1 Mpps • MAC Address table size: 16K entries • Mean time between failures (hours) – 429482hrs • 16/8 Port switch • Switching capacity: 12.8 Gbps • Forwarding rate: 9.5 Mpps) • MAC Address table size: 8K entries • Mean time between failures (hours) – 330182hrs 	

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RAM& accessories	<ul style="list-style-type: none"> • SDRAM- 64MB • Flash- 16MB 	
Support	Locally Available Technical Support Services(Manufacturer's Letter of Authorization Mandatory)	
Warranty	Manufacturer's Limited Lifetime Warranty	

ii) WIRELESS ACCESS POINT

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Features	<ul style="list-style-type: none"> • Ports: LAN Gigabit Ethernet auto sensing • Cabling type: Category 5e or better • Antennas: Internal antennas optimized for installation on a wall or ceiling • LED indicators: Power, WLAN, LAN • Operating system: Linux <p>Physical Interfaces</p> <ul style="list-style-type: none"> • Ports: 10/100/1000 Ethernet, with support for 802.3af PoE • Buttons: Reset button • LEDs: Power, Wireless, Ethernet <p>Network Capabilities</p> <ul style="list-style-type: none"> • VLAN support: Yes • Number of VLANs: 1 management VLAN plus 16 VLANs for SSIDs • 802.1X supplicant: Yes • SSID-to-VLAN mapping: Yes • Auto channel selection: Yes • Spanning tree: Yes • Load balancing: Yes • IPv6: Yes <p>IPv6 host support IPv6 RADIUS, syslog, Network Time Protocol (NTP), etc.</p> <ul style="list-style-type: none"> • Layer 2 802.1Q-based VLANs, 16 active VLANs plus 1 management VLAN <p>Quality of Service</p> <ul style="list-style-type: none"> • Quality of service (QoS) Wi-Fi Multimedia and Traffic Specification (WMM TSPEC) 	
Wireless	<ul style="list-style-type: none"> • Frequency: WAP551: Selectable radio band (2.4 or 5 GHz) WAP561: Dual concurrent radios (2.4 and 5 GHz) • WLAN: 802.11b/g/n 3x3 multiple-input multiple-output (MIMO) with 3 spatial streams 20 and 40 MHz channels PHY data rate up to 450 Mbps 802.11 dynamic frequency selection (DFS), EU version only • Data rates supported 802.11a/b/g: 54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2, 	



	and 1 Mbps 802.11n: • 20-MHz bandwidth: MCS 0-15 for supported data rates	
Standards	<u>Standards Compliance</u> IEEE 802.11n, 802.11g, 802.11b, 802.3af, 802.3u, 802.1X (security authentication), 802.1Q (VLAN), 802.1D (Spanning Tree), 802.11i (WPA2 security), 802.11e (wireless QoS), IPv4 (RFC 791), IPv6 (RFC 2460)	
Security	<ul style="list-style-type: none"> • WPA/WPA2: Yes, including Enterprise authentication • Access control Yes, management access control list (ACL) plus MAC ACL • Secure management HTTPS • Wi-Fi Protected Setup (WPS) Yes (soft WPS, no hardware push button) • SSID broadcast: Yes • Rogue access point detection: Yes 	
Mounting	<ul style="list-style-type: none"> • Multiple mounting options Mounting bracket included for easy ceiling or wall mounting • Physical security lock Kensington lock slot 	
Management	<ul style="list-style-type: none"> • Remote management: Yes • Dynamic Host Configuration Protocol (DHCP) client : Yes • IPv6 host: Yes • HTTP redirect: Yes 	
support	<ul style="list-style-type: none"> • Locally Available Technical Support Services (<i>Manufacturer's Letter of Authorization Mandatory</i>) 	
Warranty	<ul style="list-style-type: none"> • Manufacturer's Limited Lifetime Warranty 	

8. STANDARD IP PHONE

TECHNICAL SPECIFICATIONS		
Compliant Standards: TIA/EIA 810-B		
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key features	<ul style="list-style-type: none"> • IP Phones with LCD Display • RJ-45 Port Ethernet, MAC address (IEEE 802.3) • Preassigned phone extensions • Dial Plan • Voice and data VLANs 	

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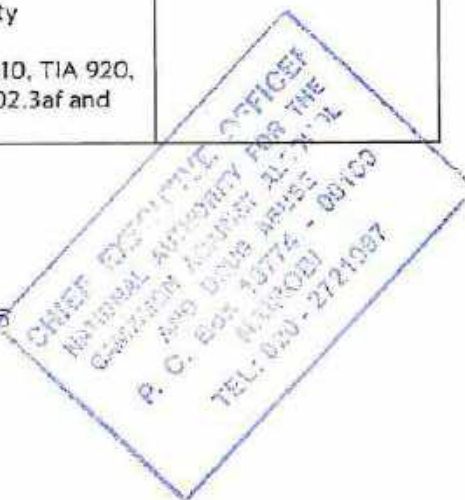
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AND DRUG ABUSE
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NAIROBI
TEL: 020 - 2721997

	<ul style="list-style-type: none"> Ethernet (10/100/1000) line interface with a secondary 10/100/1000 port Gigabit Adapter for Gigabit connectivity to a PC supports PoE class 1 for low power consumption 	
Protocols	<ul style="list-style-type: none"> SIP (RFC3261, RFC3262) DTMF transport (RFC2833) Peer to Peer calling 	
Key-pad	<ul style="list-style-type: none"> 2-way speakerphone Dual position flip stand Four-way navigation cluster button Quick-access Voicemail Message button Telephony application button – to return to main telephone screen Menu button – (options and settings access) Contacts application – supports up to 100 entries Call log – contains last 100 calls 	
Network and provisioning	<ul style="list-style-type: none"> IP NOE and SIP v2 (RFC3261) DHCP and static IP manual or dynamic host configuration protocol (DHCP) network setup IEEE 802.1 AB/LLDP-MED client (automatic VLAN acquisition, PoE management, inventory information) The phone supports CDP and 802.1Q/p standards, and can be configured with an 801.1Q VLAN header containing the VLAN ID overrides configured by the Admin VLAN ID. 	
Quality-of-service (QoS) options	<ul style="list-style-type: none"> The phone supports CDP and 802.1Q/p standards, and can be configured with an 801.1Q VLAN header containing the VLAN ID overrides configured by the Admin VLAN ID. 	
Configuration options	<ul style="list-style-type: none"> The user can configure IP address assignment statically or through the DHCP client. 	
Certification and compliance	<ul style="list-style-type: none"> Regulatory Compliance <ul style="list-style-type: none"> CE Markings per directives 2004/108/EC and 2006/95/EC <ul style="list-style-type: none"> Safety EMC – Emissions, Immunity Telecom Industry Standards: TIA 810, TIA 920, IEEE 802.3 Ethernet, IEEE 802.3af and 802.3at 	

9. ADDITIONAL NOTES

Tenderers should take note of the following

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- a. The network should be capable of carrying data, voice and video. QOS should be considered as part of installation and configuration of the network.
- b. All active LAN equipment should be from the same manufacturer for seamless integration, management and maintenance.
- c. Each floor should have a telecommunication Closet to house the necessary structured cabling components and active equipment.

10. FIELD QUALITY CONTROL

Installation personnel shall meet manufacturer's training and education requirements for implementation of extended warranty program.

11. LABELING

Use 6d if the type of termination block permits labels. Otherwise use 6e.

Use 6g if the owner does not have a standard for outlet numbering. Use 6h if required. Alter time as requested.

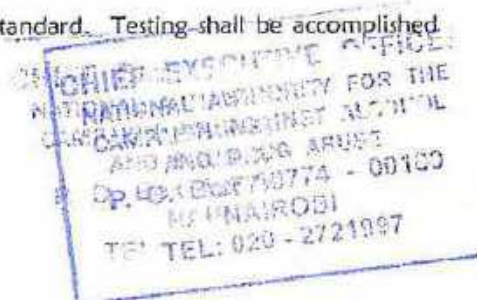
Labeling shall conform to ANSI/TIA/EIA-606(A) standards. In addition, provide the following:

- a. Label each outlet with permanent self-adhesive label with minimum 3/16 in. high characters.
- b. Label each cable with permanent self-adhesive label with minimum, 1/8 in. high characters, in the following locations:
 - 1. Inside receptacle box at the work area.
 - 2. Behind the communication closet patch panel or punch block.
- c. Use labels on face of data patch panels. Provide facility assignment records in a protective cover at each telecommunications closet location that is specific to the facilities terminated therein.
- d. Use color-coded labels for each termination field that conforms to ANSI/TIA/EIA-606(A) standard color codes for termination blocks.
- e. Mount termination blocks on color-coded backboards.
- f. Labels shall be machine-printed. Hand-lettered labels shall not be acceptable.
- g. Label cables, outlets, patch panels, and punch blocks with room number in which outlet is located, followed by a single letter suffix to indicate particular outlet within room, i.e., S2107A, S2107B. Indicate riser cables by an R then pair or cable number.
- h. Mark up floor plans showing outlet locations, type, and cable marking of cables. Turn these drawings over to the owner two (2) weeks prior to move in to allow the owner's personnel to connect and test owner-provided equipment in a timely fashion.
- i. Three (3) sets of as-built drawing shall be delivered to the owner within four (4) weeks of acceptance of project by the owner. A set of as-built drawings shall be provided to the owner in magnetic media form and utilizing CAD software that is acceptable to the owner. The magnetic media shall be delivered to the owner within six (6) weeks of acceptance of project by owner.

12. TESTING

- a. Testing shall conform to ANSI/TIA/EIA-568-B.1 standard. Testing shall be accomplished using level IIe or higher field testers.

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- b. Test each pair and shield of each cable for opens, shorts, grounds, and pair reversal. Correct grounded, and reversed pairs. Examine open and shorted pairs to determine if problem is caused by improper termination. If termination is proper, tag bad pairs at both ends and note on termination sheets.

1. Perform testing of copper cables with tester meeting ANSI/TIA/EIA-568-B.1 requirements.
2. If copper backbone cable contains more than one (1) percent bad pairs, remove and replace entire cable.

Use 2 or 3 as required.

3. If copper cables contain more than the following quantity of bad pairs, or if outer sheath damage is cause of bad pairs, remove and replace the entire cable:

CABLE SIZE	MAXIMUM BAD PAIRS
<100	1
101 to 300	1 – 3
301 to 600	3 – 6
>601	6

- c. If horizontal cable contains bad conductors or shield, remove and replace cable.

Initially test optical cable with a light source and power meter utilizing procedures as stated in ANSI/TIA/EIA-526-14A: OFSTP-14A Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant and ANSI/TIA/EIA-526-7 Measurement of Optical Power Loss of Installed Single Mode Fiber Cable Plant. Measured results shall be plus/minus 1 dB of submitted loss budget calculations. If loss figures are outside this range, test cable with optical time domain reflectometer to determine cause of variation. Correct improper splices and replace damaged cables at no charge to the owner.

- 1) Cables shall be tested at 850 and 1300 nm for multimode optical fiber cables.
- 2) Cables shall be tested at 1310 and 1550 nm for single mode optical fibers.
- 3) Testing procedures shall utilize "Method B" – One jumper reference.
- 4) Bi-directional testing of optical fibers is required.

- d. Perform optical time domain reflectometer (OTDR) testing on each fiber optic conductor.

Measured results shall be plus/minus 1 dB of submitted loss budget calculations.

i Submit printout for each cable tested.

ii Submit 3.5 in. disks with test results and program to view results.

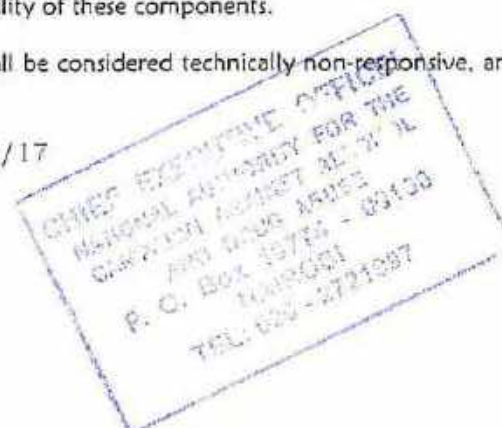
- e. Where any portion of system does not meet the specifications, correct deviation and repeat applicable testing at no additional cost.

4. BROCHURES AND TECHNICAL LITERATURE

Tenderers must enclose together with their submitted bids brochures detailing technical Literature and specifications of all the components of the structured cabling system. The brochures shall be used to evaluate the suitability of these components.

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

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PART II: PARTICULAR SPECIFICATIONS FOR CCTV INSTALLATIONS

1. DESCRIPTION OF THE PROJECT

The works to be carried out include the supply, delivery, installation, testing, commissioning and leaving in servicing condition the Security system as herein described in this specification.

The works shall include, but not limited to the supply and installation of the following:

- CCTV Cameras
- Network Video Recorder

1. REGULATIONS

The contractor shall, in execution and completion of the works in the detailed design for which he is responsible, comply with the provisions of the following as necessary and relevant:

- f) ISO/IEC, CCK, ATM CENELEC 11801
- g) ANSI/EIA/TIA 56
- h) Latest Edition of IEE Regulation
- i) Kenya Bureau of Standards
- j) Electric Power Act and Rules made there under.

WORKING DRAWINGS

The Contractor shall submit to the Project Manager working drawings for the proposed system for approval. The drawings will show the locations of and identifiers for all cable routing and terminations, telecommunication outlets/connectors. Location of core switch and Edge switches.

2. NETWORK VIDEO RECORDER

TECHNICAL SPECIFICATIONS		
Compliant Standards : ISO 9001		
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	<ul style="list-style-type: none">• 4K Resolution• Main Processor – Embedded Quad-core Processor• Operating System – Embedded Linux• Intelligent Video System with Business Analytics• Maximum 320 Mbps Incoming Bandwidth• Up to 12 MP Resolution for Preview and Playback• Support for IPC and UPnP Protocols• PoE – 24 Ports (IEEE802.3af/at), 10/100 Mbps• Multi-Screen Display 1/4/8/16/25. Sequence• Compression: Supports Smart H.265+, H.264+ & MJPEG• Recording: Normal, Manual, Schedule	

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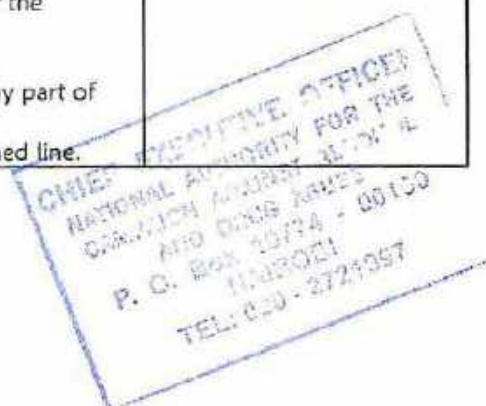
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	(Continuous/Event), Event (Pre/Post), Over write Modes: Selectable (Stop/Continuous) <ul style="list-style-type: none"> • 8 SATA HDD Bays (Supporting upto 10TB HDD Each), 1 eSATA ports • Playback Speed: 120fps • Ethernet Support: RJ-45, 2* Gigabit Ethernet • 4 Gigabit Ethernet ports, SFP x 2. • Automatic camera registration, any Recording Device ONVIF and Major Camera Brands Support • Inputs and outputs: 4 NO/NC - selectable inputs, 3 relay outputs, 2 USB port, 1RJ-45 4ea (LAN/WAN, 1Gbps), 1000M SFP 2ea • Embedded IVS 	
Display	Interface Interface - Two (2) HDMI Ports: <ul style="list-style-type: none"> • HDMI-1: 4K • HDMI-2: 1080p One (1) VGA Port (1080p) Native Output Resolution - 3840 x 2160, 1920 x 1080, 1280 x 1024, 1280 x 720, 1024 x 768 Ethernet and RS485 communication protocols	
Power	Power Supply Single - 240 VAC $\pm 10\%$, 50 Hz Power Consumption < 18 W, without HDD Total PoE Power - 25.5 W single port, 220 W total	
Recording	Compression - Smart H.265+, H.265, Smart H.264+, H.264, MJPEG Supported IP Camera Resolution - 12 MP, 8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 1080p, 1.3 MP, 720p, D1, CIF, Bit Rate - 16 Kbps to 20 Mbps per channel Record Mode - Manual, Schedule (Regular, Motion Detection), Alarm, IVS, Stop	
Certifications	<ul style="list-style-type: none"> • CE - EN55032, EN55024, EN50130-4, EN60950-1 • Safety - UL 60950-1, CAN/CSA C22.2 No.60960-1 	
Warranty	Comprehensive 3 Years Manufacturer's Warranty (Attach Manufacturer's Warranty Statement)	

3. EMBEDDED IVS

TECHNICAL SPECIFICATIONS		
Compliant Standards : ISO 9001		
Item	Minimum Specifications	Proposed Solution
Intelligence	IVS triggers an alarm and takes a defined action for the following events: <ul style="list-style-type: none"> • Tampering with the camera. • Camera loses or changes focus drastically. • Error writing to an onboard Micro SD card. • Error sending or receiving data over the network. • Unauthorized access to the camera. • Motion - An object moves through any part of the scene. • Tripwire - A target crosses a user-defined line. 	

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	<ul style="list-style-type: none"> • Intrusion - A target enters or exits a defined perimeter. • Scene Change • Abandoned/Missing Object • Facial Detection • People Counting • Heat Map 	
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4. BULLET CAMERA

TECHNICAL SPECIFICATIONS		
Compliant Standards: • CE approved & ISO 9001		
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	<ul style="list-style-type: none"> • The camera should be of 4 MP Bullet type • The camera should have 3.7 ~ 9.4mm (3.1x) motorized Varifocal lens with maximum aperture ratio of F1.2 • The lens mount should be Board type • The image sensor used in the camera should 1 / 8" 6M CMOS Progressive Scan, • The Electronic Shutter Speed of the camera should be Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec) • The minimum illumination(B/W) provided should be 0 Lux with IR LED on • Adaptive IR up to 50 m; auto ON in night mode, or off • The minimum illumination Color : 0.07Lux (F1.2, 1/30sec) • The camera should have the property of IR cut filter with auto switch • The camera should have SNR of 50 dB • The camera should have the property of (Wide Dynamic Range), WDR of 120dB • The camera should provide 3 DNR (Digital Noise Reduction) of SSNRV (2D+3D noise filter) (Off / On) 	
Compression Standards	<ul style="list-style-type: none"> • H.265+/H.265 • The bit rate is 512 Kbps – 4 Mbps • The camera should be capable of providing 4 streams 	
Image	<ul style="list-style-type: none"> • The Maximum Image Resolution of the Camera should be 2560 x 1920@ 30fps • Frame rate H.265 / H.264 : Max. 30fps at all resolutions, MJPEG : Max. 30fps • The Camera should have GOP ration should be from 1-100 	
Network	<ul style="list-style-type: none"> • storage in NAS • interoperable with ONVIF, PSIA, CGI, ISAPI • support for TCP/IP,ICMP,HTTP,HTTPS,FTP,DHCP,DNS,DDNS,RT 	

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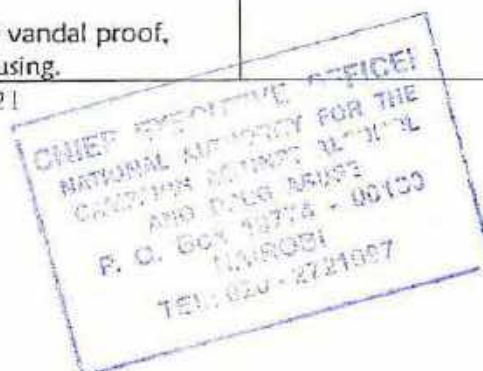


	<p>P, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, Bonjour</p> <ul style="list-style-type: none"> • ONVIF S compliant Security • HTTPS (SSL) Login Authentication, Digest Login Authentication IP Address Filtering, User access Log, 802.1X Authentication 	
General	<ul style="list-style-type: none"> • The communication interface of the camera should be 1 RJ45 10/100/1000Mbps Ethernet • The camera should have a 128GB SD card support • The power source used in the camera should be DC12V/2A (+/-10%) • The camera should have PoE(802.3af) • Maximum power consumption should be 20W • The camera should have IP67, IP66, NEMA 4X / IK10 Vandal Resistant 	
Warranty	Comprehensive 3 Years Manufacturer's Warranty (Attach Manufacturer's Warranty Statement)	

5. DOME CAMERA

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	<ul style="list-style-type: none"> • The camera should be of 4 MP Dome type • The camera should have 3.7 ~ 9.4mm (2.4x) motorized Varifocal lens with maximum aperture ratio of F1.6 • The lens mount should be Board type • The image sensor used in the camera should 1 / 8" 6M CMOS Progressive Scan, • The Electronic Shutter Speed of the camera should be Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec) • The minimum illumination(B/W) provided should be 0 Lux with IR LED on • Adaptive IR up to 50 m; auto ON in night mode, or off • The minimum illumination Color : 0.07Lux (F1.3, 1/30sec) • Adaptive IR 50m (164.04ft); auto ON in night mode, or off • The camera should have the property of IR cut filter with auto switch • The camera should have SNR of 50 dB • The camera should have the property of (Wide Dynamic Range), WDR of 120dB • The camera should provide 3 DNR (Digital Noise Reduction) of SSNRV (2D+3D noise filter) (Off / On) • Outdoor cameras should be vandal proof, IP65 and complete with housing. 	

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Compression Standards	<ul style="list-style-type: none"> • H.265+/H.265 • The bit rate is 512 Kbps ~ 4 Mbps • The camera should be capable of providing 4 streams 	
Image	<ul style="list-style-type: none"> • The Maximum Image Resolution of the Camera should be 2560 x 1920@ 30fps • Frame rate H.265 / H.264 : Max. 30fps at all resolutions, MJPEG : Max. 30fps • The Camera should have GOP ration should be from I-100 	
Network	<ul style="list-style-type: none"> • storage in NAS • interoperable with ONVIF, PSIA, CGI, ISAPI • support for TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, ICMP, 802.IX, QoS, IPv6, Bonjour • ONVIF S compliant • Security • HTTPS (SSL) Login Authentication, Digest Login Authentication IP Address Filtering, User access Log, 802.IX Authentication 	
General	<ul style="list-style-type: none"> • The communication interface of the camera should be 1 RJ45 10/100/1000Mbps Ethernet • The camera should have a 128GB SD card support • The power source used in the camera should be DC12V/2A (+/-10%) • The camera should have PoE(802.3af) • Maximum power consumption should be 20W • The camera should have IP67, IP66, NEMA 4X / IK10 Vandal Resistant 	
Warranty	Comprehensive 3 Years Manufacturer's Warranty (Attach Manufacturer's Warranty Statement)	

7.0 BROCHURES AND TECHNICAL LITERATURE

Tenderers must enclose together with their submitted bids brochures detailing technical Literature and specifications of the active components of the Security system. The brochures shall be used to evaluate the suitability of these components.

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

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PART C

1. STANDBY GENERATING SYSTEM.

1 Operating Conditions

The equipment and all components shall be suitable for the operation in ambient conditions of 24°C to 36°C and up to 100% relative humidity

- i) in an unheated ventilated building
- ii) In the open air as specified

Unless otherwise stated all ratings of equipment and components shall be interpreted as site rating and NOT sea level or other ratings.

2 Functional Objectives

The set shall be capable of operating continuously and satisfactorily in a medium dust laden atmosphere as defined in BS 1701 and in accordance with BS 649.

The generating set is required for standby duty and will be connected to the switchboard through a circuit. It shall have an automatic mains failure control, appropriately interlocked with the other incoming supply. Provisions shall be made in the control circuit of the generator for automatic and remote push button control, including the terminals and cable glands for all external cables, which will be supplied by others, where specified. It shall also be possible to start, operate and stop the set manually, independent of any automatic features.

Within the operating conditions specified in part 3 above the set shall be capable of starting and accepting full load within the shortest possible time, and in any case, in not more than 10 seconds. Any special features included to achieve this shall be stated in Section F.

3 Scope of the Contract Works

The work covered by this Specification includes the design, manufacture, supply, delivery, installation, commissioning and testing to the satisfaction of the Engineer and maintenance for a period of twelve months of a new generating set complete with all necessary ancillary equipment.

The equipment to comprise 150KVA, 415 volts/3 phase /50Hz prime rated diesel generator set with all integral accessories, and all necessary equipment for the safe and efficient working of the set. The diesel generator set will be site rated at level of 1660 metres, Kenya Datum.

Diesel generator set to include:

- a) Push button starting, starting battery and mains power supply trickle charger to be included.
- b) 72 hour operational running capacity auxiliary fuel oil storage tank, loose transfer pump and duplex oil strainer.
- c) An integral belly/ base fuel tank for daily service with an operational running capacity of 8 hours
- d) All interconnecting pipe work, valves and fittings between the storage tank, base tank and the diesel engine.
- e) An automatic generator control unit
- f) A diesel generator control cubicle
- g) Acoustic enclosure/ sound attenuated canopy
- h) All local wiring
- i) Maintenance tools and spare parts as specified.

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4 Performance Objective

The output rating of the set in KVA, the voltage, the number of phases and the frequency shall be as specified in Bill No.2 Schedule I of the Bills of Quantities.

Within the operating conditions specified the set, equipped with its standard air intake filters, shall be capable of delivering its rated output continuously at rated voltage and 0.8 lagging power factor and of delivering 10% in excess of the continuous maximum rating for a period of one hour in any 12 hour period.

The steady state voltage shall be maintained within $2 \frac{1}{2}$ % of the rated voltage under control of the voltage regulator between the cold start ambient conditions and the maximum working temperature, from no load to 10% overload and from unity to 0.8 lagging power factor. After any change of load the voltage shall not vary by more than + 15% of the rated voltage and shall return to within \pm 3% within 3 seconds and to within $2 \frac{1}{2}$ % of rated voltage within 1 seconds. On starting the voltage overshoot shall not exceed 15% and shall return to within 3% in not more than 3 seconds.

The governing of the set shall be such that the steady load speed band shall not exceed 1% of rated speed. Sudden removal of the full load at rated frequency shall not cause the frequency to rise above 110% of the rated frequency and it shall return to within 105% of the rated frequency within 3 seconds. The resultant steady state frequency shall return to 104% within 15 seconds. If full load is then reimposed the frequency shall not fall below 94% of rated frequency and shall return to 99% within 3 seconds and to the rated frequency within 15 seconds. The cyclic irregularity of the set at full load shall not be worse than 1/150.

The deviated interference shall be suppressed to the limit specified in BS 800 and BS 833.

5 Generating Set Arrangement

Unless otherwise indicated the set and its auxiliaries shall be mounted on sufficiently substantial under-base. All items which must be held in correct relative alignment shall be located by means of dowels.

The set shall be designed and supplied for operation bolted to the floor on robust anti-vibration and shock absorbing devices. They shall have adjusting screws for optimum setting and levelling and be so designed and installed that no appreciable engine vibration shall be transmitted to the floor or to any surrounding.

Bearings shall be suitable for operation over long periods without the need for replacement of the lubricant. Oil lubricated bearings shall be fitted with a visible oil level gauge.

6 Diesel Engine

6.1 General

The engine shall comply in design and performance with BS.649 "Diesel Engines for General purposes" or its approved equivalent. The engine shall be designed for satisfactory operation on fuel oil and lubricating oils complying with BS. 2869.

The engine shall be totally enclosed, with forced lubrication from an integral pump having on the suction side a coarse strainer and on the delivery side a dual 'full flow' fine filter with a changeover cock incorporating pressure by-pass, so that the oil flow to the engine is maintained if the filter should choke. Alternatively a single filter of the self-cleaning type fitted with a by-pass relief valve and having the same filtration performance may be provided. Manual lubrication of any part of the engine will not be accepted. The capacity of the lubricating oil

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system shall be sufficient to enable the engine to run continuously for 12 hours at any load without replacement.

A filter with a by-pass relief valve shall be inserted in the fuel line immediately before the pump(s). The fuel filter element shall be incapable of passing particles larger than micrometers. The fuel system shall be so arranged that fuel resulting from filter, pump or pipe spillage shall be incapable of entering the engine sump.

Air filters complying with KS 06-294: 1986, Grade 'A' and Grade 'B' suitable for use in a dusty atmosphere shall be fitted on the engine air intake(s)

No significant critical speed of the complete shaft system, including the generator, shall be within 15% of the rated speed.

A manually reset overspeed trip shall be fitted to stop the engine if its speed exceeds the rated speed by 15%. A mechanical trip is preferred but an electrical overspeed trip may be offered. Both types shall be equipped with a pair of contacts which close on operation of the trip. If the device is belt driven, at least two belts shall be provided and the drive shall be capable of carrying full load with one belt removed.

The set shall be arranged such that on shut-down the cooling water temperature shall not rise with residual heat so that the high water temperature lock-out operates. The engine may be naturally aspirated as pressure charged, or as indicated.

The starting shall be by means of electricity supplied from a starter battery. The starter motor shall be of axial type, de-energizing by a device operated from the engine. A means of manual starting shall also be provided.

Suitable means shall be provided for running by hand the engine main shaft and the associated generator to facilitate inspection and overhaul.

If weekly test runs are insufficient to prevent the drying out of the bearings, means shall be provided to ensure that the bearing surfaces are adequately and automatically wetted with lubricating oil either periodically or immediately prior to every start.

The engine shall be capable of being started from any crank position.

A thermostatically controlled 240-volt immersion heater may be fitted in the engine lubricating oil sump to facilitate starting. The heating surface loading of any lubricating oil heater(s) shall not exceed 0.015 watt per square millimeter to avoid carbonization of oil.

An efficient exhaust silencer with adequate draining facilities shall be supplied, and shall either be mounted on the set or installed in a generator room constructed as shown on the drawing indicated. The exhaust silencer system shall be so arranged that it may be readily relocated if required. Where any additional piping bends and fittings are specified, the manufacturer shall advise on any problems involved.

6.2 Fuel Oil System

An auxiliary fuel storage tank whose minimum capacity shall be sufficient to run the engine continuously on full load for 72 hours shall be installed in the position indicated in the contract drawing. It shall be supplied complete with supports.

The tank shall be fitted with a hand operated fuel with a flexible suction hose to permit filling from a drum on the floor.

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A three way cock shall be fitted in the line from tank to the engine to enable the fuel to be supplied from a source other than the storage tank.

The position of the cock shall be clearly marked 'MANUAL, AUTOMATIC, OFF' as applicable.

A duplex oil filter shall be supplied between the storage tank and the diesel engine. The duplex filter shall be capable of being cleaned without dismantling, or in interruption of the fuel flow, and shall be easily maintainable. The tank shall be equipped with a graduated dipstick, a clearly visible contents' gauge (not of the site glass type) and with drain, vent, overflow and inlet and outlet connection.

The set shall also have an integral belly/base fuel tank for daily services with an operational running capacity of 8 hours.

6.3 Lubricating Oil System

An engine driven integral gear type lubricating oil pump shall be provided. The lubricating oil system shall include an oil cooler and fine mesh filters, together with devices to indicate lubricating oil pressure and to initiate a 240 volt A.C. Lubricating oil Low pressure Alarm, Lubricating Oil High Temperature Alarm and Cooling Water High Temperature Alarm.

As separate 240 volt A.C. Motor driven automatic lubricating oil priming pump shall be provided for intermittent operation when the diesel is lying idle.

6.4 Starting of Engine

The diesel generator set shall have facilities for local and remote push button starting, with a Local/ Remote/ Automatic selector switch at the local panel.

On mains failure the engine shall be capable of being automatically started from battery located near the generator set.

The battery shall be complete with drip tray and trickle charger.

All necessary relays, contacts, switches and miscellaneous items for the starting sequence shall be supplied and installed in the local control panel.

The system shall be designed to give maximum reliability in starting.

The Contractor shall state in detail his proposals to ensure reliable starting and prevention of deterioration of the diesel engine, generator and exciter during idle periods.

All manually operated valves and controls on whose setting the correct operation of the automatic starting equipment depends shall be provided with locking devices.

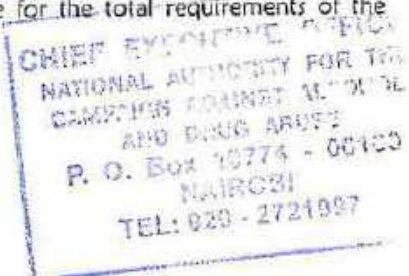
6.5 Cooling System

The engine may be air or water cooled unless a preference is indicated.

6.5.1 Air Cooling of Engine

Cooling air for the engine and lubricating oil shall be provided by fan(s) mechanically driven from the engine. The cooling system shall be adequate for the total requirements of the

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engine when running on continuous full load and on 10% overload for one hour in accordance with BS 649 and under the conditions of Section 3.

The engine shall be so designed that the cooling air discharges into or is drawn through a reasonably airtight ducted assembly enclosing the lubricating oil cooler, the cylinder barrels and the cylinder heads of the engine.

This assembly shall terminate in a flanged outlet to which trunking may be readily attached when necessary, to enable hot air from the cooling system to be discharged outside the building.

Belt driven fans shall have at least two belts and the drive shall be capable of transmitting the full load with one belt removed. The cooling air temperature shall be controlled so as to maintain a safe working temperature of the cylinder head(s) and the engine shall shut down if the maximum is exceeded.

6.5.2 Water Cooling of Engine

A radiator of the air blast type shall be provided. It shall either have separate sections for water and for lubricating oil or be arranged for jacket water cooling only.

The radiator shall be mounted on the set and the fan(s) shall be mechanically driven from the engine. Where indicated the radiators shall be suitable for remote wall or floor mounting, in which case the fan shall be electric motor driven from a supply similar in voltage, phase and frequency to the alternator output and shall be started on line.

Where remotely mounted, the fan shall only operate when generating set is running and shall be controlled by a thermostat mounted in the radiator such that the fan motor will start on rising temperature 50°C and stop on falling temperature.

Belt driven fans shall be provided with at least two belts and the drive shall be capable of transmitting the full load with one belt removed. Circulation of the jacket water and lubricating oil through the respective radiator sections and /or heat exchanger shall be by means of pumps mechanically driven by the engine. Belt driven pumps shall be provided with at least two belts and drive shall be capable of transmitting the full load with one belt removed.

Circulation by thermo-syphon will be accepted provided the engine will operate under the conditions of section 6 and in accordance with BS 649.

An easily visible flow indicator provided with contacts shall be fitted in the water outlet from the engine; the contacts shall close in the 'no flow' condition and shut down the set.

Alternatively in thermo syphon systems and sealed or pressurized radiator systems the flow indicator may be dispensed with providing the engine shuts down by the operation of the high temperature or low oil pressure safety devices in accordance with section 8.3.

A thermostatically controlled diverter valve shall be inserted in the engine water discharge pipe with a return to the circulating pipe section, to maintain the circulating water at the optimum temperature irrespective of the load. Alternatively a thermostatic bypass will be accepted.

A radiator make-up/expansion tank, fitted with float control inlet, shall be provided. If a sealed or pressurized unit is offered the tank may be dispensed with.

Where indicated provision shall be made on the radiator framework to permit the attachment of ducting for the discharge air.

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A thermometer shall be mounted near the cylinder head(s) to indicate water temperature. Where a lubricating oil cooler is fitted, thermometers shall be mounted at the oil inlet too and outlet from the engine. Alternatively, thermocouple may be provided at all thermometer positions and taken to an instrument panel.

Adequate drains shall be provided at low points in the water and lubricating oil systems of the radiator and, where applicable, of the heat exchanger.

6.6 Governing System

Governing shall conform to B.S. 640 Class A. The governor shall control the frequency within the limits stated in Section 6 Part. Manual speed adjustment shall be provided over a range of $\pm 15\%$ of the rated speed at any load. The governor system shall be of the mechanical or hydraulic type. In addition the engine shall be fitted with an approved over speed trip device which shall operate independently of the normal speed governor and shall act directly upon the fuel supply to the engine.

The over speed shall act at a speed of 12% to 15% in excess of normal operating speed.

6.7 Exhaust System

The diesel engine shall be provided with a suitable exhaust system for horizontal discharge outside the diesel generator room.

The silencer shall be of spark arresting type and shall be equipped with cleaning and draining arrangements.

If an exhaust driven turbo-charger is supplied it shall include air intake filters, mani-folds and outlet manifolds.

All necessary ducting, piping, supports and lagging required for the system shall be included.

Weatherproof wall boxes permitting expansion shall be fitted where the exhaust piping passes through the building wall or roof. Pipe work shall be connected at site by butt weld connections or use of flanged joints. The use of screwed connectors shall be avoided.

Flanges shall conform to the appropriate Table of B.S.10: 1962. Welding of flanges at site shall be carried out in accordance with B.S.806. The faces of flanges shall be machined and the backs shall be machined or spot faced to receive the bolt heads.

Valves and fittings shall be of approved design and manufacture and shall be subject to the same tests as the highest pressure piping or vessel to which they are connected.

6.8 Engine Instruments

Unless otherwise indicated the following instruments shall be provided:

- (a) a lubricating oil pressure gauge
- (b) a running hours meter
- (c) a tachometer
- (d) a water thermometer
- (e) an exhaust gas pyrometer or thermometer mounted near the mani-fold

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- (f) lubricating oil thermometers on the inlet to and outlet from the engine, when a lubricating oil cooler is fitted
- (g) Exhaust turbo-blower pressure gauge(s) as applicable

6.9 Pipe work, Valves and Fittings

All piping shall comply with requirements of KS-259:11989 for mild steel pipes. Provision shall be made for ready handling of all parts of the plant during assembly or disassembly of the unit. Adequate provision shall be made for attaching lifting devices, slings and eyebolts.

7 The Generator (Alternator and Exciter)

7.1 General

The generator shall comply with BS-2613:197, for service in tropical conditions, and shall withstand being idle for considerable periods without any harmful drop in the insulation resistance.

The generator shall have a prime rated net output of 150KVA as specified in the schedules of the Bills of Quantities, at 0.8 lagging power factor, 415 volts, 3 phase, 4 wire, 50 Hertz with brushless rotating rectifier excitation system and voltage regulator. It shall be directly coupled to the engine and be sized such that it will accept the maximum output of the engine including overload. The output voltage shall be maintained within plus or minus 2 ½ % from no load to full load conditions. The alternator shall be capable of operating within the range of plus or minus 15% of the nominal voltage according to the automatic voltage regulator.

Three phase machines shall be star connected, and a diagram showing the terminal marking and phase rotation shall be provided in the terminal box. Cables connecting the machine winding and machine terminals shall not have a higher de-rating factor for temperature than the windings.

The insulation shall comply with BS 2757 excluding Classes Y and A. The insulation shall have an oil, moisture and fungus proof finish, with a surface which will not retain dust or condensation. It shall be possible to put the set in service after long periods in unheated storage without necessarily drying out the insulation.

The alternator shall be capable of withstanding a short circuit for three seconds when under the control of the automatic voltage regulator.

7.2 Excitation

Excitation shall be by means of brushless direct coupled exciter armature.

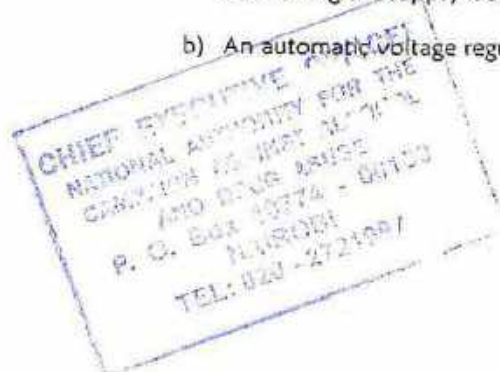
The alternators shall be designed for an excitation voltage at full load of not less than 50 Volts unless prior approval is given.

7.3 Electrical Control Panel

The Automatic Mains Failure control panel shall be provided and fitted with the following:-

- a) Two four pole contactors and two TP & N incoming MCCB's each of suitable rating for controlling the supply from the mains transformer and standby generator.
- b) An automatic voltage regulator for the set.

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- c) Control equipments as necessary including phase failure protection relay for both the mains supply and the generator supply (with both under and over voltage protection) and phase sequence protection relay for the mains supply all to fulfil the functional requirements and automatic changeover as detailed in Part 9.3.2
- d) One ammeter and a selector switch to measure each phase current and neutral current
- e) One voltmeter and a selector switch to read line to line and line to neutral voltage
- f) A frequency meter

The meters shall comply with BS 89, table 7.

7.3.1 General

The set is to be used for mains failure duty and an automatic starting panel shall be provided which shall contain all necessary equipment for controlling the automatic starting and stopping of the set, lubricating oil priming (if necessary), all auxiliaries, fault warnings and shut downs. All faults, warning and shut-downs shall be separately indicated. There shall be test facilities for indication lamps, etc, preferably by means of a single test button. Means shall be provided for isolating all supplies to the starting panel either by an isolating switch or by withdrawable fuses.

When the set is stopped other than under lock-out conditions, it shall be self-resetting ready for the next start.

The set shall be suitable for starting by manual means, e.g. by cranking or direct operation of the starter solenoid.

All switches and push buttons shall be clearly marked to indicate their function.

It shall be possible to operate the 'Start' and 'Stop' buttons and to see the 'Set Failure' indications without opening the panel doors.

7.3.2 Automatic Changeover Controls

The controls shall be installed and wired in the machine control panel.

The control shall be provided such that on failure of the normal electricity supply, it will automatically initiate the starting of and effect the transfer of load to the standby generator. The schematic for the controls shall be approved by the Electrical Engineer before manufacture commences.

Where failure of the normal supply is referred to, it shall be defined as follows:

- a) Complete loss of voltage in one line Or in all the three lines
- b) Falling of voltage below 85% of the normal voltage between two lines or line and neutral
- c) Voltage overshoot to 110% of the normal voltage between two lines or line and neutral
- d) Incorrect phase sequence

On failure of the normal supply, the unit shall operate in the following manner:

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- a) After a delay, adjustable from 0 to 15 seconds (to avoid operation by a transient dip in voltage) a signal shall be given to start the standby generating set.
- b) On receipt of a signal from the standby generating set that it is ready to take load, and providing that the failure of the normal supply still persists, the normal supply contactor in the control panel shall open and the standby contactor shall close. If the normal supply has been restored before the changeover has taken place, the contactor shall not operate and the starting relay contacts shall open to initiate the shutting down of the standby generating set.

When the standby supply is in operation and the normal supply is restored and remains within 10% of rated voltage on all phases for a pre-set time (adjustable up to 120 second) the standby contactor shall open and the normal supply contactor shall close; the starting relay contacts shall then open to shut down the generating set.

Provision shall be made so that automatic return to normal supply can be prevented if required.

Once a start signal has been sent to standby generating set, the engine starting sequence shall be allowed to continue until the set is ready to take the load before a stopping signal is sent.

A push button labelled 'Test' shall be provided to enable a failure of normal supply to be simulated. If the button is pressed and released the equipment shall complete the starting sequence, and when the set is ready to take load it shall be shut down. If the button is held depressed the equipment shall change over to the standby supply when the set is ready to take load.

Indicating lamps or illuminated panels shall be provided on the front of the panel. They shall be appropriately labelled, easily visible and shall give the following information:

'Main Supply Available'

'Generator Supply Available'

'Mains Supply on load'

'Generator Supply on load'

7.4 Lock out

7.4.1 General

The set shall stop and lock out to prevent further starting when:

- a) It fails to start when the electric starter motor has been in operation for 20 seconds under automatic start condition.
- b) The lubricating oil pressure falls to a value at which it would be unsafe to continue running the engine.
- c) The cooling water does not flow, when the engine is fitted with a visible flow indicator on the cooling water system.

i. In water cooled engines the cooling water temperature exceeds a predetermined limit.

ii. In air cooled engines the cylinder head temperature exceeds a safe maximum.



d) The overspeed trip has operated.

7.4.2 Failure of the circuits concerned in sub-section 9.4.1 (b) to 9.4.1(e) shall cause a set to shut down. Reset of lock out shall be by hand.

7.5 Fault indication

Each lock-out detailed in section 9.4.1 shall be indicated by a lamp on the panel together with an indication of the fault causing the shut-down. The fault warning lights shall be set to operate before the lock-out.

7.6 Starting Battery and Charger

The battery shall be 24 volts and capable of with-standing the loads imposed upon it by its specified duties. It may be of lead-acid or alkaline type and shall be of sufficient capacity for four starts in succession once in an eight-hour period. Auxiliary circuits connected to the battery shall be protected by fuses.

The battery shall be used to supply an automatic starting and control equipment, and relay operation shall not be impaired when the battery is supplying current to the starter motor.

A single phase supply for battery charging shall be available from the main M.V SWITCHBOARD.

A charger shall be provided which will recharge the battery after engine starting and maintain it in a charged condition when the set is standing or is in service. It may also supply the load of any automatic starting and control equipments, and an additional load up to 24 watts when the set is running and in service.

An alternative quick charge rate shall be provided. The charger shall be fitted with an ammeter to measure the charge and discharge current excluding the starter motor current.

7.6.1 Wiring and Earthing

Power cables and small wiring cables interconnecting major components shall be of the heat and oil resistant type and shall be metal sheathed or run in metal ducts or metal conduit, which shall be coded and terminated with lugs or eyes or to be soldered, the terminations shall be clearly marked with the numbers and letters of the terminals to which they are connected. Terminals shall be numbered or lettered, easily accessible and fitted with individual insulating barriers or adequately spaced. Barriers shall be fitted to separate control terminals from power wiring terminals.

All metal work housing electrical equipment shall be bonded to a brass earthing terminal and connected to station Earth and as detailed in the schedule.

7.7 Contactors

Contactors shall have magnetic circuits designed for a.c or d.c operation and shall be rated in accordance with ks 04-182:1982. Four pole- contactors shall be fitted for three phase-equipment and two-pole contactors for single phase equipments. Main and auxiliary contacts shall be silver faced or better.

7.8 Relays

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Relays shall preferably be of sealed type mounted in approved plug-in bias with spring loaded retainers but if this is not practicable they shall be mounted on individual sub-bases and wired so that easy access is obtained to soldered connections. Unsealed relays shall be enclosed in individual or common dust protecting cases.

Time delays, if of the pneumatic type, shall operate on filtered air. The thermal type of time delay relay will not be accepted.

7.9 Fuses

Fuses shall comply with KS-183:1978. A spare fuse cartridge for each pole shall be mounted inside each equipment.

7.10 Rectifiers, Capacitors and solid State components

Rectifiers, capacitors and solid state components shall be suitable for any transient voltage and high currents likely to be uncouncted during the operation of the equipment and for the internal operating temperature of the enclosures at the specified maximum external ambient temperature.

8 Enclosures for Equipment

Enclosures for electrical and control equipment shall be drip proof and dust protecting, with adequate front and rear access as necessary for maintenance and repair. Special attention shall be given to the method of construction and to the mounting of the components to minimize the effect of vibration. Diagrams of connections in durable form shall be mounted inside the enclosures.

9 Lifting Gear and Handling.

Provision shall be made for ready handling of all parts of the plant during assembly or disassembly of the unit. Adequate provision shall be made for attaching lifting devices, slings and eyebolts.

10 Commissioning

The Contractor shall include for fully commissioning the set and its control equipment and for the purpose of the required tests, shall provide all necessary instrument s, tools, fuel and lubricating oil.

The following tests and checks as applicable shall be carried out by the contractor in the presence of the electrical engineer or his representative.

- a) Check that the main frame is level in all directions, engine and generator shafts are in proper alignment and the vibration absorbing devices are properly installed and located.
- b) Check water and sump oil levels and that the water jacket and radiation eaters (if fitted) are in working order.
- c) Check the battery electrolyte levels and the specific gravity.
- d) Examine the containers in which the fuel and lubricating oils were delivered and check that the type and grade of oils are as recommended for the unit.
- e) Ensure that sufficient fuel oil is in the fuel tank for a two hours test run.
- f) Check that all radiator and engine block water drain points are free from sludge and other blockages.
- g) Check engine bolts, main drive coupling, valve clearance, fuel pumps settings, governor settings, pipeline connections, water hose, exhaust couplings, flexible pipe work etc, and where a separate cooling water tank is fitted, that the water levels is satisfactory and the ball valve and overflow work.

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- h) Check all outgoing connections on the generator and the control panel. All lugs for principal connections shall have clean and bright contact surfaces. A suitable abrasive shall be used where necessary.
- i) Check access panels and doors for proper opening and closing and for functioning of any interlocks fitted.
- j) With the set isolated from the main supply and the selector switch in the 'manual' position, start the engine by means of the 'start' push button and allow it to run up to normal speed. Check that the main battery charger is automatically switched off to avoid its being overloaded by the reduction in voltage across the battery. Where a battery charging dynamo is fitted, check that the main battery charger is disconnected by the operation of the auxiliary contact during the time the engine is running.
- k) Check instruments and gauges for normal operation and response and that the generator voltage is being maintained within the prescribed limits, making due allowance for no-load conditions. Compare the reading of the frequency meter with that of engine tachometer, where both are fitted.
- l) Stop engine by turning selector switch to off position and verify that the generator contactor opens at between 95% and 85% of normal voltage. Re-check water and oil levels.
- m) Turn selector switch to 'Auto' position. Disconnect the sensing circuit supply and check that the set starts, the mains contactor opens, and the generator contactor closes in correct order. Reconnect the sensing circuit to verify that the engine stops on restoration of the mains supply and the contactors operate correctly. Check voltage sensing and time delays on each phase in turn and also the push buttons for mains failure simulation and engine stopping operate correctly.

NOTE: Running of the engine for any length of time under no load condition is undesirable and tests calling for such operation should be carried out in as short time as possible consistent with thoroughness.

- n) Operate the necessary isolators and switches to put the set on standby for essential services network with the mains failure simulation push, verify that the set operates correctly with the appropriate time delay for taking up load and that the carrying of the load and its distribution over three phases are satisfactory.
- o) Run the set at various loads for periods totaling at least 30 minutes. Check that the voltage and frequency are being maintained within the required limits with large alterations of load. Note the rate of charge on the dynamo ammeter with the engine running (if a dynamo is fitted), and the rate of charge on the battery charging ammeter with the engine stopped. Check against manufacturers recommendations and adjust charging rates if necessary.
- p) Check that the various engine safeguards operate satisfactorily.
- q) Check the vibration absorbing devices for proper operation and that performance of all flexible connections, both mechanical and electrical, is satisfactory.
- r) When all tests are satisfactory and agreed with the Engineer or his representative, the lubricating oil and water levels shall be finally checked, the fuel oil tank replenished and set left in normal operating order.
- s) An initial supply of all lubricating oils and greases shall be provided by the Contractor.
- t) Additional lubricating oil shall be provided for recharging the engine sump once together with a supply of lubricating oils and greases to cover the normal use and serving of the set during the 12 months maintenance period referred to in Part 14 of Section D.

11 Standard Specification For Auxiliary Fuel Storage Tanks (UG/AG) Fabrication

The tank shall comply with Kenya Bureau Standards, Specification for Storage Tanks for Petroleum Industry. Part 1: Carbon Steel Welded Horizontal Cylindrical Storage Tanks; 2002.

The tanks shall comply to the following specifications:-

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- a) The thickness of the shell and end plates of the tank shall be 6mm;
- b) The dished end of the tank to bend to 25 mm radius;
- c) The Mild Steel plate joints welding shall be butt welded for circumferential joints and lap welding for longitudinal. Further no longitudinal joint shall be located at the bottom of the tank;
- d) All joints on the tank plates, lap or butt type, shall be welded both sides to full penetration (AG/UG);
- e) Accessories:-
 - i. 1 x 600 mm manholes with the following sockets and fittings 1 No x 100 mm filler pipe welded to 150 mm x 100 mm reducing bush;
 - ii. 3 No x 50 mm diameter suction pipes welded to 75 mm x 62 mm reducing bush;
 - iii. 1 No x 50 mm diameter vent pipe welded to 75 mm x 62 mm reducing bush; and
 - iv. 1 No x 25 mm diameter dip pipe with lockable cap, chain, etc. welded to 75 mm x 30 mm reducing bush.



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2. INFORMATION TO BE SUPPLIED BY THE TENDERER

DESCRIPTION

1. General
2. Information on the set to be supplied
3. Deviations from the specifications

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1. GENERAL

- a). The tenderer shall complete this Section in full with details of the set he is offering.
- b). Any equipment which they wish to offer but which does not comply with the specification shall be fully detailed together in Part 3 of this section with details of any other deviation or omissions which he may wish to make.

Any tender which is submitted without filling these sections will be deemed non-responsive.

- c). The tenderers shall be required to submit, together with their tenders, brochures detailing technical specifications of the generator set they intend to supply. Any tender which is submitted without the brochures will be deemed non-responsive

2. INFORMATION OF THE SET TO BE SUPPLIED

ITEM	EQUIPMENT	DETAILS
1.	<u>Diesel Engine</u> Make Type Net continuous rating (B.S.649) (a) at sea level (b) at site Speed Supercharger Make Type Air cooling Quantity of air required Details of ducting Water cooling Details of water cooling circuits Radiator: Make Type Length Breadth Height	 KVA KVA Rev/min Not Applicable To be Applicable mm mm mm



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ITEM	EQUIPMENT	DETAILS
2.	Aspiration Method	
	Quantity of air required	
	<u>Auxiliaries</u>	
	Filters	
	Coolers	
	Primary pumps	
	Tachometer and drive	
	Governor	
	Special cold start devices	
	Running hours meter	
	Safety devices	
	High temperature	
	Low pressure (lubricating oil)	
	Cooling water flow trip over speed trip	
	Speed sensing devices	
	Lubricating oil thermometers:	
	Number	
	Position (s)	
	Water thermometer	
	Position Exhaust thermometer	
	Position	
	Starting Battery	
	Battery charger	
	Immersion Heater	
3.	<u>Lubrication</u>	Grade quantity (litres)
	Recommended oil (s)	
	Sump	
	Elsewhere (state where)	
4.	<u>Alternator and Exciter</u>	
	Make and type	
	Bearings	
	Insulation class (BS.2757)	

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ITEM	EQUIPMENT	DETAILS	
5.	Output voltageVolts	
	<u>Electrical Control Panel</u>		
	Main circuit breaker	Amps	
	Bypass switches	Amps	
	Automatic changeover contactor	Amps	
	Automatic voltage regulator	Volts	
	Ammeter selector switch		
	Voltmeter selector switch		
	Frequency meter	Hertz	
	Ammeters ----- No.	Amps	
	Voltmeters -No.	Volts	
	Power factor meter	KVAR	
	Other equipment – give details		
6.	<u>Performance data</u>		
	Fuel consumption	<u>Rated output</u>	<u>Consumption</u>
		%	Litres/hour
		110	
		100	
		75	
		50	
	Maximum output	<u>Ambient temp.</u>	<u>Out-put KVA</u>
		°C	
		40	
		30	
		20	
		10	

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ITEM	EQUIPMENT	DETAILS
6.	Performance Data (cont'd)	
	Voltage regulation	%
	Frequency regulation	%
	Time to accept 75% full load from 5°C	Seconds
	Time to accept 100% full load from 5°C	Seconds
	Time to accept 100% full load from 40°C	Seconds
7.	<u>Physical Details</u>	
	a) Auxiliary fuel storage tank	
	• Capacity Litres
	• Dimension	Diameter: mm Length: mm
	b) Generator set	
	• Total Weight Kg
	• Overall Dimension	Length: mm Width: mm Height: mm
	• Weight of Heaviest component Kg
	• Weather proofing	YES/NO.....
	• Sound proofing	YES/NO.....
	• Capacity of Integral belly/base fuel tank for daily service for 8-hour operation Litres
8.	<u>Operational Details</u>	
	Description of Operation	
	Sequence of the automatic control	
	Details of drawings, literature, etc., included with tender.	

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3.DEVIATIONS FROM THE SPECIFICATION

The tenderer shall give details of any equipment which does not meet the specification, or any other deviations, omissions, additions or alternatives in respect of the set which he is offering.

If none, write none



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SECTION D

SCHEDULE OF CONTRACT DRAWINGS



SCHEDULE OF CONTRACT DRAWINGS

DRAWING NO.	DRAWING TITLE
As shall be issued by the Engineer	

NOTE:

Tenderers are advised to inspect the electrical drawings at the office of the Chief Engineer (Electrical) – State Department for Public Works, at Chief Engineer's (Electrical) Office, Hill Plaza Building, Community area, Nairobi along Ngong road, during normal working hours.



SECTION E
TECHNICAL SCHEDULE

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TECHNICAL SCHEDULE

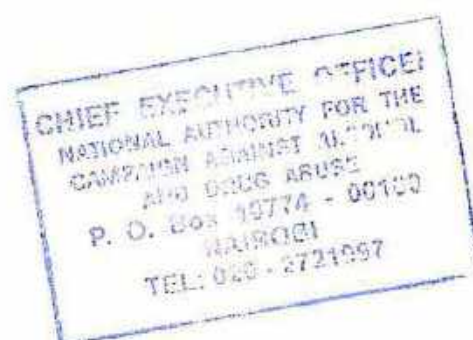
1. The technical schedule shall be submitted by tenderers to facilitate and enable the Project Manager to evaluate the tenders, especially where the tenderer intends to supply or has based his tender sum on equipment, which differs in manufacture, type or performance from the specifications indicated by the Project Manager.
2. This schedule shall form part of the technical evaluation criterion, and tenderers are therefore advised to complete the schedule as they shall be considered non-responsive.



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	DESCRIPTION	MAKE	TYPE
1.	MCBs and MCCBs		
2.	Socket outlets		
3.	Trunking		
4.	Cable trays		
5.	PVC/SWA/PVC copper cable		
6.	SC copper cable		
7.	Distribution Boards		
8.	Isolators		
9.	Smoke Detectors		
10.	Fire Alarm Panel		
11.	Light Switches		
12.	Lighting fittings ; a) LED Panels b) LED battens c) LED Bulkheads d) Downlighters e) EXIT emergency lighting f) Bulkhead fittings.		
13.	Network Switches		
14.	Wireless Access Points		
15.	CCTV Cameras		
16.	IP Phones		

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SECTION F
SCHEDULE OF UNIT RATES



SCHEDULE OF UNIT RATES

1. The tenderer shall insert unit rates against the items in the following schedules and may add such other items as he considers appropriate.
2. The unit rates shall include for supply, transport, insurance, delivery to site, storage as necessary, assembling, cleaning, installing, connecting, profit and maintenance in defects liability and any other obligation under this contract.
3. The unit rates will be used to assess the value of additions or omissions arising from authorized variations to the contract works.
4. Where trade names or manufacturer's catalogue numbers are mentioned in the specification, the reference is intended as a guide to the type of article or quality of material required. Alternative brands of **equal and approved** quality will be accepted.
5. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including **V.A.T and all taxes applicable at the time of tender.**

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SCHEDULE OF UNIT RATES

ITEM	DESCRIPTION	QTY/UNIT	RATE(KSHS)
1.	IP 65 rated Isolators as KATKO, 3 Phase a) 20A b) 100A	No.	
3.	<u>Cables</u> PVC SWA PVC Cables:- a) 2 core 10mm ² b) 2 core 16mm ² c) 2.5mm sq. 2 core d) 4.0 mm sq 4 core e) 6.0 mm sq 4 core f) 10 mm sq 4 core g) 35 mm sq 4 core h) 70 mm sq 4 core	Lm.	
4.	100A 4-way TPN Distribution Board.	No.	
5.	Blanking Cover for Twin socket outlet points.	No.	
6.	70W LED IP 65 Flood light	No.	
7.	16 port edge switch POE capabilities	No.	
8.	3000VA UPS	No.	
9.	18U Wall Mounted cabinet	No.	
10.	48 port cisco core as Cisco Catalyst C9600 series.	No.	



SECTION G
BILLS OF QUANTITIES



BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against item of preliminaries in the sub-contractor's Bills of Quantities and specification. These Bills are designated as Bill No.1 in this Section. Where the sub-contractor fails to insert his price in any item he shall be deemed to have made adequate provision for this on various items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

The Bills of Quantities are divided generally into three sections:-

a) Preliminaries – Bill 1

Sub-contractors preliminaries are as per those described in section C – sub-contractor preliminaries and conditions of contract. The sub-contractor shall study the conditions and make provision to cover their cost in this Bill. The number of preliminary items to be priced by the Tenderer has been limited to tangible items such as site office, temporary works and others. However the Tenderer is free to include and price any other items he deems necessary taking into consideration conditions he is likely to encounter on site.

b) Installation Items and Other Bills

The brief description of the items in these Bills of Quantities should in no way modify or supersede the detailed descriptions in the contract Drawings, conditions of contract and specifications.

The unit of measurements and observations are as per those described in clause 1.05 of the section C.

c) Summary

The summary contains tabulation of the separate parts of the Bills of Quantities carried forward with provisional sum, contingencies and any prime cost sums included. The sub-contractor shall insert his totals and enter his grand total tender sum in the space provided below the summary.

This grand total tender sum shall be entered in the Form of Tender provided elsewhere in this document



B) NOTES FOR BILLS OF QUANTITIES

1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.
2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including **V.A.T and all taxes applicable at the time of tender.**
3. All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part.
4. The brief description of the items given in the Bills of Quantities are for the purpose of establishing a standard to which the sub-contractor shall adhere to. Otherwise alternative brands of **equal and approved** quality will be accepted.

Should the sub-contractor install any material not specified here in before receiving **approval** from the Project Manager, the sub-contractor shall remove the material in question and, **at his own cost**, install the proper material.

5. The grand total of prices in the price summary page must be carried forward to the **Form of Tender.**
6. Tenderers must enclose, together with their submitted tenders, **detailed manufacturer's Brochures** detailing Technical Literature and specifications on the items they intend to offer.

This shall be used in the tender evaluation to determine the first line aesthetics and quality of fittings offered.

Elect-G/2



**PROPOSED NATIONAL MULTIPURPOSE FACILITY FOR DRUG USE DISORDERS IN MOMBASA - NACADA -
KITCHEN & DINING**

BILL No. 1: ELECTRICAL INSTALLATION WORKS

Schedule No. 1: POWER SUPPLY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>Supply, install, testing&commissioning of the following complete as specified. All cables shall be copper and shall be complete with cable glands, lugs and necessary termination kits.</u>				
1.01	LV BOARD Metal clad, floor mounting Free standing, compartmentalized LV Board with 1No.400A TPN Bus Bars fully wired for 1No. 300A variable 50kA TPN incomer MCCB with suitable large scale Ammeter, Voltmeter, phase indicator lamps, selector switches and metering chamber able to accommodate 1 No KPLC Three Phase Meter (TPN) and cut-out (TPN) c/w suitably rated three-phase surge diverter. The subboard shall be powder coated, IP54, modular type, sheet steel 14swg including testing, provision labeling the board complete with all fixing materials and accessories to Kenya Power approval as Power Technics or approved equivalent and with the following: i) 1No. 400 A TP+ N + E busbars ii) 1No. 300 A TP+ N Adjustable MCCB Incomer iii) 1 No. 160 A MCCB outgoing iv) 1 No. 100 A TP MCCB outgoing vii) 3 No. Blanked Spareways	1	No.		
1.02	EARTHING Earthing of Meterboard comprising of copper earth electrode of size 1500mm long and 15mm diameter enclosed by a concrete manhole of size 300X300X450 mm with removable concrete cover and a 38mm diameter PVC heavy gauge lead in duct and bonded to the boards using 16mm sq cable as per the latest IEEE Requirements.	1	Item		
1.02	SUB-MAIN POWER DISTRIBUTION 35mm ² 4Core PVC/5WA/PVC Copper cables in cable duct from Meterboard to DB A	50	LM		
1.09	FIREMAN'S SWITCH Fireman's switch circuit comprising of 3x2.5 mm ² Heat resistant single core PVC copper cables drawn in concealed 20mm HG PVC conduits complete with all fixing materials necessary to the Incomer.	1	No.		
1.10	Firemans switch as MENVIER or approved equivalent.	1	No.		
1.11	Water Booster pump power point comprising wiring in 3x6.0mm ² PVC-SC-CU cables in concealed PVC conduits	1	LM		
1.12	32A SPN isolator forabove item as CLIPSAL or approved equivalent.	1	No.		
	Total carried forward to the summary page				



Schedule No. 2: GROUND FLOOR

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>Supply, install, testing & commissioning of the following complete as specified. All cables shall be copper and shall be complete with cable glands, lugs and necessary termination kits.</u>				
	LIGHTING POINTS				
2.01	Lighting point wired in 3x1.5 mm ² single core PVC cables drawn in 20mm H.G. PVC conduits for:				
	a) one way switching	60	No		
	b) two way switching	54	No		
	c) Unswitched	10	No		
	LIGHTING FITTINGS				
2.02	10A Switch Plates flush mounted on walls as MK or approved equivalent.				
	a) 1 gang 1 way	11	No		
	b) 2 gang 1 way	2	No		
	c) 3 gang 1 way	2	No		
	d) 2 gang 2 way	2	No		
	e) 3 gang 2 way	2	No		
	f) Intermediate	5	No		
2.03	Light Fittings complete with all accessories and lamps as follows:				
	a) Standard Recessed LED 1200 X 600, 36W, coolday Panel Light as PHILLIPS or approved equivalent.(Type F2)	1	No		
	b) High-bay 84W LED PANEL c/w Detachable mounting system FOR double volume area as PHILLIPS Gentlespace Gen3 or approved equivalent.(Type H)	29	No		
	c) Standard Recessed LED 600 X 600 36W coolday Panel Light as PHILLIPS Coreline Panel or approved equivalent.(Type E)	15	No		
	d) Circular Recessed Ceiling Downlight 18W CORELINE as PHILLIPS for passageways (Type B)	6	No		
	e) Circular ceiling luminaire with die-cast aluminium 'starburst' base, opal polycarbonate diffuser and solid/slotted bezel in silver/white. 25W, As Thorn Lyric LED for entryways (Type B1)	8	No		
	e) Surface LED 1200 mm 18W batten Light as PHILLIPS or approved equivalent.(Type F1)	3	No		
	f) Ditto but coldproof.(Type CP)	2	No		
	g) Circular 18W Ceiling Light C/W integrated occupancy sensor as PHILLIPS LED or approved equivalent for Washrooms.(Type A)	17	No		
	h) Mirror 14w T5 light fitting as PHILIPS or equal and approved (Type M)	10	No		
	i) Circular wall luminaire with die-cast aluminium 'starburst' base, opal polycarbonate diffuser and solid/slotted bezel in silver/white. 2500 lumen output As Thorn Lyric LED. (Type WL)	4	No		
	k) Outdoor LED Bulk head Wall -mounted and vandal-resistant luminaire for external areas as Philips EnduraLED Bulkhead or approved equivalent (Type BL)	18	No		
	l) Self-contained single sided EXIT sign with 8W fluorescent lamp for non-maintained emergency lighting for 3 hour duration as THORN EF X3. (Type EXIT)	10	No		
	SOCKET OUTLET AND POWER POINTS				
2.04	13 Amps socket outlet points wired ring comprising of 3x2.5 mm sq. single core PVC copper cables drawn in concealed 25mm HG PVC conduits and power coated metal Trunking.	27	No.		
	Total carried forward to Next page				

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GROUND FLOOR CONT'D

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Balance B/ f Supply, install, test and commission the following :-				
2.05	13 Amps. Switched socket outlet with neon indicator as BG, CLIPSAL or approved equivalent				
	i) Single	17	No.		
	ii) Twin	10	No.		
2.06	Data/Telephone outlets points comprising of 20mm ² HG PVC conduits and complete with a draw wire.	10	No		
2.08	TV Outlet points wired with 75 Ohms coaxial cable drawn in concealed 20mm ² PVC HD conduit from housing unit to amplifier in	7	No		
2.09	Flat TV/coax single Ivory socket plate as MK or approved equivalent.	7	No		
2.1	DP power points comprising of 3 x 4.0 mm ² PVCI copper cables drawn in concealed in 32mm HG PVC conduits for kitchen (Average of 10metres)	2	No.		
2.11	32 Amps double pole switches with neon indicator as CLIPSAL or approved equivalent for item above.	2	No.		
2.12	Extract Fan power point comprising of 3 x 4.0mm ² PVCI copper cables drawn in concealed in 32mm HG PVC conduits.(Average of 10metres)	4	No.		
2.13	20 Amps double pole switches with neon indicator as CLIPSAL or approved equivalent for item above.	4	No.		
2.14	Sweep Fan power point comprising of 3 x 2.5mm ² PVCI copper cables drawn in concealed in 32mm HG PVC conduits.	11	No.		
2.15	Single Phase Isolator power point comprising of 3 x 6.0mm ² PVCI copper cables drawn in concealed in 32mm HG PVC conduits for AC (Average of 25metres)	2	No.		
2.16	SPN Isolator 20A with enclosure gauge 18 for item above.	2	No		
2.17	3 Phase Isolator power point comprising of 5 x 6.0mm ² PVCI copper cables drawn in concealed in 32mm HG PVC conduits for Kitchen Equipment (Average of 25metres)	3	No.		
2.18	32A TPN Isolator complete with enclosure gauge 18 for item above.	3	No		
	CONSUMER UNITS / DISTRIBUTION BOARDS				
2.19	300mm x 50mm perforated, steel, hot dip galvanised, cable tray for data cables complete with all accessories.	30	Lm		
2.20	150mm x 50mm deep two compartment metal trunking constructed from heavy gauge powder coated steel, and shall be complete with all accessories for coupling and earthing for power cables. The trunking shall be angular section, Allow for colour change to Architect's detail.	10	Lm		
	ii) Carry out bonding throughout the entire length of the trunking and connect to earthing.	1	Item		
2.21	12-way 160A DB surface mounted complete with integral isolator and lockable cover and all accessories excluding MCBs as Schneider	1	No		
	Total carried forward to Next page				



GROUND FLOOR CONT'D

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Balance B/ f				
	Supply, install, test and commission the following :-				
2.22	The following MCBs as Harvels or approved equivalent for item above.				
	i) 10A SP MCB	8	No		
	ii) 20A SP MCB	8	No		
	iii) 32A SP MCB	5	No		
	iv) 32A TPN MCB	3	No		
	v) Blanking Plate	6	No		
	<u>FIRE DETECTION AND ALARM SYSTEM.</u>				
	Supply, deliver, install and commission a complete Fire Detection and Alarm system, Analogue addressable type and in accordance with BS 5839 :2000, P2 and L2				
2.23	Photoelectric Heat/Smoke detector point completely wired in wired in 2x1.5mm ² heat resistant screened cables drawn in 20mmØ concealed HG PVC conduits including all accessories but excluding the Detector Unit.	34	No.		
2.24	Electronic Sounder and Beacon point completely wired in wired in 2x1.5mm ² heat resistant screened cables drawn in 20mmØ concealed HG PVC conduits including all accessories but excluding the Sounder and Beacon Unit.	3	No.		
2.25	Call point completely wired in wired in 2x1.5mm ² heat resistant screened cables drawn in 20mmØ concealed HG PVC conduits including all accessories but excluding the call unit.	6	No.		
2.26	Addressable Resettable call point incorporating Integral short circuit isolator and reset key as Menvier or Approved Equivalent	6	No.		
2.27	Addressable Electronic Fire Alarm sounder complete with Red Flashing beacon as MENVIER or approved equivalent.	3	No.		
2.28	Addressable optical smoke detector as Menvier MENVIER or equal and approved.	27	No.		
2.29	Addressable optical smoke beam detector with remote test feature complete with remote test switch with test key as Morlev MI-LPB2 or	1	No.		
2.30	Addressable photo thermal sensor as Menvier MENVIER or equal and approved.	7	No.		
2.31	Fire Detection & Alarm Panel point completely wired in wired in 3x2.5mm ² heat resistant screened cables drawn in 20mmØ concealed HG PVC conduits including all accessories but excluding the detector.	1	No.		
2.32	1 Loop Addressable fire detection and alarm panel complete with 72 hour stand by batteries, zone indicator lights, test and reset buttons and supervisory buzzer as Menvier or approved equivalent.	1	No.		
	<u>SECURITY & AUDIO SYSTEMS.</u>				
2.33	CCTV & Access Control outlets points comprising of 20mm ² HG PVC conduits concealed and complete with a draw wire.	10	No		
	Total carried forward to summary page				



Schedule No. 3: FIRST FLOOR

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>Supply, install, testing & commissioning of the following complete as specified. All cables shall be copper and shall be complete with cable glands, lugs and necessary termination kits.</u>				
	LIGHTING POINTS				
3.01	Lighting point wired in 3x1.5 mm ² single core PVC cables drawn in 20mm H.G. PVC conduits for:				
	a) one way switching	20	No		
	b) two way switching	12	No		
	c) Unswitched	3	No		
	LIGHTING FITTINGS.				
3.02	10A Switch Plates flush mounted on walls as MK or approved equivalent.				
	a) 1 gang 1 way	3	No		
	b) 2 gang 2 way	3	No		
3.03	Light Fittings complete with all accessories and lamps as follows:				
	a) Standard Recessed LED 600 X 600 36W coolday Panel Light as PHILLIPS Coreline Panel or approved equivalent. (Type E)	11	No		
	b) Circular Recessed Ceiling Downlight 18W CORELINE as PHILLIPS for passageways (Type B)	10	No		
	g) Circular 18W Ceiling Light C/W integrated occupancy sensor as PHILLIPS LED or approved equivalent for Washrooms. (Type A)	6	No		
	d) Mirror 14w TS light fitting as PHILIPS or equal and approved (Type M)	5	No		
	e) Self-contained single sided EXIT sign with 8W fluorescent lamp for non-maintained emergency lighting for 3 hour duration as THORN EF X3. (Type EXIT)	3	No		
	SOCKET OUTLET AND POWER POINTS				
3.04	13 Amps socket outlet points wired ring comprising of 3x2.5 mm sq. single core PVC copper cables drawn in concealed 25mm HG PVC conduits and power coated metal Trunking.	11	No.		
3.05	13 Amps. Twin Switched socket outlet with neon indicator as BG, CLIPSAL or approved equivalent	11	No.		
3.06	Data/Telephone outlets points comprising of 20mm ² HG PVC conduits and complete with a draw wire.	3	No		
3.07	TV Outlet points wired with 75 Ohms coaxial cable drawn in concealed 20mm ² PVC HD conduit from housing unit to amplifier in	2	No		
3.08	Flat TV/coax single Ivory socket plate as MK or approved equivalent.	2	No		
3.09	Extract Fan power point comprising of 3 x 4.0mm ² PVC copper cables drawn in concealed in 32mm HG PVC conduits. (Average of 10metres)	2	No.		
3.10	20 Amps double pole switches with neon indicator as CLIPSAL or approved equivalent for items above.	2	No.		
	Total carried forward to Next page				

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FIRST FLOOR CONT'D

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Balance B/ f Supply, install, test and commission the following :-				
3.11	Sweep Fan power point comprising of 3 x 4.0mm ² PVCI copper cables drawn in concealed in 32mm HG PVC conduits.	2	No.		
	<u>CONSUMER UNITS / DISTRIBUTION BOARDS</u>				
3.12	4-way 125A DB surface mounted complete with 100A integral isolator and lockable cover and all accessories excluding MCBs as Schneider	1	No		
3.13	The following MCBs as Harvels or approved equivalent for item above.				
	i) 10A 5P MCB	2	No		
	ii) 20A 5P MCB	2	No		
	iii) 32A 5P MCB	3	No		
	iv) Blanking Plate	6	No		
	<u>FIRE DETECTION AND ALARM SYSTEM</u>				
	Supply, deliver, install and commission a complete Fire Detection and Alarm system, Analogue addressable type and in accordance with BS 5839 :2000, P2 and L2				
3.14	Photoelectric Smoke detector point completely wired in wired in 2x1.5mm ² heat resistant screened cables drawn in 20mmØ concealed HG PVC conduits including all accessories but excluding the Detector Unit.	7	No.		
3.15	Electronic Sounder and Beacon point completely wired in wired in 2x1.5mm ² heat resistant screened cables drawn in 20mmØ concealed HG PVC conduits including all accessories but excluding the Sounder and Beacon Unit.	1	No.		
3.16	Call point completely wired in wired in 2x1.5mm ² heat resistant screened cables drawn in 20mmØ concealed HG PVC conduits including all accessories but excluding the call unit.	2	No.		
3.17	Addressable Resettable call point incorporating integral short circuit isolator and reset key as Menvier or Approved Equivalent	2	No.		
3.18	Addressable Electronic Fire Alarm sounder complete with Red Flashing beacon as MENVER or approved equivalent.	1	No.		
3.19	Addressable optical smoke detector as Menvier MENVER or equal and approved.	7	No.		
	<u>SECURITY & AUDIO SYSTEMS.</u>				
3.20	CCTV & Access Control outlets points comprising of 20mm ² HG PVC conduits concealed and complete with a draw wire.	5	No		
	Total carried forward to summary page				

Schedule No.4: LIGHTNING PROTECTION

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Supply, Install, Test and Commission as per BS 7671:2008 the following as described below: LIGHTNING PROTECTION				
4.01	25mmx3mm copper tape including copper saddles at 1500mm intervals and bonding to water tanks and other metal work in the roof, all as FURSE	80	LM		
4.02	Downward conductor comprising 25mm x 3 mm thick bare copper tape as FURSE	40	LM		
4.03	Copper air terminations (lightning arrestors) inclusive of base clamp and all fixing materials as FURSE	3	No.		
4.04	Test clamp as FURSE	4	No.		
	EARTHING.				
4.05	Earthing comprising of the following and any other necessary accessories:-				
	a) 15 mm x 1800 mm earth rod as FURSE cat. No. RB 105.	4	No.		
	b) 15 mm dia. Driving stud as FURSE cat.No. ST100.	4	No.		
	c) Rod to tape clamp as FURSE.	4	No.		
	d) Concrete inspection pit as FURSE cat. No.PT005. (or a well made 320mm x 320mm x 210 mm depth pit.)	4	No.		
	e) 25x3mm copper tape	20	LM		
	Total Amount Carried Forward to Summary Page				

Schedule No.5: CENTRALIZED ANTENNA SYSTEM

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>Supply, install, testing & commissioning of the following complete as specified. All cables shall be copper and shall be complete with cable glands, lugs and necessary termination kits.</u> <u>CENTRALIZED ANTENNA SYSTEM</u>				
5.01	Mast head High gain amplifier units.	1	No		
5.02	DSTV decoders complete with mounting brackets	1	No		
5.03	Satellite Receiver Dish for DSTV complete with mounting and installation	1	No		
5.04	8 Way splitter unit as Ellies or equivalent.	2	No		
5.05	16 SWG, (300 x 300 x 300) mm ³ galvanised steel draw box for TV works.	1	No		
5.06	13A high voltage guard as rollatec or approved equivalent	1	No		
5.07	Security lock box made of 16SWG steel sheet with auto lacquer finish for the equipment complete with Yale locks.	1	No		
	Total carried forward to the summary page				

COLLECTION PAGE

Item	Description	Kshs.
A	Schedule No.1: POWER SUPPLY	
B	Schedule No.2: GROUND FLOOR	
C	Schedule No.3: FIRST FLOOR	
D	Schedule No.4: LIGHTNING PROTECTION	
E	Schedule No.5: TV SYSTEM	
	TOTAL AMOUNT CARRIED TO SUMMARY PAGE	



BILL NO. 2 - DATA & CCTV WORKS

SCHEDULE 1: STRUCTURED CABLING - GROUND FLOOR

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Supply, Install, test and Commission the following				
	HORIZONTAL CABLING				
1.01	RJ45 cat 6 UTP (Dual) Data and voice outlets complete with faceplates and labelling system as Siemons or its equal and approved equivalent	20	No.		
1.02	3m RJ45- RJ45 Cat 6 UTP factory terminated patch cord as Siemons for use at workstation areas	20	No.		
1.03	1m, RJ45- RJ45 cat 6 UTP factory terminated patch cord as Siemons to be used in cabinet.	20	No.		
1.04	Cat 6 UTP 4-pair screened cable as Siemons pulled between cabinet and work stations.	1000	Lm.		
	CABINETS				
1.05	18U Wall/ground Mounted cabinet with low noise (low dB) fans and power outlet sockets, as described in particular specifications	1	No.		
1.06	24 port RJ45 cat 6 Data/Voice patch panel for UTP termination as Siemon.	1	No.		
1.07	Cable Manager	1	No.		
1.08	240V, 50Hz 1000VA rack mount APC Smart-UPS) un-interrupted power supply unit (UPS) with USB and Serial Port or equal and approved equivalent	1	No		
	ACTIVE COMPONENTS				
1.09	24 port full PoE+ Switch, modular uplink configuration, with Network Advantage software as Cisco Catalyst C9600 series or Approved equivalent	1	Item		
1.1	Wall mounted wireless Access point with POE support, with dual-band radios support up to 450 Mbps per radio to maximize capacity and coverage, Robust security including WPA2, 802.1X with secure authentication, 10/100/1000 Ethernet, with support for 802.3af PoE as CISCO Small Business Cat. No. 550/560 Wireless Access Point or equal and approved equivalent	4	No		
1.11	BACKBONE CABLING				
	8 core multimode fibre optic cable	50	Lm		
	SC-SC fibre patch cord Complete with connectors	1	No.		
	24 Port fibre optic patch panel	1	No.		
	SFP fibre modules as CISCO or approved equivalent	2	No.		
	TELEPHONE WIRING AND TELEPHONE INSTRUMENTS				
1.12	Standard Secretarial IP Enhanced network connectivity with Power over Ethernet as Cisco 7821-K9 IP Phone or equal and approved equivalent	4	No.		
	TOTAL CARRIED FORWARD TO COLLECTION PAGE				



SCHEDULE NO. 2: PROJECTION SYSTEM

Item	Description	Unit	Qty	Rate	Amount
	Supply, Install, Test and Commission the following				
2.01	LCD projector upto 300" display, 4000-lumen, XGA 1024x768 resolution, dual HDMI, Split-screen and multi-PC projection, as EPSON EB-2042U or approved equivalent	No.	1		
2.02	Electric projector screen 96" x 96"	No.	2		
2.03	Projector ceiling mount bracket	No.	1		
2.04	4way HDMI splitter	No.	1		
2.05	2xHDMI/VGA/RCA Termination socket	No.	2		
2.06	Any other items necessary to complete the installation satisfactorily. Please list and give quantity of the items a) HDMI Cables b) 10m Extension Cable with male & female connector c)	Lot	1		
TOTAL CARRIED FORWARD TO COLLECTION PAGE					

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SCHEDULE NO. 3: CCTV WORKS

Item	Description	Qty	Unit	Rate	Kshs.
	INDOOR INSTALLATION CAMERAS Supply, Install, Test and commission the following:				
3.01	Indoor 4 Megapixel Bullet Camera , as Wisenet QNO-7080R or approved equivalent.	1	No		
3.02	Indoor 4 Megapixel Dome Camera for double volume space as Wisenet XND-6081RV or approved equivalent.	12	No		
3.03	Outdoor 4 Megapixel Dome Camera as Wisenet QND-7080R or approved equivalent.	3	No		
3.04	Cat 6-E, 4 pair STP terminated in RJ 45 as appropriate and drawn in new conduits and trunking.	800	LM		
	CONTROL ROOM/SERVER ROOM				
3.05	16 Channel Input/Output Network Video recorder with minimum internal storage capacity of 2 terabyte as in the particular specifications of this document as Wisenet QRN-16205 or approved equivalent	1	No		
3.06	Cat 6, 4pair STP terminated in RJ45 as appropriate; drawn in conduit /trunking	100	M.		
3.07	LCD LED panel display 49",HDMI input, Component video input, composite video input, S-video input, VGA input,VGA output and composite video output.	1	No		
3.08	Installation, programming, testing and commissioning	1	Item		
3.09	Allow for any other items required to complete the installation to enable the system to function:- (i) (ii)				
	TOTAL CARRIED FORWARD TO COLLECTION PAGE				

COLLECTION PAGE

Item	Description	Kshs.
A	Schedule 1- Structured cabling works	
B	Schedule 2- Projection System	
C	Schedule 3 - CCTV WORKS	
D	Allow for Data Connection From a Client Appointed Service Provider	
	TOTAL AMOUNT CARRIED TO SUMMARY PAGE	



BILL NO.3: GENERATOR INSTALLATION WORKS

SCHEDULE 1 - GENERATING SET

Item	DESCRIPTION	Qty	Unit	RATE	KSHS
1.1	Supply, deliver to site, install, test and commission a prime rated 150KVA 3 phase, 415V, 50Hz diesel generating set with a continuous power factor of 0.8 lagging and as fully described in the particular specifications. The generator set is to be complete with a sound attenuated canopy and an integral base/belly daily service fuel tank with an operational running capacity of 8 hours.	1	No.		
1.2	Supply, deliver to site and install a steel exhaust pipe of not less than 14 SWG and of adequate diameter running from the generating set to the outside of the generator house	5	LM		
1.3	Connect the exhaust pipe above in item 1.2 using steel pipes of adequate diameter, and flexible piping off engine exhaust manifold complete with heavy duty silencer	Item			
1.4	Complete earthing of generating set to electrical engineer's approval (Inclusive of manhole with watertight cover)	Item			
1.5	Allow for training of client's staff on the operation and maintenance of the generating set.	Item			
SUB-TOTAL C/F TO COLLECTION PAGE					

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SCHEDULE 2- AMF CONTROL PANEL

Item	DESCRIPTION	Qty	Unit	RATE	KSHS
	Supply, deliver to site, install, test and commission the following:				
2.1	An electrical control panel complete with suitable rated incoming MCCBs and contactors for automatic change over operation and complete with all other control accessories as fully described in clauses 9.3 to 9.10 of the particular specifications	1	No.		
2.2	Suitable rated manual by-pass switch with clearly labeled NORMAL-OFF-BYPASS positions, and shall such be wired that when the switch is on either OFF or BYPASS position, the generator shall receive no signal to start	1	No.		
2.3	240V AC/12V DC mains power supply trickle battery charger as specified in clause 9.6 of specifications. The trickle charger shall charge the battery when the set is on IDLE mode, otherwise when the set is RUNNING, the battery shall be charged by the generator charger. Wiring shall be done such that the two chargers shall not operate at the same time.	1	No.		
2.4	12 volts battery as specified in clause 9.6 of the particular specifications	2	No.		
2.5	Armoured cables complete with glands and pvc sleeves:				
	(a) 95mm sq. 4CORE PVC/SWA/PVC copper cable	50	LM		
	(b) 2x2.5mm ² , 4 core, PVC/SWA/PVC copper cable	50	LM		
2.6	Interwire the control panel with the Mains LV board	Item	Item		
SUB-TOTAL C/F TO COLLECTION PAGE					

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SCHEDULE 3- RECOMMENDED SPARE PARTS AND LUBRICATORS

Item	DESCRIPTION	Qty	Unit	RATE	KSHS
	For the supply to the site of the following spare parts and lubricators to suit the set:				
3.1	Oil Filters	4	No.	}	
3.2	Air Filters	4	No.		
3.3	Fuel Filters	4	No.		
3.4	Set of Fan belts to suit the set	1	No.		
3.5	20 litre tins of engine oil of grade	1	No.		
3.6	2 kilogram tins grease of grade	4	No.	}	
3.7	10 litre plastic container of distilled water	4	No.		
3.8	Any other spare parts recommended by Tenderer ***				
	*The tenderer to fill in the Grade quality to be supplied				
	***The tenderer to fill in the details and price of items but the price not to be included in total carried forward to summary page				
SUB-TOTAL C/F TO COLLECTION PAGE					

CHIEF EXECUTIVE OFFICER
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AND DRUG ABUSE
P. O. Box 10774 - 00100
NAIROBI
TEL: 020 - 2721097

SCHEDULE 4 -TOOLS TO BE SUPPLIED WITH THE SET

Item	DESCRIPTION	Qty	Unit	RATE	KSH5
	For the supply to site of the following tools:				
4.1	Metal tool box with lock and two keys	1	No.	}	
4.2	Set of 8 No. Chrome vanadium ring spanners in sizes to suit the set	1	No.		
4.3	Set of 3 screwdrivers, 75mm, 200mm and 300mm plus one 200mm Philips type	1	No.		
4.4	- ditto -but open ended spanners	1	No.		
4.5	Set of feeler gauges	1	No.		
4.6	Grease gun to suit greasing points	1	No.		
4.7	Oil can, trigger type	1	No.		
4.8	Any other special tools which the tenderer recommends should be purchased as an optional:*	1	No.	}	
	NOTE* Tenderer should give detail and prices of item 4.8 but the price not to be included in total carried forward.				
SUB-TOTAL C/F TO COLLECTION PAGE					



SCHEDULE 5 – AUXILIARY FUEL TANK

Item	DESCRIPTION	Qty	Unit	RATE	KSHS
5.1	Supply, deliver to site and install, to the approval of the project manager, and connect to the daily service base/belly fuel tank, a 2000 Litres capacity auxiliary fuel tank with level indicator. The tank is to be CYLINDRICAL complete with stand and all interconnecting G.I pipe work as specified in this document	1	No		
5.2	Supply, install, test and commission a 240V AC Fuel Pump complete with a suitable rated motor DOL starter, all control accessories and G. I piping	Item	Item		
5.2	Supply, install, test and commission a manually operated fuel pump complete with all interconnecting accessories and G. I piping	Item	Item		
5.3	Supply and deliver to site generator diesel	2000	Ltrs		
SUB-TOTAL C/F TO COLLECTION PAGE					

COLLECTION PAGE

Item	Description	Qty	Unit	RATE	Amount
1	Schedule 1 - Generating Set				
2	Schedule 2 - AMF Panel				
3	Schedule 3 - Recommended Spare Parts and Lubricators				
4	Schedule 4 - Tools to be Supplied with the Set				
5	Schedule 5 - Auxiliary Fuel Tank				
6	Provisional sum for Fluctuations				300,000
TOTAL AMOUNT CARRIED FORWARD TO SUMMARY PAGE					

Elec-G/18



BILL No. 4 PROJECT MANAGERS STATIONERY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>Supply, install, testing&commissioning of the following complete as specified. All cables shall be copper and shall be complete with cable glands, lugs and necessary termination kits.</u>				
1.01	HP Laserjet print cartridges 53A	5	No		
1.02	Photocopying papers size A4. 80g/cm3 white - 500 sheets	5	Ream		
1.03	Letter head quality paper as classic or equal and approved - blue 80g/cm3	5	Ream		
1.04	A4 size, Translucent PVC covers as KATKO or approved equivalent, 100 sheets blue in colour and 0.2mm thick	3	pkts		
1.05	A4 size, Embossed covers as KATKO or approved equivalent, 100 sheets blue in colour.	3	pkts		
1.06	650 VA Backup UPS as APC or approved equivalent	2	No.		
1.05	Laptop 9th generation intel core i7 processor, 16GB DDR4 RAM, ITB HDD + 256GB PCIe SSD Storage, 17.3" Full HD 1080p Display, NVIDIA GeForce GTX 1660 Ti 6GB GDDR6 as HP or approved equivalent	1	No		
	Total Carried Forward To The Summary page				



MAIN SUMMARY PAGE

ITEM	DESCRIPTION	AMOUNT
1.00	Bill No. 1: ELECTRICAL INSTALLATION WORKS	
2.00	Bill No. 2: DATA & CCTV WORKS	
3.00	Bill No. 3: GENERATOR INSTALLATION WORKS	
4.00	Bill No.4:- STATIONERY	
5.00	On handing over of the site to the contractor, the contractor shall be required to avail on site an LED lighting TEST KIT which shall remain on site during the entire contract period. The KIT shall be used on site to test, in the presence of the Project Manager's representative, all the LED lamps before installation. The KIT shall test the following parameters amongst others: a) LED lamp power factor b) LED lamp real power (KW) c) LED lamp active power (KVA) d) LED lamp reactive power (KVAr) e) Power supply frequency (HZ) f) Power supply voltage (V) F) LED lamp luminous output (Lumens). Upon completion and testing of the works to the satisfaction of the Project Manager, the TEST KIT shall revert to the Project Manager.	
6.00	Allow for 4 sets of 'AS INSTALLED DRAWINGS'	
7.00	Provisional sum for KPLC Connection	1,000,000
8.00	Provisional sum for Relocation of Existing KPLC Lines	1,000,000
	TOTAL AMOUNT CARRIED FORWARD TO GRAND SUMMARY	

TOTAL AMOUNT IN WORDS

.....

TENDERER'S NAME & STAMP

.....

SIGNATURE

DATE

P.I.N No.....

V.A.T CERTIFICATE No.....

WITNESS.....

ADDRESS.....

SIGNATURE OF WITNESS.....

DATE

Elec-G/20



SECTION D:

GENERAL MECHANICAL SPECIFICATIONS

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 18774 - 00153
NAIROBI
TEL: 020 - 2721997

SECTION D

GENERAL MECHANICAL SPECIFICATION

<u>CLAUSE</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
2.01	GENERAL	D-1
2.02	QUALITY OF MATERIALS	D-1
2.03	REGULATIONS AND STANDARDS	D-1
2.04	ELECTRICAL REQUIREMENTS	D-1
2.05	TRANSPORT AND STORAGE	D-2
2.06	SITE SUPERVISION	D-2
2.07	INSTALLATION	D-2
2.08	TESTING	D-2
2.09	COLOR CODING	D-4
2.10	WELDING	D-4



GENERAL MECHANICAL SPECIFICATION

2.01 General

This section specifies the general requirement for plant, equipment and materials forming part of the Sub-contract Works and shall apply except where specifically stated elsewhere in the Specification or on the Contract Drawings.

2.02 Quality of Materials

All plant, equipment and materials supplied as part of the Sub-contract Works shall be new and of first class commercial quality, shall be free from defects and imperfections and where indicated shall be of grades and classifications designated herein.

All products or materials not manufactured by the Sub-contractor shall be products of reputable manufacturers and so far as the provisions of the Specification is concerned shall be as if they had been manufactured by the Sub-contractor.

Materials and apparatus required for the complete installation as called for by the Specification and Contract Drawings shall be supplied by the Sub-contractor unless mention is made otherwise.

Materials and apparatus supplied by others for installation and connection by the Sub-contractor shall be carefully examined on receipt. Should any defects be noted, the Sub-contractor shall immediately notify the Engineer.

Defective equipment or that damaged in the course of installation or tests shall be replaced as required to the approval of the Engineer.

2.03 Regulations and Standards

The Sub-contract Works shall comply with the current editions of the following:

- a) The Kenya Government Regulations.
- a) The United Kingdom Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.
- b) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
- c) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
- e) The Local Council By-laws.
- f) The Electricity Supply Authority By-laws.
- g) Local Authority By-laws.
- h) The Kenya Building Code Regulations.
- i) The Kenya Bureau of Standards

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2.04 Electrical Requirements

Plant and equipment supplied under this Sub-contract shall be complete with all necessary motor starters, control boards, and other control apparatus. Where control panels incorporating several starters are supplied they shall be complete with a main isolator.

The supply power up to and including local isolators shall be provided and installed by the Electrical Sub-contractor. All other wiring and connections to equipment shall form part of this Sub-contract and be the responsibility of the Sub-contractor.

The Sub-contractor shall supply three copies of all schematic, cabling and wiring diagrams for the Engineer's approval.

The starting current of all electric motors and equipment shall not exceed the maximum permissible starting currents described in the Kenya Power and Lighting Company (KPLC) By-laws.

All electrical plant and equipment supplied by the Sub-contractor shall be rated for the supply voltage and frequency obtained in Kenya, that is 415 Volts, 50Hz, 3-Phase or 240Volts, 50Hz, 1-phase.

Any equipment that is not rated for the above voltages and frequencies shall be rejected by the Engineer.

2.05 Transport and Storage

All plant and equipment shall, during transportation be suitably packed, crated and protected to minimise the possibility of damage and to prevent corrosion or other deterioration.

On arrival at site all plant and equipment shall be examined and any damage to parts and protective priming coats made good before storage or installation. Adequate measures shall be taken by the Sub-contractor to ensure that plant and equipment do not suffer any deterioration during storage.

Prior to installation all piping and equipment shall be thoroughly cleaned.

If, in the opinion of the Engineer any equipment has deteriorated or been damaged to such an extent that it is not suitable for installation, the Sub-contractor shall replace this equipment at his own cost.

2.06 Site Supervision

The Sub-contractor shall ensure that there is an English-speaking supervisor on the site at all times during normal working hours.

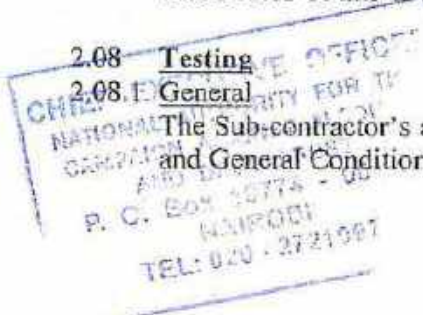
2.07 Installation

Installation of all special plant and equipment shall be carried out by the Sub-contractor under adequate supervision from skilled staff provided by the plant and equipment manufacturer or his appointed agent in accordance with the best standards of modern practice and to the relevant regulations and standards described under Clause 2.03 of this Section.

2.08 Testing

2.08.1 General

The Sub-contractor's attention is drawn to Part 'C' Clause 1.38 of the "Preliminaries and General Conditions".



2.08.2 Material Tests

All material for plant and equipment to be installed under this Sub-contract shall be tested, unless otherwise directed, in accordance with the relevant B.S Specification concerned.

For materials where no B.S. Specification exists, tests are to be made in accordance with the best modern commercial methods to the approval of the Engineer, having regard to the particular type of the materials concerned.

The Sub-contractor shall prepare specimens and performance tests and analyses to demonstrate conformance of the various materials with the applicable standards.

If stock material, which has not been specially manufactured for the plant and equipment specified is used, then the Sub-contractor shall submit satisfactory evidence to the Engineer that such materials conform to the requirements stated herein in which case tests of material may be partially or completely waived.

Certified mill test reports of plates, piping and other materials shall be deemed acceptable.

2.08.3 Manufactured Plant and Equipment – Work Tests

The rights of the Engineer relating to the inspection, examination and testing of plant and equipment during manufacture shall be applicable to the Insurance Companies or Inspection Authorities so nominated by the Engineer.

The Sub-contractor shall give two week's notice to the Engineer of the manufacturer's intention to carry out such tests and inspections.

The Engineer or his representative shall be entitled to witness such tests and inspections. The cost of such tests and inspections shall be borne by the Sub-contractor.

Six copies of all test and inspection certificates and performance graphs shall be submitted to the Engineer for his approval as soon as possible after the completion of such tests and inspections.

Plant and equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Sub-contractor's own risk and should the test and inspection certificates not be approved, new tests may be ordered by the Engineer at the Sub-contractor's expense.

2.08.4 Pressure Testing

All pipe work installations shall be pressure tested in accordance with the requirements of the various sections of this Specification. The installations may be tested in sections to suit the progress of the works but all tests must be carried out before the work is buried or concealed behind building finishes. All tests must be witnessed by the Engineer or his representative and the Sub-contractor shall give 48 hours notice to the Engineer of his intention to carry out such tests.

Any pipe work that is buried or concealed before witnessed pressure tests have been carried out shall be exposed at the expense of the Sub-contractor and the specified tests shall then be applied.

The Sub-contractor shall prepare test certificates for signature by the Engineer and shall keep a progressive and up-to-date record of the section of the work that has been tested.

2.09 Colour Coding

Unless stated otherwise in the Particular Specification all pipe work shall be color coded in accordance with the latest edition of B.S 1710 and to the approval of the Engineer or Architect.

2.10 Welding

2.10.1 Preparation

Joints to be made by welding shall be accurately cut to size with edges sheared, flame cut or machined to suit the required type of joint. The prepared surface shall be free from all visible defects such as lamination, surface imperfection due to shearing or flame cutting operation, etc., and shall be free from rust scale, grease and other foreign matter.

2.10.2 Method

All welding shall be carried out by the electric arc processing using covered electrodes in accordance with B.S. 639.

Gas welding may be employed in certain circumstances provided that prior approval is obtained from the Engineer.

2.10.3 Welding Code and Construction

All welded joints shall be carried out in accordance with the following Specifications:

a) Pipe Welding

All pipe welds shall be carried out in accordance with the requirements of B.S.806.

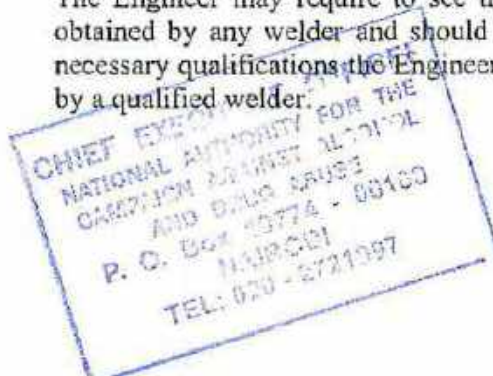
b) General Welding

All welding of mild steel components other than pipework shall comply with the general requirements of B.S. 1856.

2.10.4 Welders Qualifications

Any welder employed on this Sub-contractor shall have passed the trade tests as laid down by the Government of Kenya.

The Engineer may require to see the appropriate certificate obtained by any welder and should it be proved that the welder does not have the necessary qualifications the Engineer may instruct the Sub-contractor to replace him by a qualified welder.



SECTION E

PARTICULAR SPECIFICATIONS

FOR

PLUMBING AND DRAINAGE



PARTICULAR PLUMBING AND DRAINAGE SPECIFICATIONS

CLAUSE No.	DESCRIPTION	PAGE
3.1	General.....	E-1
3.2	Materials and standards.....	E-1
3.2.1	Pipework and Fittings.....	E-1
3.2.2	Valves.....	E-3
3.2.3	Waste Fitment Traps.....	E-4
3.2.4	Pipe Supports.....	E-4
3.2.5	Sanitary Appliances.....	E-6
3.2.6	Pipe Sleeves.....	E-6
3.3	Installation.....	E-6
3.3.1	General.....	E-6
3.3.2	Above Ground Installation.....	E-6
3.4	Testing Inspection.....	E-8
3.4.1	Site Tests – Pipework Systems.....	E-8
3.4.2	Site Test – Performance.....	E-8
3.5	Sterilisation of Hot and Cold Water System.....	E-9



PARTICULAR SPECIFICATIONS FOR PLUMBING AND DRAINAGE

3.1 GENERAL

This section specifies the general requirements for plant, equipment and materials forming part of the plumbing and drainage installations.

3.2 MATERIALS AND STANDARDS

3.2.1 Pipework and Fittings

Pipework materials are to be used as follows:

a) Galvanized Steel Pipework

Galvanized steel pipe work up to 65mm nominal bore shall be manufactured in accordance with B.S. 1387 Medium Grade, with tapered pipe threads in accordance with B.S. 21. All fittings shall be malleable iron and manufactured in accordance with B.S. 143.

Pipe joints shall be screwed and socketed and sufficient coupling unions shall be allowed so that fittings can be disconnected without cutting the pipe. Running nipples and long screws shall not be permitted unless exceptionally approved by the Engineer.

Galvanized steel pipe work, 80mm nominal bore up to 150mm nominal bore shall be manufactured to comply in all respects with the specification for 65mm pipe, except that screwed and bolted flanges shall replace unions and couplings for the jointing of pipes to valves and other items of plant. All flanges shall comply with the requirements of B.S. 10 to the relevant classifications contained hereinafter under Section 'C' of the Specification.

Galvanizing shall be carried out in accordance with the requirements of B.S. 1387 and B.S. 143 respectively.

b) Copper Tubing

All copper tubing shall be manufactured in accordance with B.S. 2871 from C.160 'Phosphorous De-oxidized Non-Arsenical Copper' in accordance with B.S. 1172.

Pipe joints shall be made with soldered capillary fittings and connections to equipment shall be with compression fittings manufactured in accordance with B.S. 864.

Short copper connection tubes between galvanized pipe work and sanitary fittings shall not be used because of the risk of galvanic action.

If, as may occur in certain circumstances, it is not possible to make the connection in any way than the use of copper tubing, then a brass straight connector shall be positioned between the galvanized pipe and the copper tube in order to prevent direct contact.

c) **P.V.C. (Hard) Pressure Pipes and Fittings**

All P.V.C. pipes and fittings shall be manufactured in accordance with B.S. 3505: 1968.

Joining

The method of joining to be employed shall be that of solvent welding, using the pipe and manufacturer's approved cement. Seal ring joint shall be introduced where it is necessary to accommodate thermal expansion.

Testing

Pipelines shall be tested in sections under an internal water pressure normally one and a half times the maximum allowable working pressure of the class of pipe used. Testing shall be carried out as soon as practical after laying and when the pipeline is adequately anchored. Precautions shall be taken to eliminate all air from the test section and to fill the pipe slowly to avoid risk of damage due to surge.

d) **A.B.S. Waste System**

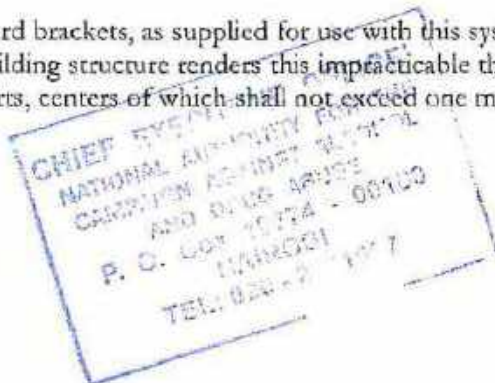
Where indicated on the Drawings and Schedules, the Sub-contractor shall supply and fix A.B.S. waste pipes and fittings.

The pipes, traps and fittings shall be in accordance with the relevant British Standards, including B.S. 3943, and fixed generally in accordance with manufacturer's instructions and B.S. 5572: 1978.

Joining of pipes shall be carried out by means of solvent welding, the manufacturer's instructions and B.S. 5572: 1978.

Joining of pipes shall be carried out by means of solvent welding. The manufacturer's recommended method of joint preparation and fixing shall be followed.

Standard brackets, as supplied for use with this system, shall be used wherever possible. Where the building structure renders this impracticable the Sub-contractor shall provide purpose made supports, centers of which shall not exceed one meter.



Expansion joints shall be provided as indicated. Supporting brackets and pipe clips shall be fixed on each side of these joints.

e) PVC Soil System

The Sub-contractor shall supply and fix PVC soil pipes and fittings as indicated on the Drawings and Schedules.

Pipes and fittings shall be in accordance with relevant British Standards, including B.S. 4514 and fixed to the manufacturer's instructions and B.S. 5572.

The soil system shall incorporate synthetic rubber gaskets as provided by the manufacturer whose fixing instructions shall be strictly adhere to.

Connections to WC pans shall be effected by the use of a WC connector, gasket and cover, fixed to suit pan outlet.

Suitable supporting brackets and pipe clips shall be provided at maximum of one metre centres.

The Sub-contractor shall be responsible for the joint into the Gully Trap on Drain as indicated on the Drawings.

3.2.2 Valves

a) Draw-off Taps and Stop Valves (Up to 50mm Nominal Bore)

Draw-off taps and valves up to 50mm nominal bore, unless otherwise stated or specified for attachment or connection to sanitary fitment shall be manufactured in accordance with the requirements of B.S.1010.

b) Gate Valves

All gate valves 80mm nominal bore and above, other than those required for fitting to buried water mains shall be of cast iron construction, in accordance with the requirements of B.S. 3464. All gate valves required for fitting to buried water mains shall be of cast iron construction in accordance with the requirements of B.S.1218.

All gate valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S. 1952.

The pressure classification of all valves shall depend upon the pressure conditions pertaining to the site of works.

c) Globe Valves

All globe valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S.3061.

The pressure classification of all globe valves shall depend upon the pressure conditions pertaining to the site of works.

3.2.3 Waste Fitment Traps

a) Standard and Deep Seal P & S Traps

Where standard or deep seal traps are specified they shall be manufactured in suitable non-ferrous materials in accordance with the full requirements of B.S. 1184.

In certain circumstances, cast iron traps may be required for cast iron baths and in these instances bath traps shall be provided which are manufactured in accordance with the full requirements of B.S.1291.

b) Anti-Syphon Traps

Where anti-syphon traps are specified, these shall be similar or equal to the range of traps manufactured by Greenwood and Hughes Limited, Deacon Works Littlehampton, Sussex, England.

The trade name for traps manufactured by this company is 'Grevak'.

3.2.4 Pipe Supports

a) General

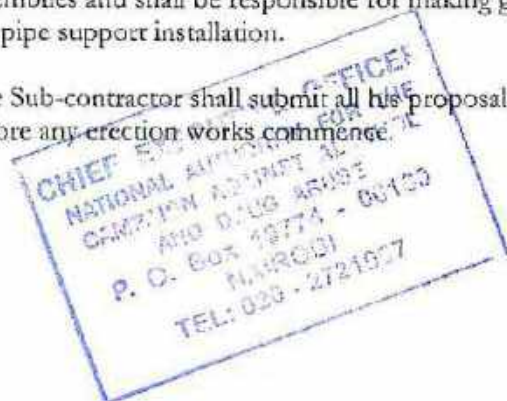
This sub-clause deals with pipe supports securing pipes to the structure of buildings for above ground application.

The variety and type of support shall be kept to a minimum and their design shall be such as to facilitate quick and secure fixings to metal, concrete, masonry or wood.

Consideration shall be given, when designing supports, to the maintenance of desired pipe falls and the restraining of pipe movements to a longitudinal axial direction only.

The Sub-contractor shall supply and install all steelwork forming part of the pipe support assemblies and shall be responsible for making good damage to builders work associated with the pipe support installation.

The Sub-contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection works commence.



b) Steel and Copper Pipes and Tubes

Pipe runs shall be secured by clips connected to pipeangers, wall brackets, or trapeze type supports. 'U' bolts shall not be used as a substitute for pipe clips without the prior approval of the Engineer.

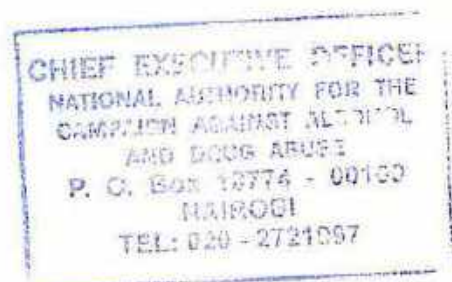
An approximate guide to the maximum permissible supports spacing in metres for steel and copper pipe and tube is given in the following table for horizontal runs.

Size Nominal Bores	Copper Tube to B.S. 659	Steel Tube to B.S. 1387
15mm	1.25m	2.0m
20mm	2.0m	2.5m
25mm	2.0m	2.5m
32mm	2.5m	3.0m
40mm	2.5m	3.0m
50mm	2.5m	3.0m
65mm	3.0m	3.5m
80mm	3.0m	3.5m
100mm	3.0m	4.0m
125mm	3.0m	4.5m
150mm	3.5m	4.5m

The support spacing for vertical runs shall not exceed one and a half times the distances given for horizontal runs.

c) Expansion Joints and Anchors

Where practicable, cold pipework systems shall be arranged with sufficient bends and changes of direction to absorb pipe expansion providing that the pipe stresses are contained within the working limits prescribed in the relevant B.S. specification.



Where piping anchors are supplied, they shall be fixed to the main structure only. Details of all anchor design proposals shall be submitted to the Engineer for approval before erection commences.

The Sub-contractor when arranging his piping shall ensure that no expansion movements are transmitted directly to connections and flanges on pumps or other items of plant.

The Sub-contractor shall supply flexible joints to prevent vibrations and other movements being transmitted from pumps to piping systems or vice versa.

3.2.5 Sanitary Appliances

All sanitary appliances supplied and installed as part of the Sub-contract works shall comply with the general requirements of B.S. Code of Practice 305 and the particular requirements of the latest B.S. Specifications.

3.2.6 Pipe Sleeves

Main runs of pipework are to be fitted with sleeves where they pass through walls and floors. Generally the sleeves shall be of P.V.C. except where they pass through the structure, where they shall be mild steel. The sleeves shall have 6mm – 12mm clearance all around the pipe or for insulated pipework all around the installation. The sleeve will then be packed with slag wool or similar.

3.3 INSTALLATION

3.3.1 General

Installation of all pipework, valves, fittings and equipment shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The Sub-contractor shall be responsible to the Main Contractor for ensuring that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

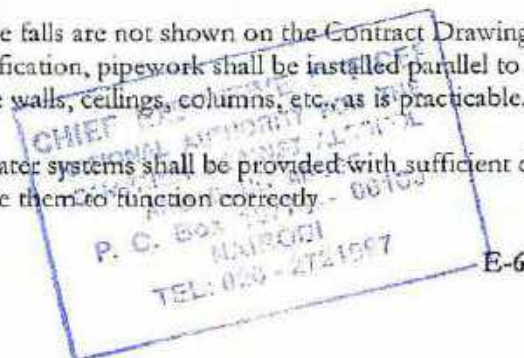
3.3.2 Above Ground Installation

a) Water Services

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

Where falls are not shown on the Contract Drawings or stated elsewhere in the Specification, pipework shall be installed parallel to the lines of the buildings and as close to the walls, ceilings, columns, etc., as is practicable.

All water systems shall be provided with sufficient drain points and automatic air vents to enable them to function correctly.



Valves and other user equipment shall be installed with adequate access for operation and maintenance. Where valves and other operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach from a small step ladder, extension spindles with floor or wall pedestals shall be provided.

Screwed piping shall be installed with sufficient number of unions to facilitate easy removal of valves and fittings, and to enable alterations of pipework to be carried out without the need to cut the pipe.

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

All screwed joints to piping and fittings shall be made with P.T.F.E. tape.

The test pressure shall be maintained by the pump for about one hour and if there is any leakage, it shall be measured by the quantity of water pumped into the main in that time. A general leakage of 4.5 litres per 25mm of diameter, per 1.6 kilometres per 24 hours per 30 metres head, may be considered reasonable but any visible individual leak shall be repaired.

b) Sanitary Services

Soil, waste and vent pipe system shall be installed in accordance with the best standard of modern practice as described in B.S. 5572 to the approval of the Engineer.

The Sub-contractor shall be responsible for ensuring that all ground waste fittings are discharged to a gully trap before passing to the sewer via a manhole.

The Sub-contractor shall provide all necessary rodding and inspection facilities within the draining system in positions where easy accessibility is available.

Where a branch requires rodding facilities in a position to which normal access is unobtainable, then that branch shall be extended so as to provide a suitable purpose made rodding eye in the nearest adjacent wall or floor to which easy access is available.

The vent stacks shall terminate above roof level and where stack passes through roof, a weather skirt shall be provided. The Sub-contractor shall be responsible for sealing the roof after installation of the stacks.

The open end of each stack shall be fitted with a plastic coated or galvanised steel wire guard.

Access for rodding and testing shall be provided at the foot of each stack.

c) Sanitary Appliances

All sanitary appliances associated with the Sub-contract works shall be installed in accordance with the best standard of modern practice as described in C.P. 305 to the approval of the Engineer.

1.1. TESTING AND INSPECTION

1.4.1 Site Tests – Pipework Systems

a) Above Ground Internal Water Services Installation

All water service pipe system installed above ground shall be tested hydraulically for a period of one hour to not less than one and half times to design working pressure.

If preferred, the Sub-contractor may test the pipelines in sections. Any such section found to be satisfactory need not be the subject of a further test when system has been completed, unless specifically requested by the Engineer.

During the test, each branch and joint shall be examined carefully for leaks and any defects revealed shall be made good by the Sub-contractor and the section re-tested.

The Sub-contractor shall take all necessary precautions to prevent damage occurring to special valves and fittings during the tests. Any item damaged shall be repaired or replaced at the Sub-contractor's expenses.

b) Above Ground Soil Waste and Ventilation System

All soil, waste and ventilating pipe system forming part of the above ground installation, shall be given appropriate test procedures as described in B.S. 5572, 1972.

Smoke tests on above ground soil, waste and ventilating pipe system shall not be permitted.

Pressure tests shall be carried out before any work which is to be concealed is finally enclosed.

In all respects, tests shall comply with the requirements of B.S. 5572.

3.4.2 Site Test – Performance

Following satisfactory pressure test on the pipework system operational tests shall be carried out in accordance with the relevant B. S. Code of practice on the systems as a whole to establish that special valves, gauges, control, fittings, equipment and plant are functioning correctly to the satisfaction of the Engineer.

All hot water pipework shall be installed with pre-formed fibre glass lagging to a thickness of 25mm where the pipe runs above a false ceiling or in areas where the ambient temperature is higher than normal with the result that pipe "sweating", due to condensation will cause nuisance.

All lagged pipes which run in a visible position after erection shall be given a canvas cover and prepared for painting as follows:



- i) Apply a coating of suitable filler until the canvas weave disappears and allow to dry.
- ii) Apply two coats of an approved paint and finish in suitable gloss enamel to colors approved by the Engineer.

All lagging for cold and hot water pipes erected in crawlways, ducts and above false ceiling which after erection are not visible from the corridors of rooms, shall be covered with a reinforced aluminium foil finish banded in colours to be approved by the Engineer.

In all respects, unless otherwise stated, the hot and cold water installation shall be carried out in accordance with the best standard of modern practice and described in C.P.342 and C.P.310 respectively to the approval of the Engineer.

The test pressure shall be applied by means of a manually operated test pump or, in the case of long main or mains of large diameter, by a power driven test pump which shall not be left unattended. In either case precautions shall be taken to ensure that the required pressure is not exceeded.

Pressure gauges should be recalibrated before the tests.

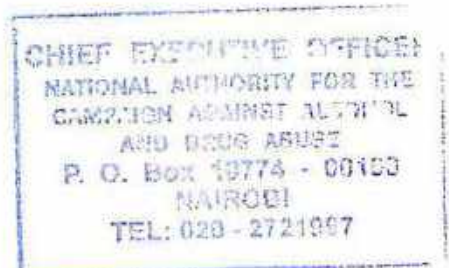
The Sub-contractor shall be deemed to have included in his price for all test pumps, and other equipment required under this specification.

The test pressure shall be one and a half times the maximum working pressure except where a pipe is manufactured from a material for which the relevant B.S. specification designates a maximum test pressure.

3.5 STERILISATION OF COLD WATER SYSTEM

All water distribution system shall be thoroughly sterilised and flushed out after the completion of all tests and before being fully commissioned for handover.

The sterilisation procedures shall be carried out by the Sub-contractor in accordance with the requirements of B.S. Code of Practice 301, Clause 409 and to the approval of the Engineer.



SECTION G

PARTICULAR SPECIFICATIONS

FOR

KITCHEN EQUIPMENT

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
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NAIROBI
TEL: 020 - 2721007

PARTICULAR SPECIFICATIONS FOR KITCHEN EQUIPMENT

The specifications cover the supply, delivery and installation of various kitchen equipment as shown on contract drawing.

1. High pressure gas burners:

- High pressure complete with aeration Control
- Heavy duty cast iron pan support
- 2 rings heavy duty burners, mounted on a stainless steel stand with heavy duty cast iron pan support
- Stainless steel removable drip tray in heavy Stainless steel frame Low and high flame control knob
- Power 36 Kw

Size 900x900x720mm

2. Stockpot Stand

1-burner L.P. Gas heated stockpot stand complete with: -

- Exterior satin finish 18/10 stainless steel, 1.6mm thick.
 - One concentric ring cast iron burner independently controlled complete with a flame failure device.
 - Stainless steel spillage tray, 0.8mm thick.
 - Enamelled cast iron pan supports.
 - Adjustable legs.
- The unit shall have a rating of at least 47,000 BTU/H with external dimensions of 600 x 600 x 600mm high.

3. Solid Top Electric Cooking Range

Four-burner plate electrically heated solid top cooking range complete with

- Exterior satin finish 18/10 stainless steel, 1.6mm thick.
- 3Kw radiant plates of size 300 x 300 mm with built in thermostats
- 5 positions control switches for the plates.
- "Power on" indicator light.

The unit shall have an electrically heated thermally insulated oven as follows: -

- Oven heating elements positioned at the top and under the oven base plate with total loading of 6kw.
- Thermostatically controlled oven temperature to range from 500 C- 3500C with five settings.
- Indicator lamp to show mains on.
- Double-skinned counter balanced door insulated with glass wool.
- 1 No. Chromium plated oven shelf. There shall be three levels for shelf setting.
- Adjustable legs.

The range and oven shall have a total rating of 18 KW at 415V, 50 HZ with external dimensions of 900 x 900 x 800mm high.

Ditto but 2No heating element and table top 6kw at 240V.

4. Free Standing Gas Lava Grill

As CHIEFTAIN, freestanding gas lava grill; Size: 800x900x850mm

Model: CLG-9 or equivalent



5. 100 Litres Non tilting Gas Heated Boiling Pan

Stainless steel boiling pan double jacketed complete with steam release valve, steam pressure gauge and water supply

A cylindrical gas-heated tilting boiling pan of capacity 100Litres (30Gallons) directly heated and constructed as follows:

- Satin finished 18/10 stainless steel external plating and well both 1.6mm thick.
- Satin finished 18/10 stainless steel spring balanced lid with handle.
- 32mm outlet with tap for discharge.
- Removable vegetable basket.
- Boiling pan mounted on a sturdy stainless steel frame with manual worm and wheel tilting mechanism with heat resistant handle.
- It shall have a Safety device for switching off burner during tilting of pan.
- Cast iron ring burners with Automatic ignition device, pilot flame and flame failure protection device.
- Limit thermostat with manual resetting
- Glass wool thermal insulation of combustion chamber.
- Adjustable stainless steel legs.
- Water supply connections.

All as "MBM of Italy" or approved equivalent.

It shall be the responsibility of the tenderer to construct a 150mm thick concrete plinth for the equipment

6. Electric Heated Tilting Pan

Directly heated Electric tilting pan with pan capacity 100litres

It shall be constructed as follows:

- Exterior surface finish 18/10 stainless steel, minimum 2mm thick
- 18/10 stainless steel counter balanced lid with helicoidal spring, shaped to assist in containing condensation within the pan. Lid shall have heat resistant handles.
- Pan in 18/10 stainless steel with stainless steel thermal diffusion bottom and shaped front side for easy discharge of oil.
- Robust Manual worm and wheel tilting mechanism with heat resistant handle
- A water spout with tap at front of appliance
- Thermostatically controlled armoured stainless steel elements fixed on bottom of pan
- Safety device for switching off burner during lifting of pan
- High temperature limit thermostat with manual reset
- Signal lamps for indicating electricity ON.
- Adjustable Stainless steel feet

The total rating of unit shall be 18Kw elements and suitable for 415V, 50 HZ or 240V 50Hz supply with proper earthing, with external dimensions of 800 x900x 850mm high Power shall be supplied through insulated heat resistant cables. It shall be as Chieftain CETBP model or equivalent approved.

7. ELECTRIC DEEP FAT FRYER

ELECTRIC DEEP FAT FRYER, F-E9221 Fryers are designed to deep fry large amounts of product (chips, croquettes, different types of dredging's, etc.). 2 mm stainless AISI-304 steel top with rounded edges for easy cleaning. Laser cut and automatic welding for a perfect adjustment of sides between modules with square angle finish. Number of wells: 2. Well capacity: 21 litres. Standard equipment: Four 132x338x132 mm baskets. Well integrated in the top, with cool area at the bottom. This helps to maintain oil properties and quality for a longer time. Heating by means of AISI 304 stainless steel electrical resistances inside the well. They can be tilted more than 90° for a perfect cleaning. High power/litre rate: 0.857 kW per litre. Thermostat for temperature control (between 60 and 200°C). Safety thermostat. Oil discharge through robust and reliable high temperature resistant ball tap. Fitted with independent lids for each well. Basket drainage support at the back of the well. Water-tight and protecting support controls.

High temperature protector for the chimney made of enamelled cast iron. Front access to components. According to European standards for components and panels temperature, efficiencies and combustion, and sanitary regulations (EN-60335 and EN-203) IPX5 grade water protection equipment. Maximum power: 36.0 kW. Dimensions: 800 x 930 x 850 mm.

8. DOUBLE BOWL DOUBLE DRAINER SINK ON STAND

DBDD Sink size 1500x700x850mm high with 2No. bowls each centrally placed, and a stainless steel grid under shelf shall be incorporated. Each should have undershelf.

The top shall be of 16 s.w.g. Stainless steel. Unit frame to be 32mm R.H.S. stainless steel and each leg to be equipped with an adjustable sanitary foot. The feet/stand shall have a spacing of maximum 1000mm.

Each bowl shall be fitted with a perforated removable corner strainer in full own height, a 40 mm waster outlet with stand overflow outlet fitting and a heavy duty hot/cold water sink mixer, pillar type with over arm swivel outlet.

9. SINGLE BOWL DOUBLE DRAINER SINK ON STAND

Sink of size 1000x650x900mm constructed as above.

10. STAINLESS STEEL WORKTOP

Stainless steel working with a stainless steel grid shelf shall be incorporated. The top shall be of 16 s.w.g. Stainless steel sheet backed with 4 mm thick mild steel for reinforcement. The unit frame to be 32mm R.H.S. Stainless steel and each leg to be equipped with an adjustable sanitary foot, and the corners strengthened to give stability. The table top to have turned down edges in front and ends. The top shall be strengthened with the frame such that it takes heavy loads without sagging.

11. Potato Peeler

Potato peeler of capacity 25kg/charge) shall be supplied. The peeler shall be complete with a stand, isolating switch, replaceable disc and hopper lid, suitable water inlet and drainage hose connections, **waste dilution unit**. The peeler shall have fine cutting edges to ensure perfect peeling.

Electrically run, it shall have a motor rating of ½ hp and suitable for use with 240V, 50Hz, 1 phase power supply. The unit shall be as CRYPTO PEERLESS or equal and approved.

12. Knife Sharpener

It shall be professional style electric knife sharpener of dimension 230x102x115mm high as of H&M P51/8 model or approved equivalent

13. Chopping Board

Teflon chopping block made of plastic material of size 450 x 300 x 10mm thick.

14. Juice Extractor Machine

A countertop juice extractor capable of extracting 80-100kg/hr of fruits.

It should be multipurpose and multifunction all fruits wheatgrass, leafy green soaked nuts, beans, pulses and vegetables.

The unit shall be complete with the following components: juicing machine, extra large feeding tube, stainless steel feeding tube, micro mesh stainless filter and a powerful 850W motor with auto shut-off ability.

The main body construction material shall be polycarbonate and melamine.

15. Vegetable Preparation Machine

Heavy duty bench mounted vegetable preparation machine capable of slicing, dicing, chipping, grating and shredding between 150kgs of mixed vegetables per hour.

The body shall be in Aluminium alloy casting. The drum interior, feed ram and the cutting parts shall be in Stainless Steel and shall be replaceable. Size approx. 300x300x300mm high. The Unit shall incorporate a safety device which will prevent the motor from operating unless the feed ram is in the operating position.

Electrically run, it shall have a continuously rated motor of rating of 0.5hp with overload protection and suitable for use with 240V, 50Hz, 1 phase power supply. All electrical components shall be adequately insulated and shall be splash proof. ~~The unit shall be as "CRYPTO PEERLESS" or approved equivalent.~~

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CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
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16. **Stainless Steel Wall Shelf**
1500x300mm stainless steel 2 tier wall mounted shelf with upstand at the back, stainless steel tubular supporting structure for the shelves & wall mounting brackets
17. **Meat Mincer**
Gravity feed meat-mincing machine with anodized finish stainless steel feed pan and catch tray. The Unit will be bench mounted and capable of 150kg of meat per hour.
The motor power to be 0.5 hp and suitable for 240V, single phase, 50Hz power supply. The overall machine dimension to be approx. 800x360x410mm (l x w x h).
The unit to be as Ambercons UH-12MEC mincer or approved equivalent.
18. **Meat Chopping Block**
Chopping block size 610 x 610 x 300mm high on a 610mm high stainless steel stand. The block shall be made from reversible red beech wood or equal and approved.
It shall be securely mounted on the stand such that the top surface of the block is roughly 800mm above the finished floor.
19. **Stainless Steel Wall Shelf**
2000x300mm stainless steel 2 tier wall mounted shelf with upstand at the back, stainless steel tubular supporting structure for the shelves & wall mounting brackets
20. **Dough Mixer**
40 liters capacity electrically driven mixing and general-purpose machine complete with 40-liter stainless steel bowl, bowl truck, beater, whip and spiral dough hook.
It shall be constructed from a rigid one piece Aluminium alloy casting with factory lubricated components.
It shall be capable of operating on three different speeds, i.e, 150 rpm, 300 rpm and 450 rpm with a variable frequency motor speed control knob. There shall be a 15 minute variable timer on the control panel in addition to an emergency stop button.
The bowl cradle and bowl guard shall be electrically interlocked such that the machine shall only operate with the bowl cradle in the raised position.
The motor power shall be suitable for 380V, 1.5hp, 50Hz power supply. It shall be equipped with thermal overload protection. It shall be as Ambercons SP-40HI or equal and approved
21. **Plate Stacking Rack**
4-tier stainless steel plate stacking rack of size 1800x600x1800mm high. Each shelf shall be constructed in stainless steel sheet with a 50mm up stand all round. The whole unit shall be substantially constructed such that each shelf can accommodate at least 150 No.9-inch diameter earthenware plates without deflection. The unit frame shall be stainless steel, 32mm square with adjustable sanitary feet.
22. **Pot Stacking Rack**
4-tier stainless steel pot rack of size 1350x600x1800mm high. The rack shall have an additional frame to reinforce the underside of the shelves such that the longest side shall have three frames and three legs. All legs shall have an adjustable foot.
23. **Bain Marie/Hot Cupboard**
Electric heated upper half Bain Marie and lower half hot cupboard unit of size 1500x700x850mm high. The Bain Marie shall be of the water well type complete with food serving pots and lids. It shall have atleast 4No. serving pots.

The Bain Marie top shall be divided into suitable number of food container pots, minimum 200mm deep and to be drawn from 16 S.W.G. Stainless steel sheet. Water well to be integral with the top and filled with 20mm swivel drain.

The hot cupboard shall be equipped with stainless steel sliding doors and fitted with two stainless steel shelves. The doors shall be double cased and insulated as the panels, and the door handles to be strong and of heat resisting plastic.

The whole unit to be constructed in stainless steel on a strong angular framework with adjustable feet. Burners shall be constructed as those of the cooking range, complete with safety devices.

24. Coffee/Tea Urn

Electrically heated coffee/tea urn of capacity 30 litres with an infuser. It shall be of stainless steel casing/satin finish double layered with lift off cover. Double layered Heating power 2800W-3000W,50/60HZ,240V

The urn shall be complete with non-drip draw off tap and drain plug, and water supply arm with control valve and drain plug.

It shall have an immersion electric element of loading 3Kw single phase with selector switch and automatic safety cut out.

25. 3-Nozzles Juice Dispenser

36 Litres capacity juice dispenser with adjustable cooling system with temperature range of 5-20°C using refrigerant R134a.

Power supplied shall be 240v, 50Hz and 1KW.

External dimensions are 620x450x635mm

Food grade high-density crack PC neutralizing tank, safe and easy to clean split material switch to ensure pollution-free frozen drinks.

Computer control panel with stainless steel shell, beautiful and durable spray-style design with application of strong bonding.

Stainless steel evaporator with temperature balance

The compressor shall be closed-end with high-pressure, energy saving, quiet

26. Water Dispenser

20Litres water dispenser with both hot and cold water dispensing outlets (15litres cold and 5litres hot). It shall be complete with cooling and heating elements controlled with a thermostat, 18.9 litres bottle with water and 50No.disposable cups. It shall be standing at 900mm above ground

27. Upright Refrigerator

A stainless steel 304 double door upright fridge capacity 1100litres with Controller .The refrigerator shall be anti-corrosion treated with white enamelled outer casing and with foamed in polyurethane insulation. The inside shall have aluminium inner cabinet with 5No. adjustable stainless steel wire GN1/1 shelves.

The refrigeration system shall be tropicalized hermetically sealed with thermostat control. It shall be suitable for 240v, single phase, 50Hz power supply, with R 134A refrigerant. It shall be capable of achieving a temp range of 0°C - 10°C.

28. Dolly trolley

Dolly trolley for carrying heavy stuff and of size 600 x 800x200mm high. The trolley shall be constructed sturdily with 1No. Heavy duty tray made of 16 s.w.g. Stainless steel sheet backed with plywood for rigidity and noise/shock absorption. The trolley shall also be complete with upright stand control handle made of 25mm diameter stainless steel frame. The unit to run on 4No.100mm diameter heavy-duty castors (2 fixed 2 swivel).

29. Weight Scale

Electronic weight scale suitable for efficient utilization in weighing meat up to 300kg capacity with accuracy. As "Avery" or equal and approved.

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30. Dial Indicator Bench Scale

Electronic bench type dial indicator scale (0-30Kg) with accuracy. The unit shall be executed in enamelled steel and the weighing platform to be finished in polished stainless steel suitable for weighing wet foodstuffs during preparation.

31. Insectocutor

Insectocutor of stainless steel housing with powder coated safety grille, removable plastic tray, fully protected high-tension grid operating at a voltage of about 16000 volts and wall mounting brackets. It shall also have a facility to emit ultra - violet light and shall be operational on 240V, 50Hz supply.

32. Microwave Oven

Microwave Oven equipped with motor driven turn table and cooking grille. It shall have a glass door for visual monitoring of cooking process. It shall incorporate safety features such as a safety interlock system to shut off power when the door is opened or not properly closed. It shall have simple electronic digital power and time control. It shall be complete with circulation fan for even cooking. It shall be 24 litres capacity with electronic programmer having end cooking signal. It shall operate on 240 V 50Hz power supply. To be as MINNEAPOLIS model WP1000PF Microwave or equal and approved.

33. Mobile Refuse Bins

1No. 1150 x 600 x 600mm depth and 2No. 350 x 350 x 860mm depth mobile refuse bins mounted on a stainless steel frame work and 4No. 100mm diameter flexcelo castor wheels. The bin to be fabricated out of heavy gauge galvanized mild steel sheets of 2mm thickness.

34. 3- tier Vegetable rack

The Rack shall be 3-tier with baskets. The enamelled steel tube frame taking total of 9 white plastic covered wire baskets and shall be 1500x500x1020mm high. The baskets shall be 406mm wide, it shall be as H&M P50/1 model or equivalent approved.

35. DISHWASHER COMPLETE WITH ACCESSORIES

The unit shall be manufactured from polished stainless steel and the dimensions shall be 705x800x1485mm with a running capacity of 1000 dishes per hour or 45 racks per hour and 2-3 minutes per wash cycle.

Dishwasher shall be supplied complete with:

- 4No. 500x500mm plate racks
- 4No. 500x500mm saucer racks
- 4No. 500x500mm open racks
- 4No. 500x500mm cutlery basket
- Drain pump
- Automatic detergent pump
- Rinse aid pump
- Self cleaning vertical mount wash pump
- Hot water boiler with 6.0Kw heating element
- 10 litres automatic water softener
- Stainless steel dumping table of size: 1500x700x850mm
- Stainless steel 90° corner table of size: 550x500x850mm
- Stainless steel pre-wash entry table of size: 1200x730x850mm
- Stainless steel grading table of size: 1600x1100x870mm
- Flexible shower with mixing group and intermediate tap
- Stainless steel wash tank filter to trap food debris

570mmx 400 mm diameter stainless steel waste bins with castors. It shall be as H&M P76/4 model or equal approved.



SECTION F

PARTICULAR SPECIFICATION FOR PORTABLE FIRE EXTINGUISHER

CHIEF EXECUTIVE OFFICER
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CAMPAIGN AGAINST SLUTTY
AND BOOB AGES
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PARTICULAR SPECIFICATIONS FOR PORTABLE FIRE EXTINGUISHER AND HOSE REEL INSTALLATIONS

6.1 GENERAL

The particular specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers and Boosted Hose Reel System. The Sub-contractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the contract drawings but which are necessary for the completion and satisfactory functioning of the works.

If in the opinion of the Sub-contractor there is a difference between the requirements of the Specifications and the Contract Drawings, he shall clarify these differences with the Engineer before tendering.

6.2 SCOPE OF WORKS

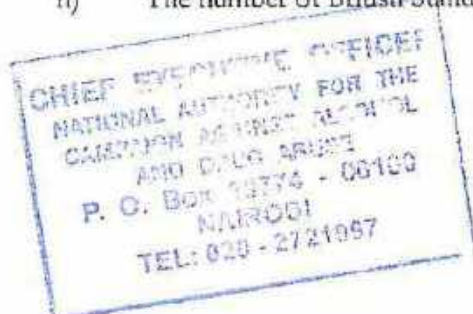
The Sub-contractor shall supply, deliver, erect, test and commission all the portable fire extinguishers and Hose Reel which are called for in these Specifications and as shown on the Contract Drawings.

6.3 WATER/CO₂ EXTINGUISHERS

These shall be 9-litre water filled CO₂ cartridge operated portable fire extinguishers and shall comply with B.S. 1382: 1948 and to the requirements of B.S.4523: 1977. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping. There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:

- a) Method of operation.
- b) The words 'WATER TYPE' (GAS PRESSURE) in prominent letters.
- c) Name and address of the manufacturer or responsible vendor.
- d) The nominal charge of the liquid in imperial gallons and litres.
- e) The liquid level to which the extinguisher is to be charged.
- f) The year of manufacture.
- g) A declaration to the effect that the extinguisher has been tested to a pressure of 24.1 bar (350 psi).
- h) The number of British Standard 'B.S' 1382 or B.S. 5423: 1977.



6.4 PORTABLE CARBON DIOXIDE FIRE EXTINGUISHERS

These shall be portable carbon dioxide fire extinguishers and shall comply with B.S. 3326: 1960 and B.S. 5423: 1977.

The body of extinguisher shall be a seamless steel cylinder manufactured to one of the following British Standards; B.S. 401 or B.S. 1288.

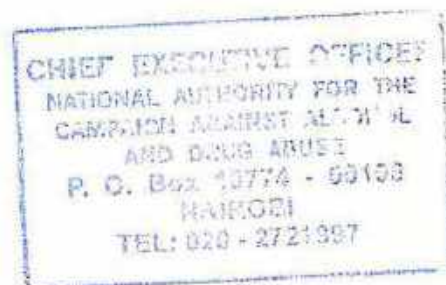
The filling ratio shall comply with B.S. 5355 with valves fittings for compressed gas cylinders to B.S.341. Where a hose is fitted it shall be flexible and have a minimum working pressure of 206.85 bar (3000 p.s.i.). The hose is not to be under internal pressure until the extinguisher is operated.

The nozzle shall be manufactured of brass gunmetal, aluminium or stainless steel and may be fitted with a suitable valve for temporarily stopping the discharge if such means are not incorporated in the operating head.

The discharge horn shall be designed and constructed so as to direct the discharge and limit the entrainment of air. It shall be constructed of electrically non-conductive material.

The following markings shall be applied to the extinguishers:-

- a) The words "Carbon Dioxide Fire Extinguisher" and to include the appropriate nominal gas content.
- b) Method of operation.
- c) The words "Re-charge immediately after use".
- d) Instructions for periodic checking.
- e) The number of the British Standard B.S. 3326: 1960 or B.S. 5423.
- f) The manufacturers name or identification markings



DRY CHEMICAL POWDER PORTABLE FIRE EXTINGUISHER

The portable dry powder fire extinguishers shall comply with BS3465: 1962 and BS 5423. The body shall be constructed to steel not less than the requirements of BS 1449 or aluminium to BS 1470: 1972 and shall be suitably protected against corrosion.

The dry powder charge shall be not-toxic and retain its free flowing properties under normal storage conditions. Any pressurizing agent used as an expellant shall be in dry state; in particular compressed air.

The discharge tube and gas tube if either is fitted shall be made of steel, brass, copper or other not less suitable material. Where a hose is provided it shall not exceed 1,060mm and shall be acid and alkali resistant. Provision shall be made for securing the nozzle when not in use.

The extinguisher shall be clearly marked with the following information

- a) The word "Dry Powder Fire Extinguisher"
- b) Method of operation in prominent letters.
- c) The working pressure and the weight of the powder charge in Kilogramme.
- d) Manufacturers name or identification mark
- e) The words "RECHARGE AFTER USE" if rechargeable type.
- f) Instructions to regularly check the weight of the pressure container (gas Cartridge) or inspect the pressure indicator on stored pressure types when fitted, and remedy any loss indicated by either.
- g) The year of manufacture.
- h) The Pressure to which the extinguisher was tested.
- i) The number of this British Standard BS 3465 or BS 5423: 1977.
- j) When appropriate complete instructions for charging the extinguisher shall be clearly marked on the extinguisher or otherwise be supplied with the refill.



6.6 AIR FOAM FIRE EXTINGUISHER

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. 5423 with the following specifications:-

Cylinder: to B.S. 1449

Necking: to be 76mm outside diameter steel EN 3A 2¹/₄ X 8TPI female thread.

Head cap: to be plastic moulding acetyl resin.

CO₂ Cylinder: to be 75gm P.V.C coated.

Internal Finish: to be polythene lining on phosphate coating.

External finish: to be phosphated - One coat primer paint and one coat stove enamel B.S. 381 C.

6.7 FIRE BLANKET

The fire blanket shall be made from cloth woven with pre-asbestos yarn or any other fire proof material and to measure 1800 x 1210 mm and shall be fitted with special tapes folded so as to offer instantaneous single action to release blanket from storing jacket.

6.8 BOOSTED HOSE REEL SYSTEM

6.8.1 General

The Particular Specification details the requirements for the supply, installation and commissioning of the hose reel installation. The hose reel installation shall comply in all respects to the requirements set out in C.O.P 5306 Part 1: 1976, B.S 5041 and B.S 5274. The System shall comprise of a pumped system.

6.8.2 Hose Reel Pumps

The fire hose reel pumps shall consist of a duplicate set of multi-line centrifugal pumps from approved manufacturers. The pumps shall be capable of delivering 0.76 lit/sec at a running pressure of 2 bars.

The pump casing shall be of cast iron construction with the impeller shaft of stainless steel with mechanical seal.

6.8.3 Control Panel

The control panel shall be constructed of mild steel 1.0mm thick sheet, be moisture, insect and rodent proof and shall be provided complete with circuit breakers and a wiring diagram enclosed in plastic laminate.

The pump shall be controlled by a flow switch therefore; the control panel shall include the following facilities:

- (a) 'On' push button for setting the control panel to live.
- (b) Green indicator light for indicating control panel live.
- (c) Duty / Stand-by pump auto change over.
- (d) Duty pump run green indicator light.
- (e) Stand-by pump run green indicator light.
- (f) Duty pump fail red indicator light.
- (g) Stand-by pump fail red indicator light.
- (h) Low water condition pump cut-out with red indicator light.

The pumps are to be protected by a low level cut-out switch to prevent dry pump run when low level water conditions occur in the water storage tank.

6.8.4 Hose Reel

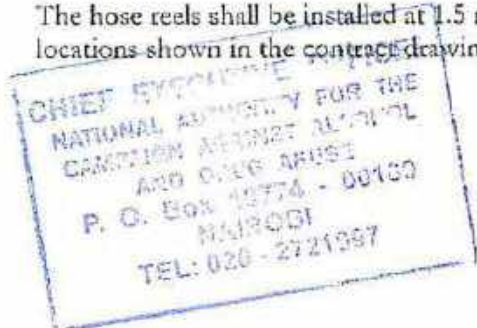
The hose reel to the installation shall consist of a recessed, swing-type hose reel as Angus Fire Armour Model III or from other approved manufacturers.

The hose reel shall comply with B.S. 5274: 1975 and B.S 3161: 1970 and is to be installed to the requirements of C.P. 5306 Part 1: 1976.

The hose reel shall be supplied and installed complete with a first-aid Non-kinking hose 30 meters long with a nylon spray / jet / shut-off nozzle fitted. A screw down chrome-plated globe valve to B.S 1010 to the inlet to the reel is to be supplied. The orifice to the nozzle is to be not less than 4.8mm to maintain a minimum flow of 0.4 lit / sec to jet.

The hose reels shall be installed complete with electro-galvanised cabinet recessed on the wall.

The hose reels shall be installed at 1.5 metres centre above the finished floor level in locations shown in the contract drawings.



6.8.5 Pipe Work

The pipe work for the hose reel installation shall be galvanised wrought steel tubing heavy grade Class C to B.S 1387: 1967 with pipe threads to B.S 21. The pipe work and all associated fittings shall be in approved colour for fire fittings.

6.8.6 Pipe Fittings

The pipe fittings shall be wrought steel pipe fittings, welded or seamless fittings conforming to B.S. 1740 or malleable iron fittings to B.S 143.

All changes in direction will be with standard bends or long radius fittings. No elbows will be provided.

6.8.7 Non-return Valves

The non-return valves up to and including 80mm diameter shall be to B.S. 5153: 1974. The valves shall be of cast iron construction with gunmetal seat and bronze hinge pin.

6.8.8 Gate Valves

The gate valves up to and including 80mm diameter shall be non-rising stem and wedge disc to B.S 5154: 1974 with screwed threads to B.S. 21 tapes thread

6.8.9 Sleeves

Where pipe work passes through walls, floors or ceilings, a sleeve shall be provided one diameter larger than the diameter of the pipe, the space between them to be packed with mineral wool, to the Engineer's approval.

6.8.10 Earthing

The hose reel installation shall be electrically earthed by a direct earth connection. The installation of the earthing shall be carried out by the Electrical Sub- contractor.

6.8.11 Finish Painting

Upon completion of testing and commissioning the hose reel installation, the pipework shall be primed and finish painted with 2 No. coats of paints to the Engineer's requirements.

6.8.12 Testing and Commissioning

The hose reel installation shall be flushed out before testing to ensure that no builder's debris has entered the system. The installation is to be then tested to one and half times the working pressure of the installation to the approval of the Engineer. Simulated fault conditions of the pumping equipment are to be carried out before acceptance of the System by the Engineer.

6.8.13 Instruction Period

The Sub-contractor shall allow in his contract sum for instructing of the use of the equipment to the Client's maintenance staff. The period of instruction may be within the contract period but may also be required after the contract period has expired.

The period of time required shall be stipulated by the Client but will not exceed two days in which time the Client's staff shall be instructed on the operation and maintenance of the equipment.



6.8.14 Signage-Fire Instruction /Fire Exit

6.8.14.1 Fire Instruction Notice

Print fire instruction on the Perspex plates with White Colour.
Background measuring 510mm length x 380mm width x 4mm thick as follows;

FIRE INSTRUCTION NOTICE

In the event of fire;

1. Raise the alarm by actuating the nearest alarm system point, Sound Siren /gong or **Shout Fire**
2. Attack fire using the nearest available equipment
3. Call nearest fire Brigade or Police 999 and inform your switchboard (PABX) Operator
4. Ensure that all personnel not involved in fire fighting evacuation to safety outside the building.
5. Close but **DO NOT LOCK** doors behind as you leave.
6. Evacuate the building using stairs or fire escapes. Do not use Lifts/escalators. Walk calmly. Avoid panic. Do not stop or return for personal belongings.
7. Assemble as per floor outside the building for roll call.

6.8.14.2 Fire Exit Sign

Print Fire Exit signs on the Perspex plate, 4mm thick, with white colour background as follows:-

1. Lettering **IN RED COLOUR** of not less than 50mm in height.
2. A pendant sign bearing words, **FIRE EXIT** and with a directional arrow.

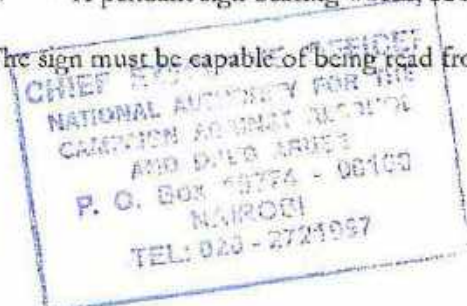
The sign must be capable of being read from both approaches to exit and so is double sided.

6.8.14.3 Hose Reel Label

Print Fire Exit signs on the Perspex plate, 4mm thick, with white colour background as follows:-

1. Lettering **IN RED COLOUR** of not less than 50mm in height.
2. A pendant sign bearing words, **HOSE REEL** and with a directional arrow.

The sign must be capable of being read from both approaches to exit and so is double sided.



SECTION H

PARTICULAR SPECIFICATION

FOR

L.P. GAS INSTALLATIONS

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 19774 - 00103
NAIROBI
TEL: 020 - 2721957

PARTICULAR SPECIFICATION FOR L.P. GAS INSTALLATIONS

A GENERAL

The specification and sub-contract drawings detail the requirements of the Sub-contract works.

The specification and sub-contract drawings shall be read together and are meant to explain each other.

The sub-contract drawings do not purport to show minor details of equipment, fixtures, pipe work or fixings, but are intended to indicate the intent and extent of the installations as designed, together with the sufficient information for the tenderer to include in his pricing any other items he deems necessary for the satisfactory completion and correct functioning of the sub-contract works.

If in the opinion of the tenderer, there is any ambiguity or any difference in the requirements of the specifications and the sub-contract drawings, he shall clarify these with the Engineer before tendering. No claims for extra payment shall be entertained because of non-compliance of this requirement.

B REGULATIONS AND STANDARDS

Material, equipment, installations and workmanship shall comply with the requirements of the latest Editions of the following:

- (a) Kenya Government By-laws.
- (b) Relevant standards published by the Kenya Bureau of Standards.
- (c) Relevant British Standards, Specifications & Codes of Practice; referred to as B.S. & B.S.C.P respectively in this document.
- (d) Requirements of the clients proposed local L.P Gas Supplier for the sub-contract.
- (e) This specification and the sub-contract drawings.

C L.P.GAS BULK STORAGE TANKS

The L.P Gas bulk storage tank shall be of horizontal cylindrical mild steel construction manufactured in compliance with the requirements of BS 5500 or ASME (American Society of mechanical Engineers) Codes. The storage tank shall have a nominal gas capacity of one ton.

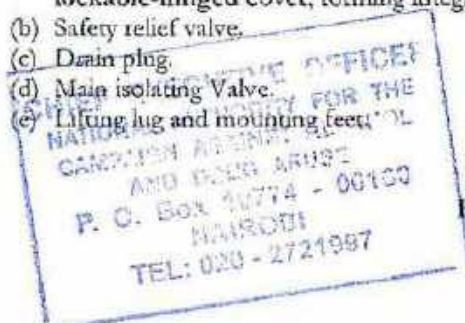
The storage tank shall have the following minimum pressure requirements:-

Test Pressure: 26 bars

Working pressure: 17.5 bars

The tank shall be supplied complete with:

- (a) Filling valve, magnetic float gauge, multi-valve and first stage regulator all housed under a lockable-hinged cover, forming integral part of the tank.
- (b) Safety relief valve.
- (c) Drain plug.
- (d) Main isolating Valve.
- (e) Lifting lug and mounting feet.



The tank shall be pickled and primed on the outside and painted with two coats of weather resistant paint in yellow ochre.

Apart from the above minimum specification for the bulk L.P Gas storage tank, the tenderer shall ensure that he has allowed for in his pricing of the tank any additional requirements needed by L.P. Gas supplier.

D PIPEWORK

The L.P. Gas pipe work installation shall comply with the requirements of B.S.C.P. 331: Part 3.

Pipes for L.P. Gas installations shall be galvanized mild steel tubing to B.S. 1387: Class C with Pipe threads to B.S. 21.

Pipe fittings shall be either welded or seamless wrought steel pipe fittings to B.S. 1740: Class C.

All joint in the pipework shall be made using non hardening jointing compound suitable for L.P gas. A union shall be provided on all straight runs of pipe work at a maximum interval of six meters.

Pipe work laid under ground shall be wrapped with pipe wrapping material having vapour permeability of less than $0.11\text{g/m}^2/\text{d}$ at 25°C and 75% relative humidity. The pipe wrapping material shall have high resistance to mineral acids, alkalis and salts and shall be on non-cracking and non-hardening characteristics.

Under ground L.P. Gas distribution pipe work shall be laid to a slope of 1 in 200. Gas service pipes, from the gas distribution pipes to the parts of building they service, shall be laid to rise from the distribution pipe at a slope of 1 in 200. All pipes under the ground shall rest throughout their length on a 150mm deep, flue sand topping, follow by an approved backfilling.

Where the pipe passes through the building fabric, it shall be located within a galvanized steel pipe sleeve, one diameter larger than the pipe passing through it. The void between the pipe and the sleeve shall be packed with bitumen or approved equal material.

Horizontal and vertical pipes within the building shall be fixed off the walls with brass built in brackets or spacer type steel pipe clips. The pipe supports spacing intervals for both the horizontal and vertical pipe runs shall be as follows:

Pipe nominal diameter:	15mm	Interval: 1.82 metres
:	20 & 25mm	: 2.44 metres
:	32 & 40mm	: 2.75 metres
:	50mm	: 3.00 metres
:	65mm	: 3.65 metres

The pipe work underneath the tables worktops to which shall be connected the gas outlets shall be made from gas quality copper.

H-2



E CHAINLINK FENCE

It shall be the responsibility of others to construct a concrete plinth of 150 mm thickness to support the tank and erect a 1.2m high chain link fence with lockable gates around the cylinders to protect them.

F GAS ISOLATION VALVE

The L.P. Gas isolation valves shall be quarter turn; lever operated ball valve of stainless steel construction.

The valve shall have "open" and "closed" positions clearly marked on the valve body.

The valves shall be as 'Saunders' or equal and approved.

G TESTING AND COMMISSIONING

The whole pipe work system shall be pressure tested using compressed air. The test pressure shall be 7.0 bars, which shall be maintained for a period of six hours. If the pressure drops during this period, leaks in the pipe work shall be made good and the pressure test repeated for a further six hours.

The pressure test on pipe work shall be made before any part of the pipe work is concealed in any manner.

The bulk gas storage tank shall be pressure tested using water and compressed air. Test pressure of 25 bars shall be maintained for a period of six hours.

After completion of pressure tests and installation, the L.P. Gas installations shall be balanced to give the required gas flows at each gas user's point.



SECTION I

PARTICULAR SPECIFICATIONS

FOR

**KITCHEN COLDROOM & KITCHEN
MECHANICAL VENTILATION SYSTEM**

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. BOX 19774 - 00100
NAIROBI
TEL: 020 - 2721987

PARTICULAR SPECIFICATION FOR COLD ROOM

1.0 SCOPE OF WORK

The work to be carried out comprises the supply, delivery, installation, testing and commissioning of kitchen cold room refrigeration equipment, a cold room door, wall, ceiling and floor insulation and control panel with auxiliary equipment. The works shall be at the Othaya Hospital in Othaya.

DESIGN CONDITIONS

CLIMATIC CONDITIONS	MOMBASA (MOMBASA CONDITIONS)
Maximum Design Temperature	32.6°C
Minimum Temperature	24.2°C
Relative Humidity	50% -82%
Altitude	31m ASL
Longitude	39° 35' 5E
Latitude	4° 0' 35S

Evaporators' cooling load 4.0 KW

1.2 THE COLD ROOM

The internal dimensions on the cold room are 2.075 x 2.825 x 3.3 m high. This shall have mechanically applied vapor barrier and insulation on the concrete floor slab, roof and walls.

1.3 VAPOUR BARRIER & WATER PROOFING

Before the application of the insulation to the structure, a vapour barrier shall be applied to the entire internal surface. This shall consist of an even layer of Flinkote type 3 or equal and approved applied to manufactures instructions. The top surface of the floor insulation shall be water proofed using an asphalt saturated and coated vapour barrier paper of not more than 0.3 perms permeance or other equal and approved, lapped at least 80mm and tacked in place. The vapor seal must be approved by the Engineer before insulation work is commenced.

1.4 INSULATION

The insulating material shall be polystyrene (or equal and approved) with a conductivity of approximately 0.035 W/M°C and a density of approx. 25Kg/m³ for the walls and ceiling and 40Kgs/m³ for the floor. It shall be applied in two layers each 50 mm thick with the second layer breaking joints with the first layer. Care must be taken to avoid breaking the vapor seal when fixing the insulation.

Hardwood battens shall be provided at regular intervals between insulation and then chicken wire mesh fixed all over the insulation. The sub- contractor shall finish off the walls and ceiling by laying aluminium sheet and the floor with 3mm thick chequered aluminium plate held firmly by employing aluminium rawl bolts.



1.5 INSULATED DOOR

The door and frame shall be fabricated from heavy seasoned timber and insulated with two layers of 50mm thick polystyrene sandwiched between 10mm thick seasoned wood strips. It shall have a clear height of 1.9m being hinged on one side so that it opens outward. The door shall be completed with sufficient gaskets to ensure an air tight seal. The door shall be fitted with automatic plunger type switches for operating the fan motors and interior lights such that when it is open, the lights shall go on and the fan shall stop, and when it is closed, the lights shall go off and the fan shall start.

The door shall be such that it can be padlocked from outside but with an inside release such that it can be opened from inside even when padlocked.

1.6 EVAPORATOR

The evaporator shall consist of a cooling coil, air-circulating fan, fan guard, defrost electric heater element and a thermostatic expansion valve. The valve shall be pressure equalized and manually adjustable. A timer unit shall be mounted in the control panel to control both the de-frosting intervals and defrosting period – both of which shall be variable. The evaporator shall be of cooling load capacity 4.0KW. It shall be ceiling type unit with a drip tray fitted with a drain pipe to the outside of the building. The unit shall be as KUBA SGA 71 or equal and approved.

1.7 CONDENSING UNIT

The condensing unit shall be of such capacity to cope with evaporator cooling load while using R-134a refrigerant as the cooling media or other approved ozone friendly refrigerant under the specified conditions. The condensing units shall be air-cooled, **Semi-hermetic** with automatic capacity control for evaporator demand.

They shall be provided with suitable vibration mountings and initial oil charge in the compressor. The units shall be complete with compressor, electric motor, air-cooled condenser of non-ferrous construction, liquid receiver, all mounted on a common base. The units shall be as BITZER or other approved equivalent and shall be mounted as directed on site/compressor room. It shall be the responsibility of the contractor to provide all the necessary anti-vibration mountings and mounting bolts.

1.8 REFRIGERATION PIPEWORK

Pipework shall be approved copper tubing and fitting and shall be properly fixed in conformity with 'TRANE REFRIGERATION MANUAL'. The suction line shall be insulated with at least 25mm thickness of Armaflex or other approved material which shall not have insulating properties inferior to those of cork. The condensing unit shall be approximately 5 meters from evaporator unit.

1.9 REFRIGERATION COMPONENTS

The system shall be provided with the following components all similar to or equal to those manufactured by DANFOSS.

- Filter drier
- Sight glass with moisture indicator
- Solenoid valve
- HP/LP cut out
- Suction & delivery gauges
- Room thermostat



1.10 CONTROL PANEL

A splash proof control panel with an isolator shall be mounted close to the cold room door as shown on the drawing. This shall incorporate the controlling thermostat with temp. Range from -10° to 30°C , starters for motors and defrosting controls. The system instrumentation shall include a dial thermometer mounted on the walls close to the control panel and of diameter 80 mm and temperature range from -10°C to 30°C , a red 'door open' indicator light, a green light 'running' indicator, a visual or audible alarm in the event of temperature rise of more than 2° above the pre-set temperature due to Electrical and or Mechanical failures and a time clock complete with micro switch terminal block and fuses.

1.11 ELECTRICAL INSTALLATION

The electrical sub-contractor shall be responsible for providing power to the control panel and for providing a local Isolator and connecting power to it. The cold room sub-contractor shall be responsible for the final connections to the above equipment, all control wiring and for all wiring within the control panel.

1.12 MEAT RAILS AND SHELVES

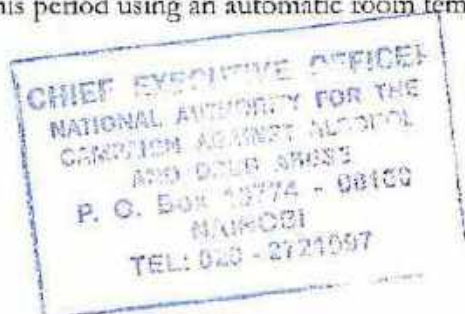
The sub-contractor shall supply and fix 5 No. meat rail as shown on the drawing of approximate length of 2000mm and fixed to the wall at a height of approximately 2 metres above the finished floor level. All steel shall be hot dip galvanized. He shall also supply fully fabricated 3 tier stainless steel metal shelves and set them in the cold room as shown on the drawing. Shelf size to be 1200mm x 650 mm x 1200mm high.

1.13 TESTING AND COMMISSIONING

Before insulation of the suction pipe the refrigeration system shall be tested for pressure and leaks using the combined pressure and leaks testing method. The refrigeration system shall be charged with R134A refrigerant and entire system raised to test pressure using nitrogen or other inert gas. The test pressure shall be twice the working pressure for the system.

Leaks shall be checked using soap bubble followed by using of electronic leak detector. After system is proved leak proof, it shall be maintained under test pressure for 24 hours. If at the end of this time the gauge pressure has fallen, the complete system shall be re-tested. After the successful completion of the test, the system shall be evacuated using vacuum for 24 hours. If there is loss of vacuum the system shall be dehydrated again and left under vacuum for a further 24 hrs until the system is effectively dehydrated.

After this the system shall be charged with the correct type and quantity of the refrigerant. The system shall then be set to work and adjusted to ensure that it operates correctly and design conditions are achieved. It shall be left to operate for 72 Hrs and room temperatures recorded for this period using an automatic room temperature sensor/recorder.



2.0 PARTICULAR KITCHEN VENTILATION SPECIFICATION

2.1 General:

The kitchen area located on ground floor as shown on the Contract Drawings shall be mechanically ventilated using an extract fan and hood.

2.2 Extract Fan:

The kitchen island shall be mechanically ventilated using a Duct-mounted extract fan as shown on the contract Drawings. The extract fan shall be as manufactured by 'COLCHESTER ROOF UNITS', Axial Flow Fan Model type DSM/500 with a duty of $1.8\text{m}^3/\text{s}$ at $300\text{N}/\text{M}^2$ static pressure and running at 2900 RPM or other equal approved and equivalent. The motor shall be suitable for an electrical supply of 240V, Single phase 50Hz, or 415 volts, three phase and 50HZ. There shall be an extra extract fan for deep fat fryer shall be as manufactured by 'COLCHESTER ROOF UNITS', Axial Flow Fan Model type DSM/500 with a duty of $0.5\text{m}^3/\text{s}$ at $150\text{N}/\text{M}^2$ static pressure and running at 2900 RPM or other equal approved and equivalent. The motor shall be suitable for an electrical supply of 240V, Single phase 50Hz, or 415 volts, three phase and 50HZ.

2.3 Extract ducting

The extract fan shall extract air through a duct, Kitchen hood and grease filters. The extract duct shall be of sizes shown on the contract drawings and manufactured from 18 S.W.G (1.219mm) rolled steel sheet galvanized after manufacture. The joints shall be stiffened by $1\frac{1}{4}" \times 1\frac{1}{4}" \times \frac{1}{8}"$ mild steel angles. The seam of ducting shall be riveted with 8 S.W.G. rivets at 50mm (2") centres.

2.4 Extract Hood

The extract hood shall be supplied, fixed and supported as shown on the contract drawings. The hood shall be manufactured with suitable angle iron around the inside at the top to enable support bolts or screws to pass through.

The vertical faces of the hood shall be manufactured from 16 S.W.G. (1.626mm) anodized aluminium sheet and suitably stiffened and incorporating a drainage channel on the inside at the base. The top of the hood shall be constructed from 16 S.W.G (1.626mm). rolled steel sheet galvanized after manufacture and suitably stiffened and a connection for extract ducting to be made as shown on the contract drawings.

A connection box (PLENUM) as dimensioned on the contract drawings shall be constructed from 16 S.W.G. (1.626mm) aluminium sheet and fitted beneath the extract drawing connection. Grease filter to be connected to extract ducting also.

2.5 Grease Filters

Grease filters shall be supplied and installed as shown on the contract drawings. They shall be as manufactured by 'VOKES' of England or equal and approved equivalent. They should be double sided Vee bank type no. DS 20/6 with double sided V- Bank housing with 6 No grease filters or other equal and approved equivalent. They shall be easily removable and washable. There will be a Single angle unit top exit for use in deep fryer canopy for housing 2No. 508x254 top exit washable type stainless steel filter panels. The unit shall have removable grease trays and framework made out of stainless steel. As "Vokes" TE 20/2 single sided Top exit housing with top exit or equal and approved

FLEXIBLE CONNECTION

The flexible connection shall be made of heavy duty canvas and shall form a damp-proof joint between the duct and the fan.

FAN CONTROL PANEL

The panel shall be fabricated from G.I sheet of minimum 18 SWG (1.2mm) with a hinged door and the powder coated after manufacture. It shall be provided with an integral lock. It shall be complete with the following: -

- Isolator on the door.
- Motor starter with current overload relay.
- Miniature circuit breaker.
- Phase failure relay with over voltage and under voltage protection
- Timer switch to switch off the fan at a present time.
- Push buttons for start and stop.
-

ELECTRICAL WORKS

The Contractor (in conjunction with an approved electrical contractor) shall be responsible for providing power to a local Isolator and connecting power to it. The Contractor shall further be responsible for the connections between the Isolator and the control panel.

The panel shall be approximately eight (8) meters from Isolator. The contractor shall be responsible for connections between the panel and the fan and. Electrical works under this contract shall include conduit works and a suitable weatherproof Isolator next to the fan.

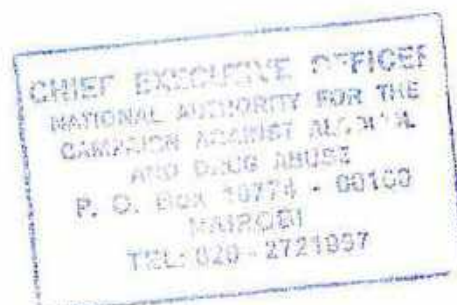


SECTION J:

BILLS OF QUANTITIES

AND

SCHEDULE OF UNIT RATES



BILLS OF QUANTITIES AND SCHEDULE OF UNIT RATES

<u>CLAUSE No.</u>	<u>CONTENTS</u>	<u>PAGE</u>
1.	GENERAL NOTES TO TENDERERS.....	J-1
2.	STATEMENT OF COMPLIANCE.....	J-2
3.	BILLS OF QUANTITIES	J-3 to J-27
4.	SUMMARY PAGE.....	J-28



SPECIAL NOTES

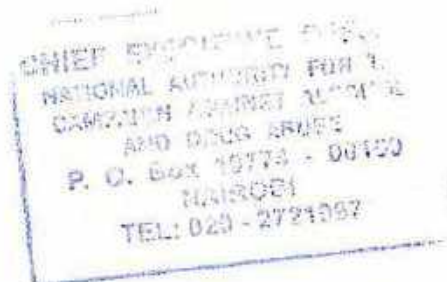
1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.
2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including 14% VAT).

In accordance with Government policy, the 14% VAT and 3% Withholding Tax **shall be deducted** from all payments made to the Tenderer, and the same shall be forwarded to the **Kenya Revenue Authority (KRA)**.

3. All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part thereof.
4. The brief description of the items given in the Bills of Quantities are for the purpose of establishing a standard to which the sub-contractor shall adhere. Otherwise alternative brands of **equal and approved** quality will be accepted.

Should the sub-contractor install any material not specified here in before receiving **written approval** from the Project Manager, the sub-contractor shall remove the material in question and, **at his own cost**, install the proper material.

5. The grand total of prices in the price summary page must be carried forward to the **Form of Tender for the tender to be deemed valid**.
6. Tenderers must enclose, together with their submitted tenders, detailed manufacturer's Brochures detailing Technical Literature and specifications on all the equipment they intend to offer.



1. Statement of Compliance

- a) I confirm compliance of all clauses of the General Conditions, General Specifications and Particular Specifications in this tender.
- b) I confirm I have not made and will not make any payment to any person, which can be perceived as an inducement to win this tender.

Signed:for and on behalf of the Tenderer

Date:

Official Rubber Stamp:



BILLS No. 1

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against item of preliminaries in the sub-contractor's Bills of Quantities and specification. These Bills are designated as Bill 1 in this Section. Where the sub-contractor fails to insert his price in any item he shall be deemed to have made adequate provision for this on various items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

The Bills of Quantities are divided generally into three sections:-

a. Preliminaries – Bill 1

Sub-contractors preliminaries are as per those described in section C – sub-contractor preliminaries and conditions of contract. The sub-contractor shall study the conditions and make provision to cover their cost in this Bill. The number of preliminary items to be priced by the Tenderer has been limited to tangible items such as site office, temporary works and others. However the Tenderer is free to include and price any other items he deems necessary taking into consideration conditions he is likely to encounter on site.

b. Installation Items – Other Bills

- i. The brief description of the items in these Bills of Quantities should in no way modify or supersede the detailed descriptions in the contract Drawings, conditions of contract and specifications.
- ii. The unit of measurements and observations are as per those described in clause 3.05 of the section

c. Summary

The summary contains tabulation of the separate parts of the Bills of Quantities carried forward with provisional sum, contingencies and any prime cost sums included. The sub-contractor shall insert his totals and enter his grand total tender sum in the space provided below the summary.

This grand total tender sum shall be entered in the Form of Tender provided elsewhere in this document



BILL No. 1 PRELIMINARIES

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	cts
1	Discrepancies clause 1.02					
2	Conditions of sub-contract Agreement clause 1.03					
3	Payments clause 1.04					
4	Site location clause 1.06					
5	Scope of Contract Works clause 1.08					
6	Extent of the Contractor's Duties clause 1.09					
7	Firm price contract clause 1.12					
8	Variation clause 1.13					
9	Prime cost and provisional sum clause 1.14 (insert profit and attendance which is a percentage of expended PC or provisional sum.)					
10	Bond clause 1.15					
11	Government Legislation and Regulations clause 1.16					
12	Import Duty and Value Added Tax clause 1.17 (Note this clause applies for materials supplied only. VAT will also be paid by the sub-contractor as allowed in the summary page)					
13	Insurance company Fees clause 1.18					
14	Provision of services by the Main contractor clause 1.19					
15	Samples and Materials Generally clause					
SUB-TOTAL CARRIED TO PAGE J-6						

J-4

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST
AND BURN ABUSE
P. O. Box 19774 - 00100
NAIROBI
TEL: 020 - 2721997

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	cts
16	Supplies clause 1.20					
17	Bills of Quantities clause 1.23					
18	Contractor's Office in Kenya clause 1.24					
19	Builder's Work clause 1.25					
20	Setting to work and Regulating system clause 1.29					
21	Identification of plant components clause 1.30					
22	Working Drawings clause 1.32					
23	Record Drawings (As Installed) and Instructions clause 1.33					
24	Maintenance Manual clause 1.34					
25	Hand over clause 1.35					
26	Painting clause 1.36					
27	Testing and Inspection – manufactured plant clause 1.38					
28	Testing and Inspection – Installation clause 1.39					
29	Storage of Materials clause 1.41					
30	Initial Maintenance clause 1.42					
31	Attendance Upon Tradesmen, etc. (Insert percentage only) clause 1.58					
32	Local and other Authorities notices and fees clause 1.60					
	SUB-TOTAL CARRIED TO PAGE J-6					

J-5

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
COMBINATION AGAINST CORRUPTION
AND DRUG ABUSE
P. O. Box 10774 - 00102
NAIROBI
TEL: 020 - 2721097

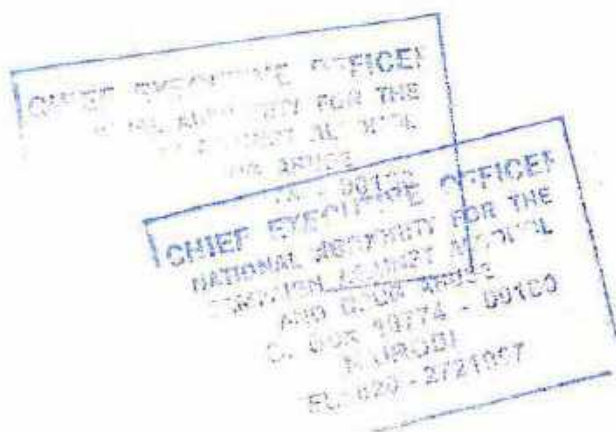
ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	cts
33	Temporary Works clause 1.63					
34	Patent Rights clause 1.64					
35	Mobilization and Demobilization Clause 1.65					
36	Extended Preliminaries Clause 1.66(see appendix on page C- 24)					
37	Supervision by Engineer and Site Meetings Clause 1.67	1	Item		400,000	00
38	Allow for profit and Attendance for the above					
39	Amendment to Scope of Sub-contract Works Clause 1.68					
40	Contractor Obligation and Employers Obligation clause 1.69(see appendix page C- 24)					
41	Any other preliminaries;					
	Subtotal above					
	Subtotal brought forward from page J-4					
	Subtotal brought forward from page J-5					
	TOTAL FOR BILL NO. 1- PRELIMINARIEGS CARRIED FORWARD TO PRICE MAIN SUMMARY					




BILL NO. 2: KITCHEN SANITARY FITTINGS, PLUMBING, DRAINAGE AND FIRE PROTECTION					
Item	Description	Qty	Unit	Rate (Kshs)	Cost (Kshs)
	SANITARY APPLIANCES Supply, deliver, install, test and commission the following sanitary appliances complete with all the accessories including all connections to the services, waste, jointing to water supply overflows, supports and all plugging and screwing to walls and floors. (i) All sanitary fittings shall be in approved colour. (ii) The Model and Ref No. indicated is only a guide to the type and quality of fittings. (iii) Equivalent and Approved models may be acceptable.				
	Water Closet (WC) Suite Low level wash down water closet suite in white complete with horizontal outlet, flush valve as COBRA and associated pipeworks for inlet connection to the water closet pan and S-trap outlet. All to be as Duravit or approved equivalent.	13	No.		
A	Ambulant Disabled Water Closet suite Low level wash down water closet suite for the elderly and disabled in white complete with horizontal outlet AND BOTTOM SUPPLY AND OVERFLOW WITH CLOSE COUPLING SIDE LEVER TREATMENT, 7.5 litre cistern, raised heavy duty toilet seat and cover and S-trap outlet and 600 x 35mm stainless steel grab rails (4No.) in stainless steel. The set to be complete with wash hand basin, 6mm thick mirror, toilet roll holder and robe hook. All to be as "Twyfords Avalon BTW" or approved equivalent.	2	No.		
B	Wash hand basin (WHB)-Pedestal Pedestal wash hand basin size 575 x 500mm with one tap hole, 32mm diameter chrome plated chain waste, chain stay hole, chrome plated non-concussive time delay press action pillar tap as Cobra model and heavy duty chrome plated bottle trap (32mm 'P' trap) with 75mm seal. To be of Duravit D-Code CAT No. 23105500002 washhand basin and pedestal code No. 086327 or equal and approved.	15	No.		
C	Mixer tap of stainless steel as Honsgrohe Logis Single lever basin mixer 70 Coolstart with pop up waste set #71072000	15	No.		
D	Wash hand basin WHB-Countertop Countertop washhand basin 600mm wide counter top basin as COTTO Quado white drop in basin Size 600x460mm complete with tap and waste fittings and counter top	2	No.		
E	Mixer tap of stainless steel as Honsgrohe Logis Single lever basin mixer 70 Coolstart with pop up waste set #71072000	2	No.		
F	Urinal Two range urinal bowl in white vitreous china comprising 2No. bowls with 1No. division complete with bowl/divisions support complete with 4.5 litres automatic ceramic cistern ref CX 8711 WH, and fittings including siphon ball valve, cistern supports and drip tap in brass, chrome plated bottle trap, chrome plated flushpipe and spreader ref SS 6071SS with all connections, wall hangers/supports. To be as Twyfords 'Clifton' or approved equivalent	2	No.		
G	Urinal flush valve as Cobra No.FJ 6000, 3/4" Flush Master Junior, CP, exposed type with integral ballstop valve and wall plate, complete with C.P. flush pipe and fittings for top inlet spreader	2	No.		
H	Toilet Roll Holder Semi recessed toilet roll holder in Vitreous China of size 165 x 165mm in approved colour as Twyford or equal and approved	15	No.		
I	Total carried to Next page				

SOCIAL HALL,KITCHEN NACADA MIRITINI

Item	Description	Qty	Unit	Rate (Kshs)	Cost (Kshs)
Total brought forward from to Previous page					
	Mirror				
A	6mm thick polished plate glass silver backed mirror with bevelled edges, size 610 x 610mm, Plugged and screwed to wall with 4No. chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam.	3	No.		
B	Ditto size 1200x600mm	3	No.		
C	Hand paper Towel dispenser as Mediclinic, with Stainless Steel matte finish	6	No.		
	Angle valve & Flexible Tubing				
D	15mm diameter x 300mm long flexible connectors complete with integral chrome plated angle valve as Cobra or equal and approved.	No	19		
	Soap Dispenser				
E	Soap Dispenser, capacity 1.136 litres complete with plastic rawl plugs, fixing screws, lock and key complete with initial fill of soap gel. The soap dispenser to be as ZALPON'S MARK 7 model, size 125 x 100 x 290mm high or approved equivalent	No	6		
Total for Kitchen Sanitary fittings carried to collection page					



Item	Description	Qty	Unit	Rate (Kshs)	Cost (Kshs)
	INTERNAL PLUMBING				
	PPR Pipes				
	Supply, deliver and install Polypropylene Random (PP-R) 20 pipework to DIN 8077 with joints, couplings, reducers, tees, adaptors, pipe fixing clips etc all to DIN 16962 and DIN 16928 .Pipe jointing shall be by polyfusion or use of electric coupling. Where pipework is not chased proper anchoring using approved fixtures shall be done. No pipework shall be left exposed to the sun. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints, support raceways, isolating sheaths, elastic materials, expansion arms and bends, crossovers, couplings, clippings, connectors, joints etc. as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	PPR PN 20 PIPEWORK				
A	25mm diameter pipework	38	Lm		
B	32mm diameter pipework	45	Lm		
C	40mm diameter pipework	80	Lm		
D	50mm diameter pipework	60	Lm		
E	65mm diameter pipework	30	Lm		
	Bends				
F	25mm diameter bend	25	No.		
G	32mm diameter bend	35	No.		
H	40mm diameter bend	25	No.		
I	50mm diameter bend	20	No.		
J	65mm diameter bend	10	No.		
	Tees				
K	25mm equal tee	30	No.		
L	32mm equal tee	18	No.		
M	40mm equal tee	12	No.		
N	50mm equal tee	5	No.		
	Reducers				
O	32 x 25mm diameter reducer	15	No.		
P	40 x 32mm diameter reducer	10	No.		
Q	50 x 32mm diameter reducer	8	No.		
R	50 x 40mm diameter reducer	9	No.		
S	65 x 50mm diameter reducer	5	No.		
	Valves				
T	25mm gate valve	10	No.		
U	32mm gate valve	10	No.		
V	40mm gate valve	3	No.		
W	50mm gate valve	2	No.		
X	65mm gate valve	3	No.		
	Unions				
Y	25mm diameter pipe unions	12	No.		
Z	32mm diameter pipe unions	7	No.		
AA	40mm diameter pipe unions	5	No.		
BB	50mm diameter pipe unions	6	No.		
	Threaded Fittings				
CC	20mm male/female threaded 90° bend/Elbow	6	No.		
DD	25mm male/female threaded 90° bend/Elbow	9	No.		
EE	32mm male/female threaded 90° bend/Elbow	8	No.		
FF	40mm male/female threaded 90° bend/Elbow	8	No.		
	Pipe Sleeves				
GG	50mm diameter heavy duty PVC pipe sleeves for crossing over columns and beams.	10	Lm		
Total carried forward to the Next page					

Item	Description	Qty	Unit	Rate (Kshs)	Cost (Kshs)
Total brought forward from Previous page					
	Water Storage Roof Tank				
A	Supply, deliver and Assemble a water tank, made of Glass Reinforced Tank Water(GRP)sectional tank plates 6mm thick plates (type 1 and 4) and of size 1000mm x 1000mm capacity of tank to be 6,000 litres (1585 gallons) and of preferred dimensions 3000mm x 2000mm x 1000mm. The tank to come complete with tank cover, mosquito proof inspection vent, internal stays, jointing material, bolts and nuts internal and external ladder,sockets for connecting,inlet,outlet,drain and overflow	No.	1		
	Sterilization				
B	Allow for flushing out and sterilizing the whole system with chlorine to the satisfaction of the Project Engineer.	Item	1		
	Water Storage Tank -Ground Tank				
C	Supply, deliver and assemble a ground level water tanks,made of HOT PRESSED GLASS REINFORCED PANEL Sectional tank plates and of size 1000mm x 1000mm Capacity of tank to be 50,000 litres and of preferred dimensions 5000mm x 5000mm x 2000mm. The tank to come complete with STAINLESS STEEL SUPPORT BEAMS GRADE tank cover, mosquito proof inspection vent, internal stays, jointing material, bolts and nuts including applying two coats of non-toxic bituminous paint on the inside and two coats of aluminum paint on the outside. The tank shall be complete with the following pipe connections:-- -100mm diameter overflow -100mm diameter outlets -100mm diameter inlet -100mm diameter washout with gate valve	1 140	item Lm		
D	100mm HDPE pipe				
E	Sluice Valve 100mm diameter Sluice Valve	1	No		
	Non Return Valve 100mm diameter approved high pressure non- return valve to BS 1952. The non-return valve to be as "Pegler" or approved equivalent,	1	No		
F	Tees 100mm diameter equal tee	3	No		
G	Bends/Elbows 100mm diameter bend/elbows	4	No		
H	50mm Air Release valve	1	No		
I					
					
Total carried forward to the Next page					

Item	Description	Qty	Unit	Rate (Kshs)	Cost (Kshs)
Total brought forward from Previous page					
	Water Booster Pumpset				
	Booster Pumps				
	Set of automatic electrically driven twin pumps. One duty and the other one standby with automatic changeover, capable of delivering 8 cubic metres per hour against a head of 40 meters. The pumpset shall be complete with 100 litres pressure vessel (as Dayliff pressure set or equal and approved) and all accessories required for proper and satisfactory operation. It includes pressure switches, time delay switch, a switch to protect against dry run, timer, gate valves and non-return valves. The pump to be as GRUNDFOS CM 10-3A or approved equivalent. Pump to be installed on STAINLESS steel platform. Allow associated controls Panels	1	Set		
A	Control Panel				
	Control panel for above pumps with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer, 15 meters long float switch control cable to the roof tank, start/stop push buttons and indicator lights. All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet that is oven powder coated. There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to not more than 6 per hour. It should include a change-over switch to enable the pumps to work alternately.	1	Item		
B	Electrical Works				
	Allow for electrical works wiring and fitting to the pumps, control panel and float switch, from isolator provided by others with 3 metres distance.	1	Item		
C	Water Tank Accessories				
D	100mm diameter overflow	1	No		
E	100mm diameter outlets	2	No		
F	50mm diameter inlet (1No)	1	No		
G	100mm diameter washout with gate valve	1	No		
H	Float switch regulator	1	No		
I	Water level indicator	1	No		
J	Internal ladder	1	No		
K	External ladder	1	No		
L	50mm diameter high pressure ball valve	1	No		
	Water Meters				
M	32 mm coucil water meter as 'Kent' or equal and approved equivalent	1	No.		
	Meter chamber				
	Meter chamber size 450x450x600mm deep with 100mm concrete (1: 3: 6) base 50mm block sides rendered all round in cement and sand (1:4) and with approved hinged and flanged cast iron cover and frame including all necessary excavation, disposal and formwork.	1	No.		
N	Excavations				
O	Excavate trench in soil/murram for water pipes not exceeding 1000mm deep and average 750mm deep, part return in, fill, ram and surplus cart away.	150	Lm		
	Sterilization				
P	Allow for flushing out and sterilizing the whole system with chlorine to the satisfaction of the Project Engineer.	1	Item		
	Testing and commissioning				
Q	Allow for testing and commissioning for all plumbing installations to the satisfaction of the engineer.	1	Item		
Total for Kitchen Internal Plumbing carried to Collection page					

Item	Description	Qty	Unit	Rate (Kshs)	Cost (Kshs)
	FOUL WATER INTERNAL DRAINAGE				
	Supply, deliver and install the following UPVC, MUPVC, soil and waste systems respectively to B.S 5255 with fittings fixed to Manufactures Printed instructions and manufactured by reputable manufacturers. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints etc. as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	MuPVC and uPVC Waste and Soil pipework				
A.	150mm diameter heavy gauge golden brown UPVC pipe	50	Lm		
B	100mm diameter heavy gauge golden brown UPVC pipe	230	Lm		
C	150mm diameter heavy gauge grey UPVC pipe	15	Lm		
D	100mm diameter heavy gauge grey UPVC pipe	80	Lm		
E	50mm diameter waste pipe	25	Lm		
F	40mm diameter waste pipe	15	Lm		
G	32mm diameter waste pipe	25	Lm		
	Bends				
H	100mm diameter long radius bend	4	No.		
I	100mm diameter short radius bend	4	No.		
J	100mm diameter sweep bend	5	No.		
K	50mm diameter sweep bend	8	No.		
L	40mm diameter sweep bend	5	No.		
M	32mm diameter sweep bend	7	No.		
	Tees				
N	100mm diameter sweep tee	1	No.		
O	50mm diameter sweep tee	9	No.		
P	40mm diameter sweep tee	6	No.		
Q	32mm diameter sweep tee	6	No.		
	Access Caps				
R	100mm diameter access cap	7	No.		
S	50mm diameter access cap	8	No.		
T	40mm diameter access cap	6	No.		
U	32mm diameter access cap	7	No.		
	Boss Connectors				
V	100 x 40mm diameter boss connector	2	No.		
W	100 x 50mm diameter boss connector	4	No.		
	Reducing Sockets				
X	50 x 40 reducing socket	2	No.		
Y	40 x 32 reducing socket	2	No.		
	Single Branch				
Z	100 x 100mm diameter single branch with 50mm boss adaptor	4	No.		
	WC Connectors				
AA	100mm diameter WC connector	15	No.		
	Traps				
BB	100 x 50mm diameter floor trap and grating	5	No.		
CC	100mm dia. floor drain in 300 x 300mm chamber with steel grating	6	No.		
DD	Standard 300 x 300 x 450mm masonry gully trap complete with 125mm thick reinforced concrete cover.	8	No.		
	Weathering Slates and Vent Cowl				
EE	100mm diameter weathering slate and apron.	8	No.		
FF	100mm diameter vent cowl	8	No.		
	CHIEF EXECUTIVE OFFICER NATIONAL AGENCY FOR THE EASTERN AFRICA P.O. BOX 40000 Nairobi				
	Total Carried to Next Page				

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Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
Total carried forward from previous page					
A	200 x 150mm deep cooking island Stainless Steel channel with grating all round the kitchen island plinth	20	Lm		
B	3 chamber Grease trap of 1650X1050mm with 4 medium density cover and grease trap tray made of stainless steel	1	No.		
Manholes and Inspection Chambers					
C	Construct inspection chamber size 600 x 450mm and averaging 750mm deep constructed in 100mm thick concrete base (1:3:6), approved 150mm block sides rendered all around in cement and sand (1:4). It shall have an approved heavy duty cast iron cover and frame as manufactured by E.A Foundry works. Include all necessary excavations, disposal and form work. To be as manhole type 'A'.	4	No.		
Testing and Commissioning					
D	Allow for testing and commissioning of the both external and internal drainage system installations to the satisfaction of the Engineer.	1	Item		
Excavations					
E	Excavate trench in soil/murram for water pipes not exceeding 1000mm deep and average 750mm deep, part return in, fill, ram and surplus cart away.	80	Lm		
Total for Kitchen Internal Drainage carried to collection page					



Item	Description	Qty	Unit	Rate (Kshs)	Cost (Kshs)
	FIRE FIGHTING EQUIPMENT				
	Fire Protection				
	Supply, deliver and install the following fire fighting equipment in positions indicated on the contract drawings or as shall be instructed by the Engineer. Supply and install the following fire fighting installation and equipment as described and shown on the drawings. Tenderers should allow for all fittings, jointings couplings including unions and clamps where necessary for the proper functioning of the installation when pricing.				
	Hosereel Installation				
	Hosereel				
A	20mm diameter 30m long swinging type hose reel complete with delivery valve, mild steel feed pipe, isolation valve, guide and all other accessories as "Angus Fire Armour" or equal and approved.	2	No.		
	GMS Pipework, Class B				
B	25mm diameter pipework	10	Lm		
C	50mm diameter pipework	15	Lm		
	Extra Over Pipework				
	Bends				
D	25mm diameter bends	6	No.		
E	50mm diameter bends	10	No.		
	Valves				
F	25mm diameter approved medium pressure screw down full way non-rising stem wedge gate valve to BS 1952, with wheel and head joints to steel tubing. The gate valve to be as PEGLER or approved equivalent.	2	No.		
G	50mm diameter ditto	2	No.		
	Reducers				
K	50 x 25 mm diameter reducer	2	No.		
	Unions				
L	25mm diameter pipe unions	2	No.		
M	50mm diameter pipe unions	2	No.		
	Hosereel Pumpset				
N	Hosereel pumpset, one duty, the other standby mounted on a frame with a mild steel base plate. Each pump shall have a duty 5m ³ /hr. against 10m head as Grundfos model CH 4-40 or approved equivalent. In addition, there shall be a 60 litres diaphragm pressure vessel (as Varem or approved equivalent), pressure switches, a switch to protect dry run, 50mm foot valve and strainer, tank connections, gate valves and non-return valves. Control shall be effected via a pressure switch through a pre-wired control panel which shall give automatic change-over from duty to standby pump within 5 seconds should the duty pump fail to deliver for any reason. The pumpset shall include all non-returns valves, timer, isolating valves and pipe connections.	1	Set		
	CHIEF EXECUTIVE OFFICER NATIONAL AUTHORITY FOR THE CAUTION AGAINST FLOODING				
	AND ALSO SUBJECT Total carried to Next page				

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Item	Description	Qty	Unit	Rate (Kshs)	Cost (Kshs)
Total brought forward from Previous page					
	Fire Hose Cabinet Surface mounted fire hose cabinet manufactured from electro galvanised steel sheet with folded edges and curled hose plate edges and painted with electro static powder coating, 180oC baked. The cabinet size shall be capable of housing 3No. portable extinguishers as described in the next page and should conform to BS EN 671-1. To be as Germania or equal and approved.	2	No.		
A					
	Fire Blanket Fire blanket made of cloth woven with pre-asbestos yarn or any other fire proof material and to measure 1800 x 1210 mm. It shall be fitted with special tapes folded so as to offer instantaneous single action to release blanket from storing jacket to BS 1721.	3	No		
B					
	Portable Fire Extinguishers Supply, deliver, install, test and commission the following portable fire extinguishers and conforming to BS EN 3 / BS 1449.				
	Water/Carbon Dioxide Gas Fire Extinguisher 9 litres water/carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	3	No		
C					
	Carbon Dioxide Gas Fire Extinguisher 5kg carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	3	No		
D					
	Dry Chemical Powder Fire Extinguisher 9kg dry chemical powder portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	3	No		
E					
	Manual Alarm Bell 9" (225mm) manual operated alarm bell (Gong)	3	No		
F					
	Fire Notices Allow for fire signage for the hose reel system, fire exits and fire instructions as described in the particular specifications and to the Project Engineer's approval.	1	Item		
G					
Total for Kitchen Fire protection works carried to collection page					



COLLECTION PAGE KITCHEN INTERNAL PLUMBING, DRAINAGE AND FIRE FIGHTING WORKS

Item	Description	Amount (Kshs)
1	Total for Sanitary fittings brought forward from page 8	
2	Total Internal Plumbing brought forward from page 10	
3	Total Internal drainage brought forward from page 11	
4	Total Fire fighting works brought forward from page 14	
Total for Bill No. 2: Kitchen Sanitary fittings, Plumbing, Drainage and Fire protection Works Carried to Main Summary Page		



BILL NO. 3: KITCHEN EQUIPMENT

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	KITCHEN EQUIPMENT				
	Cooking Island				
A	2-Burner Stockpot high pressure with 4rings burner with heavy duty cast iron pan support	1	No.		
B	1 Burner Gas Heated Stock Pot Stove	1	No.		
C	4 Burner electrically heated solid top cooking range with oven	1	No.		
D	Freestanding gas lava grill	1	No.		
E	Stainless steel gas heated boiling pan with steam release valve,steam pressure gauge and water supply 100ltrs	2	No.		
F	Stainless steel Electric Tilting Pan complete with elements, Temperature gauge and water supply capacity 100lts	1	No.		
G	Double bowl SS Sink on Stand (DBDD) 1500x700x860mm on Stand	2	No.		
H	Stainless steel worktop 3000x700x860mm with undershelf and splashback on stand	2	No.		
I	30 litres coffee/ Tea Boiler Urn	3	No.		
J	Deep Fat Fryer 21litres	1	No.		
K	Dough mixer 40litres	1	No.		
	Vegetable Preparation				
L	Potato peeler 25kg	1	No.		
M	Potato chipper 18kg	1	No.		
N	Knife Sharpener	1	No.		
O	Vegetable Processor/Preparation Machine of capacity 150 kg/hr with 5 discs	1	No.		
P	Stainless steel worktop with undershelf with splashback 2000x600x860mm long on stand	1	No.		
Q	Stainless steel worktop with undershelf with splashback 1350x600x860mm long on stand	1	No.		
R	Single bowl SS Sink on Stand (DBDD) 1000x700x860mm on stand	1	No.		
	Vegetable store				
S	3-tier Vegetable Rack 1500 x 600 x 1800	2	Item		
T	Stainless steel worktop with undershelf with splashback 1350x600x860mm long on stand	1	No.		
Total C/F to the next page					

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ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	Total B/F from previous page				
	Meat Preparation				
A	Stainless steel worktop with undershelf with splashback 2000x600x860mm long on stand	1	No.		
B	Stainless steel worktop with undershelf with splashback 1350x600x860mm long on stand	1	No.		
C	Single bowl SS Sink on Stand (DBDD) 1000x700x860mm on stand	1	No.		
D	Meat chopping block 600mmx600mm on stand	1	No.		
E	Meat slicing machine	1	No.		
F	Meat Mincer 150kg/hr	1	No.		
G	Floor standing Bone saw	1	No.		
H	Bench Electronic weighing scale (0 - 30Kg.)	1	No.		
	Wash-up				
I	Double bowl SS Sink on Stand (DBDD) 1500x700x860mm	1	No.		
J	Stainless steel worktop with undershelf and splashback 2400x700x860 on stand	1	No.		
K	Stainless Steel 4-Tier Kitchen Rack size 1800 x600 x 1800	1	No.		
	Utensil store				
L	Pot stacking rack 1350 x 600mm x 1800	1	No.		
M	Stainless Steel 4-Tier Kitchen Rack size 1800 x600 x 1800	1	No.		
N	Stainless Steel 4-Tier Plate stacking Rack size 1500 x500 x 1800	1	No.		
O	Stainless Steel Wall Shelf size 1800 x300mm	1	No.		
	Servery				
P	S/S Electric heated 4 pan baine marie with hotcupboard size 1500x700x850	2	No.		
Q	Commercial s/s Microwave Oven 24 litres	1	No.		
R	Industrial blender 4litrs	1	No.		
	Store				
S	250 kg Electronic Digital weight scale	1	No.		
	Total C/F to the next page				

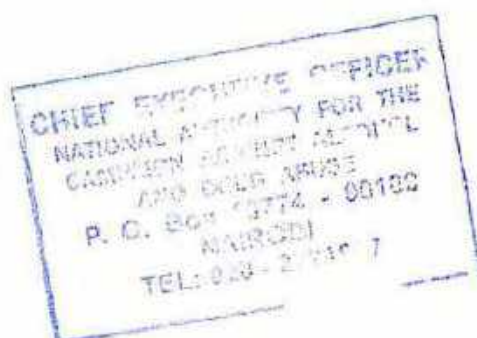
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ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	Total B/F from previous page				
A	Stainless Steel 4-Tier Kitchen Rack size 1800 x600 x 1800	1	No.		
	Cold Area				
B	Double door Upright refrigerator 1100 litres	1	No.		
C	Chest type freezer cabinet 600 litres	1	No.		
D	Commercial surge Protector	1	No.		
	General Items				
E	Insectocutor	3	Item		
F	Mobile Refuse Bins 350x350x860mm	1	No.		
G	Multi-purpose stainless steel kitchen trolley 1800x750x800	2	No.		
H	ETR Cash register	1	No.		
I	Commercial multi purpose juice extractor as WF-B2000 size 340x285x360, 2800 speed r/min or equivalent approved	1	No.		
J	Dish washer of capacity 51 baskets/hr as ANGELO PO HOOD dish washer 50x50 baskets, 51 baskets/hr or equivalent	1	No.		
	Dish washer racks for plates 500x500mm	2	No.		
	Dish washer racks for cups 500x500mm	2	No.		
K	Mechanical Project Engineer Stationery HP Elitebook 1030 G3 X360 Laptop core i7 16GB RAM 512GB SSD 13.3 INCH display	2	No.		
L	Photocopy paper, size A4, 80g/cm ² , White, 500 sheets	15	Ream		
M	Letter head quality paper, size A4, 80g/cm ² , Green, 500 sheets	3	Ream		
N	Letter head quality paper, Blue, 500 Sheets as Classic or Conqueror or approved equivalent.	4	Ream		
O	External harddisk as "Transend 2TB Portable External Hard Drive USB 3.0" or equivalent	4	No.		
P	Allow a provisional sum of Kenya shillings three hundred thousand as training for CPD points for Engineers to be paid to State Department of Public Works	1	Item	300,000.00	300,000.00
Total for Bill No.3: Kitchen Equipment C/F to Summary Page					

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BILL NO.4:KITCHEN L.P.G. INSTALLATIONS					
Item	Description	Qty	Unit	Rate (Ksh)	Amount (Ksh)
	Kitchen L.P Gas Installation				
	Storage Tank				
A	1000kg (1 TONNE) L.P gas cylinder complete with initial L.P gas,20mm isolating regulator and connecting hose	1	No.		
B	50kg Standby L.P gas cylinder complete with initial L.P gas,15mm isolating regulator and connecting hose	4	No.		
C	First stage gas pressure regulator	1	No.		
D	Second stage gas pressure regulator	1	No.		
E	L.P. Gas pressure gauge	1	No.		
F	Change over switch LPG change over switch complete with valves for switching from gas storage tank to Standby cylinders including all necessary connections	1	Item		
	Gas Isolating Valve				
G	25mm diameter L.P gas isolation valve shall be quarter turn, lever operated ball valve of stainless steel construction complete with unions and threaded adaptor	2	No.		
H	15mm diameter L.P gas isolation valve shall be quarter turn, lever operated ball valve of stainless steel construction complete with unions and threaded adaptor	2	No.		
	Pipe Sleeves				
I	50mm diameter heavy duty PVC (class 41, 2.5mm thick) pipe sleeves for crossing the concrete slab	30	Lm		
J	32mm diameter GMS pipe class B	10	Lm		
	Pipe work				
K	25mm diameter Seamless schedule 40 L.P gas pipe with pipe threads and pipe fittings (unions, elbows e.t.c)	40	LM		
L	15mm ditto	10	No		
M	6/8mm copper gas pipe	15	Lm.		
N	6mm dia gas cork	5	No.		
O	15mm dia gas cork	4	No.		
	Total C/F to the next page				



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ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	Total B/F from previous page				
	Bends				
A	25mm diameter bend/ elbow	5	No.		
B	15mm diameter bend/ elbow	5	No		
	Tees				
C	25mm equal diameter tee	5	No		
	Adaptor				
D	25x15 mm adaptor/reducer	6	No		
E	15x8 adaptor/reducer	6	No		
	Manifold				
F	4300mm long 50mm Seamless schedule 40 pipe manifold with 5No. 15mm diameter tapings to equipment complete with mounting legs and 3meters long 6/8 copper gas pipes and painted in marine type yellow colour.	1	Item		
	Excavations				
G	Excavate trench 300mm wide and depth not exceeding 1000mm deep and average 750mm deep, prepare bed with red soil/marram of particle size not more than 20 mm to a depth of 750mm. Bed shall be approved by Engineer before laying of pipes. Fill with same material as above and compact in layers of 75 mm. Cart away surplus soil.	50	Lm		
	Working and As-built Drawings				
H	Allow for Record Drawings, maintenance and operation manuals for kitchen equipment layout, plumbing & drainage and lp gas in both soft and hard copies. Three copies of as-built drawing shall be submitted in A1 paper and a soft copy in 2 GB flash disc in the latest AutoCAD release format in a scale of 1:50	1	Item		
	Flushing				
I	Allow for flushing out and cleaning the whole pipework system with compressed air	1	Sum		
	Testing and Commissioning				
J	Testing and commissioning, setting to work to the requirements of the specification the LPG system	1	Item		
Total for Bill No.4:Kitchen LPG Installation C/F to Summary Page					



BILL NO. 5: KITCHEN EXTRACT SYSTEM

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	<u>Kitchen Cooking Island & Deep fat fryer Extract System</u> Supply, deliver, install and fix the following equipment/ items as described. Where trade names are mentioned the tenderer must provide the same materials as other brands shall not be accepted without a written authority to supply alternative brands by the Mechanical Engineer.				
	Cooking Island Extract Hood				
A	5200 x 3180 x 600mm deep kitchen extract hood manufactured from 16 SWG anodized Aluminium sheet complete with its framework, supports and stiffened by a frame of 38 x 38mm galvanized mild steel R.H.S. The hood shall have a 75mm wide by 25mm deep grease drainage channel all round with 1No. 20mm diameter drain holes and a plenum box.	1	No		
B	Ditto 1200x1159x600mm deep Grease Filter Bank	1	No		
C	The grease filter unit consisting of a double-sided V-bank housing with top exit for use in island canopy applications for housing 6No. 508 x 254mm top exit washable type stainless steel filter panels. The unit shall have removable grease trays and framework made out of stainless steel. As "Vokes" DS 20/6 double sided V-bank housing with top exit or equal and approved.	1	No		
D	Single angle unit top exit for use in deep fryer canopy for housing 2No. 508x254 top exit washable type stainless steel filter panels. The unit shall have removable grease trays and framework made out of stainless steel. As "Vokes" TE 20/2 single sided Top exit housing with top exit or equal and approved	1	No		
	Grease Filter				
E	The grease filters of size 508 x 254mm washable type stainless steel filter panels. The unit shall have removable grease trays and framework made out of stainless steel. The filter shall be composed of folded woven metal material interspersed with layers of expanded metal mesh of stainless steel and shall be capable of filtering a total of 1200m ³ /hr. The filter panels shall be easily removable for washing as and when necessary. As "Vokes" or equal and approved.	6	No		
F	Ditto for deep fat fryer canopy Ductwork	2	No		
G	500 x 500mm extract duct from hood to fan, constructed from 18 S.W.G. rolled galvanized steel sheet and connected to the fan by flexible connections and flanged joints. All joints and seams shall be sealed with mastic to make them airtight.	40	SM		
H	Ditto 350x350mm	30	SM		
I	Allow for all ductwork fittings associated with the complete installation of the ductwork for satisfactory functioning of the ductwork system.	1	Item		
Total C/F to the next page 00100					

SOCIAL HALL, KITCHEN NACADA MIRITINI

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	Total B/F from previous page				
	Extract Fan				
A	Axial case fan capable of extracting 1.8m ³ /s of air against 300Pa static pressure. The fan will be driven by an electric motor. The fan shall be installed complete with guard kit, plate fan inlet guard, protection guard, silencer and flexible connector, in accordance with the manufacturer's printed instructions.	1	No		
B	Diitto extracting 0.57m ³ /s of air against 150Pa static pressure.	1	No		
	Fan Installation				
C	Allow for fixing of fans, sealing and water proofing of the exit area of duct through the roof.	1	Item		
	Anti-vibrations Mounting				
D	Anti-vibrations mounting to isolate vibrations between the fan and the roof structure shall be able to withstand a load range of upto 23kg per mounting and shall be as "WOODS" part No. 76518 or equal and approved.	2	Item		
	Fan Control Panel				
E	Splash proof control panel manufactured from 1.2mm thick sheet with stove enamel finish and clear perplex front cover. The panel shall incorporate isolator contactor phase failure relay, motor starter, overload relay and overheat safety control and fuses.	1	No		
	Vapor Proof Light Fitting				
F	Vapor proof light fittings, capacity 65 watts in a heat resistant and watertight enclosure all complete with in approved heat resistant conduits and wiring in the kitchen hood.	3	No		
	Fire Damper				
G	Shutter fire damper complete with fusible link and micro switch for de-activating the fan when damper closes suitable for a duct size 500 x 500mm	2	No		
	Associated Electrical Work				
H	Electrical works including but not limited to wiring and conduits to both kitchen extract fans and control panels from local isolators provided by others. It shall include a push and turn safety switch near the fan for isolation during servicing and maintenance.	1	Item		
I	Allow for As- Built drawing, maintenance and operation manuals in both soft and hard copies. Three copies of as-built drawing shall be submitted in A1 paper and a soft copy in 2 GB flash disc in the latest AutoCAD release format in a scale of 1:50	1	Item		
J	Testing and Commissioning Testing and commissioning, setting to work to the requirements of the specification	1	Item		
	BUILDER'S WORKS ASSOCIATED WITH KITCHEN ISLAND INSTALLATION				
K	Allow for construction of kitchen island plinth of size 5000 x 2780 x 150 mm deep. The plinth should allow for conduit work for water, gas and electricity.	1	Item		
	Total C/F to the next page				

SOCIAL HALL, KITCHEN NACADA MIRITINI

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
A	Total B/F from previous page Allow for all builders works associated with but not limited to hacking the floor for plumbing, drainage, gas and electrical conduits. It shall also include hacking the walls for water, drainage and electrical services. Note that the floor has terrazo finish. Allow for making good the floor/walls to initial state.	1	Item		
B	Allow for construction of masonry dwarf wall, approximately 5000 mm long x 600mm high x 200 mm thick, in the kitchen island for anchorage of LP gas and electrical services.	1	Item		
Total for Kitchen Extraction Carried Forward to Main Summary Page					



SOCIAL HALL,KITCHEN NACADA MIRITINI

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
BILL NO. 6:KITCHEN COLD ROOM INSTALLATION					
A	Evaporator Unit 4.0kW evaporator unit as Guntner or equal and approved.	1	No.		
B	Semi-hermetic Condensing Unit To have capacity matching Item A above. To be as BITZER or equal and approved.	1	No.		
C	Control Panel The panel shall be complete with contactors, timers and all other accessories necessary for the automatic operation of the coldstore.	1	No.		
D	Coldroom Finishes. 0.9mm (SWG 20) thick aluminium sheet fixed firmly on the coldroom walls and the roof complete with the corner panels.	45	SM		
E	1.62mm (16 SWG) thick chequered aluminium plate reinforced with GI steel sheet underneath and fixed firmly on the floor	7	SM		
F	Thermal Insulation Supply and lay 50mm thick pre-fabricated insulation in two layers with a coat of vapour seal between layers.	52	SM		
G	Coldroom Door Complete insulated kitchen coldroom door Size: 1900 x 900 x 175mm thick complete with rubber seals on door edges.	1	Item		
H	Controls Room thermostat to cut compressor in and out, depending on the room temperature.	1	No.		
I	Accessories Dial thermometer	1	No.		
J	Thermostatic expansion valve	1	No.		
K	Solenoid valve	1	No.		
L	Filter drier	1	No.		
M	Low and high cut-out switch	1	No.		
N	Low pressure gauge	1	No.		
O	High pressure gauge	1	No.		
P	Sight glass	1	No.		
Q	Refrigerant Pipework Copper pipework complete with armflex Insulation, 15mm diameter copper tubing	7	LM		
Total C/F to the next page					

SOCIAL HALL,KITCHEN NACADA MIRITINI

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	Total B/F from previous page				
	Refrigerant				
A	Allow for the charging of the refrigeration system with necessary amount of refrigerant for initial testing and eventual operation of the coldstore.	1	Item		
	Other Items				
B	80mm diameter and 2000mm long galvanised meat rail	1	No.		
	Meat Hook				
C	Meat hooks	5	No.		
	Light Fitting				
D	65W vapour proof light fittings	1	No.		
	Food Rack				
E	3-tier stainless steel food rack -1200 x 650 x 1200 mm high	1	No.		
	Anti-Vibration Mountings				
F	Anti-Vibration Mountings for the condensing unit as WOODS P.N.50417 or equal and approved.	1	Item		
	Associated Electrical Works				
G	Allow for electrical works including but not limited to wiring and conduits from the local isolator provided by others within 2metres in the machine room to the control panel, condenser and evaporator. It shall include a push and turn safety switch near the machines in the machine room for isolation during servicing and maintenance.	1	Item		
	Total C/F to the next page				



SOCIAL HALL,KITCHEN NACADA MIRITINI

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	Total B/F from previous page				
	As-built Drawings Maintenance and Operation Manuals				
A	Allow for as-built drawing, maintenance and operation manuals in both soft and hard copies. Three copies of the as-built drawing shall be submitted in A1 paper in a scale of 1:50	1	Item		
	Testing and Commissioning				
B	Allow for setting to work, testing and commissioning of the coldroom installation to the satisfaction of the Project Engineer	1	Item		
Total for Bill No.6: Kitchen Coldroom carried forward to Summary page					



SUMMARY PAGE FOR KITCHEN AND SOCIAL HALL MECHANICAL WORKS

Item	Description	Amount (Ksh)
1	Total for Bill No 1:Preliminaries and General Items	
2	Total for Bill No 2:Sanitary fittings,Plumbing,Drainage and Fire fightings Installation Works	
3	Total for Bill No 3: Kitchen Equipment	
4	Total for Bill No 4:Kitchen LPG Installations	
5	Total for Bill No 5:Kitchen Extract system	
6	Total for Bill No 6:Kitchen Coldroom	
7	Contingency sum to be used at the discretion of the Engineer	1,800,000.00
	Total for Kitchen/Social Hall Mechanical Works carried to Summary Page of Vol. 1 of 3	

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 19774 - 00100
NAIROBI
TEL: 020 - 2721097

SCHEDULE OF UNIT RATES

ITEM	DESCRIPTION	UNIT	RATE (KShs)
1.	Close coupled water closet, white	No.	
2.	Countertop 'Duravit Caro' wash hand basin	LM	
3.	40mm GI pipe	LM	
4.	40 mm gate valve (pegler)	LM	
5.	65mm gate valve	No.	
6.	75mm ditto	No.	
7.	50mm ditto	No.	
8.	3.0 Kw evaporator unit	LM	
9.	Condensing unit to match item 3 above	No.	
10.	5.0 Kw evaporator unit	No.	
11.	Condensing unit to match item5 above	No.	
12.	Axial fan capable of extracting 1.5 m ³ /s of air against 250 Pa static pressure.	No.	
13.	Fan control panel	No.	
14.	Single door Upright refrigerator 700 litres	No.	
15.	Water dispenser 20litres	No.	
16.	Mixing machine	No.	
17.	2 Ton gas tank and gas supply	No.	
18.	Hose reel	No.	
19.	Electric stainless-steel hot cupboard	No.	
24.		No.	

INVESTIGATIVE OFFICES
FEDERAL BUREAU OF INVESTIGATION
AND CRIMINAL JUSTICE
P. O. BOX 10774 - 00100
HAWAII
TEL: 643-2721087

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SECTION K:

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED



CONTENTS

<u>CLAUSE No.</u>	<u>PAGE</u>
1. GENERAL NOTES TO THE TENDERER.....	(i)
2. TECHNICAL SCHEDULE.....	K-1-K-2



TECHNICAL SCHEDULE

1. General Notes to the Tenderer

- 1.1 The tenderer shall submit technical schedules for all materials and equipment upon which he has based his tender sum.
- 1.2 The tenderer shall also submit separate comprehensive descriptive and performance details for all plant apparatus and fittings described in the technical schedules. Manufacturer's literature shall be accepted. Failure to comply with this may have his tender disqualified.
- 1.3 Completion of the technical schedule shall not relieve the Contractor from complying with the requirements of the specifications except as may be approved by the Engineer.



TECHNICAL SCHEDULE

The tenderer must complete in full the technical schedule. Apart from the information required in the technical schedule, the tenderer **MUST SUBMIT** comprehensive manufacturer's technical brochures and performance details for all items listed in this schedule (fill forms attached).

ITEM	DESCRIPTION	MANUFACTURER	COUNTRY OF ORIGIN	REMARKS (Catalogue No. etc.)
A	Portable extinguishers			
B	Copper pipes			
C	Gas Pressure regulator			
D	LPG Automatic Changeover switch			
E	Gas valves			
F	Bowl Urinal			
G	PPR pipe and fittings			
H	Extract fan 1.8m ³ /s against 300Pa static pressure			
I	Extract 0.57m ³ /s of air against 150Pa			
J	Control panels			
K	4.0 kW evaporator unit			
L	Copper pipe			
M	1 tonne LPG tank			
N	Dish washer of capacity 51 baskets/hr			
O	2-Burner Stockpot high pressure with 4rings burner with heavy-duty cast-iron pan support			
P	1 Burner Gas Heated Stock Pot Stove			
O	Freestanding gas lava grill			
Q	Stainless steel gas heated boiling pan 100ltr Stainless steel Electric Tilting Pan 100ltr			
R	Deep Fat Fryer 21litres			
S	Dough mixer 40litres			

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 18774 - 00100
NAIROBI
TEL: 020 - 2721097

A	4 Burner electrically heated solid top cooking range with oven			
B	S/S Electric heated 4 pan bain marie with hotcupboard size 1500x700x850			
C	Low level wash down water closet suite			
D	Ambulant Disabled Water Closet suite			
E	Urinal 2 Bowl			
F	Urinal flush valve			
G	Glass Reinforced Plastic (GRP) sectional tank plates 6mm thick plates (type 1 and 4) and of size 1000mm x 1000mm			
H	Sluice Valve 100mm			
I	Booster pump capacity 8 cubic metres per hour against a head of 40 meters.			
J	100 litres pressure vessel			
K	Grease Filter Bank V-bank housing with top exit			
L	Grease Filter Bank Single angle unit top exit			
M	32mm Water Meter			
N	Hose reel Pump set of capacity 5m ³ /hr against 10m head			
O	Non-Return Valve 100mm			

Catalogue must be attached for all the items in the schedule of material above



DEPT. SECRETARY OFFICE
NATIONAL AUTHORITY FOR THE
ERADICATION AGAINST ALCOHOL
AND DRUG ABUSE
P. O. BOX 19774 - 00150
Nairobi
TEL: 011-3721997

SECTION L:

DRAWING SCHEDULE

CONTENTS

<u>CLAUSE No.</u>	<u>PAGE</u>
1. DRAWING SCHEDULE.....	L-1



DRAWING SCHEDULE:

As shall be provided during project implementation.

L-1



PROVISIONAL SUMS

CHIEF EXECUTIVE OFFICER
NATIONAL AUTHORITY FOR THE
CAMPAIGN AGAINST ALCOHOL
AND DRUG ABUSE
P. O. Box 13774 - 00120
NAIROBI
TEL: 020 - 2721397

ITEM	DESCRIPTION				KSHS.	CTE
	PROVISIONAL SUMS					
A	Provide a Provisional sum of Kshs.Five Million for contingencies to be omitted or expended in whole or part at the discretion of the Project Manager in consultation with the client.				5,000,000.00	
	<u>TOTAL TO GRAND SUMMARY</u>			KSHS.	5,000,000.00	

PS/1



GRAND SUMMARY

CHIEF EXECUTIVE OFFICE
NATIONAL AUTHORITY FOR THE
CAMPAIGN ACCOUNT ALLOCATION
AND OMBUDSMAN
P. O. Box 19774 - 00120
NAIROBI
TEL: 020 - 2721097

**PROPOSED NATIONAL MULTI PURPOSE FACILITY FOR DRUG USE DISORDERS IN MOMBASA -
KITCHEN/DINING/SOCIAL HALL**

WP ITEM NO. D102/CO/MSA/1902 JOB NO.10750C5

GRAND SUMMARY

ITEM	DESCRIPTION		OFFICIAL USE (KSHS)	FOR CONTRACTOR'S USE
1	PARTICULAR PRELIMINARIES	PP/8		
2	GENERAL PRELIMINARIES	GP/15		
3	BUILDERS WORK VOL. 1 OF 3	KB/S		
4	EXTERNAL WORKS	EW/S		
5	ELECTRICAL ENGINEERING SERVICES VOL 2 OF 3	Elec-G20		
6	MECHANICAL ENGINEERING SERVICES VOL 3 OF 3	J-28		
7	PROVISIONAL SUMS	PS/1		
	TOTAL CARRIED TO FORM OF TENDER (VAT INCL.) KSHS.			

Amount in words: Kenya Shilings...

Tenderer's signature and stamp.....

Address.....

Date.....

Witness: Name and signature.....

Address.....

Date.....

