REPUBLIC OF KENYA

MINISTRY OF TOURISM AND WILDLIFE
STATE DEPARTMENT FOR WILDLIFE
P.O.BOX 41394 -00100 NAIROBI

OPEN TENDER

FOR

PROPOSED CONSTRUCTION OF WATER PANS, DRILLING, EQUIPPING & CIVIL WORKS FOR BOREHOLES IN VARIOUS PARTS OF KENYA

TENDER NO. SDW/ONT/012A/2023-2024

CLOSING DATE: 7TH FEBRUARY 2024

NSSF BUILDING BLOCK 'A' EASTERN 15TH FLOOR,

BISHOP ROAD

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INVITATION TO TENDER

Date: 18th January 2024

Tender No.: SDW/ONT/012A/2023-2024

PROCURING ENTITY:	***State Department for Wildlife,*** ***P. O. BOX 41394 -00100, Nairobi TEL: 0254-20-2724725/2724646*** ***Tender No. SDW/ONT/012A/2023-2024***
CONTRACT NAME:	***Drilling, Equipping and Civil Works of Boreholes in Kericho, Nakuru and Baringo Counties***
CONTRACT DESCRIPTION:	***Drilling, Equipping Civil Works of Boreholes in Kericho, Nakuru and Baringo Counties*** ***Tender No. SDW/ONT/012A/2023-2024***

1.	The **Ministry of Tourism and Wildlife,** ***State Department for Wildlife*** invites sealed Tenders for ***Drilling, Equippingand Civil Works of Boreholes in Kericho, Nakuru and Baringo Counties*** The scope of works is as follows: - 1. Drilling and Construction of Borehole 2. Pump Installation and Control Panel 3. Raising Main Pipeline 4. Construction of 100 m^3 Masonry/Steel Elevated and or 24m^3Steel Elevated Tank 5. Last Mile Connectivity 6. Other civil works The Construction Period is: ***6 Months*** The Location is: ***various***
m	Tendering will be conducted under open competitive method *using* a standardized Tender document. Tendering is to citizen contractors.
3.	The tenderers may obtain further information and inspect the Tender Documents during office hours *[. 0900 to 1500 hours]* at the address given below.
4.	A complete set of tender documents may be obtained by interested tenderers electronically fromthe www.tenders.go.ke or www.tourism.go.ke
5.	Tenders shall be quoted in Kenya Shillings and shall include all taxes.
	Tenders shall remain valid for (180) days from the date of opening of tenders.
6.	All Tenders must be accompanied by a Tender Security Amount for kshs.150,000.00 (One Hundred and Fifty Thousand Kenya shillings (In Accordance with Section 61(2) (c) of the PPADAct 2015)

7.	The Tenderer shall chronologically serialize all pages of the Tender documents submitted (Mandatory in Accordance with Section 74(1)(i) Of the PPAD Act 2015)	
8.	Completed Tenders must be delivered to the address below on or before ***10.00am on 7th February 2024*** ***State Department for Wildlife,*** ***NSSF Building, Bishop Road*** ***P.O BOX 41394 -00100, Nairobi.*** **Electronic Tenders will not be permitted**.	
9.	Tenders will be opened immediately after the deadline date and time specified above or any dead line date and time specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend at the address below.	
10.	Bidders are allowed to quote for maximum **Two (2) lots (sites)** and in the event a bidder quote for more than two lots/sites, the evaluation team shall consider the first two bids only at the financial stage	
11.	Late Tenders will be rejected.	
12.	The addresses referred to above are:	
1)	Name of Procuring Entity	***State Department for Wildlife***
2)	Physical address for hand Courier Delivery to an office or Tender Box (City, Street Name, Building, Floor Number and Room)	**Tender Box:** 15th Floor **City:** Nairobi **Street Name:** Bishop Road Building Name: NSSF Building Block A, **Floor Number:** 15th Floor
3)	Postal Address	P.O Box 41394 -00100, Nairobi.
4)	Insert name, telephone number and e-mail address of the officer to be contacted.	Principal Secretary TEL: +0254-20-2724725/2724646

B.	Addressor submission of Tenders	
1)	Name of Procuring Entity	State Department for Wildlife
2)	Postal Address (include designation of officer to be attentioned)	P.O Box 41394 -00100, Nairobi. Attention: Principal Secretary
3)	Physical address for hand Courier Delivery to an office or Tender Box (City, Street Name, Building, Floor Number and Room)	Tender Box: NSSF Block A 15th Floor City: Nairobi Street Name: Bishop Road Building Name: NSSF Building Block A Floor Number: 15th Floor
C.	Address for Opening of Tenders	
1)	Name of Procuring Entity	*State Department for Wildlife*
2)	Physical address for the location (City, Street Name, Building, Floor Number and Room)	City: Nairobi *Street Name: Bishop Road* *Building Name: NSSF Building* *Floor Number: 15th Floor*

Principal Secretary ……. Date……

PART 1 - TENDERING PROCEDURES

SECTION I: INSTRUCTIONS TO TENDERERS

A General Provisions

1. Scope of Tender

1.1 The ***State Department for State Department for Wildlife*** invites tenders for Works Contract as described in the tender documents. The name, identification, and number of lots (contracts) of this Tender Document are **specified in the TDS.**

2. Fraud and Corruption

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

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

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

2.4 Unfair Competitive Advantage -Fairness and transparency in the tender process require that the Firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender being tendered for. The Procuring Entity shall indicate in the **TDS** firms (if any) that provided consulting services for the contract being tendered for. The Procuring Entity shall check whether the owners or controllers of the Tenderer are same as those that provided consulting services. The Procuring Entity shall, upon request, make available to any tenderer information that would give such firm unfair competitive advantage over competing firms.

3. Eligible Tenderers

3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.7 or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. Public employees and their close relatives *(spouses, children, brothers, sisters and uncles and aunts)* are not eligible to participate in the tender. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the tendering process and, in the event the JV is awarded the Contract, during contract execution. The maximum number of JV members shall be specified in the **TDS.**

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

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

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

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

c) Has the same legal representative as another tenderer; or

d) Has a relationship with another tenderer, directly or through common third parties, that puts it in a position

to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process; or

e) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender; or

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

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

h) Has a close business or family relationship with a professional staff of the Procuring Entity who:

i) are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract; or

ii) would be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.

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

3.5 A Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. A firm that is not a tenderer or a JV member may participate as a subcontractor in more than one tender. Members of a joint venture may not also make an individual tender, be a subcontractor in a separate tender or be part of another joint venture for the purposes of the same Tender.

3.6 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT 4.8.A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub-consultants for any part of the Contract including related Services.

3.7 Tenderer that has been debarred from participating in public procurement shall be ineligible to tender or be awarded a contract. The list of debarred firms and individuals is available from the website of PPRA www.ppra.go.ke.

3.8 Tenderers that are state-owned enterprises or institutions may be eligible to compete and be awarded a Contract(s) only if they are accredited by PPRA to be (i) a legal public entity of the state Government and/or public administration, (ii) financially autonomous and not receiving any significant subsidies or budget support from any public entity or Government, and (iii) operating under commercial law and vested with legal rights and liabilities similar to any commercial enterprise to enable it compete with firms in the private sector on an equal basis.

3.9 A Firms and individuals may be ineligible if their countries of origin (a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country, or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country. A tenderer shall provide such documentary evidence of eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

3.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, subcontracts and labor) from national suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided in for this purpose is be provided in *"SECTION III - EVALUATION AND QUALIFICATION*

CRITERIA, Item 9".

3.11 Pursuant to the eligibility requirements of ITT 4.10, a tender is considered a foreign tenderer, if the tenderer is not registered in Kenya or if the tenderer is registered in Kenya and has less than 51 percent ownership by Kenyan

Citizens. JVs are considered as foreign tenderers if the individual member firms are not registered in Kenya or if are registered in Kenya and have less than 51 percent ownership by Kenyan citizens. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.

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

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

3.14 A Kenyan tenderer shall provide evidence of having fulfilled his/her tax obligations by producing a valid tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority.

4. Eligible Goods, Equipment, and Services

4.1 Goods, equipment and services to be supplied under the Contract may have their origin in any country that is not eligible under ITT 3.9. At the Procuring Entity's request, Tenderers may be required to provide evidence of the origin of Goods, equipment and services.

4.2 Any goods, works and production processes with characteristics that have been declared by the relevant national environmental protection agency or by other competent authority as harmful to human beings and to the environment shall not be eligible for procurement.

5. Tenderer's Responsibilities

5.1 The tenderer shall bear all costs associated with the preparation and submission of his/her tender, and the Procuring Entity will in no case be responsible or liable for those costs.

5.2 The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine 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.

5.3 The Tenderer and any of its personnel or agents will be granted permission by the Procuring Entity to enter upon its premises and lands for the purpose of such visit. The Tenderer shall indemnify the Procuring Entity against all liability arising from death or personal injury, loss of or damage to property, and any other losses and expenses incurred as a result of the inspection.

5.4 The tenderer shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including charts, as necessary or required.

B. Contents of Tender Documents

6. Sections of Tender Document

6.1 The tender document consists of Parts 1, 2, and 3, which includes all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITT 8.

PART 1 Tendering Procedures

i) Section I - Instructions to Tenderers (ITT)
ii) Section II - Tender Data Sheet (TDS)
iii) Section III - Evaluation and Qualification Criteria
iv) Section IV - Tendering Forms

PART 2 Works Requirements

i) Section V - Drawings
ii) Section VI - Specifications
iii) Section VII - Bills of Quantities

PART 3 Conditions of Contract and Contract Forms

i) Section VIII - General Conditions of Contract (GCC)
ii) Section IX - Special Conditions of Contract (SC)
iii) Section X - Contract Forms

6.2 The Invitation to Tender Document (ITT) issued by the Procuring Entity is not part of the Contract documents.

6.3 Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 8. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail. The Tenderer is expected to examine all instructions, forms, terms, and specifications in the Tender Document and to furnish with its Tender all information and documentation as is required by the Tender document.

7. Site Visit

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

8. Pre-Tender Meeting

8.1 The Procuring Entity shall specify in the **TDS** if a pre-tender meeting will be held, when and where. The Procuring Entity shall also specify in the **TDS** if a pre-arranged pretender site visit will be held and when. The Tenderer's designated representative is invited to attend a pre-arranged pretender visit of the site of the works. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

8.2 The Tenderer is requested to submit any questions in writing, to reach the Procuring Entity not later than the period specified in the **TDS** before the meeting.

8.3 Minutes of the pre-Tender meeting and the pre-arranged pretender site visit of the site of the works, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents in accordance with ITT 6.3. Minutes shall not identify the source of the questions asked.

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

9. Clarification and amendments of Tender Documents

9.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the **TDS** or raise its enquiries during the pre-Tender meeting and the pre-arranged pretender visit of the site of the works if provided for in accordance with ITT 8.4. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the **TDS** prior to the deadline for submission of tenders. The Procuring Entity shall forward copies of

its response to all tenderers who have acquired the Tender Documents in accordance with ITT 6.3, including a description of the inquiry but without identifying its source. If specified in the **TDS**, the Procuring Entity shall also promptly publish its response at the web page identified in the **TDS**. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents appropriatelyfollowingthe procedure under ITT 8.4.

10. Amendment of Tendering Document

10.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tendering document by issuing addenda.

10.2 Any addendum issued shall be part of the tendering document and shall be communicated in writing to all who have obtained the tendering document from the Procuring Entity in accordance with ITT 6.3. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's web page in accordance with ITT 8.4.

10.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity shall extend, as necessary, the deadline for submission of Tenders, in accordance with ITT 25.2 below**.**

C. Preparation of Tenders

11. Cost of Tendering

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

12. Language of Tender

12.1 The Tender, as well as all correspondence and documents relating to the tender exchanged by the tenderer and the Procuring Entity, shall be written in the English Language. Supporting documents and printed literature that are part of the Tender may be in another language provided they are accompanied by an accurate and notarized translation of the relevant passages into the English Language, in which case, for purposes of interpretation of the Tender, such translation shall govern.

13. Documents Comprising the Tender

13.1 The Tender shall comprise the following:

a) Form of Tender prepared in accordance with ITT 14;
b) Schedules including priced Bill of Quantities, completed in accordance with ITT 14 and ITT 16;
c) Tender Security or Tender-Securing Declaration, in accordance with ITT 21.1;
d) Alternative Tender, if permissible, in accordance with ITT 15;
e) Authorization: written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordance with ITT 22.3;
f) Qualifications: documentary evidence in accordance with ITT 19 establishing the Tenderer's qualificationsto perform the Contract if its Tender is accepted;
g) Conformity: a technical proposal in accordance with ITT 18;
h) Any other document required in the **TDS**.

13.2 In addition to the requirements under ITT 11.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender,

together with a copy of the proposed Agreement. The Tenderer shall chronologically serialize pages of all tender documents submitted.

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

14. Form of Tender and Schedules

14.1 The Form of Tender and Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITT 20.3. All blank spaces shall be filled in with the information requested.

15. Alternative Tenders

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

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

15.3 Except as provided under ITT 13.4 below, Tenderers wishing to offer technical alternatives to the requirements of the Tender Documents must first price the Procuring Entity's design as described in the Tender Documents andshall further provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Winning Tender conforming to the basic technical requirements shall be considered by the Procuring Entity. When specified in the **TDS**, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the **TDS**, as will the method for their evaluating, and described in Section VII, Works' Requirements.

16. Tender Prices and Discounts

16.1 The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender and in the Bill of Quantities shall conform to the requirements specified below.

16.2 The Tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Tenderer shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the Procuring Entity. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Tender, and provided that the Tender is determined substantially responsive notwithstanding this omission, the average price of the item quoted by substantially responsive Tenderers will be added to the Tender price and the equivalent total cost of the Tender so determined will be used for price comparison.

16.3 The price to be quoted in the Form of Tender, in accordance with ITT 14.1, shall be the total price of the Tender, including any discounts offered.

16.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 14.1.

16.5 It will be specified in the **TDS** if the rates and prices quoted by the Tenderer are or are not subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, except in cases where the contract is subject to fluctuations and adjustments, not fixed price. In such a case, the Tenderer shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Procuring Entity may require the Tenderer to justify its proposed indices and weightings.

16.6 Where tenders are being invited for individual lots (contracts)or for any combination of lots (packages), tenderers wishing to offer discounts for the award of more than one Contract shall specify in their Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shallbe submitted in accordance with ITT 16.4, provided the Tenders for all lots (contracts) are opened at the same time.

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

17. Currencies of Tender and Payment

17.1 Tenderers shall quote entirely in Kenya Shillings. The unit rates and the prices shall be quoted by the Tenderer in the Bill of Quantities, entirely in Kenya shillings. A Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya shall device own ways of getting foreign currency to meet those expenditures.

18. Documents Comprising the Technical Proposal

18.1 The Tenderer shall furnish a technical proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV, Tender Forms, in sufficient detail to demonstrate the adequacy of the Tenderer's proposal to meet the work's requirements and the completion time.

19. Documents Establishing the Eligibility and Qualifications of the Tenderer

19.1 Tenderers shall complete the Form of Tender, included in Section IV, Tender Forms, to establish Tenderer's eligibility in accordance with ITT 4.

19.2 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract the Tenderer shall provide the information requested in the corresponding information sheets included in Section IV, Tender Forms.

19.3 A margin of preference will not be allowed. Preference and reservations will be allowed, individually or in joint ventures. Applying for eligibility for Preference and reservations shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 33.1.

19.4 Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a contractor or group of contractors qualifies for a margin of preference. Further the information will enable the Procuring Entity identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and thereby help to prevent any corrupt influence in relation to the procurement process or contract management.

19.5 The purpose of the information described in ITT 19.4 above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.

19.6 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to ownership and control which information on any changes to the information which was provided by the tenderer under ITT 6.3. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.

19.7 All information provided by the tenderer pursuant to these requirements must be complete, current and accurate as at the date of provision to the Procuring Entity. In submitting the information required pursuant to these requirements, the Tenderer shall warrant that the information submitted is complete, current and accurate as at the date of submission to the Procuring Entity.

19.8 If a tenderer fails to submit the information required by these requirements, its tender will be rejected. Similarly, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.

19.9 If information submitted by a tenderer pursuant to these requirements, or obtained by the Procuring Entity (whether through its own enquiries, through notification by the public or otherwise), shows any conflict of interest which could materially and improperly benefit the tenderer in relation to the procurement or contract management

process, then:

i) if the procurement process is still ongoing, the tenderer will be disqualified from the procurement process,
ii) if the contract has been awarded to that tenderer, the contract award will be set aside,
iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other persons have committed any criminal offence.

19.10 If a tenderer submits information pursuant to these requirements that is incomplete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 6.7 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material, or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tenderer.

20. Period of Validity of Tenders

20.1 Tenders shall remain valid for the Tender Validity period specified in the **TDS**. The Tender Validity period starts from the date fixed for the Tender submission deadline (as prescribed by the Procuring Entity in accordance with ITT 24). A Tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.

20.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT 21.1, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting itsTender security. A Tenderer granting the request shall not be required or permitted to modify its Tender, except as provided in ITT 20.3.

20.3 If the award is delayed by a period exceeding the number of days to be specified in the **TDS** days beyond the expiry of the initial tender validity period, the Contract price shall be determined as follows**:**

a) in the case of **fixed price** contracts, the Contract price shall be the tender price adjusted by the factor specified in the **TDS**;
b) in the case of **adjustable price** contracts, no adjustment shall be made; or in any case, tender evaluation shall be based on the tender price without taking into consideration the applicable correction from those indicated above.

21. Tender Security

21.1 The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender Security as specified in the **TDS**, in original form and, in the case of a Tender Security, in the amount and currency specified in the **TDS**. A Tender-Securing Declaration shall use the form included in Section IV. Tender Forms**.**

21.2 If a Tender Security is specified pursuant to ITT 19.1, the Tender Security shall be a demand guarantee in any of the following forms at the Tenderer's option:

a) an unconditional Bank Guarantee issued by reputable commercial bank); or
b) an irrevocable letter of credit;
c) a Banker's cheque issued bya reputable commercial bank; or
d) another security specified **in the TDS**,

21.3 If an unconditional bank guarantee is issued by a bank located outside Kenya, the issuing bank shall have a correspondent bank located in Kenya to make it enforceable. The Tender Security shall be valid for thirty (30) days beyond the original validity period of the Tender, or beyond any period of extension if requested under ITT 20.2.

21.4 If a Tender Security or Tender-Securing Declaration is specified pursuant to ITT 19.1, any Tender not accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.

21.5 If a Tender Security is specified pursuant to ITT 21.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the Performance Security and any other documents required in the **TDS**. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined nonresponsive or a bidder declines to extend tender validity period.

21.6 The Tender Security of the successful Tenderer shall be returned as promptly as possible once the successful Tenderer has signed the Contract and furnished the required Performance Security, and any other documents required in the **TDS**.

21.7 The Tender Security may be forfeited or the Tender-Securing Declaration executed:

e) if a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender, or any extension thereto provided by the Tenderer; or

f) if the successful Tenderer fails to:

i) sign the Contract in accordance with ITT 50; or

ii) furnish a Performance Security and if required in the **TDS**, and any other documents required in the **TDS**.

21.8 Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA that PPRA debars the Tenderer from participating in public procurement as provided in the law.

21.9 The Tender Security or the Tender-Securing Declaration of a JV shall be in the name of the JV that submits the Tender. If the JV has not been legally constituted into a legally enforceable JV at the time of tendering, the Tender Security or the Tender-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITT 4.1 and ITT 11.2.

21.10 A tenderer shall not issue a tender security to guarantee itself.

22. Format and Signing of Tender

22.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 13 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 15, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies of the Tender, in the number specified in the **TDS** and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

22.2 Tenderers shall mark as "CONFIDENTIAL" all information in their Tenders which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.

22.3 The original and all copies of the Tender shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified in the **TDS** and shall be attached to the Tender. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Tender where entries or amendments have been made shall be signed or initialed by the person signing the Tender.

22.4 In case the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

22.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender.

D. Submission and Opening of Tenders

23. Sealing and Marking of Tenders

23.1 Depending on the sizes or quantities or weight of the tender documents, a tenderer may use an envelope, package or container. The Tenderer shall deliver the Tender in a single sealed envelope, or in a single sealed package, or in a single sealed container bearing the name and Reference number of the Tender, addressed to the Procuring Entity and a warning not to open before the time and date for Tender opening date. Within the single envelope, package or container, the Tenderer shall place the following separate, sealed envelopes:

a) in an envelope or package or container marked "ORIGINAL", all documents comprising the Tender, as described in ITT 11; and

b) in an envelope or package or container marked "COPIES", all required copies of the Tender; and

c) if alternative Tenders are permitted in accordance with ITT 15, and if relevant:

i) in an envelope or package or container marked "ORIGINAL –ALTERNATIVE TENDER", the alternative Tender; and

ii) in the envelope or package or container marked "COPIES- ALTERNATIVE TENDER", all required copies of the alternative Tender.

The inner envelopes or packages or containers shall:

a) bear the name and address of the Procuring Entity.

b) bear the name and address of the Tenderer; and

c) bear the name and Reference number of the Tender.

23.2 If an envelope or package or container is not sealed and marked as required, the *Procuring Entity* will assume no responsibility for the misplacement or premature opening of the Tender. Tenders that are misplaced or opened prematurely will not be accepted.

24. Deadline for Submission of Tenders

24.1 Tenders must be received by the Procuring Entity at the address specified in the **TDS** and no later than the date and time also specified in the **TDS**. When so specified in the **TDS**, Tenderers shall have the option of submitting their Tenders electronically. Tenderers submitting Tenders electronically shall follow the electronic Tender submission procedures specified in the **TDS**.

24.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the Tender Documents in accordance with ITT 8, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

25. Late Tenders

25.1 The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of tenders, in accordance with ITT 24. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned unopened to the Tenderer.

26. Withdrawal, Substitution, and Modification of Tenders

26.1 A Tenderer may withdraw, substitute, or modify its Tender after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITT 22.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

a) prepared and submitted in accordance with ITT 22 and ITT 23 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION; "and

b) received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 24.

26.2 Tenders requested to be withdrawn in accordance with ITT 26.1 shall be returned unopened to the Tenderers.

26.3 No Tender may be withdrawn, substituted, or modified in the interval between the deadline for submission of Tenders and the expiration of the period of Tender validity specified by the Tenderer on the Form of Tender or any extension thereof.

27. Tender Opening

27.1 Except in the cases specified in ITT 23 and ITT 26.2, the Procuring Entity shall publicly open and read out all Tenders received by the deadline, at the date, time and place specified in the **TDS**, in the presence of Tenderers' designated representatives who chooses to attend. Any specific electronic Tender opening procedures required if electronic Tendering is permitted in accordance with ITT 24.1, shall be as specified in the **TDS**.

27.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelopes with the corresponding Tender shall not be opened, but returned to the Tenderer. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Tender opening.

27.3 Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Tender being substituted, and the substituted Tender shall not be opened, but returned to the Tenderer. No Tender substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Tender opening.

27.4 Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Tender. No Tender modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Tender opening.

27.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Tenderer and whether there is a modification; the total Tender Price, per lot (contract) if applicable, including any discounts and alternative Tenders; the presence or absence of a Tender Security or Tender-Securing Declaration, if required; and any other details as the Procuring Entity may consider appropriate.

27.6 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further for evaluation. The Form of Tender and pages of the Bills of Quantities are to be initialed by the members of the tender opening committee attending the opening. The number of representatives of the Procuring Entity to sign shall be specified in the **TDS**.

27.7 At the Tender Opening, the Procuring Entity shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 25.1).

27.8 The Procuring **Entity shall prepare minutes of the Tender Opening that shall include, as a minimum:**

a) the name of the Tenderer and whether there is a withdrawal, substitution, or modification;
b) the Tender Price, per lot (contract) if applicable, including any discounts;
c) any alternative Tenders;
d) the presence or absence of a Tender Security, if one was required.
e) number of pages of each tender document submitted.

27.9 The Tenderers' representatives who are present shall be requested to sign the minutes. The omission of a Tenderer's signature on the minutes shall not invalidate the contents and effect of the minutes. A copy of the tender opening register shall be distributed to all Tenderers upon request.

E. Evaluation and Comparison of Tenders

28. Confidentiality

28.1 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderers or any other persons not officially concerned with the Tender process until information on Intentionto Award the Contract is transmitted to all Tenderers in accordance with ITT 46.

28.2 Any effort by a Tenderer to influence the Procuring Entity in the evaluation of the Tenders or Contract award decisions may result in the rejection of its tender.

28.3 Notwithstanding ITT 28.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any **matter related to the tendering process, it shall do so inwriting.**

29. Clarification of Tenders

29.1 To assist in the examination, evaluation, and comparison of the tenders, and qualification of the tenderers, the Procuring Entity may, at its discretion, ask any tenderer for a clarification of its tender, given a reasonable time for a response. Any clarification submitted by a tenderer that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the tenders, in accordance with ITT 33.

29.2 If a tenderer does not provide clarifications of its tender by the date and time set in the Procuring Entity's request for clarification, its Tender may be rejected.

30. Deviations, Reservations, and Omissions

30.1 During the evaluation of tenders, the following definitions apply:

a) "Deviation" is a departure from the requirements specified in the tender document;

b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the tender document; and

c) "Omission" is the failure to submit part or all of the information or documentation required in the Tender document.

31. Determination of Responsiveness

31.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the tender itself, as defined in ITT 13.

31.2 A substantially responsive Tender is one that meets the requirements of the Tender document without material deviation**, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:**

a) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or

b) limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the tenderer's obligations under the proposed contract; or

c) if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsive tenders.

31.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 18, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.

31.4 If a tender is not substantially responsive to the requirements of the tender document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

32. Non-material Non-conformities

32.1 Provided that a tender is substantially responsive, the Procuring Entity may waive any non-conformities in the tender.

32.2 Provided that a Tender is substantially responsive, the Procuring Entity may request that the tenderer submit the necessary information or documentation, within a reasonable period, to rectify nonmaterial non-conformities in the tender related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the tender. Failure of the tenderer to comply with the request may result in the rejection of its tender.

32.3 Provided that a tender is substantially responsive, the Procuring Entity shall rectify quantifiable nonmaterial non-conformities related to the Tender Price. To this effect, the Tender Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified in the **TDS.**

33. Arithmetical Errors

33.1 The tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment or amendment in any way by any person or entity.

33.2 Provided that the Tender is substantially responsive, the Procuring Entity shall handle errors on the following basis:

a) Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualification of the tender as non-responsive.

b) Any errors in the submitted tender arising from a miscalculation of unit price, quantity, and subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead

to disqualification of the tender as non-responsive. and

c) if there is a discrepancy between words and figures, the amount in words shall prevail

33.3 Tenderers shall be notified of any error detected in their bid during the notification of award.

34. Currency provisions

34.1 Tenders will priced be in Kenya Shillings only. Tenderers quoting in currencies other than in Kenya shillings will be determined non-responsive and rejected.

35. Margin of Preference and Reservations

35.1 No margin of preference shall be allowed on contracts for small works.

35.2 Where it is intended to reserve the contract to specific groups under Small and Medium Enterprises, or enterprise of women, youth and/or persons living with disability, who are appropriately registered as such by the authority to be specified in the **TDS**, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses/firms belonging to those specified groups are the only ones eligible to tender. Otherwise if no so stated, the invitation will be open to all tenderers.

36. Nominated Subcontractors

36.1 Unless otherwise stated in the **TDS**, the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected in advance by the Procuring Entity.

36.2 Tenderers may propose subcontracting up to the percentage of total value of contracts or the volume of works as specified in the **TDS**. Subcontractors proposed by the Tenderer shall be fully qualified for their parts of the Works.

36.3 The subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works unless their specialized parts of the Works were previously designated by the Procuring Entity in the **TDS** as can be met by subcontractors referred to hereafter as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractors proposed by the Tenderer may be added to the qualifications of the Tenderer.

37. Evaluation of Tenders

37.1 The Procuring Entity shall use the criteria and methodologies listed in this ITT and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Procuring Entity shall determine the Best Evaluated Tender in accordance with ITT 40.

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

a) Price adjustment due to discounts offered in accordance with ITT 16;
b) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT39;
c) price adjustment due to quantifiable nonmaterial non-conformities in accordance with ITT 30.3; and
d) any additional evaluation factors specified **in the TDS** and Section III, Evaluation and Qualification Criteria.

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

37.4 In the case of multiple contracts or lots, Tenderers shall be allowed to tender for one or more lots and the methodology to determine the lowest evaluated cost of the lot (contract) combinations, including any discounts offered in the **Form of Tender, is specified in Section III, Evaluation and Qualification Criteria.**

38. Comparison of Tenders

38.1 The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 38.2 to determine the Tender that has the lowest evaluated cost.

39. Abnormally Low Tenders

39.1 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender,

appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price or that genuine competition between Tenderers is compromised.

39.2 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.

39.3 After evaluation of the price analyses, in the event that the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

40. Abnormally High Tenders

40.1 An abnormally high price is one where the tender price, in combination with other constituent elements of the Tender, appears unreasonably too high to the extent that the Procuring Entity is concerned that it (the Procuring Entity) may not be getting value for money or it may be paying too high a price for the contract compared with market prices or that genuine competition between Tenderers is compromised.

40.2 In case of an abnormally high tender price, the Procuring Entity shall make a survey of the market prices, check if the estimated cost of the contract is correct and review the Tender Documents to check if the specifications, scope of work and conditions of contract are contributory to the abnormally high tenders. The Procuring Entity may also seek written clarification from the tenderer on the reason for the high tender price. The Procuring Entity shall proceed as follows:

i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.

ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case maybe.

40.3 If the Procuring Entity determines that the Tender Price is abnormally too high because genuine competition between tenderers is compromised (*often due to collusion, corruption or other manipulations*), the Procuring Entity shall reject all Tenders and shall institute or cause competent Government Agencies to institute an investigation on the cause of the compromise, before retendering**.**

41. Unbalanced and/or Front-Loaded Tenders

41.1 If in the Procuring Entity's opinion, the Tender that is evaluated as the lowest evaluated price is seriously unbalanced and/or front loaded, the Procuring Entity may require the Tenderer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the tender prices with the scope of works, proposed methodology, schedule and any other requirements of the Tender document.

41.2 After the evaluation of the information and detailed price analyses presented by the Tenderer, the Procuring Entity may as appropriate:

a) accept the Tender; or

b) require that the total amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding 30% of the Contract Price; or

c) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works; or

d) reject the Tender,

42. Qualifications of the Tenderer

42.1 The Procuring Entity shall determine to its satisfaction whether the eligible Tenderer that is selected as having submitted the lowest evaluated cost and substantially responsive Tender, meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

42.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 19. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other

than Specialized Subcontractors if permitted in the Tender document), or any other firm(s) different from the Tenderer.

42.3 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in disqualification of the Tender, in which event the Procuring Entity shall proceed to the Tenderer who offers a substantially responsive Tender with the next lowest evaluated price to make a similar determination of that Tenderer's qualifications to perform satisfactorily.

42.4 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price.

42.5 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.

42.6 After evaluation of the price analyses, if the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

43. Best Evaluated Tender

43.1 Having compared the evaluated prices of Tenders, the Procuring Entity shall determine the Best Evaluated Tender. The Best Evaluated Tender is the Tender of the Tenderer that meets the Qualification Criteria and whose Tenderhas been determined to be:

a) Most responsive to the Tender document; and
b) the lowest evaluated price.

44. Procuring Entity's Right to Accept Any Tender, and to Reject Any or All Tenders.

44.1 The Procuring Entity reserves the right to accept or reject any Tender and to annul the Tender process and reject all Tenders at any time prior to Contract Award, without thereby incurring any liability to Tenderers. In case of annulment, all Tenderers shall be notified with reasons and all Tenders submitted and specifically, Tender securities, shall be promptly returned to the Tenderers.

F. Award of Contract

45. Award Criteria

45.1 The Procuring Entity shall award the Contract to the successful tenderer whose tender has been determined to be the Lowest Evaluated Tender.

46. Notice of Intention to enter into a Contract

46.1 Upon award of the contract and Prior to the expiry of the Tender Validity Period the Procuring Entity shall issue a Notification of Intention to Enter into a Contract / Notification of award to all tenderers which shall contain, at a minimum, the following information:

a) the name and address of the Tenderer submitting the successful tender;
b) the Contract price of the successful tender;
c) a statement of the reason(s) the tender of the unsuccessful tenderer to whom the letter is addressed was unsuccessful, unless the price information in (c) above already reveals the reason;
d) the expiry date of the Standstill Period; and
e) instructions on how to request a debriefing and/or submit a complaint during the standstill period;

47. Standstill Period

47.1 The Contract shall not be signed earlier than the expiry of a Standstill Period of 14 days to allow any dissatisfied tender to launch a complaint. Where only one Tender is submitted, the Standstill Period shall not apply.

47.2 Where a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer

the Notification of Intention to Enter **into a Contract with the successful Tenderer.**

48. Debriefing by the Procuring Entity

48.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 46, an unsuccessful tenderer may make a written request to the Procuring Entity for a debriefing on specific issues or concerns regarding their tender. The Procuring Entity shall provide the debriefing within five days of receipt of the request.

48.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending **such a debriefing meeting.**

49. Letter of Award

49.1 Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 42.1, upon addressing a complaint that has been filed within the Standstill Period, the Procuring Entity shall transmit the Letter of Award to the successful Tenderer. The letter of award shall request the successful tenderer to furnish the Performance Security within 21days of the date of the letter.

50. Signing of Contract

50.1 Upon the expiry of the fourteen days of the Notification of Intention to enter into contract and upon the parties meeting their respective statutory requirements, the Procuring Entity shall send the successful Tenderer the Contract Agreement.

50.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and return it to the Procuring Entity.

50.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period

51. Appointment of Adjudicator

51.1 The Procuring Entity proposes the person named in the **TDS** to be appointed as Adjudicator under the Contract, at the hourly fee specified in the **TDS**, plus reimbursable expenses. If the Tenderer disagrees with this proposal, the Tenderer should so state in his Tender. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority designated in the Special Conditions of Contract (SCC) pursuant to Clause 23.1 of the General Conditions of Contract (GCC), to appoint the Adjudicator.

52. Performance Security

52.1 Within twenty-one (21) days of the receipt of the Letter of Acceptance from the Procuring Entity, the successful Tenderer shall furnish the Performance Security and, any other documents required in the **TDS**, in accordance with the General Conditions of Contract, subject to ITT 40.2 (b), using the Performance Security and other Forms included in Section X, Contract Forms, or another form acceptable to the Procuring Entity. A foreign institution providing a bank guarantee shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent bank is not required.

52.2 Failure of the successful Tenderer to submit the above-mentioned Performance Security and other documents required in the **TDS**, or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the Tenderer offering the next Best Evaluated Tender.

52.3 Performance security shall not be required for contracts estimated to cost less than Kenya shillings five million shillings**.**

53. Publication of Procurement Contract

53.1 Within fourteen days after signing the contract, the Procuring Entity shall publish the awarded contract at its

notice boards and websites; and on the Website of the Authority. At the minimum, the notice shall contain the following information:

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

54. Procurement Related Complaints and Administrative Review

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

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

Section II - Tender Data Sheet (TDS)

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

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERERS
	A. General
ITT 1.1	The name of the contract is ***Construction of Equipping and Civil Works in Boreholes in Kericho, Nakuru and Baringo Counties*** The reference number of the Contract is ***SDW/ONT/012A/2023-2024*** The number and identification of lots (contracts) comprising this Tender are Lot 1 Comprises the following sites: - 1. Sasumua Pry BH- Nakuru County 2. Kwirindochei Pry- Baringo County 3. Kipchobet BH –Baringo County 4. Blue Hills-Kericho County 5. Mangu Pry BH-Nakuru County 6. Kabianga HC BH - Kericho County 7. St. Peters Kamasai- Kericho County 8. Kapsigot BH –Baringo County 9. Kapchelelachbe-Kericho County 10. Takitech Pry-Nakuru County
ITT 2.3	The Information made available on competing firms is as follows: a. Employers Requirements b. Bill of Quantities
ITT 2.4	The firms that provided consulting services for the contract being tendered for are: _N/A
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: N/A
B. Contents of Tender Document	
8.1	Pre-Tender conference ***shall not*** take place. **Bidders shall make own arrangements to inspect the sites before submission of their bids**
ITT 8.2	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than ***seven (7) days before closing date (7th January 2024)***
ITT 8.4	The Procuring Entity's website where Minutes of the pre-Tender meeting and the arranged pretender site visit will be published is N/A

ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: ***State Department for Wildlife,*** ***P.O BOX 41394 -00100, Nairobi*** ***TEL: 0254-20-2724725/2724646*** ***NSSF Building, Bishop Road***
ITT Reference	**PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS**
C. Preparation of Tenders	
ITP 13.1 (h)	The Tenderer shall submit the following additional documents in its Tender: ***a) Form of Tender prepared in accordance with ITT 14;*** ***b) Schedules including priced Bill of Quantities, completed in accordance with ITT 14 and ITT 16;*** ***c) Tender Security or Tender-Securing Declaration, in accordance with ITT 21.1;*** ***d) Alternative Tender, if permissible, in accordance with ITT 15;*** ***e) Authorization: written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordance with ITT 22.3;*** ***f) Qualifications: documentary evidence in accordance with ITT 19establishing the Tenderer's qualifications to performthe Contract if its Tender is accepted;*** ***g) Conformity: a technical proposal in accordance with ITT 18;*** ***h) Any other document required by the Evaluation Criteria in the TDS.***
ITT 15.1	Alternative Tenders ***Shall Not*** be considered.
ITT 15.2	Alternative times for completion ***Shall Not be*** permitted.
ITT 15.4	Alternative technical solutions shall be permitted for the following parts of the Works: ***As Per Procuring Entity Instructions***
ITT 16.5	The prices quoted by the Tenderer shall be: ***Fixed***
ITT 20.1	The Tender validity period shall be ***180 days.***
ITT 20.3 (a)	Delay shall not exceed 21 days. The Tender price shall be adjusted by the following percentages of the tender price: ***No Price Adjustments***
ITT 21.1	Tenderer shall provide Tender Security for kshs .150,000.00(One Hundred and Fifty Thousand shillings) from a reputable financial institution or Insurance Company regulated by IRA and approved by PPRA valid for 30 days beyond Tender validity period
ITT 21.2 (d)	The other Tender Security shall be N/A
ITT 21.5	Performance Security shall be required once notification of award is issued and accepted by the successful Tenderer
ITT 22.1	Tenders SHALL be dropped in the Tender Box located at the ***NSSF Building Block A on 15th Floor -, Bishop Road.***
ITT 22.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: ***Power of Attorney***

D. Submission and Opening of Tenders	
ITT Reference	**PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS**
ITT 24.1	(A) For Tender submission purposes only, the Procuring Entity's address is: ***State Department for Wildlife,*** ***P.O BOX 41394 -00100, Nairobi*** ***TEL: 0254-20-2724725/2724646*** ***NSSF Building Block A, Bishop Road*** Date and time for submission of Tenders 7TH January,2024,10.00 am Electronic Tenders ***Shall Not be Permitted.***
ITT 27.1	The Tender opening shall take place at the time and the address for Opening of Tenders provided below: ***State Department for Wildlife,*** ***P.O BOX 41394 -00100, Nairobi*** ***TEL: 0254-20-2724725/2724646*** ***NSSF Building Block A, Bishop Road*** ***7th February2024***
ITT 27.1	If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures **specified below;** ***N/A***
ITT 27.6	The number of representatives of the Procuring Entity to sign is: ***All Members of the Tender Opening Committee***.
E. Evaluation, and Comparison of Tenders	
ITT 32.3	The adjustment shall be **adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified in the** TDS.
ITT 35.2	The invitation to tender is extended to the ***citizen Contractors***
ITT 36.1	At this time, the Procuring Entity ***Does Not Intend*** to execute certain specific parts of the Works by subcontractors selected in advance.

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 36.2	Contractor's may propose subcontracting: ***APPLICABLE***
ITT 36.3	The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: ***APPLICABLE*** For the above-designated parts of the Works that may require Specialized Subcontractors, the relevant qualifications of the proposed Specialized Subcontractors will be added to the qualifications of the Tenderer for the purpose of evaluation.
ITT 37.2 (d)	Additional requirements apply. These are detailed in the evaluation criteria in Section III: Evaluation and Qualification Criteria.
ITT 51.1	The person named to be appointed as Adjudicator is PPRA
ITT 52.2	Other documents required are ***As Per the Evaluation Criteria*** *–See Evaluation criteria*
ITT 54.1	The procedures for making a Procurement-related Complaints are detailed in the "Regulations" available from the PPRA Website www.ppra.go.ke or email complaints@ppra.go.ke. If a Tenderer wishes to make a Procurement-related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to: For the attention: Principal Secretary Procuring Entity: ***State Department for Wildlife*** Email address*:* www.tourism.go.ke In summary, a Procurement-related Complaint may challenge any of the following: a. the terms of the Tender Documents; and b. the Procuring Entity's decision to award the contract

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1. General Provisions

Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the Kenya Shilling equivalent using the rate of exchange determined as follows:

a) For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.
b) Value of single contract - Exchange rate prevailing on the date of the contract signature.
c) Exchange rates shall be taken from the publicly available source identified in the ITT 14.3. Any error in determining the exchange rates in the Tender maybe corrected by the Procuring Entity.

This section contains the criteria that the Employer shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in Section IV, Tendering Forms. The Procuring Entity should use **the Standard Tender Evaluation Document for Goods and Works** for evaluating Tenders.

Evaluation and contract award Criteria

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

2. Preliminary examination for Determination of Responsiveness

The Procuring Entity will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements of "Part 2 – Procuring Entity's Works Requirements", including checking for tenders with unacceptable errors, abnormally low tenders, abnormally high tenders and tenders that are front loaded. The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides very clear guide on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will be considered irresponsive and will not be considered further.

Table 1: Preliminary Evaluation Criteria

S/NO	Completeness and Responsiveness Criteria	Requirement	Weight	Remarks
1.	Chronologically Serialized Tender document (One original and 1 copy)	Serialize	***Mandatory***	-
2.	Attach a copy of Certificate of Incorporation or business registration certificate	Attach	***Mandatory***	-
3.	Attach copies of Identity card(s) for Sole proprietors, Partnership, CR12 for the last 3 months	Attached	***Mandatory***	
4.	Attach a copy Valid Single Business Permit from any County	Attach	***Mandatory***	-
5.	Attach a copy of Valid Tax Compliance Certificate	Valid	***Mandatory***	-
6.	Attach a copy of Valid NCA 8 Certificate and above for water works category.	Valid	***Mandatory***	
7.	Attach Valid Water Licence issued by the Ministry of Water Sanitation and Irrigation	Valid	***Mandatory***	
8.	Attach a duly filled, signed and stamped Bills of quantities	Attached	***Mandatory***	-
9.	Duly Signed Power of Attorney	Attach	***Mandatory***	
10.	Dully filled, signed and stamped Form of Tender	Amount must be indicated	***Mandatory***	-
11.	Attach a duly, filled, signed and stamped Confidential Business Questionnaire	Attach	***Mandatory***	
12.	Tender Security Tender Sum/Price from a reputable Financial Institution	Original MUST be attached as required	***Mandatory***	
REMARKS				

Table 2: Technical Evaluation Criteria

Tenderers shall be evaluated based on the criteria below and those who attain a maximum score of 40 marks out of 60 marks shall proceed to financial evaluation

S/NO	SUBJECT	DESCRIPTION	POINT/SCORE SCALE
1	**Financial Capacity**	**FINANCIAL CAPACITY (20) MARKS**	
		A copy of Bank Credit Line Letter issued within the Last 6 months clearly indicating the **amount of credit** the company may access at least a kshs3,000,000.00	16Marks
		A copy of clear, legible, signed and stamped Bank statement for 12Months from (January 2023-January,2024) With a operating balance 0f at least kshs 3,000,000.00	4 Marks
2.	**Experience**	**EXPERIENCE 10 MARKS**	
		Contractor should provide evidence for the following. Evidence will be in terms of **completion certificates and/or certificateof practical completio**n/Contracts/LSO	
		Demonstrate evidence of execution of similar Previous works equivalent to Ksh 5,000,000.00 or above in the last 5 years for 2no(two). sites(5marks) Provide proof of Completion certificates or certificate of practical completion/Contracts/LSO to be attached clearly showing the ***clients satisfaction with the services rendered*** (Minimum 2) (5 marks)	10marks
	Pre-requisites and conditions for site staff	**Pre-requisites and conditions for site staff**	
		Contractors must produce CV/Resume, certificates and other credentials of the following staff certified by an administrator of oath within a period **not exceeding 6 months** prior to submission N/A	
		The technical staff presented during tendering **MUST** be present during the site takeover and throughout the project implementation phase. Any replacement of Key Personnel should be authorized by the Accounting Officer and shall be of Equal or higher qualification	
		The Civil Engineer will be the contact person for the project throughout the project implementation phase.	
		The project contact person will be responsible for **Project Documentation** including preparation of all	
		Interim/final payment certificates for approval by the clients supervision team/person after joint inspection and measurement for valuation of works is done.	
		The contractor's technical staff are jointly responsible for **Measurement of Implemented Works And Quantities** throughout the implementation phase. The client's supervisor will be responsible for **Confirmation and Approval** of the measured works.	
3.0	**Qualifications of Site staff**	**S/No** | **Position** | **Qualification** | **Total Work Experience (in Years)** | **Experience in Similar Works (in Years)** 1. | Site Agent | Bsc. Civil Engineering, Professional Engineer, | 5 | 2	**10 Marks**

				Registered with Engineers Board of Kenya or Equivalent (2 marks)			
		2.	Assistant Site Agent	Bsc. Civil Engineering/Geotechnical Engineering, Professional Engineer Registered with Engineers Board of Kenya or Equivalent (2 marks)	5	2	
		3.	Engineering Surveyor	Bsc. Surveying or Higher National Diploma (HND) in Surveying (1 mark)	5	2	
		4.	Foreman (Civil Works)	Higher National Diploma (HND) in Civil Engineering/Building/ Construction or Equivalent (1 mark)	5	2	
		5.	Hydro Geologist	Bsc. Geology Must be Registered with a Professional Body (1 mark)	5	2	
		6.	Electromechanical Engineer	Bsc. Electrical or Mechanical Must be Registered with a Professional Body (1 mark)	5	2	
		7.	Sociologist	Diploma in Social Science/Sociology or Community Development (1 mark)	5	2	
		8.	Environmentalist	Degree in Environmental Science or	5	2	

				Equivalent and registered with NEMA as an associate expert (1 mark)			
	Pre-requisites and Conditions for equipment	Attach evidence Logbooks /Lease Agreement Certified by a Lawyer within a period not exceeding 6 months prior to tendering for relevant equipment. The presented equipment should be readily available for mobilization to the project site **Without Delay** in accordance to the schedule of activities across the project implementation phase					
4.0	**Equipment (15marks)**	**S/ No.**	**Equipment Type & Characteristics**	**Minimum No. Required**			15marks
		1.	Drilling Rig(4marks)	1			
		2.	Installation Truck(4marks)	1			
		3.	4WD Pick Ups 1 Ton(2marks)	1			
		4.	Concrete Mixer (Capacity 2 m^3 including Batch Weighing) (2marks)	1			
		5.	Poker concrete Vibrators (40mm-60mm) (1mark)	1			
		6.	Test Pumping Unit(1mark)	1			
		7.	Welding Machine(1mark)	1			
5.0	Work Plan	*Attach a Gantt Chart or table clearly indicating the time frame and activities from start of contract(project) to the Completion of the Project* *Attached signed and stamped-5 marks* *Notattached -0 mark*					5 marks
		TOTAL					**MAX 60**

Pass mark: 40 Marks

Bidders who meet the pass mark shall be considered responsive and shall proceed to financial evaluation.

3. **Tender Evaluation (ITT 35) Price evaluation**: in addition to the criteria listed in ITT 35.2 (a) – (c) the following criteria shall apply:

i) **Alternative Completion Times, i**f permitted under ITT 13.2, will be evaluated as follows: ***N/A***

ii) **Alternative Technical Solutions** for specified parts of the Works, if permitted under ITT 13.4, will be evaluated as follows: ***N/A***

iii) **Other Criteria; i**f permitted under ITT 35.2(d): ***N/A***

4. **Multiple Contracts**

Multiple contracts will be permitted in accordance with ITT 35.4. Tenderers are evaluated on basis of Lots and the lowest evaluated tenderer identified for each Lot. The Procuring Entity will select one Option of the two Options listed below for award of Contracts.

OPTION 1

i) If a tenderer wins only one Lot, the tenderer will be awarded a contract for that Lot, provided the tenderer meets the Eligibility and Qualification Criteria for that Lot.

OPTION 2

The Procuring Entity will consider all possible combinations of won Lots [contract(s)] and determine the combinations with the lowest evaluated price. Tenders will then be awarded to the Tenderer or Tenderers in the combinations provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the won Lots.

NOTE
If a tenderer quotes more than two Lot, the tender evaluation committee shall key in the prices of the first two lots

5. Alternative Tenders (ITT 13.1)

An alternative if permitted under ITT 13.1, will be evaluated as follows:

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

6. Margin of Preference is not applicable

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

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

b) In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.

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

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

iii) At least _____ (*insert number)* of contract(s) of a similar nature executed within Kenya, or the East African Community or abroad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings _____ equivalent.

iv) Contractor's Representative and Key Personnel, which are specified as _____

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

vi) Other conditions depending on their seriousness.

a) **History of non-performing contracts**:
Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that Non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last _____ (*specify years*). The required information shall be furnished in the appropriate form.

b) Pending Litigation
Financial position and prospective long-term profitability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above if all pending litigation will be resolved against the Tenderer. Tenderer shall provide information on pending litigations in the appropriate form.

c) Litigation History
There shall be no consistent history of court/arbitral award decisions against the Tenderer, in the last _____ (*specify years*). All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the years specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

8. QUALIFICATION FORM SUMMARY

1	2	3	*4*	*5*
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
1	Nationality	Nationality in accordance with ITT 3.6	Forms ELI – 1.1 and 1.2, with attachments	
2	Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority in accordance with ITT 3.14.	Attach Valid Tax Compliance/Exemption Certificate	
3	Conflict of Interest	No conflicts of interest in accordance with ITT 3.3	FORM CON – 2	
4	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.8	FORM CON – 2	
5	State- owned Enterprise	Meets conditions of ITT 3.7	Forms ELI – 1.1 and 1.2, with attachments	
6	Goods, equipment and services to be supplied under the contract	To have their origin in any country that is not determined ineligible under ITT 4.1	Forms ELI – 1.1 and 1.2, with attachments	
7	History of Non-Performing Contracts	Non-performance of a contract did not occur as a result of contractor default since 1st January 2018	History of Litigation Form	
8	Suspension Based on Execution of Tender/Proposal Securing Declaration by the Procuring Entity	Not under suspension based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 19.9	Self-Declaration Form	
9	Pending Litigation	Tender's financial position and prospective long-term profitability still sound according to criteria established in 3.1 and assuming that all pending litigation will NOT be resolved against the Tenderer.	Form CON – 2	
10	Litigation History	No consistent history of court/arbitral award decisions against the Tenderer since 1st January *2018*	Form CON – 2	
11	Financial Capabilities	(i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as Kenya Shillings *[5,000,000] or* equivalent for the subject contract(s) net of the Tenderer's other commitments.	Form FIN – 3.1, with attachments	

1	2	3	*4*	*5*
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
12	Average Annual Construction Turnover	Minimum average annual construction turnover of Kenya Shillings *[insert amount]*, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last *[insert of year]* years, divided by *[2 years]* years **N/A**	Form FIN – 3.2	
13	General Construction Experience	Experience under construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor for at least the last 2 years	Form EXP – 4.1	

	Specific Construction & Contract Management Experience	A minimum number of *[2Nos]* similar contracts specified below that have been satisfactorily and substantially completed as a prime contractor, joint venture member, management contractor or sub-contractor between1st January 2018 and tender submission deadline i.e. …. (number) contracts, each of minimum value Kenya shillings…..... equivalent. [*In case the Works are to be tender as individual contracts under multiple contract procedure, the minimum number of contracts required for purposes of evaluating qualification shall be selected from the options mentioned in ITT 35.4]* The similarity of the contracts shall be based on the following: [*Based on Section VII, Scope of Works, specify the minimum key requirements in terms of physical size, complexity, construction method, technology and/or other*	Form EXP 4.2(a)	
1	**2**	**3**	***4***	***5***
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
		characteristics including part of the requirements that may be met by specialized subcontractors, if permitted in accordance with ITT 34.3]		

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QUALIFICATION FORMS

1. FORM EQU: EQUIPMENT

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

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

Omit the following information for equipment owned by the Tenderer.

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

Bidder must demonstrate that they will have access to the key Contractors equipment listed hereafter

S/No.	Equipment Type & Characteristics	Minimum No. Required
1.	Drilling Rig	1
2.	Installation Truck	1
3.	4WD Pick Ups 1 Ton	1
4.	Concrete Mixer (Capacity 2 m^3 including Batch Weighing)	1
5.	Poker concrete Vibrators (40mm-60mm)	1
6.	Test Pumping Unit	1
7.	Welding Machine	1

2. FORM PER -1

Contractor's Representative and Key Personnel Schedule

Tenderers should provide the names and details of the suitably qualified Contractor's Representative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Contractor' Representative and Key Personnel

S/No	Position	Qualification	Total Work Experience (in Years)	Experience in Similar Works (in Years)
1.	Site Agent	Bsc. Civil Engineering, Professional Engineer, Registered with Engineers Board of Kenya or Equivalent	5	2
2.	Assistant Site Agent	Bsc. Civil Engineering/Geotechnical Engineering, Professional Engineer Registered with Engineers Board of Kenya or Equivalent	5	2
3.	Engineering Surveyor	Bsc. Surveying or Higher National Diploma (HND) in Surveying	5	2
4.	Foreman (Civil Works)	Higher National Diploma (HND) in Civil Engineering/Building/ Construction or Equivalent	5	2
5.	Hydro Geologist	Bsc. Geology Must be Registered with a Professional Body	5	2
6.	Electromechanical Engineer	Bsc. Electrical or Mechanical Must be Registered with a Professional Body	5	2
7.	Sociologist	Diploma in Social Science/Sociology or Community Development	5	2
8.	Environmentalist	Degree in Environmental Science or Equivalent and registered with NEMA as an associate expert	5	2

3. FORM PER-2:

Resume and Declaration - Contractor's Representative and Key Personnel.

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Name of Tenderer

Position [*#1*]: [*title of position from Form PER-1*]		
Personnel information	Name:	Date of birth:
	Address:	E-mail:
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: *[language and levels of speaking, reading and writing skills]*	
Details		
	Address of Procuring Entity:	
	Telephone:	Contact (manager / personnel officer):
	Fax:	
	Job title:	Years with present Procuring Entity:

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Project	**Role**	**Duration of involvement**	**Relevant experience**
[main project details]	*[role and responsibilities on the project]*	*[time in role]*	*[describe the experience relevant to this position]*

Declaration

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

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

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

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

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

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

Signature: _____

Date: (day month year):_____Countersignature

of authorized representative of the Tenderer:

Signature:_____Date: (day month

year): _____

4. TENDERER'S QUALIFICATIONWITHOUTPRE-QUALIFICATION

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

4.1 FORM ELI -1.1

Tenderer Information Form

Date: _____

ITT No. and title: _____

Tenderer's name
In case of Joint Venture (JV), name of each member:
Tenderer's actual or intended country of registration: *[indicate country of Constitution]*
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name:_____ Address:_____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITT 3.6 ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 3.5 ☐ In case of state-owned enterprise or institution, in accordance with ITT 3.8, documents establishing: • Legal and financial autonomy • Operation under commercial law • Establishing that the Tenderer is not under the supervision of the Procuring Entity 2. Included are the organizational chart and a list of Board of Directors.

4.2 FORM ELI -1.2

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

Date _____

ITT No. and title _____

Tenderer's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name:_____ Address: _____

Telephone/Fax numbers: _____
E-mail address: _____

1. Attached are copies of original documents of
☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITT 3.6.
☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 3.8.

2. Included are the organizational chart and a list of Board of Directors.

4.3 FORM CON – 2

Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: _____
Date: _____
JV Member's Name_

_____
ITT No. and title: _____

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
☐ Contract non-performance did not occur since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1. ☐ Contract(s) not performed since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
Year	**Non- performed portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and Kenya Shilling equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Procuring Entity: *[insert full name]* Address of Procuring Entity: *[insert street/city/country]* Reason(s) for non performance: *[indicate main reason(s)]*	*[insert amount]*
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
☐ No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3. ☐ Pendinglitigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.			

Year of dispute	**Amount in dispute (currency)**	**Contract Identification**	**Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)**
		Contract Identification: _____ Name of Procuring Entity: _____ Address of Procuring Entity: _____ Matter in dispute: _____ Party who initiated the dispute: Status of dispute: _____	
		Contract Identification: Name of Procuring Entity: Address of Procuring Entity: Matter in dispute: Party who initiated the dispute: Status of dispute:	
Litigation History in accordance with Section III, Evaluation and Qualification Criteria			
☐ No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4. ☐ Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.			

Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (currency), Kenya Shilling Equivalent

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

4.4 FORM FIN – 3.1:

Financial Situation and Performance

Tenderer's Name: _____
Date: _____
JV Member's Name_

_____

ITT No. and title: _____

4.4.1. Financial Data

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

Cash Flow Information

Type of Financial information in_____ (currency)	**Historic information for previous_____*years*, (amount in currency, currency, exchange rate*, USD equivalent)**				
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Cash Flow from Operating Activities					

*Refer to ITT 15 for the exchange rate

4.4.2 Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	**Source of finance**	**Amount (Kenya Shilling equivalent)**
1		
2		
3		

4.4.3 Financial documents

The Tenderer and its parties shall provide copies of financial statements for_____years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

(a) reflect the financial situation of the Tenderer or in case of JV member, and not an affiliated entity (such as parent company or group member).

(b) be independently audited or certified in accordance with local legislation.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements[1] for the_____years required above; and complying with the requirements

[1] If the most recent set of financial statements is for a period earlier than 12 months from the date of Tender, the reason for this should be justified.

4.5 FORM FIN – 3.2:

Average Annual Construction Turnover

Tenderer's Name: _____
Date: _____
JV Member's Name_

_____
ITT No. and title: _____

	Annual turnover data (construction only)		
Year	**Amount Currency**	**Exchange rate**	**Kenya Shilling equivalent**
[indicate year]	*[insert amount and indicate currency]*		
Average Annual Construction Turnover *			

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

4.6 FORM FIN – 3.3:

Financial Resources

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

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

4.7 FORM FIN – 3.4:

Current Contract Commitments / Works in Progress

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

Current Contract Commitments					
	Name of Contract	**Procuring Entity's Contact Address, Tel,**	**Value of Outstanding Work [Current Kenya Shilling /month Equivalent]**	**Estimated Completion Date**	**Average Monthly Invoicing Over Last Six Months [Kenya Shilling /month)]**
1					
2					
3					
4					
5					

4.8 FORM EXP - 4.1

General Construction Experience

Tenderer's Name: _____
Date: _____
JV Member's Name_

_____
ITT No. and title: _____

Page_____of_____pages

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

4.9 FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

Tenderer's Name: _____
Date: _____
JV Member's Name_

_____

ITT No. and title: _____

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

4.10 FORM EXP - 4.2 (a) (cont.)

Specific Construction and Contract Management Experience (cont.)

Similar Contract No.	**Information**
Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:	
1. Amount	
2. Physical size of required works items	
3. Complexity	
4. Methods/Technology	
5. Construction rate for key activities	
6. Other Characteristics	

4.11 FORM EXP - 4.2(b)

Construction Experience in Key Activities

Tenderer's Name: _____
Date: _____
Tenderer's JV Member Name: Sub-contractor's Name[2] (as _____per ITT 34):ITT No. and title _____

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

1. Key Activity No One: _

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

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

2. Activity No. Two
3. ……

OTHER FORMS

5. FORM OF TENDER
(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022)

INSTRUCTIONS TO TENDERERS

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

ii) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address. Tenderers are reminded that this is a mandatory requirement.

iii) Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION FORMS OF THE TENDERER as listed under (s) below.

Date of this Tender submission: .....*[insert date (as day, month and year) of Tender submission]* **Tender Nameand Identification**: .....*[insert identification]* **Alternative No.**: .....*[insert identification No if this is a Tender for an alternative]*

To..... *[Insert complete name of Procuring Entity]*

Dear Sirs,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above-namedWorks, we, the undersigned offer to construct and complete the Works and remedy any defects therein for the sum of Kenya Shillings [*[Amount in figures]*_____Kenya Shillings *[amount inwards]*_____.

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

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

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

3. We agree to adhere by this tender until_____*[Insert date]*, and it shall remain binding upon us and maybe 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. We further understand that you are not bound to accept the lowest or any tender you may receive.

5. We, the undersigned, further declare that:
   i) *No reservations:* We have examined and have no reservations to the tender document, including Addenda issued in accordance with ITT 28;
   ii) *Eligibility:* We meet the eligibility requirements and have no conflict of interest in accordance with ITT 3 and 4;
   iii) *Tender-Securing Declaration:* We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender-Securing or Proposal-Securing Declaration in the Procuring Entity's Country in accordance with ITT 19.8;
   iv) Conformity: We offer to execute in conformity with the tendering documents and in accordance with the implementation and completion specified in the construction schedule, the following Works: *[insert a brief description of the Works];*

v) *Tender Price:* The total price of our Tender, excluding any discounts offered in item 1 above is: *[Insert one of the options below as appropriate]*

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

Option 2, in case of multiple lots:

a) Total price of each lot [*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies]*; and

b) Total price of all lots (sum of all lots) [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];

vii) *Discounts:* The discounts offered and the methodology for their application are:

viii) The discounts offered are: [*Specify in detail each discount offered.*]

ix) The exact method of calculations to determine the net price after application of discounts is shown below: [*Specify in detail the method that shall be used to apply the discounts*];

x) *Tender Validity Period:* Our Tender shall be valid for the period specified in TDS 18.1 (as amended, if applicable) from the date fixed for the Tender submission deadline specified in TDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

xi) *Performance Security:* If our Tender is accepted, we commit to obtain a Performance Security in accordance with the Tendering document;

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

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

xiv) *State-owned enterprise or institution:* [*select the appropriate option and delete the other*] [*We are not a state-owned enterprise or institution*] / [*We are a state-owned enterprise or institution but meet the requirements of ITT 3.8*];

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

Name of Recipient	Address	Reason	Amount

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

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

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

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

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

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

xxi) **Beneficial Ownership Information:** We commit to provide to the procuring entity the Beneficial Ownership Information in conformity with the Beneficial Ownership Disclosure Form upon receipt of notification of intention to enter into a contract in the event we are the successful tenderer in this subject procurement proceeding.

xxii) We, the Tenderer, have duly completed, signed and stamped the following Forms as part of our Tender:
- a) Tenderer's Eligibility; Confidential Business Questionnaire – to establish we are not in any conflict to interest.
- b) Certificate of Independent Tender Determination – to declare that we completed the tender without colluding with other tenderers.
- c) Self-Declaration of the Tenderer – to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.
- d) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal

Further, we confirm that we have read and understood the full content and scope of fraud and corruption as informed in **"Appendix 1- Fraud and Corruption**" attached to the Form of Tender.

Name of the Tenderer: *[*insert complete name of person signing the Tender*]

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

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

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

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

Date signed_____day of_____, _____

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

A. TENDERER'S ELIGIBILITY- CONFIDENTIAL BUSINESS QUESTIONNAIRE

Instruction to Tenderer

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

(a) **Tenderer's details**

	ITEM	**DESCRIPTION**
1	Name of the Procuring Entity	
2	Reference Number of the Tender	
3	Date and Time of Tender Opening	
4	Name of the Tenderer	
5	Full Address and Contact Details of the Tenderer.	1. Country 2. City 3. Location 4. Building 5. Floor 6. Postal Address 7. Name and email of contact person.
6	Current Trade License Registration Number and Expiring date	
7	Name, country and full address (*postal and physical addresses, email, and telephone number*) of Registering Body/Agency	
8	Description of Nature of Business	
9	Maximum value of business which the Tenderer handles.	
10	State if Tenders Company is listed in stock exchange, give name and full address (*postal and physical addresses, email, and telephone number*) of state which stock exchange	

General and Specific Details

b) Sole Proprietor, provide the following details.

Name in full_____Age_____Nationality_____Country of Origin_____Citizenship _____

c) Partnership, provide the following details.

	Names of Partners	Nationality	Citizenship	% Shares owned
1				
2				
3				

d) Registered Company, provide the following details.

i) Private or public Company_____

ii) State the nominal and issued capital of the Company_____

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

Kenya Shillings (Equivalent).....

iii) Give details of Directors as follows.

	Names of Director	Nationality	Citizenship	% Shares owned
1				
2				
3				

(e) DISCLOSUREOFINTEREST- Interest of the Firm in the Procuring Entity.

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

If yes, provide details as follows.

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

ii) Conflict of interest disclosure

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
1	Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer.		
2	Tenderer receives or has received any direct or indirect subsidy from another tenderer.		
3	Tenderer has the same legal representative as another tenderer		
4	Tender has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process.		

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document.		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.		

f) Certification

On behalf of the Tenderer, I certify that the information given above is complete, current and accurate as at the date of submission.

Full Name_____ Title or

Designation_____

_____ _____

(Signature) *(Date)*

B. CERTIFICATE OF INDEPENDENT TENDERDETERMINATION

I, the undersigned, in submitting the accompanying Letter of Tender to the_____[Name of Procuring Entity] for:_____[Name and number of tender] in response to the request for tenders made by:_____[Name of Tenderer] do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of_____[Name of Tenderer] that:

1. I have read and I understand the contents of this Certificate;

2. I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am the authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tenderon behalf of the Tenderer;

4. For the purposes of this Certificate and the Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
   a) has been requested to submit a Tender in response to this request for tenders;
   b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities or experience;

5. The Tenderer discloses that [check one of the following, as applicable:
   a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;
   b) the Tenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;

6. In particular, without limiting the generality of paragraphs (5)(a) or (5)(b) above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   a) prices;
   b) methods, factors or formulas used to calculate prices;
   c) the intention or decision to submit, or not to submit, a tender; or
   d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuant to paragraph (5)(b) above;

7. In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by the procuring authority or as specifically disclosed pursuant to paragraph (5)(b) above;

8. the terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, whichever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5)(b) above.

Name_____Title_Date _____

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

C. SELF - DECLARATION FORMS

FORM SD1

SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENTAND ASSET DISPOSALACT 2015.

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

1. THAT I am the Company Secretary/ Chief Executive/Managing Director/Principal Officer/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. THATwhat is deponed to herein above is true to the best of my knowledge, information and belief.

…… ……. …… (Title)
(Signature) (Date)

Bidder Official Stamp

FORM SD2

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

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

1. THAT I am the Chief Executive/Managing Director/Principal Officer/Director of ..... *(insert name of the Company)* who is a Bidder in respect of Tender No. ..... for …….. *(insert tender title/description)* for ..... *(insert name of the Procuring entity)* and dulyauthorized 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. THATwhat is deponed to herein above is true to the best of my knowledge information and belief.

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

Bidder's Official Stamp

(Title)	(Signature)	(Date)

Bidder's Official Stamp

BUY KENYA –BUILD
KENYA FORM SD 3

BUY KENYA -BUILD KENYA

IN COMPLIANCE WITH SECTION 144(3)(F) OF PPADR 2020)

A plan demonstrating linkage with local industries which ensures at least forty percent (40%) inputs are sourced from locally manufactured articles, materials and supplies partially mined or produced in Kenya, or where applicable have been assembled in Kenya.

NAME OF LOCAL MANUFACTURER/SERVICEPROVIDER OR PRODUCER	REGISTRATION CERTIFICATE NUMBER	TYPE OF SUPPLY (IF SAME PROVIDER FOR DIFFERENT PRODUCT/SERVICE, USE DIFFERENT ROW)		PRODUCT BRAND	ITEMS DESCRIPTION/SERVICEPROCURED	ITEM BAR CODE	UNIT OF MEASURE	QUANTITY	UNIT PRICE (KSHS)
		Product	Service						

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

I ……..……. (person) on behalf of *(Name of the Business/ Company/Firm*) .....declare that I have read and fully understood the contents of the Public Procurement & Asset Disposal Act, 2015, Regulations and the Code of Ethics for persons participating in Public Procurement and Asset Disposal and my responsibilities under the Code.

Ido hereby commit to abide by the provisions of the Code of Ethics for persons participating in Public Procurement and Asset Disposal.

Name of Authorized signatory……..... Sign…….....

Position…….....…….....

Office address……. Telephone…….....…….

E-mail…….....….....…

Name of the Firm/Company…….....……

Date….....(Company Seal/ Rubber

Stamp where applicable)

Witness

Name …….... Sign..... Date……

D. APPENDIX 1- FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

1. Purpose

2. The Government of Kenya's Anti-Corruption and Economic Crime laws and their sanction's policies and procedures, Public Procurement and Asset Disposal Act *(no. 33 of 2015)* and its Regulation, and any other Kenya's Acts or Regulations related to Fraud and Corruption, and similar offences, shall apply with respect to Public Procurement Processes and Contracts that are governed by the laws of Kenya.

3. Requirements

The Government of Kenya requires that all parties including Procuring Entities, Tenderers, (applicants/proposers), Consultants, Contractors and Suppliers; any Sub-contractors, Sub-consultants, Service providers or Suppliers; any Agents (whether declared or not); and any of their Personnel, involved and engaged in procurement under Kenya's Laws and Regulation, observe the highest standard of ethics during the procurement process, selection and contract execution of all contracts, and refrain from Fraud and Corruption and fully comply with Kenya's laws and Regulations as per paragraphs 1.1 above.

Kenya's public procurement and asset disposal act *(no. 33 of 2015)* under Section 66 describes rules to be followed and actions to be taken in dealing with Corrupt, Coercive, Obstructive, Collusive or Fraudulent practices, and Conflicts of Interest in procurement including consequences for offences committed. A few of the provisions noted below highlight Kenya's policy of no tolerance for such practices and behavior: -

1) a person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or asset disposal proceeding;
2) A person referred to under subsection (1) who contravenes the provisions of that sub-section commits an offence;
3) Without limiting the generality of the subsection (1) and (2), the person shall be: -
   a) disqualified from entering into a contract for a procurement or asset disposal proceeding; or
   b) if a contract has already been entered into with the person, the contract shall be voidable;
4) The voiding of a contract by the procuring entity under subsection (7) does not limit any legal remedy the procuring entity may have;
5) An employee or agent of the procuring entity or a member of the Board or committee of the procuring entity who has a conflict of interest with respect to a procurement: -
   a) shall not take part in the procurement proceedings;
   b) shall not, after a procurement contract has been entered into, take part in any decision relating to the procurement or contract; and

c) shall not be a subcontractor for the bidder to whom was awarded contract, or a member of the group of bidders to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.

6) An employee, agent or member described in subsection (1) who refrains from doing anything prohibited under that subsection, but for that subsection, would have been within his or her duties shall disclose the conflict of interest to the procuring entity;
7) If a person contravenes subsection (1) with respect to a conflict of interest described in subsection (5)(a) and the contract is awarded to the person or his relative or to another person in whom one of them had a direct or indirect pecuniary interest, the contract shall be terminated and all costs incurred by the public entity shall be made good by the awarding officer. Etc.

In compliance with Kenya's laws, regulations and policies mentioned above, the Procuring Entity:

a) Defines broadly, for the purposes of the above provisions, the terms set forth below as follows:
   i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
   ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

v) "obstructive practice" is:

- deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
- acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.

b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:

"fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal process or the exercise of a contract to the detriment of the procuring entity or the tenderer or the contractor, and includes collusive practices amongst tenderers prior to or after tender submission designed toestablish tender prices at artificial non-competitive levels and to deprive the procuring entity of the benefitsof free and open competition.

c) Rejects a proposal for award[1] of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

d) Pursuant to the Kenya's above stated Acts and Regulations, may sanction or recommend to appropriate authority (ies) for sanctioning and debarment of a firm or individual, as applicable under the Acts and Regulations;

e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring (i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect[2] all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the PPRA or any other appropriate authority appointed by Government of Kenya; and

f) Pursuant to Section 62 of the above Act, requires Applicants/Tenderers to submit along with their Applications/Tenders/Proposals a "Self-Declaration Form" as included in the procurement document declaring that they and all parties involved in the procurement process and contract execution have not engaged/will not engage in any corrupt or fraudulent practices.

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

Beneficiary: _____

Request for Tenders No:

_____

Date: _____

TENDER GUARANTEE No.: _____

Guarantor: _____

1. We have been informed that _____ (here in after called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here in after called" the Tender") for the execution of _____ under Request for Tenders No. _____ ("the ITT").

2. Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.

3. At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

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

b) having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension there to provide by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.

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

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

_____

[signature(s)]

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

FORMAT OF TENDER SECURITY [Option 2–Insurance Guarantee]

TENDER GUARANTEE No.: _____

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

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

Sealed with the Common Seal of the said Guarantor this___day of_____20___.

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

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

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

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

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

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

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

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

TENDER-SECURING DECLARATION FORM

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

Date:..... *[insert date (as day, month and year) of Tender Submission]*
Tender No. ..... *[insert number of tendering process]*
To:.....*[insert completenameof Purchaser]* I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.

2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of our obligation(s) under the bid conditions, because we – (a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the instructions to tenders.

3. I/We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer(s), upon the earlier of:
   a) our receipt ofa copy of your notification of the name of the successful Tenderer; or
   b) thirty days after the expiration of our Tender.

4. I/We understand that if I am/we are/in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid, and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed:.....Capacity / title (director

or partner or sole proprietor, etc.) …….…….....……. Name:

…….. Duly authorized to sign the bid

for and on behalf of: *[insert complete name of Tenderer]*

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

Appendix to Tender

Schedule of Currency requirements

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

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

PART II - WORK REQUIREMENTS

SECTION V - DRAWINGS

SECTION VI - SPECIFICATIONS

Notes for preparing Specifications

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

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

3. There are considerable advantages in standardizing **General Specifications** for repetitive Works in recognized public sectors, such as 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. Care must be taken in drafting Specifications to ensure they are not restrictive. In the Specifications of standards for materials, plant and workmanship, existing Kenya Standards should be used as much as possible, otherwise recognized international standards may also be used.

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

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

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

1. GENERAL SPECIFICATIONS

1.1. Introduction

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

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

1.2. Location

The sites for the proposed boreholes are in:

1. Sasumua Pry BH- Nakuru County
2. Kwirindochei Pry- Baringo County
3. Kipchobet BH –Baringo County
4. Blue Hills-Kericho County
5. Mangu Pry BH-Nakuru County
6. Kabianga HC BH - Kericho County
7. St. Peters Kamasai- Kericho County
8. Kapsigot BH –Baringo County
9. Kapchelelachbe-Kericho County
10. Takitech Pry-Nakuru County

1.3. Extent of Contracts

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

1.4. Precedence of Contract Documents

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

i. Provision of the Standard or Special Specifications shall take precedence over those of the General Conditions of Contract.
ii. Provision of the Special Specifications shall take precedence over the Standard Specifications unless otherwise indicated.
iii. Details shown or noted on the Contract drawings shall take precedence over the requirements of both the Standard and the Special Specifications.
iv. Detail Drawings shall take precedence over General Drawings.
v. Within the Standard Specifications, the provisions of any section particular to the provisions at variance shall take precedence over the General Section, and within any section clauses particular to the provisions at variance shall take precedence over those not so particular. The foregoing order of precedence shall apply also to sections and clauses of the Special Specifications.

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

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

1.5. Standards

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

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

1.6. Quality of Materials and Workmanship

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

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

All materials shall be of approved manufacture and origin and the best quality of their respective kind, equal to sample and delivered on to the site a sufficient period before they are required to be used in the works to enable the Engineer to take such samples as he may require for testing or approval, and the Contractor shall furnish any information required by the Engineer as to the quality, weight, strength, description, etc. of the materials. No materials of any description shall be used without prior approval by the Engineer and any condemned as unfit for use in the works shall be removed immediately from the site by, and without recompense to, the Contractor.

1.7. Trade Names

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

1.8. Samples

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

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

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

1.9. Testing

As provided in Clause 33.1 of the Conditions of Contract and in accordance with the Specification quoted for

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

1.10. Programme for the Execution of Works

i. In accordance with Clause 22 of the Conditions of Contract, the Contractor upon receiving Engineer's order to commence shall within 7 days draw up a working programme setting out order in which the works are to be carried out with appropriate dates thereof together with delivery dates for materials. The Contractor shall together with his work programme supply an expenditure chart showing monthly anticipated expenditure.

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

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

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

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

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

1.11. Substantial (Practical) Completion

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

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

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

1.12. Nominated Sub-Contractors and Nominated Supplies

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

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

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

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

ii. Providing equipment and labour for unloading and hoisting Subcontractor’s materials.

iii. Providing space for office accommodation, and for storage of plant and materials; allowing use of sanitary accommodation; the supply of all necessary water, power, lighting and watching and clearing away all rubbish.
iv. Carting away for and making good after the work of Sub-Contractors as may be required will be measured and valued separately in the Bills of Quantities.

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

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

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

1.13. Entry upon Land, Working Site and Adjoining Lands

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

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

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

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

The Contractor shall on his own accord obtain rights of admission, and right of using all other areas which are necessary for storing and manufacturing, or for setting up site offices and Resident Engineer's office or whatsoever will be necessary. No separate payment will be made to the Contractor on account of these items and the Contractor must make due allowance for them in his rates.

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

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

1.14. Preservation of Survey Beacons

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

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

1.15. Land for Camp Site

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

1.16. Existing Services

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

The Contractor shall on the Engineer's direction arrange for the construction of permanent or temporary diversions of the said drains etc., together with their reinstatement in liaison with the respective Departments, Bodies, Corporations or Authorities. The cost of such works or diversions including reinstatement shall be charged against the appropriate provision sum provided into the Bills of Quantities. The Contractor shall be

at liberty, subject to the approval of the works, bear the cost of reinstatement of addition diversion. No services may be tampered with by the Contractor and all works in connection with any kind of services shall be carried out by their respective owners.
It is the responsibility of the contractor to inform the Engineer immediately any existing service is exposed.

1.17. Damage to Services

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

1.18. Temporary Roads and Traffic Control

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

1.19. Road Closure

Where a road used by the Contractor for delivery of any materials used in the works is closed under Section 71 of the Traffic ACT CAP 403 (2015) or amendments thereto, the contractor shall obey such closure order and use alternative roads.

1.20. Road and Railway Crossing and Traffic Control

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

1.21. Protection from Water

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

1.22. Weather Conditions

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

1.23. Protection from Weather

All materials shall be stored on site in a manner approved by the Engineer and the Contractor shall carefully protect from the weather all works and materials which may be affected thereby.
No separate payment will be made for this and Contractor will allow in his rate for this.

1.24. Explosive and Blasting

At works requiring the use of explosives, the Contractor shall employ men experienced in blasting, and these men must be in possession of a current blasting certificate. The purchase, transport, storage, and use of explosive shall be carried out in accordance with the most recent Explosives Ordinance and Rules issued by the Government and the Contractor shall allow in his rates for excavation and quarrying for all expenses incurred in meeting these requirements, including the provision of suitable stores. Blasting operations shall be carried out with as little interference as possible to traffic or persons and the rates shall include for all flagging, watching barricade and clearance of debris.
In all cases previous permission from the Engineer must be obtained before commencing any blasting operation.
If, in the opinion of the Engineer, blasting would be dangerous to persons or property, or it is carried out in a reckless manner, the Engineer can prohibit any further use of explosives.

1.25. Liaison with Police, etc.

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

off of trenches or other excavations must be followed explicitly.

1.26. Provision of Water

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

1.27. Temporary Lighting

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

1.28. Sanitation

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

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

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

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

1.29. Medical Facilities

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

1.30. Signboards

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

1.31. Setting Out and Survey Equipment

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

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

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

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

	Description	No.
a)	2m ranging rods	11
b)	Modern Universal Theodolite and Tripod	1
c)	Automatic level and Tripod	1
d)	4 level staff with levelling bubble	2
e)	100m steel tape	2
f)	50m steel tape	2
g)	3m pocket tapes	3

The contractor shall clear the site and set out the Works well in advance to enable the Engineer to inspect and approve the setting out prior to commencement of the Works. The Contractor shall amend at his own cost any error due to inaccurate setting out.
Any checking or approval by the Engineer of the setting out, bench marks, plans or schedule will not relieve the Contractor of his responsibilities under the Contract. The Contractor shall provide plan showing the position of his site offices, storage, sheds, accommodation, Engineer's Representatives office etc., to the permanent works for the approval of the Engineer before commencing erection of his camp.

1.32. Backfilling of Holes and trenches

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

1.33. Inspection of Works

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

1.34. Cleaning up of Site

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

1.35. Testing of Water-Retaining Structure

All water-retaining structures shall on completion be tested for water tightness in the following manner. The structure shall be filled with potable water in stage and held at each stage for such time as the Engineer may require. Should any dampness or leakage occur at any stage, the water shall be drained off and the defects made good. The procedure shall be continued and finally the structure shall after a period allowed for absorption remain full for seven days. Within those seven days, the level of the surface of the water should be recorded and measurements made at intervals of 24 hours. The total leak must not exceed 0.3% of the total volume of water in the tested structure. If the structure does not satisfy the Condition of the test, and the daily drop in water level is decreasing, the period of test may be extended for a further 7 days, and if the specified limit is then not exceeded, the structure may be considered as satisfactory.
Should any dampness or leakage or other defects occur they shall be made good and the structure re- tested until the water tightness is approved by the Engineer. Faces of submerged structures may not be covered before testing.
The Contractor shall allow in his rates for all expenses and shall provide water and all necessary labour and materials for testing the structures.

1.36. Testing of Roofs

Where structures are used for storage of potable water adequate precautions should be taken to ensure that the roof is watertight in order to give projection against a potential source of pollution.
The roof should be tested by lagooning the concrete slab to a minimum depth of 75 mm for a period of 3 days; the roof slab should be regarded as satisfactory if no damp patches occur on the soffit. The roof screed should be completed immediately after testing.
All water, labour and materials for the test are to be provided by the contractor who shall allow for this in his rates.

1.37. Cleaning and Sterilizing Water-Retaining Structures

The interior of all potable water-retaining structure shall be thoroughly cleaned and washed after the water tightness test has been approved by the Engineer in order to remove all contamination.
The structure shall then be filled to overflow level with clean water containing 50 parts per million of chlorine and left for a period of at least 24 hours. The chlorinated water shall then be drained away and the structure refilled with clean water from which samples shall be taken for bacteriological examination and for tests of residual chlorine. If any of the results of the tests are unsatisfactory when compared with those of the control sample of the supply water, the sterilizing process shall be repeated until the results of the tests are satisfactory.
The costs of the initial sampling, analysis and preparing on the bacteriological quality of the water shall be

borne by the employer, but should the initial report be unsatisfactory, the costs of any subsequent sampling analysis and preparing reports shall be borne by the Contractor.
The Contractor shall allow for - in his rates providing water, all labour, materials, chemicals and other things necessary for cleaning and sterilizing the water-retaining structures.

1.38. Contractor's Superintendence
The Contractor shall give or provide all necessary superintendence during the execution of the works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The Contractor or his competent and authorized Agent or representative approved in writing by the Engineer (which approval may at any time be withdrawn) is to be constantly on the works and shall give his while time to the superintendence of the same. If such approval shall be withdrawn by the Engineer, the Contractor shall after receiving written notice or such withdrawal, remove the Agent from the Site within the time stated in the notice and shall replace him by another Agent approvedby the Engineer.

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

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

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

1.42. Compliance with Statutes and Local Regulations
In addition to requirements of Clause 25 of the Conditions of Contract, the Contractor shall be responsible for acquainting himself with all current valid Statute Ordinance or By-Laws or Regulations provided in the Bills of Quantities. This applies to training Levy and other similar taxes for which no claims on the part of the Contractor other than the one inserted in the Bills of Quantities will be allowed.

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

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

1.45. Office for the Contractor
The Contractor shall erect an office near the works on the site to be kept open at all hours during which the work is in progress.
Any notice to be given to or served upon the Contractor shall be deemed and taken to be effectively given or served upon by the delivery there-of at such office on the Site.

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

1.47. Housing for the Engineers Staff
The employer shall provide housing for Engineers Staff

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

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

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

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

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

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

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

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

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

1.49. Attendance upon Resident Engineer and Resident Engineer ‘s Staff

For duration of the Contract.

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

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

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

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

1.50. Insurance

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

1.51. Transport for Engineer's Representative

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

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

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

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

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

1.52. Removal of Camps

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

1.53. Site Meetings

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

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

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

2. TECHNICAL SPECIFICATIONS

2.1 SITE CLEARANCE

2.1.1 Clearance of Trees, Bushes, Scrub, etc.

The contractor shall unless otherwise directed cut down all trees remove bushes, plantations, crops and other vegetable growth and grub up all roots, take down all huts, buildings, wall fence and any other obstruction and handle and transport salvaged usable materials, to a site approved by the Engineer. All salvaged and usable materials are the property of the respective owners. The clearing and demolition here-in described shall be carried out to a width of the minimum excavation plus 1.50 m on either side.
With exception of the salvaged material fore-mentioned, the Contractor shall destroy or otherwise remove the whole of the rubbish from the site to an approved tip or number of tips provided by him.
Trees shall be cut down to as near the ground level as possible and the rate entered in the Bill of Quantities shall include for cutting down, removing branches and foliage, cutting into suitable lengths, grubbing up stumps and roots, stacking up, burning or disposing off as directed.
Before commencing any site clearance, general clearance, clearance of pipelines etc., the contractor shall inform the Engineer's Representative of his intention. The Engineer's Representative will by visiting the section of works concerned, determine the extent of the clearance expressly required.
Payment for clearance will be authorized on the basis of what is expressly required and at the discretion of the Engineer's Representative.

2.1.2 Damage to Land, etc.

Except where necessary for the proper execution of the Works, the Contractor shall not interfere with any fence, hedge, trees, land or crop forming the boundary of the site, or elsewhere. In the event of any interference, the Contractor shall make good any damage to such fence, hedges, trees, land or crop to the satisfaction of the Engineer and the owner thereof.
Where the work is to be executed in private land, the Employer will be responsible for negotiating and obtaining rights of way and the serving of all notices as may be required upon the owners and/or occupiers of the land and it shall be the obligation of the Contractor to keep the Employer and the Engineer fully informed concerning the rate of progress and of his intention to enter and begin work with any way leave as provided for under the Conditions of Contract and required by this Specification.

2.1.3 Clearing the Site on Completion

On completion of the Work, the Contractor shall clear the Site of all plant, building, spoils, dumps, rubbish, etc. and leave the Site to the satisfaction of the Employer.
Borrow pits and temporary quarries shall be made good and covered with vegetable soil. Dumps for waste materials shall be covered with at least 0.5 m of soil of which at least a 0.1m layer in top shall be vegetable soil

2.2 EARTHWORKS SPECIFICATIONS

2.2.1 GENERAL

2.2.1.1 Method Statements

At least seven (7) days prior to the commencement of any open excavation at any section of the Works, the Contractor shall submit for the Employer's Representative's (Engineer's) approval, a statement of the excavation methods and procedures he intends to adopt on that section.
The statement shall include a description of the following, together with any other items which the Contractor considers relevant:
Sequence of operations; - A detailed programme of events and any consequent change in the overall programme of the Works;
Excavation protection and support, including drainage and temporary works; - Disposal or re-use of materials, including quantities and locations.
The methods adopted shall provide for the safe and efficient execution of the excavation work in such a way as to conform to the programme for completion of the Works and so that they do not interfere with other operations in progress of the Contractor or others.
The Employer's Representative's (Engineer's) approval of the Contractor's method of excavation shall not relieve the Contractor of any of his responsibilities or obligations under the Contract.
In the event the Contractor's methods do not provide results which satisfy requirements stated in the Specification, the Contractor will be obliged to change them and to use techniques and procedures either agreed between the Engineer and the Contractor or as indicated by the Engineer. Such changes will not warrant any extra payment to the Contractor.

2.2.1.2 Location and Shape of Excavation

The Contractor shall locate the excavations for structures and all other work as shown on the drawings and in accordance with the benchmarks provided to him by the Engineer.
The Contractor shall be responsible for correct location, and all extra work caused by his negligence in this matter will be at his expense and shall be corrected at the Engineer's request.
If local survey points or bench marks have been removed or are insufficient, the setting-out shall be related back to other established survey points or bench marks. Excavation shall be to the lines, grades and dimensions shown on the drawings or as established by the Engineer. During the progress of any open excavation work, it may be found necessary or desirable to vary the slopes or the dimensions of the excavations from those shown on the drawings or established by the Engineer. Such adjustment or trimming of the final excavated surface is considered to be a separate operation as defined hereafter.
Any and all over-excavation performed by the Contractor for any purpose or reason, except as may be directed by the Engineer, shall be at the expense of the Contractor. All such over-excavation shall be backfilled with approved material from excavations or concrete as directed by the Engineer, and the cost of furnishing and placing this backfill or concrete shall be at the expense of the Contractor.
The Engineer may direct alternative measures of backfilling, and the cost of such measures shall be at the expense of the Contractor.
Any other excavation performed at the option of the Contractor to secure access to required work, for disposal of material excavated, or for any other purpose, shall be at the expense of the Contractor.

2.2.1.3 Measurement of Excavated Volumes

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

a) Contour Line Method

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

b) Average Section Method

Profiles shall be taken by the Contractor of the ground surface before commencement of excavation, immediately after a change of type of work or classification of material and after completion of any excavation. Measurements shall be taken by means of a tacheometer or levelling instrument in order that vertical sections may be prepared at intervals of 3.0m or as directed by the Engineer. The volumes of excavated material shall be calculated between adjoining sections by considering the average area of the two sections over the intermediate distance. In the case of a curvilinear area, the profiles shall be measured radially. Volumes of excavated material shall be calculated for the cross-sectional area of each profile. The distance over which this area shall be considered is the length of the arc, passing through the Centre of gravity of the section, subtended by the angle between the radial sections.
Measurements, which are to be the basis of quantities for payment, shall be taken in the presence of the Engineer.
The Contractor shall give notice of his intention to take such measurements not less than twenty-four (24) hours beforehand.

2.2.1.4 Classification of Excavated Materials

Separate measurements shall be made for bulk and trench excavation classified either as "common excavation" or "rock excavation". At the commencement of any excavation operations at each location of each section of the Works, the Contractor shall establish and agree with the Engineer the separate classification and their limits.
Subsequent modifications to these limits may be made during the progress of the Works in accordance with actual conditions as encountered, but such modifications will only be agreed when the materials are exposed. Whenever an agreement is not possible on the classification of the material exposed in a certain area, a ripping test, in the form described below, shall be performed by the Contractor at his own expense at the area considered, in the presence of the Engineer.

The ripping test shall comprise:

(a) a survey, on a 1.0 m grid, to establish cross-sections over a test area of not less than 10 x 4 m within the area to be classified;
(b) provision of a Caterpillar Model D8K tractor or equivalent machine, equipped with a single straight ripper tooth 110 m penetration, hydraulically operated and approved by the manufacturer for use with the D8K;
(c) Ripping of test area with two passes per meter of width, with the full load applied to ripper tooth;
(d) After ripping, removal of ripped material by loading machine of approved type;
(e) Re-survey of the cross-sections and calculation of the volume and equivalent depth of excavation.

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

(a) All materials excavated without prior visual inspection and classification by the Engineer;
(b) All material that gives an equivalent depth of excavation equal to or more than 0.25 meters in the ripping test;
(c) All non-rippable boulders, or detached pieces of solid rock, embedded in common excavation material, but each having a volume of less than one cubic meter or a weight of less than two tones.

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

(a) All material so classified by visual inspection and agreed with the Engineer.
(b) All material that gives an equivalent depth of excavation less than 0.25 meters in the ripping test;
(c) All non-rippable boulders, or detached pieces of solid rock embedded in common excavation, each having a volume of more than one cubic meter or a weight of more than two tons.

2.2.1.5 Dewatering

The Contractor shall be responsible for the protection of all sections of the Works from effects of surface water run-off and ground water.
Such protection shall include pipes, channels, embankments and pumping arrangements to keep the Works free from any water which may damage the finished quality or impede progress or inspection during

construction.
Where local streams or natural drainage channels intersect the Site of the Works, these streams and channels shall be diverted outside the limits of the Works, at the expense of the Contractor.
The Contractor shall be responsible for the design of all such temporary dewatering works, and shall on request, provide the Engineer with drawings, calculations, explanatory reports and any other evidence that their performance will be adequate for their purpose.
Where some part of the Permanent Works can be adopted for such dewatering, the Engineer will instruct the Contractor on any limitations he requires with respect to their temporary use for dewatering during the construction of the Works.

2.2.2 TYPES OF EXCAVATION

2.2.2.1 General Clearing

General clearing comprises the removal and disposal of all trees, shrubs, buildings, fences and similar matter from the areas shown on the drawings or as directed by the Engineer.
The areas to be cleared shall include the foundation areas to all parts of the Works.
The limits of general clearing shall extend 5m beyond the toe of the fills and the limits of excavation, except where otherwise directed or indicated on the drawings.
Timber may be retained and used on Site by the Contractor. Unsuitable material shall be removed directly to an approved disposal area.

2.2.2.2 Stripping

Stripping shall consist of the removal from the surface and disposal of all humus, stumps, roots, brush, rubbish, other vegetation matter, and perishable and undesirable materials generally to a depth of 0.5m or as otherwise directed by the Engineer.
Stripping work shall include the transporting and disposal of stripped material. The limits of stripping shall extend at least 3 m beyond the toe of fills and limits of excavation, except where otherwise directed or shown on the drawings.

2.2.2.3 Bulk Excavation

Bulk excavation comprises the open cut excavation to be performed to lines, grades and dimensions shown on drawings or as directed by the Engineer.
The method adopted shall be suitable for the types of material encountered, to provide for the work to progress in an orderly manner and to restrict over-excavation to a minimum.
Within 3 m of the levels shown on the drawings, the Engineer may direct the excavation in successive stages until a suitable foundation or surface, as determined by the Engineer, is reached.
The Contractor shall not be entitled to any additional payment above the unit prices for the excavation by reason of such successive stages in the excavation procedure. Each successive stage shall include sufficient cleaning to enable the Engineer to inspect the foundation in order to direct further excavation if required.
Loose excavated material shall be removed from the excavation as the work proceeds and shall be transported to the disposal area or stockpile as directed.
For the final preparation of slopes and foundations, the Engineer may direct that the last 20 cm of the excavation, whether in common material or rock excavation, shall be excavated without the use of explosives or ripping, and such excavation methods will not be considered for separate payment, since they shall be deemed to have been already included in the unit prices for excavation work.
For the Emergency Spillway, excavation shall be carried out by such methods that shall not in any way disturb the condition of the adjacent existing spillway and dam.

2.2.2.4 Trench Excavation

Trench excavations shall be defined as those whose final width is less than 2 meters, or greater than 2 meters when depth is greater than width.
Excavation for trenches (including pits, footings, etc.) shall be performed by the use of hand tools and approved mechanical equipment in such a manner as to prevent shattering of the sides and bottom of the excavation. At the option of the Contractor, and with the approval of the Engineer, blasting may be carried out in accordance with Sub-section 3 hereafter. All planking, strutting and supports necessary to retain the sides of the excavation shall be provided, erected and maintained in a safe condition by the Contractor.

2.2.2.5 Slope Adjustment and Trimming

If, during the progress or after completion of bulk or trench excavations in common material, the Engineer instructs the Contractor to modify or extend the slopes or dimensions of the excavation by a horizontal width of less than 5 m, such modifications or extensions will be considered as separate excavation operations defined as "slope adjustment" or "trimming".
Modifications or extensions of more than 5 m will be considered and paid for as bulk excavation. - Slope adjustment shall apply where the modification or extension involves the adjustment of the limits of the bulk excavation by additional excavation of a horizontal width of more than 1 m up to 5 m. - Trimming shall apply where the adjustment to the bulk excavation limits is required by a thickness of additional excavation of less than 1m.

2.2.2.6 Seams and Cavities

The assumed lines of excavation shown on the drawings shall not be interpreted as indicating accurately the final or actual excavation lines.
There may be depressions, fissures, faults, seams and bands of soft disintegrating material running in various directions in the materials to be excavated and in the foundations, slopes and other areas.
Where defects occur, they shall be made safe by supports or corrected by local excavation below the general surface of excavation to the lines, depths and dimensions directed by the Engineer.

2.2.3 DISPOSAL AND STOCKPILING AREAS

The Contractor shall maintain appropriate disposal areas in the locations shown on the drawings, or as otherwise approved, for materials unsuitable for fill or aggregate production, surplus material from excavation and other approved waste.
All debris, bush, roots and other combustible material shall be burned or buried. All non-combustible waste shall be buried. Disposal by burying shall be done in such a manner that the material disposed of is buried with a minimum cover of 50 cm of excavation spoil or stripped material. The Contractor shall at no time leave a fire unattended and shall be responsible for any fire damage resulting from his operations.
Should the Contractor wish to form spoil dumps for his own convenience, other than those described, he shall obtain the Engineer's approval before any dumping is started.
Where excavated materials are suitable and are required for use in subsequent work, the Engineer may direct that these are separately stockpiled and will designate the location for such stockpiles within the disposal areas or in separate locations adjacent to the sites of the Works.
Adequate road access to the disposal and stockpile areas shall be established and maintained by the Contractor. Disposal and stockpile areas shall be cleared in accordance with Sub-section 2.1, and drainage channels shall be formed to remove surface water.
The tipping of materials in disposal or stockpile areas shall be controlled to provide a uniform and progressive use of the area, and tipped material shall be spread and graded to form layers of not more than1 m thickness.
On completion of the Works, the disposal and stockpile areas shall be left in a tidy and safe condition to the satisfaction of the Engineer.

2.2.4 BACKFILL

The Contractor shall supply, place and compact backfill or selected material in trenches and around concrete structures as shown on the drawings or as directed by the Engineer.
No backfilling shall commence until the foundation and Permanent Works have been inspected and approved by the Engineer.

Backfill shall be placed and compacted in successive layers not exceeding 25 cm in thickness. Compaction of cohesive soils shall continue until the dry density of the material reaches a value of 90% of the AASHTO maximum dry density, as determined in accordance with BS 1377.
The compaction of granular soils shall continue until the dry density of the material reaches a value of not less than 80% of the relative density as determined in accordance with Test 12 of U.S. Bureau of Reclamation Earth Manual (Section Edition, 1974).

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

2.3 CONCRETE WORKS

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

2.3.1 Materials and Tests.

2.3.1.1 Cement

Cement shall be ordinary Portland cement complying with BS 12. The cement shall be delivered in properly sealed, unbroken bags.
Rapid hardening Portland cement complying with BS 12 may be used with the approval of the Engineer.
Quantities in excess of one ton shall be stored in a water-proof shed with a raised floor. The cement shall be used in the order in which it has been received.
Quantities of less than one tonne for early use may be stored on a raised floor and covered by water- proof tarpaulin.
Any cement damaged by water or proving defective shall be removed from the site immediately.

2.3.1.2 Aggregates for Concrete

The aggregates shall comply in all respects with the requirements of BS 882.
The aggregates shall be free from dust, decomposed material, clay, earthly matter, and foreign substances or friable, then or laminated material. The fine aggregate shall be of approved river sand.
Coarse and fine aggregates shall be stored on the sites in separate heaps so that no possibility of any intermixing of the two shall occur. Any materials, which have become intermixed, shall be removed by the Contractor forthwith.
A sample of all aggregates shall be delivered to the site for the approval of the Engineer, and it shall remain on the site until all concrete work is finished.
Should the Engineer so require, the Contractor shall furnish a certificate from an approved testing laboratory in connection with each source of fine and coarse aggregate showing that materials comply with the specification. All such testing shall be carried out at the Contractor's expenses.

2.3.1.3 Water

All water to be used for concrete, motor and curing shall be of good drinkable quality, free from humus acid, chemicals, salts or other matters that in any way whatsoever may be harmful to the concrete either by diminishing the strength or causing a discoloration of the concrete.
Generally, water from public mains shall be used, but if this is not possible, the contractor shall obtain water from other sources approved by the Engineer. The Contractor may be requested to provide test analysis according to BS 3148 from an approved laboratory.

2.3.1.4 Admixture

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

2.3.1.5 Concrete Mixture

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

Concrete Grade	**Maximum size of Coarse Aggregate**	**Minimum Cement Content kg/m^3**	**Maximum Water/Cement Ratio**
10	40	210	0.5
15	40	250	0.5
20	20	350	0.5
25	14	390	0.5

2.3.1.6 Trial Mixes

The actual concrete mixes shall be determined prior to starting of concrete works according to BS 8110.
For each grade of concrete three separate batches shall be made using the actual aggregates
The workability of each of the trial batches should be determined and two times three cubes made from each batch for test at 7 days and 28 days.
The average strength of the nine cubes shall exceed the following values

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

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

2.3.2 Testing of concrete shall comply with BS 8110

All test cubes shall be manufactured, cured and tested as detailed in BS 1881.
The Contractor shall provide at his own expense all the necessary labour, equipment, moulds, transport, etc., required for manufacture of the test cubes. All test cubes requested by the Engineer shall be tested by Ministry of Works, Materials Branch, and the contractor shall allow in his rates for concrete for all costs in relation with the test cubes.
Should the Contractor require independent tests, he shall make them at his own expense, and the results of such tests shall not be valid unless test cubes are manufactured in the presence of the Engineer and tested by an approved agency and to the requirements in all details of the BS mentioned above.
Sufficient moulds and equipment shall be provided to enable a minimum of six test cubes to be prepared on each day when concrete is being mixed or such other number as the Engineer may direct. The Contractor shall be responsible for delivery of the test cubes to the Ministry of Works, materials Branch, or other approved testing laboratory.
The precise location of the concrete, which the test cubes represent and the time of Placing, shall be noted on the drawings or elsewhere.
Where the concrete in the work is compacted by mechanical vibration, the test cubes shall be compacted by mechanical vibration, and where the concrete in the work is compacted by hand, the test cubes shall also be compacted by hand as specified in BS 1881.
The Engineer may in the Laboratory make test cubes for any purpose from site materials, and the contractor shall supply such materials as required free of charge.
The test cubes shall be stored at the site of construction at a place free from vibration under damp sacks for 24 hours after which time they shall be removed from their moulds, marked and buried in damp sand or under water until the time for delivery to the testing laboratory.
The cubes shall then be placed in damp sand or another suitable damp material and sent to the testing laboratory, where they shall be similarly stored until the date of test. Test cubes shall be kept on the site for as long as practicable but for at least three-fourths of the period before testing, except for tests at ages less than seven days.

2.3.3 Standards for Acceptance of Cube Tests.

The results of all cubes shall be accepted by the contractor and Engineer as true results of the crushing strength of the cubes. The cube strength shall be calculated from the maximum load sustained by the cube at failure.
The appropriate strength required may be considered to be satisfied if the requirements in BS5328 : Part 4, clause 3.111, are fulfilled.
If the tests fail to give the required strength, further testing of the concrete shall be carried out. If these tests fail to prove the strength of the concrete used, the contractor shall at his own expense remove and replace all such concrete as directed by the Employer.

2.3.4 Slump Tests

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

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

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

2.3.5 Steel Reinforcement

Steel for reinforced concrete shall be store under cover clear of ground and shall comply with BS 4449, BS 44111 and BS 4483
All steel reinforcement shall be supplied by and approved manufacturer, and the Contractor may be required to obtain a manufacturer's test certificate in respect of steel reinforcement supplied. In the absence of such a test certificate, the Contractor may be required to submit samples to be tested at the Contractors expense in such a manner as the Engineer may determine.

2.3.6 Precast Concrete Units

Precast concrete shall be cast in properly made strong moulds true to the shape required. For work described "Finished Fair" the moulds shall be lined hardboard, sheet metal or other approved material.
The Concrete shall be thoroughly tamped in the moulds and shall not be removed from then until 7 days after placing the concrete, but the sides may be removed after 3 days, provided the moulds are such that thesides are easily removable without damaging the concrete.
The precast work shall be cast under sheds and shall remain under same for 7 days in the moulds and further 7 days after removal from the moulds. During the whole of this period the concrete shall be shielded by sacking or other approved materials kept wet. It shall then be removed from the sheds and stacked in the open for at least 7 days to season.
All precast work shall be cast in lengths convenient for handling unless otherwise described.
Prices are to include for handling reinforcement, hoisting, fixing and bedding in cement mortar, and for finishing exposed surface fair where described.

2.3.7 Workmanship

2.3.7.1 Inspection of Reinforcement and Formwork

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

2.3.7.2 Mixing of Concrete

Concrete for grade 20 and grade 25 shall be mixed by weight batching only, unless approval has been obtained from the Engineer for the concrete materials to be mixed by volume. Concrete for grade 10 and 15 can be mixed by volume.
The weight of coarse and fine aggregates in each batch shall be so computed that each batch contains one or more full 50 kg bags of cement.
All concrete is to be mechanically mixed in a batch mixer of an approved type. The dry materials for concrete shall be mixed in the mixer until a uniform colour is obtained after which the gauged quantity of water shall be gradually added. After all the water has been added, the mixer shall continue to mix for a period of not less than two minutes.
The mixers shall be equipped with an adjustable device capable of supplying a predetermined amount of water.
On the completion of each mixed batch of concrete, the mixer drum shall be completely emptied before a fresh batch is placed therein. On the cessation of work, the mixer add all handling plant shall be washed out and shall always be left clean and free from hardened concrete.
Any mix considered to be unsatisfactory by the Engineer for any reason, will be discharged to waste at the

Contractor's expense, as and where directed by the Engineer, well clear of all mixed and placing operations in such a manner as to avoid the risk of defective concrete being incorporated in the Works.
The mixer shall be maintained in a first-class condition throughout the Contract and any mixer or plant, which is faulty in any respect, shall not be used. The drums of all mixers shall revolve at the speed recommended by the makers. A mixer which has been out of use for more than 20 minutes shall be thoroughly cleaned out before any fresh concrete is mixed.
The Contractor shall always have one spare mixer ready on the site to avoid interruption in the mixing a casting of concrete.

2.3.7.3 Transport and Placing of Concrete

Concrete shall be transported in a manner which will avoid a segregation of the constituent material, and placing in the forms shall be completed before the concrete has taken its initial set. In no case shall concrete be place dint he Works more than 30 minutes after mixing. Concrete shall not be dropped through a height greater than 1.2m. Chutes may be used if they are constantly kept free from coatings of hardened concrete or other obstructions. Pumping of concrete through delivery pipes may be used, but only with the prior approval of the Engineer.
Concrete of any unit or section of the work shall be carried out in one continuous operation, and no interruption of the concreting will be allowed without the approval of the Engineer
The concrete shall be paced in layers as directed by the Engineer over the whole area to be concreted and the second layer shall not be commenced until the first is completed. Sloping beds will not be allowed when placing concrete. Should any accidental segregation occur, the affected area shall be thoroughly turned over by hand until a homogeneous mix has been obtained.
When concreting walls and columns, the mix proportions of the first 250 mm depth of concrete placed in contact with the horizontal joint should be adjusted by reducing the amount of coarse aggregate.

2.3.7.4 Compaction

After the concrete has been placed in a position it shall be compacted by vibration with a rigid poker type with internal vibrator approved by the Engineer. The Concrete shall be worked well up against the form, joints and around the reinforcement and be free form voids and other imperfections. Under no circumstances shall the concrete be shifted or transported inside the form with vibrator.
The Contractor shall always have one spare vibrator ready on the site to avoid interruption in the mixing, casting and vibrating of concrete.
In the case of reinforced concrete, a competent steel fixer shall be in constant attendance during the placing of concrete to adjust and correct the position of the reinforcement, if so required, immediately
before the concrete is placed. In no case shall the vibrators be attached to or be allowed to come into contact with the reinforcement.
Each freshly placed layer of concrete must be thoroughly compacted and worked into the preceding one but care shall be taken that no damage is done to previous work that has already set. Excessive compaction of concrete shall be avoided.
The upper surface of slabs shall be compacted cy an approved external vibrator.

2.3.7.5 Placing of Concrete under Water

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

2.3.7.6 Placing of Concrete on Earth Surfaces

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

2.3.7.7 Construction and Expansion Joints

The position and arrangement of construction and expansion joints shall be as shown on the drawings. Where additional joints are requested, the positions must be approved by the Engineer.
All construction joints shall be rebated to form a key with subsequent work. Concreting of any unit or section of the work shall be carried out in one continuous operation up to construction joints and no interruption of the concreting will be allowed without approval.
Where shown on the drawings construction and expansion joints shall be provided with water bars of

P.V.C. or other approved material. The widths and shapes of the water bars shall be as specified on the drawings and all joints shall be sued. The trade mark of the water bars shall be approved by the Engineer before commencement of work, and fixing and jointing of water bars shall be approved by the Engineer before commencement of work, and fixing and jointing of water bars shall be approved by the Engineer before casting.
The fusing of water bars shall be performed in a way so as to secure that the two bars joined over the entire width. The fused joint shall be able to withstand tension and shall be intact after 10 consecutive bending. The Engineer may request that the fusing is carried out by specialists.
Where shown on the drawings, joints shall be provided with a joint sealing compound. The sealing compound shall be a two-component polysulphide rubber sealing compound complying with BS 4254, and the trade mark shall be approved by the Engineer. The compound shall be placed in a chase made by a filletstrip in the formwork. The concrete shall be dry and suitable primer shall be applied to the joint before applying the sealant. The procedure for the workmanship shall be approved by the Engineer before commencement of work, but the contractor shall have the full responsibility for the water tightness of the joints.
It should be noted that the lower part of the concrete walls shall be cast together with the floor slab and no joint directly on the slab will be permitted.
Before depositing fresh concrete against concrete which has already set, the face of the latter shall be roughened to expose the coarse aggregate, all cement latency removed whilst the concrete is still green and the surface thoroughly wetted with water and cleared of foreign matter. Cement mortar grout mixed in the proportion of one part of cement to two parts of sand shall be spread to a thickness of 5 mm over the face of the set concrete before the fresh concrete is deposited.

2.3.7.8 Curing and Protection of Concrete

Curing shall begin as soon as the surface of the concrete has hardened sufficiently. All exposed concrete surfaces shall be cured for a period of seven days by covering them with a layer of sand, hessian canvas or other approved materials kept damp. Concrete shall be protected from sun, wind, heavy rains and flowing water for at least three days after placing.

2.3.7.9 Finishes of Horizontal Surfaces

Concrete surfaces for floors shall be true to level and falls as shown on the drawings. Water coming to the surface when vibrating shall be removed. After casting the surface shall be smoothened with a wooden flat. After some hours, when the surface has dried up, the surface shall be troweled smooth with a steel trowel. All other horizontal surfaces shall have the same surface finish except for the final troweling with steel trowel.

2.3.7.10 Finishes of Vertical Surfaces

The shuttering for exposed concrete faces shall be so constructed that the latter shall be true to line and surface. The concrete shall be consolidated as specified against the shuttering to keep the face of the work free from honeycombing and other blemishes.
After removal of the shattering, no concrete surfaces shall be treated in any way until they have been inspected by the Engineer.
If upon removal of the shuttering, the line or surface of the work is, in the opinion of the Engineer, unsightly and not in accordance with the requirements of the Contract, the Contractor shall at his own expense cut out and make good such portions of the work as the Engineer directs.
Rendering over defective surfaces shall not be permitted. Areas of honeycombing shall with the approval of the Engineer be made good immediately upon removal of the shuttering, and isolated superficial air and water holes shall be filled. Care shall be taken not to leave mortar or cement on parts of the surface which have been cast smooth and without pores.
Unless otherwise instructed, the face of exposed concrete placed against shuttering shall after removal of the shuttering be rubbed down with a carborundum stone or in other approved manner to remove fins and other irregularities, and washed perfectly clean.
Concealed concrete faces shall be left as from the shuttering, except that surfaces with honeycombing shall be made good.

2.3.7.11 Accuracy of Finish

The arrangement of all formwork shall be made in such a way that all dimensions shall comply as exactly as possible with those given on the drawings. The following tolerances shall be respected:

Foundations	50 mm
Position of columns and Walls	5mm
Thickness of walls	5mm
Lateral dimensions of columns	5mm
Level of slabs,	5mm
Slab thickness	5mm
Lateral dimension of beams	5mm
Plumb of columns and walls	3 mm in each storey(non/accumulative)
Window and door opening sizes 5 mm	5mm

Surfaces and edges must not show any noticeable warping. On a length of less than 10 m the deviation may be 10 mm at the most.
The Contractor shall be responsible for the cost of all corrective measures required by the Engineer to rectify work which is not constructed within the tolerance set out above.

2.3.7.12 Construction of Formwork.

All formwork shall be substantially and rigidly constructed of timber or steel or pre-cast concrete or other approved material and shall be true to the shape, line, level and dimensions shown on the Drawings.
Timber shall be well seasoned, free from loose knots and or Formwork of exposed concrete faces be planned to thickness. Faces in contact with concrete shall be free from adhering grout, projecting nails, splits, or other defects that will make the concrete surface. Formwork for foundations and other concealed work may be undresses or rough timber.
All joints shall be sufficiently tight to prevent leakage of cement grout and to avoid the formation of fins or other blemishes, and all faulty joints shall be caulked.
All formwork shall be thoroughly cleaned and coated with an approved type of oil before it is fixed in position. Immediately before concreting the formwork shall be watered thoroughly and washed out to remove sawdust, shav or other rubbish. Where the appearance of the concrete face is important, the positionand direction of the joints shall be as directed.
Fillet strips shall be fixed in the formwork to form a chamfer 20 mm by 20 mm on all external corners of the concrete.
Openings for inspection of the inside of the formwork for walls, beams and similar work and for the escape of wash water shall be formed in such a way that they can be conveniently closed before starting to place the concrete.
Connections between formwork elements shall be constructed to allow for easy removal of the formwork, and shall be either nailed, screwed, bolted, clamped, braced or otherwise fixed securing a sufficient strength to retain the correct shape and line during compaction of the concrete.
Bracing members placed in the formwork to keep two sides of formwork in exact position shall be approved by the Engineer. Holes in the concrete after bracing arrangement shall be made good by plugging with approved material.
Top Formwork shall be provided to concrete faces where the slope exceeds 1 vertical to 2½ horizontal. Such formwork shall be counterweighed or otherwise anchored against floating.
The formwork shall be so designed that the formwork for soffits of slabs and for sides of beams, columns and walls may be removed first leaving the formwork for the soffits of beams and their supports in position. Wedging or other suitable ways of adjustment shall be provided to allow accurate adjustments of the formwork and to allow a gradual removal of the same without jarring the concrete.
On demand the Contractor shall provide such drawings and calculations as necessary for determination of the structural strength of the formwork. The Engineer's approval of such drawings and calculations will not relieve the Contractor of his responsibilities under the Contract.
Formwork shall be erected true to line and braced and strutted to prevent deformation under the weight and pressure of the wet concrete, soffits shall be erected with an upward camber as shown on the Drawings or as directed by the Engineer or of 2 mm for each 1 m of horizontal span.
Re-propping of beams will not be approved except when props are reinstated to relieve the beams of loads

in excess of the design load. Vertical props shall be supported on folding wedges on sole-plates, or other measures shall be taken whereby the props can be gently lowered vertically when commencing to remove the formwork.
If, in the opinion of the Engineer, the formwork is faulty, inadequate or does not comply with the specifications, then the Contractor shall at his own cost modify the formwork until it meets the approval of the Engineer.

2.3.7.13 Mould Oil

All faces of formwork that will come in contact with wet concrete shall be treated with approved mould oil or other coating to prevent adherence to the concrete. Such coatings shall be insoluble in water, non-staining, nor injurious to the concrete, shall not become flaky and shall not be removable by rain or wash-water. Liquids that retard the setting of cement shall only be applied to the shuttering when applied to the shuttering when approved. Mould oils and similar coatings shall be kept free from contact with the reinforcement.

2.3.7.14 Holes for Pipes, Cast-in Items etc., General

The Contractor shall be responsible for the co-ordination with the Subcontractors for the setting out and fixing of all pipes and holes, pockets and chases for pipes. Sleeves provided by the sub-contractors are to be accurately set out and cast in and cutting away in completed concrete work is to be minimized.
Details of all holes etc. required in a structural work for services must be submitted to the Engineer who will assess the necessity for extra trimming reinforcement.
No openings, holes, chases, etc., are to be formed in the concrete without the approval of the Engineer and details of fixtures or fixings to be cast in must be approved.

2.3.7.15 Pipes through Water Retaining Walls

Pipes passing through water retaining walls and floors shall, wherever possible, be built into the structure in-situ. Shuttering shall be formed closely to the outside of the pipe, and concrete shall be placed and compacted thoroughly round the pipe.
Pipes, bolts or other steel items cast into the concrete in water retaining structures must not in a
When not possible to build in place, pipes shall pass through preformed holes. Holes shall be formed with formwork which shall be stripped cleanly and without shock to the concrete. As soon as the shuttering is stripped, the hole shall be thoroughly wire brushed to expose the aggregate. The hole shall be as neat as possible to allow the pipe to be passed through the wall, while the corners shall be chamfered or rounded.
The pipe shall be set and the hole filled up as soon as possible. Immediately before filling, the hole shall be continuously soaked so as to saturate the concrete, and the surface coated with a stiff mix of 1:1 sand grout.
Shutters shall be fixed true to the faces of the wall, and a stiff mix of concrete packed in until the hold is completely filled, particular care to be taken to ensure that the spaces beneath the invert of the pipe and beneath the slopping soffit of the hole are completely filled. Shuttering shall be stripped as soon as possible and the filling rubbed smooth. The filling and the surrounding concrete shall be kept wet for 7 days after filling.

2.3.7.16 Removal of Formwork

Formwork shall be left in position until the concrete has attained sufficient strength to be self- supporting. The Contractor shall be responsible for the safe removal of the formwork without shock or vibration – which would damage the concrete.
Any work showing sign of damage through premature removal of formwork or though premature
loading shall be entirely reconstructed at the Contractor's expense. The Engineer may delay the time of removal of formwork if necessary. Subject to the above, the minimum period for removal of formwork shall generally be as follows:

Slabs	Soffits (props left under	7 days
" "	Props	21 days
Beams	Sides	3 days
" "	Soffits	21 days
Walls and Columns	(unloaded)	2 days

When formwork is removed after 3 days, it will be necessary to ensure that the exposed surfaces of the concrete are kept thoroughly wet for the period of curing.

2.3.7.17 Reinforcement

All bending, cutting and fixing to comply with BS 8110 and BS 441111. Normally Bending schedules are incorporated into the Contract Drawings, but the Contractor shall satisfy himself about their accuracy and about their complete coverage of the work involved. Any omission, inaccuracy or other errors observed by the Contractor shall be reported to the Engineer before commencement of the work.
In case of errors in Bending Schedules, no extra payment will be approved, provided the reinforcement is shown correctly on the Contract Drawings.
The number, size, shape and position of all the reinforcement shall, unless otherwise directed or permitted by the Engineer, be strictly in accordance with the drawings.
Bars shall be of the shown lengths, and lapping, except where indicated on the Drawings, is not permitted unless approved by the Engineer.
Spacing between bars shall not differ more than 5 mm from the required spacing. Any inaccuracy in the total length of a bar as cut shall be compensated for in the end hooks or other approved parts of the bar.
The internal radius of a bend shall neither be less than allowed by BS 441111 nor less the radius given in the Bending Schedule. The steel reinforcement shall be assembled and fixed in the form of a rigid case. To prevent displacement before or during concreting the bars shall be secured one to the other with approved binding wire at each intersection. In slabs and walls binding at every second intersection is sufficient.
Concrete cover blocks (mix 1:3) shall unless otherwise directed be used between the reinforcement, the bottoms and sides of the forms to ensure the specified concrete cover to the bars. Variations of cover shall be kept within plus/minus 3 mm from the specified cover.
The minimum clear horizontal distance between adjacent bars shall
be of 25 mm or the diameter of the bars whichever is the biggest, and 25 mm vertically. Space bars shall be inserted at such intervals that the bars so not perceptibly sag. Projecting bars shall be adequately protected against displacement both during and after concreting.
At the time of fixing and when concrete is being placed, all reinforcement shall be free from oil, painting, grease, dust and scale or any other coating which would destroy and bond with the concrete. The Contractor must obtain the Engineer’s approval of the reinforcement when places, before any concreting is commenced.

2.4 MASONRY AND BLOCKWORK

2.4.1 General

All masonry work shall be constructed from building stone or approved concrete blockwork
For walls, facing and other exposed works the stone shall, unless otherwise specified, be medium chisel-dressed.

2.4.2 Workmanship

All masonry work is to be constructed in compliance with BS 5.
The Contractor shall provide and use proper setting-out rods for all work.
Stones and blocks shall be well soaked before use and the tops of walls shall be kept wet as the work proceeds.
The stones and blocks shall be properly bonded so that no vertical joint in a course is within 115mmof a joint in the previous course. Alternate courses of walling at angles and intersections shall be carried through the full thickness of the adjoining walls. All perpends, reveals and other angles of the walling shall bebuilt strictly true and square.
The stones and blocks shall be bedded, jointed and pointed in mortar (1:3) with beds and joints 9mm thick flushed up and grouted solid as the work proceeds.

2.4.3 Cement

Cement used for making mortar shall be as described in the Engineering specifications for “Materials”.

2.4.4 Lime

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

2.4.5 Sand

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

2.4.6 Water

Shall be as described in "Concrete Work"

2.4.7 Concrete Blocks

Concrete blocks shall comply with the requirements of BS 2028, 1384 except where amended or extended by the following clause. Blocks shall have square arises and corners. For fair faced work damage to arises and corners shall not exceed the removal of 11 mm of the block’s depth or thickness. Concrete blocks shall have a minimum crushing strength of 3.5 N/mm2 except when below the damp course level or in contact with soil when they shall have a minimum crushing strength of 7 N/mm2, unless noted otherwise on drawings. Hollow concrete blocks shall not be used below the damp course level or in contact with soil.
Concrete blocks used for external walls shall be Class 'A' and for internal load bearing walls they shall be at least Class `B'. Class `C' blocks shall only be used for non-load bearing partitions.
No precast blocks shall be incorporated into the works unless approved by the Engineer. The delivery of present blocks from which samples tested do not comply with this specification shall be deemed defective. Any work constructed with blocks from which samples tested do not comply with this specification shall be deemed to be defective.
From every 1,000 precast concrete blocks delivered to site ten blocks samples shall be provided for testing. The precast block samples shall be selected in accordance with BS 2028, 13114. Samples of precast concrete blocks for testing shall be tested for the following properties in accordance with the methods given in BS

2028, 13114 and the test results shall comply with the requirements of BS 2018, 13114 except where amended by this specification: -

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

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

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

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

2.4.8 Stone

All stone shall comply with the requirements of CP 121.202 for masonry and rubble walls respectively except where amended or extended by the following clauses.

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

Where snecked rubble walls are specified, the snecks shall not be less than 100 mm square on the exposed face.

Stone for masonry shall have a minimum compressive strength of 10 N/mm^2. (Stone shall not be required to be tested to failure). The density of stone for masonry shall be not less than 2300 kg/m^3. The drying shrinkage of stone shall not exceed 0.05%

Samples of stone provided for testing shall be tested for the following in accordance with the methods given in BS 2028, 13114 and the test results shall comply with the requirements of this specification.

a. Compressive strength
b. Density
c. Drying shrinkage

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

Where cast stone including stone described as artificial stone, reconstructed stone, etc., is specified the stone shall comply with the requirements of BS 1217.

Masonry shall be of stone, having no irregular faces and only the back face if not visible shall be left as from the saw.

Prior to ordering dry stone the Contractor shall demonstrate that the stone is durable. This may be done by supplying details of buildings constructed with stone from the same quarry and which has been exposed to the same environmental condition for at least ten years.

The maximum projection from the face of stone for rubble walls shall be 20 mm beyond the specified face of the wall.

The Contractor shall provide six samples of stone measuring 150 mm x 150 mm for testing prior to delivering any stone to site. As work proceeds the Contractor shall provide six samples 150 x 150 x 150 mm for testing from every 300 m^2 of work.

All stone shall be stacked on prepared dry areas free of clinker, ashes and sulphate bearing strata.

2.4.9 Wall Reinforcement

100 mm thick walls and where described other walls and partitions shall be reinforced with a 25 mm wide strip of No. 20 S.W.G. hoop iron built into alternate horizontal joints in the wall centre. The reinforcement

shall be lapped and hooked at running joints, angles and intersections and carried at least 115 mm into abutting walls at junctions.

2.4.10 Cement Mortar

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

2.4.11 Mixing of Mortar

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

2.4.12 General Construction

(a) Setting out The Contractor shall provide proper setting out rods and set out all work on same for course, openings, heights etc., and shall build the walls, piers etc., to the widths, depths and heights indicated on the Drawings and as directed by the Engineer.
(b) Building in Wood Frames Openings for doors, ventilators etc., are to be set out and left unbuilt until the wooden frames have been fixed in position.
(c) Building in Metal Windows and Doors Openings for metal frames are to be wide enough for the frames to fit without being forced into position. Build the lugs into the joints of the walling and fill in the space between the walling and frame with cement mortar well tamped into the channel of the frames and point all round externally. All frames must be set plum and level and free from twist.
(d) Walls to Receive Plaster & Similar Finishes All faces of walls to be plastered etc., to have all projections dressed off and joints raked out as key.

2.4.13 Building Walling

(a) Laying and Jointing All blocks shall be well wetted before being laid and the top of walling where left off shall be well wetted before commencing building. Walls to be kept wet three days after building. All walls throughout the works shall be carried up evenly in 200 mm courses except where courses of less depth are required to bring walling up to level of floors, windows and the like and where otherwise described, no part being allowed to be carried up more than one metre higher at one time than any other part and in such cases the joining shall be made in long steps so as to prevent cracks arising and all walls shall be levelled round at each stage. Not more than 3 metre height of wall shall be laid in any one day.
(b) Bonding the blocks shall be properly bonded together and, in such manner, that no vertical joint in any one course shall be within 115 mm of a similar joint in the courses immediately above or below. All walling of 300 mm thickness or less shall be built in single thickness of blocks. Walling exceeding 300 mm in thickness shall be built with through bonders not more than 1070 mm apart in each course as directed by the Engineer.
Alternate courses of walling at all angles and intersections shall be carried through the full thickness of the adjoining wall. All perpends, reveals and other angles of the walling shall be built strictly true and square.
(c) Tolerances All courses of walls shall be level with a maximum deviation of +/- 3 mm in any one metre length and a maximum overall deviation of 10 mm for lengths of wall exceeding 3 metres. Walls shall be plumb with a maximum deviation of +/- 3 mm in any metre height of wall with a maximum deviation of +/- 10 mm in the total height of the wall or any storey.

All corners of walls which are shown as being at right angles shall be square with a maximum deviation of 3 in 1000. All walls shall be straight with a maximum deviation of +/- 3 mm in any one metre length and a maximum overall deviation of 10 mm in any length exceeding 3 metres. All bed and vertical joints shall be an average of 10 mm thick with a maximum deviation of +/- 3 mm of blockwork, and stone rubble walls. Joints for stone masonry walls shall be 11 mm +/- 1 mm thick.

(d) Curing

All walls shall be maintained in a damp condition for at least 24 hours after laying. Walls under construction shall be dampened by applying water with a brush and no hosing directly on to the wall shall be permitted. When work ceases on any section of wall polythene or hessian shall be draped over the wall, for at least 24 hours. If hessian is used, it shall be maintained continuously wet.

(e) Backfilling

Earth backfilling against walls shall be carried out such that the level of the backfill is always equal on each side of the wall.

When a wall has filling material on one side only to a fill width of more than three times the wall thickness, the wall shall be continuously supported during backfilling.

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

2.4.14 Reinforced Walls

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

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

2.4.15 Wall Ties

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

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

2.4.16 Fair Face

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

2.4.17 Pointing

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

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

2.4.18 Holes, Cutting and Chasing

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

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

2.5 FINISHINGS

2.5.1 Samples

The Contractor shall prepare at his own cost sample areas of the paving, plastering and rendering as directed until the quality, texture and finish required is obtained and approved by the Engineer after which all work executed shall conform with the respective approved samples.

2.5.2 Finished thicknesses

The thicknesses of floor finishes quoted in this section of the specification shall be the minimum requirements.
The finished floor surface will equally have a constant level and any adjustment needed to achieve this effect with the varying floor finish materials is to be made in the screeds beneath the same.
Slabs bearing on the ground may be cast to varying levels, and be of constant thickness with varying formation levels, or have varying thicknesses at the option of the Contractor. This stipulation in no way relieves the Contractor of the requirements of the specification for structural work.

2.5.3 Materials generally

All materials shall be of high quality, obtained from manufacturer's to be approved by the Engineer. Cement, sand and water shall be as described under Concrete Work and Blockwork.

2.5.4 Bonding

Bonding compounds, etc., for use in applying plaster and similar finishes direct to surfaces without the use of backings or screeds are only to be used if approved by the Engineer and are to be used strictly in accordance with the manufacturer's printed instructions.

2.5.5 Chases, openings and holes

All chases, holes and the like which were not formed in the concrete or walling shall be cut, and all service pipes shall be fixed and all holes and chases filled with mortar before paving and plaster work is commenced. In no circumstances will the Contractor be permitted to cut chases, holes and the like in finished paving or plasterwork.

2.5.6 In situ finishing

2.5.6.1 General

The term plastering refers to the operation internally and rendering to the same operation externally but for ease of reference the term plastering has generally been used in this specification to describe both operations.

2.5.6.2 Mixes

The methods of measuring and mixing plaster shall be as laid down under Concrete Work and the proportions and minimum thickness of finished plaster shall be in accordance with drawing or bill of quantities.

To obtain greater plasticity a small quantity of lime may be added to the mixes for external plastering at the Engineer's discretion but in any case, this is not to exceed 1/4-part lime to 1 part cement.
With regard to the lime mortars gauged with cement, the addition just before use, of the cement to small quantities of the lime/sand mix shall preferably take place in a mechanical mixer and mixing shall continue for such time as will ensure uniform distribution of materials and uniform colour and consistency.
It is important to note that the quantity of water used shall be carefully controlled. Plaster may be mixed either in a mechanical mixing machine or by hand.
Hand mixed plaster shall first be mixed in the dry state being turned over at least three times. The required amount of water should then be added and the mix again turned over three times or until such time as the mass is uniform in colour and homogeneous.
The plaster shall be completely used within thirty minutes of mixing and hardened plaster shall not be remixed but removed from the site.

2.5.6.3 Preparation of surfaces for plaster etc.

Irregularities in the surfaces to be plastered or rendered shall be filled with mortar, without lime, twenty-four hours before plastering is commenced. Joints in blockwork, etc., are to be well raked out before plastering to form a good key. Smooth concrete surfaces to be plastered shall be treated with an approved proprietary bonding agent or hacked to provide an adequate key for the plaster.
All surfaces to be plastered or rendered shall be clean and free from dust, loose mortar and all traces of salts. All surfaces shall be thoroughly sprayed with water and all free water allowed to disappear before plaster is applied.
As far as practical, plastering shall not be commenced until all mechanical and electrical services, conduits, pipes and fixtures have been installed.
Before plastering is commenced all junctions between differing materials shall be reinforced. This shall apply where walls join columns and beams, particularly where flush, and similar situations where cracks arelikely to develop and as directed by the Engineer. The reinforcement shall consist of a strip of galvanized wire mesh 'Expamet' or equal approved 15 cm wide which shall be plugged, nailed or stapled as required at intervals not exceeding 45 mm at both edges. The surfaces to which such mesh shall be applied shall be painted with one coat bituminous paint prior to fixing the mesh.

2.5.6.4 Application of plaster and render

After preparation of the surfaces a key coat of cement slurry shall be applied to the wetted surface to be plastered. When this coat is dry the plaster coat shall be applied, by means of a trowel, between screeds laid, ruled and plumbed as necessary. This coat which shall be to the required thickness shall be allowed to dry and then cured as described. Surfaces are to be finished with a wood or steel float to a smooth flat surface free from all marks.
All plastering and rendering shall be executed in a neat workmanlike manner. All faces except circular work shall be true and flat and angles shall be straight and level or plumb. Plastering shall be neatly made good around pipes or fittings. Angles shall be rounded to 11 mm radius.
All tools, implements, vessels and surfaces shall be at all times kept scrupulously clean and strict precautions shall be taken to prevent the plaster or other materials from being contaminated by pieces of partially set material which would tend to retard or accelerate the setting time.

2.5.6.5 Curing of plaster

Each coat of plaster is to be maintained in a moist condition for at least three days after it has developed enough strength not to be damaged by water.

2.5.6.6 Angle beads

Where required by the Engineer, salient external angles of plastered walls shall be protected with galvanized mild steel angle beads complying with BS 12411 Fig. 7 Profile C3.
They shall be securely plugged, nailed or stapled as required at intervals not exceeding 450 mm at both edges.

2.5.6.7 Plaster stops

Where shown on details, plasterwork shall be stopped against "Expamet" galvanized steel plaster stop, reference 5115 which shall be securely nailed to walls in the positions indicated on the drawings.

2.5.6.8 Cement and sand screeds

Cement screed shall consist of cement and sand mix 1:2 laid in panels and finished with a steel trowel if not otherwise specified.
Where specified as waterproof "Puddlo" or similar waterproofing compound shall be added to the cement paving or screed strictly in accordance with the Manufacturer's instructions.
Where practicable, screed is to be laid while the concrete is still green. When this is not practicable, the concrete is to be well washed and brushed perfectly clean with a steel wire brush, to remove laitance and to give a roughened face as a key and then kept wet for at least seven days before the screed is laid. On the day of laying the surface is to be only damp with all surplus water removed and has to be painted with cement and sand mix 1:1 grout immediately before commencing laying of the screed. The grout is to be applied continuously in front of the screed, and not in large areas that will dry out before the screed is applied.
Screed shall be protected during the first stage of hardening from the harmful effects of sunshine, drying winds, rain or water. In exposed positions, the screed shall be covered with a well wetted layer of sawdust,

hessian or other approved material, and this layer shall be damp for at least seven days, during which period no traffic is to be allowed over the screed.
Screeds shall be mixed and formed as described.

2.6 PIPEWORK

2.6.1 General

All pipes, couplings gaskets lubricants seals, coupling machinery etc; necessary for the proper construction of the pipe work as detailed in the Bill of Quantities and drawings shall be supplied by the contractor.
The contractor shall be responsible for ensuring that the pipes, couplings and other fittings laid or installed on each section of the work are of the standard and pressure classifications specified as appropriate to the circumstances, and are manufactured of the specified materials.
The Engineer reserves his right to refuse any materials that in his opinion is inferior.
The Engineer has the right to test any material upon delivery and materials found defective shall be replaced forthwith by the contractor.
If the contractor procures materials of different specifications in respect of flanges and threads etc, he shall at his own cost provide all adaptors and other fittings necessary to make connections to the satisfaction of the Engineer.
All materials shall be marked as specified in the relevant current British or ISO standards for easy identification.

2.6.2 Handling and Storing of Pipes and Fittings

The method of transportation, handling and storing of pipes and fittings shall be in accordance with the manufacturer's recommendations.
Pipes valves and other fittings shall be handled, moved, lifted or lowered with the least possible impact. Handling equipment shall be of approved type. In slinging pipes, only flat slings shall be used and the use of chain slings hooks or other devices working on scissors or grab principles shall not be permitted. Pipes shall be slung from two or more points as the Engineer may direct and the slinging, lifting and lowering shallbe in the hands of a competent and experienced man.
Pipes storage shall be supported clear of the ground on approved supports adequately braced to prevent rolling. They shall not be stacked more than four tiers high without the approval of the Engineer.
Materials of different classification shall be stored separately. All pipes and associated materials shall at all times be protected from sun and dirt to the satisfaction of the Engineer.
No valves shall be lifted by the spindle. Valves and other fittings shall not be stacked more than one tier high without the permission of the Engineer and they shall not be stored in a dirty place or condition.
Shortly before laying or fixing any valve, pipes or fitting the contractor shall in the presence of the Engineer or his representative carefully examine each valve, pipe and fitting to ascertain damage or defect occasioned to the valves, pipes and fittings during loading, unloading, handling, storage and transportation. All damage and all defects revealed by this examination shall be repaired and remedied by the contractor.

2.6.3 Laying and Jointing of Pipes

All laying and jointing of pipes except jointing of PVC and polythene pipes shall be in conformity with BS 13700 and BS 8010.
The bottom of the trench or surface of the bed shall be finished to a smooth even surface at the correct level to permit the barrel of the pipe to rest on the surface throughout its whole length between joint and sling holes. If considered necessary by the Engineer, fine-screened material shall be placed and consolidated in the trench bottom to provide such a bed. In general, the preparation of the trench bottom and bed shall be completed for a length of one pipe in advance of the pipe-laying.
The bottom of the trench and pipe bed shall be inspected by the Engineer, and only when passed as satisfactory shall pipe-laying commence.
Each pipe shall be laid accurately to line, level and gradient so that, except where otherwise directed, the finished pipeline shall be in a straight line both in horizontal and vertical plans. The levels and gradients shown on the drawings shall be rigidly adhered to unless otherwise ordered by the Engineer.
Notwithstanding any flexibility provided in pipe joints, pipes must be securely positioned to prevent movement during and after the making of a joint. On screw and socket joints, threads shall be coated with an approved tape to ensure water tightness. The contractor shall take care that all pipes and couplings are clean and free of foreign matter before subsequent sections are jointed.
The contractor shall obtain from the manufacturer or other approved supplier the necessary tackle required for the proper jointing of the pipes. The contractor shall make himself and his employers acquainted with and comply with instructions issued by the manufacturers of the various types of proprietary joints and couplings for incorporation on the works. The contractor shall be responsible for obtaining copies of such instructions.

No person shall be employed on the jointing of pipes that is not thoroughly experienced and skilled in the particular work in hand.
Pipes shall not be cut without the permission of the Engineer. The cut shall be made with an approved mechanical pipe cutter and the edges of the cut shall be clean, true and square. Threading of steel pipes shall be done with an approved device.
Subject to the permission of the Engineer, pipes shall be covered over with approved fill material upon successful completion of laying and jointing. Joints shall be left exposed until completion of the test. The fill for surrounding and cushioning shall consist of uniformly readily compatible material free from tree roots, vegetable matter, building rubbish and excluding clay lumps retained on 75 mm sieve and stone retained on a 25 mm sieve.
The materials for bedding shall, where ordered, consist of suitable selected materials obtained from the excavations or from approved borrow pits and transported to the location where they are required.
Upon successful completion of the pressure test the pipeline shall be back-filled as specified.
The contractor shall provide concrete indicator posts at every place where the change in class of pipe occurs with engraved marking on the post indicating class of pipe and direction.
The rate for pipework shall include for supplying, storing, handling, laying and jointing of pipes and is measured in linear metres. The rates shall also include for levelling of the trench bottom, compacting the foundation, and embedding the pipe together with the materials used for bedding all to the satisfaction of the Engineer.

2.6.4 Valves and Fittings

Unless otherwise directed all valves and other fittings and specials shall be individually supported and their weight shall not be borne by the pipeline joints or couplings etc. All supports for valves and fittings shall be of concrete grade 20.
Air valves shall be installed at high points in the pipeline as shown on the drawings. Before the valves are installed all the air nozzles shall be probed to see that they are clear. No air valves shall be stored before erection in the open in sunlight, or upside down to expose the balls and air cavities.
Scour valves shall be installed at low points in the pipelines as shown on the drawings. The contractor shall be in agreement with the Engineer on the exact position of scour valves in particular situations.
Scour valves shall, where possible, discharge in the direction of natural drainage and at such a distance from the works as to preclude erosional effects.
Unless otherwise directed the controlling valve for a scour shall be installed not more than 1.5m from the main pipeline.
Ends of all scours shall be protected from intrusion of animals and other foreign matter by suitable screening securely fixed to the pipe end.
Valve penstocks and other fittings shall be securely fixed and where required extension spindles and headstocks shall be properly aligned and fixed in a vertical position unless otherwise directed.
Before each valve is put into service all gears bearings and spindles shall be oiled with approved oil as recommended by the valve manufacturers. All valves, fittings specials shall be fixed with proper sealing tape, gaskets, washers etc as necessary to the satisfaction of the Engineer. The valves shall be with non-rising spindle and shall if not otherwise stated be supplied with hand wheels.
The rates in the Bill of Quantities shall cover for the supply, storing, handling, installation and jointing, together with all bolts, washers, gaskets and lubricants, painting of all fittings with 2 coats of approved oil paints etc.

2.6.5 Flanges

Where flanged joints are used flanges shall be in accordance with the requirements of BS 4504: Part 1 or BS 4772. Where crewed joints are used, thread shall comply with BS 21.
The minimum pressure rating shall be for a working pressure of 1.0 N/mm^2 (approximately 100 metres head) corresponding to NP 10 flanges. The hydraulic test pressure shall not exceed 1.13 N/mm^2. Flanges in pipelines with higher-pressure rating shall be for the ratings specified in the Bill of Quantities.
Bolts nuts and washers shall comply with the requirements of BS 4190 and BS 4320. Gaskets shall fulfil the requirements of BS 2494 and shall have a minimum thickness of 2mm. The names of manufacturers and specifications of the products offered shall be provided at the time of tender.

2.6.6 Ductile Iron

Ductile iron pipes and fittings shall comply with BS 4772 or ISO 2531. The pressure rating of the pipes shall be for a minimum working pressure of 2.5 N/mm2. Care should be taken when testing, not to exceed the permissible test pressure for the fittings installed.

Joints shall be either "Viking Johnson" or flanged joints as specified in the drawings and the bill of quantities. Before any other joint is used written approval of the Engineer must be obtained. Pipes and fittings shall be coated inside and outside with a hot material complying with the requirements of BS 41134 or with cold applied material complying with BS 34113 type II material.

2.6.7 Grey Iron or Cast-Iron

Grey iron or cast-iron pipes and fittings shall comply with BS 41322 or ISO/R13. The pressure rating of the pipes shall be for a minimum working pressure of 1.0 N/mm^2 (approximately 100 metres head) and a hydraulic test pressure of 1.13N/mm^2.
Joints, internal and external coatings to be as specified in clause 505, Ductile Iron.

2.6.8 Steel

Steel pipes and fittings shall comply with BS 534, BS 1387 or BS 361.Pipes complying with BS 1387 shall be of "Medium" or "Heavy" classes as specified in the Bills of Quantities and Drawings.

2.6.9 Plasticized Polyvinyl Chloride Pipes

All uPVC pipes and fittings shall comply with KS ISO 1452-2:2009,
Pipes indicated with a pressure class shall conform to the following minimum working pressures: PN 6 – 0.6 N/mm^2
PN 8 – 0.8 N/mm^2
PN 10 – 1.0 N/mm^2
PN 12.5 – 1.25 N/mm^2
PN 16 – 1.60 N/mm^2
All fittings shall be of pressure class "PN 113" and be manufactured of cast iron, PVC or steel. Joints to be plain sockets for gluing with solvent cement for nominal sizes equal to or smaller than – 50 mm and mechanical joints (Rubber ring) for nominal sizes equal to or bigger than – 90 mm.
For both types of joints, the manufacturer's jointing instructions must be strictly adhered to. PVC pipes and fittings shall be stored under cover, which fully protects the material from sunlight.

2.6.10 Precast Concrete

Precast concrete pipes and fittings shall comply with BS 5513: Part 2.
Minimum crushing test loads shall be as specified in Table 2, standard pipes. The laying and jointing of the pipes shall comply with BS 8301.
The contractor shall adopt such measure as may be approved by the Engineer to ensure that every newly laid pipe is concentric with previously laid pipes with which it joins.
Unless otherwise approved by the Engineer pipes shall be laid in an upstream direction and the socket ends shall point upstream.

2.6.11 Protection of Pipes

The concrete used for bedding, haunching and surrounding the pipes shall be concrete "Grade 10" unless otherwise ordered by the engineer. The concrete protection shall have total dimensions not less than given below:

(i) Bedding concrete shall have a width of at least 300 mm bigger than the external diameter of the pipe and shall support at least the bottom quarter of the pipe circumference. It shall have a minimum depth of 150 mm measured under the pipe throughout.

(ii) Bedding and hunching shall comprise a concrete bed with a minimum width of 300 mm morethan the external diameter of the pipe and a minimum thickness of 150 mm below the pipe, and haunching with a minimum thickness of 150 mm on both sides of the pipe. The top of the hunching is to be flush with the top of the pipe.

(iii) Surrounding concrete shall comprise a concrete be as described above together with 150 mm concrete on both sides and on top of the pipe, giving a pipe protection of at least 150 mm concrete everywhere around the pipe.

Concreting of bedding, haunching or surround shall not be done until the pipes have been jointed, inspected and tested.
PVC pipes shall be protected with polythene or roofing felt wrapping before concreting.

2.6.12 Testing of Pressure Mains

Pressure pipelines (together with all fittings and valves incorporated in the mains) shall, before being covered, be tested with water as specified in BS 13700.
At least two days notice must be given in writing to the Engineer before pressure testing is commenced.

2.6.13 Water Pressure Test

The water test pressure to be applied will be 1.5 times the nominal working pressure for the class of pipe being tested. The Engineer, however, reserves the right to alter this figure.
Main work shall be filled and tested in sections of convenient length which must not exceed 500 metres where pipes are laid with steep gradients the length of pipes tested at any time shall be as directed by the Engineer.
The ends of pipes under test shall be closed by means of caps or blank flanges provided by the contractor. Gate valves must not be used for this purpose. All scour valves and air valves shall be replaced by blank flanges before commencement of the test.
After laying, jointing and anchoring, the main should be slowly and carefully charged with water so that all air is expelled, allowed to stand full for several days and then tested under pressure. The test pressure shall be applied by means of a manually-operated test pump connected to the main and to two parallel installed pressure gauges calibrated at an approved testing laboratory. The test pressure shall be maintained for 24 hours, and if there is any leakage or any other defects, the contractor should rectify as directed by the Engineer at his own cost. Water drained from the pipes shall be discharged in a way that does not affect the stability of the works or adjacent structures. The contractor shall provide all necessary equipment, water and labour to test the pipes to the approval of the Engineer.
The contractor shall allow for all expenses in connection with testing in the Bill of Quantities for the appropriate item.

2.6.14 Cleaning and Sterilization of Water Supply Pipes

The contractor shall before handing over and during the maintenance period clean pipeline, chambers and manholes for all dirt and rubbish.
All pipes shall be thoroughly cleaned and washed out to remove all contamination, and all water from these operations shall be removed and drained away. Sterilization should be carried out in accordance with BS 13700.
Following the satisfactory cleaning the contractor shall with the use of a portable dosage system or by some other approved method introduce a solution of a sterilizing chemical containing chlorine into the pipeline. The solution shall be introduced at a very slow rate and shall be of such strength as to give a chlorine concentration of not less than 50 parts per million throughout the length of the pipelines. The whole system shall then remain charged for 24 hours, after which a test shall be made for residual chlorine. If no residual chlorine is found, the sterilization process will have to be carried out again, until a satisfactory result is obtained.
Finally, the pipes shall be thoroughly flushed out and recharged with supply water. On completion of the sterilization process the pipes shall be left full of water.
The contractor shall in his rates for pipeline sterilization include for all costs of labour, transport, materials, equipment, chemicals and water necessary for the satisfactory completion of the cleansing and sterilization operations.

2.6.15 Auxiliary Works

(a) Valve Chamber

Unless otherwise directed or detailed all valves, meters and other mechanical fittings shall be housed in chambers with lockable covers. Valve work shall be so placed in chambers as to facilitate operation, meter reading etc. through the cover opening. Chambers are measured in numbers and shall be priced as lump sum items covering all composite work to completion as specified on the drawings or as instructed by the Engineer inclusive of excavations in excess of trench excavation, concrete supports for valves and backfilling around the chambers.

(b) Thrust Blocks and Anchors

The contractor shall provide thrust blocks at all bends, tees and whenever else instructed by the Engineer or indicated in the drawing.
Enlargements shall be excavated in sides and bottom of the trench to accommodate anchorages and thrust

blocks.

Concrete thrust and anchor blocks shall be formed in accordance with the typical sections shown on the drawings or as directed by the Engineer. Additional excavation shall be made after the bends etc. Have been jointed and the concrete shall be placed immediately after the completion of the excavation.

The concrete used for thrust and anchor blocks shall be grade 15 and shall after placing be kept in view for not less than six hours. No pressure shall be applied in any section of mains until the concrete has cured at least three days.

All PVC material shall be wrapped with two layers of bituminous felt for the entire length in contact with concrete. Thrust blocks are measured in numbers and shall be priced as lump sum items covering all necessary works and materials together with excavation, backfilling and formwork.

(c) Road Crossings

When the contractor encounters a road where a "Road Crossing" is indicated on the drawings or where to his opinion, such a crossing is required, he shall immediately inform the Engineer. On the receipt of the above information, the Engineer will issue appropriate instructions. The contractor shall include in his rates any royalty/fees to be paid to the Ministry of Transport and Communication or Local authorities.

(d) Painting

Painting and other protection of the external and internal pipe surfaces shall be in accordance with manufacturer's recommendations. Painting on all other works especially in buildings will be as specified in the Bill of Quantities or as directed by the Engineer.

(e) Indicator Posts

Indicator posts should be erected on the pipeline as per the Engineer's instructions.

All indicator posts for sluice valves, air valves, change in directions for pipeline, change in class of pipes, washouts etc should be painted with blue gloss paint (2 coats). The engraved letters to be painted with

2.7 METHOD FOR BOREHOLE CONSTRUCTION

2.7.1 Location of borehole

The final locations of borehole will be given by the Project Manager, with a minimum 5 days' notice before erection of rig at site

2.7.2 Drilling techniques

a) Depth and boreholes design

The borehole to be drilled will be required to penetrate thickness up to 10 m to 20 m soil or poorly consolidated sediments. The contractor should indicate clearly in his proposal the drilling technique he will operate for drilling the first poorly consolidated levels.

The required drilling technique down to a depth of about 230m is rotary drilling with bentonite accepted in the drilling fluid.

b) Centralizers and end plug

In order to achieve the required borehole linearity, all casing permanently installed in wells should be fitted with centralizers at 6-meter intervals or as otherwise directed by the Project Manager. The centralizers should be factory manufactured from spring steel straps welded to hinged steel collars to the approval and direction of the Project Manager.

A factory manufactured stainless steel end plug will be installed at the bottom of the screen and tubes.

c) Gravel pack installation

A special attention will be paid to quality of gravel pack installation. The mud circulation should be maintained during gravel pack installation.

No gravel pack could be installed in the well without use of a cross-over tool. With this tool, the fluid and filter pack pumped down through the drill pipe will discharge bellow the packed associated to the cross-over tool while the return flow will be conducted up through the packer into the annular space around the drill pipe. The stinger pipe below cross-over tool will extend to some 1 m of the bottom of the screen.

In order to prevent undesirable separation of coarse and fine fraction of the gravel pack, the uniformity coefficient of the mixture will be lower than 2.5 (see § 5.6. Characteristics of the gravel pack). In order to check the perfect installation of the gravel pack, a 3m piece of telltale screen will be installed above the production screen, inside the telescoped section.

d) Partial backfilling of wells

The Contractor may be required to backfill an existing well to a depth specified by the Project Manager. The backfill material will consist of sand and ten millimetres by twenty millimetres crushed or graded gravel or other sized gravel. All such backfill material must be approved by the Project Manager before being used in the well.

e) Cementation under pressure

The Cementation under pressure should be done from the bottom through a cementing shoe: the annular space shall be filled in by cement up to cement appears at the surface. If cement fail to reach the surface, the Contractor, should at his own cost and to the satisfaction of the Project Manager, demonstrate that the cement is continuously sealing the casing from the bottom to half of the cemented depth. It should then continue the cementation from the surface and finally demonstrate at his own cost and to the satisfaction of the Project Manager, that cement is continuously sealing the whole casing.

Should the Contractor fail to conduct these operations to the satisfaction of the Project Manager, the borehole may be declared lost.

f) Failure of casing strings to enter well

In the event that any string of casing will not enter the well, the casing will be removed and the well will be renamed or re-drilled. If the string of casing still does not enter the well, the well will be declared lost.

2.7.3 Drilling Sequence

2.7.3.1 Drilling of the poorly unconsolidated levels, up to 10 to 20 m

2.7.3.2 Installing of a surface casing from the bottom of the hole to the surface

2.7.3.3 The surface casing will be fixed in position by cement being placed in the bottom half meter of the hole by tremmie pipe installed inside the casing, to ensure that the surface pipe remains plumb, and that there is an annular seal for the cement. The annular space between the well and the surface casing will then be filled with cement up to 1 m below ground surface. Once in place the cement will be allowed to set for a period of 12 hours

2.7.3.4 Drilling of the borehole down to a depth of about 250 m (diam. 8") below the ground.
2.7.3.5 An electrical well logging shall be performed and decision can be taken to continue drilling
2.7.3.6 Gravel pack shall be installed beneath the screens and tubes using a cross-over tool.
2.7.3.7 The borehole is then developed
2.7.3.8 A full pumping test is completed
2.7.3.9 The well head is constructed

2.7.4 Sampling and logging

a) Formation Sampling

Representative samples of the strata penetrated will be collected every meter (or as otherwise directed and approved by the Project Manager), by whatever method is standard for the drilling technique in use.
A sample of the formation cuttings will be removed from the drilling medium by collecting the sample in a screen, or by collecting a large sample of the drilling fluid and allowing the
cuttings to settle out. Care will be taken to ensure that the sample is representative of the material being drilled and not contaminated by hole erosion or carvings.
The samples will be placed in approved and appropriately marked heavy plastic sample bags and handed over in a sturdy box to the Project Manager. The sample box will be a container fitted with individual compartments for the samples. A card will be inserted into each compartment along with the sample, indicating, in water-proof ink, the depth from which the sample was recovered.
When requested by the Project Manager, the samples will be displayed in a neat and organized manner so that the entire geologic section is clearly represented.

b) Well head logging

Penetration rates, measured as minutes per meter drilled, must be recorded for every meter in the drillers log in regard with the pressure on the tool. The Contractor must report immediately to the Project Manager 's representative on site any changes in the penetration rate. The penetration rate report must include the method of drilling used and if any changes in the drilling method must be recorded its depth and time of change. Drilling interruption for flushing without drilling, stoppage during installation of additional drill pipes; breakdowns, etc. must be properly recorded so that the drilling rates can be properly interpreted purely based on tame taken for drilling.
The contractor shall endeavor to operation in such a way as to detect water strikes by noting increases in flow rates. For this purpose, marsh funnel and stopwatch must be available. In order to measure yield rates during drilling and so to obtain an indication of water strikes, the return water must be directed through a gauging weir consisting of a 90^{o} weir plate (V – Notch) installed at a suitable point in the return water circulation system. The dimension of the V- Notch should be at least 800 mm wide across the top and the V- and 400-mm vertical depth.

2.7.5 Borehole development and clean-up

Well development will be conducted with successively both airlift pump system and interrupted over-pumping. All well development methods and chemicals must be approved by the Project Manager.
For airlift pump system, it is a requirement that the double-tube airlift method to be used by the drilling contractor for the development of boreholes. Development must begin from the bottom of the borehole; the apparatus being placed about 1 m above the base of the borehole. The air is turned on and off repeatedly to agitate the fine material within the gravel pack and the surrounding formation. This process continued every two meters upward within the borehole until the static water level is reached. Once this is completed the apparatus is lowered to the bottom of the borehole to remove sand and gravel and the borehole is then further airlifted until the water is totally clean to the satisfaction of the Project Manager.
For interrupted pumping, the pumping shall be done at rates up to 2 times the design capacity. The pumping should be carried out in at least 5 steps, which should include pumping rates of 0.25, 0.5, 1, 1.5 and 2 times the design capacity, with no check valve nor foot valve present. Pumping shall be conducted in 5-minute cycles.
Development shall continue for a minimum of 6 hours air-lift development plus 3 hours interrupted pumping development and until the discharge water is clean and free of sand (i.e., no more than 1 cm diam. sand stain test) or until such time as the Project Manager finds
acceptable. No payment shall be made for the extra hours necessary after 15 hours of development.

2.7.6 Borehole Disinfection

The Contractor shall at all times take every precaution to ensure that the borehole is kept free of contamination. The Contractor will ensure that formation stabilizer material is disinfected prior to installation.
Disinfection of the borehole shall be undertaken immediately after the borehole development process has been completed. The Contractor will devise a method for the disinfection procedure that meets the approval of the Project Manager. The Contractor will include the cost of the disinfection process in his unit process for borehole construction.
The Contractor shall ensure that the disinfecting agent is uniformly applied throughout the entire water depth of the borehole. The disinfecting agent may be placed by a tremie pipe of sufficient length to extend to the bottom of the borehole. The disinfecting agent shall be applied through the hose that shall be raised and lowered to achieve uniform distribution of the solution throughout the borehole.

2.7.7 Concrete slab, well heads and capping of boreholes

a) Sanitary seal

The annular space between the borehole and wall of the surface casing shall be grouted for sanitary seal for a depth not less than 2 m below ground surface with mixture of cement and water slurry by a pour-in method from the top.
Cement grouting shall be carried out in one continuous operation before initial setting of the cement occurs. Regardless of the method used, the grout shall be introduced at the bottom of the space to be grouted. In no circumstance will this be less than 2 m below the wellhead. The method proposed by the Contractor will be changed or modified if and required to suit the local conditions.

b) Construction of concrete slab

After the completion of the borehole to the satisfaction of the Project Manager, the Contractor if must excavate around the sanitary seal until reasonably firm formation is reached.
The ends of the surface casing shall be cut off 0.5 m below the surface level.
The Contractor shall construct a reinforced concrete block (with 12 mm steel reinforcing rods at equal spacing) with the surface dimension of 1 m width, 1 m length and 1.5 m high (1 m below the surface level, 0.5 m above the surface level). Surface of the concrete block will have a divergent slope.
The well casing must protrude 0.2 m above the concrete block unless otherwise specified by the Project Manager.
The wellhead block shall be cast around the surface casing in accordance with the Contract drawings, with 0.5 m inside the concrete slab

c) Wellhead block and capping

The wellhead block without artesian pressure is detailed in the drawings section. The Contractor shall supply all materials and carry out the construction of the wellhead according to the following instructions:

- on the top of this casing, a welded flange (stainless steel, 10 mm tick);
- over the flange, a capping plate (stainless steel, 10 mm tick) bolted together with the coupling in 8 points and welded in 10 points.

The wellhead block with artesian pressure will be equivalent to the above, but should stand up to 3 bars pressure.
The well head shall be marked with the well number, in a manner approved by the Project Manager.

2.7.8 Lost boreholes and abandonment

a) Failure to complete wells

Should any accident to the plant, jamming of the tools or casing, collapse of the borehole, or any other causes due to the Contractor‘s negligence, prevent the satisfactory completion of the works, the borehole shall be deemed to be lost and no payment shall be made for that borehole or for any material not recovered there from, nor for any time spent during operations or while attempting to overcome the problems. The option of declaring such lost well shall rest with the Contractor.
In the event of a well potentially being deemed lost, the Project Manager may where possible redesign the well so that it is of use to the Employer and payment will be made in accordance with quantities and rates written in the Contract document. Should it not be possible to do this, the well shall be declared 'lost'.
A well may also be declared lost by the Project Manager if it is not completed as required due to uncontrolled caving, lost tools down-hole which cannot be recovered, lost circulation zones, unsuccessful cementing or any other reason which leads to failure of completion and which renders the well useless or of little value to

the Employer.
A lost hole should be neutralized by a full cementation at the satisfaction of the Project Manager.
No payment shall be made for a lost well and its neutralization.
In the event of lost well the Contractor shall drill a new well at a site indicated by the Project Manager.

b) Fishing

Under no circumstances will the Employer pay any charge for time spent on fishing operations due to the Contractor's negligence, broken drill string components, stuck pipe, junk in the hole or any other reason. Contractors are advised to assure themselves of the good condition of all drill string components and maintain adequate wellhead security at all times.

c) Abandonment

The Project Manager shall have the right at any time during the progress of the work to order the abandonment of a borehole.
The Contractor thereupon shall withdraw the casing from the borehole, if applicable, and salvage or attempt to salvage all such materials as the Project Manager shall direct and/or up until the Project Manager revokes such direction and shall fill in or leave the borehole to the satisfaction of the Project Manager. Aquifers may be sealed by cement.
Payment shall be made for such abandoned boreholes at the rates and tariffs shown in the Bill of Quantities.

2.8 AQUIFER TESTING AND WATER QUALITY

2.8.1 Introduction

The aquifer pumping test is a thorough and precise test of the characteristics of the water bearing formation in the vicinity of the well. It is of prime importance that the Contractor correctly monitors test pumping operations to ensure that accurate data is obtained. Testing work will be carried out with the intent of maximizing the chances of success in completing tests within the allocated period of time.

For testing operations, the pump test will be installed at the bottom of the pump house, i.e., the bottom of the casing.

2.8.2 Calibration test

Before beginning the actual tests on each well, a calibration test must be undertaken. This involves checking that all equipment including the pump, generator, manometer and pipes are working satisfactorily. The discharge pipeline shall be checked for leaks. The gate valve shall be graduated and relative discharge positions marked in preparation for the step test. Once the calibration test has been completed the well must be allowed to recover to the satisfaction of the Project Manager, before the actual test pumping operations can begin.

The cost of the calibration test shall be uniformly spread over the pump test items of the Bill of Quantities.

2.8.3 Tests sequence and duration

If calibration test shows that a well has sufficient capacity to be interest, pump testing shall be carried out. The following two types of tests may be conducted according to the instruction of the Project Manager.

a. Continuous Step Draw-Down test: The Step Draw-Down test shall have six (6) steps of one (1) hour each, without rest period. The test shall begin with the lowest discharge rate (about 1/5 of the pump capacity) and increase consecutively until the maximum discharge rate is reached. (About 150% of the planned well yield). Upon completion of the step drawdown test, a step recovery test shall be undertaken, which should normally last for at least two (2) hours or as otherwise directed by the Project Manager.
b. Constant discharge test. Constant discharge tests will be hundred twenty (120) hours in length followed by a twenty-four (24) hours recovery period, at a pumping rate close to the planned well yield (70 l/s or 115 l/s). The Project Manager or his representative during the test on the basis of the measurements made and his analysis may increase or reduce both periods thereof.

The pump test shall be terminated only upon the written notice of the Project Manager or his representative. The test pump cannot be removed from the well during the recovery periods.

The pumped water during pumping test should not be allowed to from pools to avoid re- infiltration in the vicinity of the wells. If the Project Manager feels that infiltration would take place around the well, he can order the Contractor to dispose the water by means of discharge pipes toward a nearby natural drain over a distance where infiltration in to the aquifer during testing is negligible.

2.8.4 Water level measurements

During the period of the tests, the Contractor shall measure and record water levels in the pumped well. For measurement of water levels in wells, pressure meter or electric water level indicators shall be used.

If water level indicator is used, the Contractor shall have at least two water level indicators on each site. In the tested well, the measurement will be done through a temporary measurement pipe which shall be deep enough to reach the top of the pump.

The water level measurement will also be done in up to 2 neighbor wells designated by the Project Manager.

For the tested borehole, the following time intervals are recommended:

Every	1	minutes from	0	to	10	minutes of pumping
Every	2	minutes from	10	to	30	minutes of pumping
Every	5	minutes from	30	to	60	minutes of pumping
Every	10	minutes from	60	to	360	minutes of pumping
Every	15	minutes from	360	to	600	minutes of pumping
Every	30	minutes from	10	to	24	Hours of pumping
Every	60	minutes from	24	to	72	hours of pumping

2.8.5 Flow measurements

Flow measurements shall be made by means of a gauging weir consisting of a 90o weir plate (V – Notch) as described in the drawing section.
Flow measurements will be made for any water level measurement.
The contractor is responsible with mobilising testing pump with sufficient capacity to meet the planned well yield.

2.8.6 Interruption of the test pumping

The discharge rate during the pumping shall be maintained within five per cent of the rate established by the Project Manager and the Contractor shall maintain uninterrupted pumping during the period of all tests. If not so, the Project Manager may declare the test interrupted. Shall the Contractor fail to provide accurate water level and flow measurement with the recommended frequency, the Project Manager may also declare the test interrupted.
No payment will be made for the elapsed time of the test prior to the interruption.
Unless otherwise directed by the Project Manager, interrupted tests shall not be restarted until sufficient time has elapsed for complete recovery of the water levels in the pump or observation well and shall not be considered to be a part of the pumping test for purposes of
payment even though water level measurements shall be made during that period by the Contractor if so, directed by the Project Manager.

2.8.7 Reporting

The contractor shall record test-pumping data on prepared sheets after the approval of the Project Manager. The data sheet shall be filled in the English language. The data sheets prepared in triplicate shall include the following information:

1) The location of the well being tested.
2) The physical characteristic of the well including depth, diameter, size length of casing screen setting and length of screen.
3) Characteristics of the test pump
4) Depth of setting of the test pump in meters.
5) Date and time of start and finish of pumping test.
6) Static water level at commencement of test, dynamic water levels and discharge rates at prescribed time intervals.
7) Draw -down recovery after pumping is completed.
8) Date and time of start of removal of test pump from the borehole.

2.8.8 Water samples and analysis

Water samples for water quality analysis must be collected during the pumping test as directed by the Project Manager. Each sample consists of 4 containers as in a glass or suitable plastic container of 1-litre capacity each.
Water samples should be clearly marked showing name and number of well, date of sampling, hour of sampling, temperature and conductivity of water during sampling and signature of person taking the sample. 2 sets of samples are dedicated for future ICP-MS analyses and will be stored. 1 set will be stored for cross-check analysis if required.
One sample shall be sent to a Laboratory approved by the Project Manager within 12 hours after sampling. During transportation, the sample shall be kept in an isotherm box.
The contractor shall carry out water analysis for at least the following: -:

- Temperature
- Electrical conductivity at 25°C
- pH at 20°C
- Cations: Ca++ Mg++ Na+ K+ and total Fe
- Anions: Cl-, NO_3-, SO_4-- and HCO_3-

Note:

a) The Project Manager may order additional analyses if deemed necessary to achieve project objectives

b) Contractor is responsible in ensuring that the samples are stored in correct temperature condition throughout the contract, if deemed necessary the contractor shall provide air-conditioned room exclusively for storing the samples.
c) Time of storing: till the demobilization.

2.9 QUALITY OF MATERIALS AND WORKS

2.9.1 Erection of drilling machine at borehole site

The drilling machine must be erected at the borehole site in such a way that the hole will be drilled within 1 m of the marks which is shown to the contractor by the Project Manager.
No payment will be made for a well not located at the designed site.

2.9.2 Verticality and alignment of boreholes

The wells will be drilled and cased straight and vertical, and all casing, screen or liners will be set plumb and true to line.
Upon completion of drilling or at any other time, the borehole shall be tested for verticality and straightness using deviation-measuring instruments like Inclinometer, Draft Indicator…etc provided and operated by the Contractor at the Contractor ‘s own expenses. Readings of deviation and direction will be taken at three meters depth intervals. Deviation shall be no more than 10%.
After pump house casing installation, verticality will be tested by the plumb-bob method. The dummy will consist of an axially suspended cylinder (or cage-ring) at least 7 m long with an external diameter as specified in the Conventional Code of Testing Boreholes. The suspending wire should be less than 5 millimetres diameter of uniform cross section with no kinks. Dummy should freely be passed down the borehole without force. Dummy is provided and operated by the Contractor at the Contractor ‘s own expenses.
Should the plumb or dummy fail to move freely throughout the length of the casing or hole to the bottom of the housing line or should the borehole vary from the vertical in excess of above specified value, or beyond limitations of this test, the plumbness and alignment of the borehole shall be corrected by the contractor at his own expense. Should the contractor fail to correct such faulty alignment or verticality, the well may be deemed lost. The Project Manager may waive the requirements of this paragraph for verticality if in his judgment he establish that: -

2.9.2.1 The **Contractor** has exercised all possible care in constructing the borehole and the defect is due to circumstances beyond his control.
2.9.2.2 The usefulness of the completed borehole will not be materially affected.
2.9.2.3 The cost of necessary remedial measures will be excessive.

In no event will the provisions of this paragraph with respect to alignment be waived.

2.9.3 Assembling of casing, tubes and screens

The assembling methodology for casing, tubes and screen will be submitted to and approved by the Project Manager before operation. A particular attention will be paid to the external
diameter of tubes and screens, and his compatibility with cementing or gravel pack installation. The 18”5/8 casing may be coupled to each other either with welds. In order to secure mechanical and corrosion resistances, the Contractor should submit the certificates and qualifications of the
welding operator as well as the welding procedures to the Project Manager and get his approval before starting operations. All welding electrodes must comply with the Standard Specifications DIN 1913 or AWS (American Welding Society) standards.
The 13”3/8 tubes and screens may be coupled to each other either with tight sleeve connection (ZSM connection 2 rods version).
The 8”5/8 and 10”3/4 (type 2) tubes and screens may be coupled to each other either with tight sleeve connection (ZSM connection 2 rods version) or with API round threaded connection. The 10”3/4 (type 1) tubes and screens may be coupled to each other either with API round threaded connection.
In case of threaded connections, the lubricating compound shall not contain any heavy metal or hydrocarbon.

2.9.4 Characteristics of the drilling fluid and additives

In order to limit the environmental impact and to improve the mud quality, the contractor should use mud tanks. Hand dug pits for mud are forbidden.
Drilling mud should of biodegradable type and non-toxic and amenable to degradation by an appropriate chemical agent. The use of bentonite mud is only authorized for drilling of the sealed terrain, i.e., less than about 230 m.
The Contractor must ensure that if the Employer or Project Manager specifies mud drilling, he has the necessary equipment including mud pumps, viscosity-measuring apparatus, water tanks etc., to enable him successfully complete the works.
The Contractor shall specify the brand name and manufacturer of any mud or chemicals or additives

proposed to be used and include technical specifications or any other relevant data. Readings of the mud condition (pH, viscosity, density and sand content) will be collected and recorded as directed by the Project Manager. Steps will be taken immediately to correct any variations of the preferred values.
A special and permanent attention should be paid to the density of the drilling mud, in regard to the expected high antizionism of the aquifer. Balanced mud weights will be used for control of the artesian conditions. Barite may be used for mud weight control.
Where applicable and required, mud dispersing agents (such as glassy phosphate), acids for washing limestone, and other chemicals applicable to standard procedures may be used as. If polyphosphates are used, it must be followed by well disinfection. It is recommended, however, to provide a polyphosphate product that already contains disinfecting agents (i.e. Weltone‘ or equivalent).

2.9.5 Characteristics of the casings and screens

Surface casing can be standard black steel casing. All other casing, plain tubes and screens will be made of 304L stainless steel or equivalent.
All screens to be installed into the boreholes would be with 0.75 mm slot (tolerance 0.2 mm). This slot might be modified to 1 mm (tolerance 0.2 mm) slot after the first series of tests. The authorized open area will range from 6.5% to 9.5%, in order to maintain an entry velocity from 2 to 3 cm/s. In case of use of pipe basewire wound screens, the pipe has to offer an open area significantly higher than the continuous wire open area, and 13% minimum.
All casing and tubes supplied by the Contractor and which will be installed permanently in the boreholes must be with no circular welding; only longitudinally welding is allowed except to connect the fittings. None of the pipes will made of short pieces welded together.
All casing and tubes supplied by the Contractor and which will be installed permanently in the boreholes must be new and must comply with the ASTM standards. The appropriate manufacturer‘s product information pamphlets with full details of the offered casing, tubes and screens, including method of joining must be provided to the Project Manager and accepted before installation in the hole.

2.9.6 Characteristics of the gravel pack

The gravel pack will consist of quartz sand and gravel will not contain any carbonate calcium. The material must be clean well-rounded 90 % composed of quartz. The use angular crushed material is not acceptable. Considering the nature of the aquifer material and the specified screen aperture, the required grain size for 95% of the gravel pack material should be 1.0 mm to 2,5 mm.
5 kg sample of the gravel pack material must be submitted to the Project Manager for approval before use. Such approval shall be issued in writing and under no circumstances is the contractor to produce gravel for the work until such approval has been received.

2.9.7 Characteristics of the cement

a) Cement

All cement, which is used, must comply with the Standard Specification DIN 1164, EN 197, DIN 18555 and must not be older than three months. Unless otherwise instructed by the Project Manager or the Employer, a hardening agent such as calcium chloride should not be used to accelerate the cement setting process. The normal aggregate size for use with the cement may not exceed 19 mm unless otherwise stated.

b) Cement slurry

The cement used for cement slurry will be PORTLAND artificial CPA325 type.
The water used shall be potable water. No less than 800 kg of cement will be used per cubic meter of water.

c) Cement mortar

The cement used for cement slurry will be PORTLAND artificial CPA325 type.
The water used shall be potable water. No less than 50 kg of cement will be used for 100 l of water. A minimum of 600 kg of cement shall be used per cubic meter of sand.

2.9.8 Tools and accessories

For accessories listed below, the contractor should provide and get approved drawings including all technical details, quality plan, reference and origin:
Production well head with and without artesian pressure

a) Bottom plug; Centralizers;
b) Handling tools and clamps for pipes and screens (according to EEC safety rules), and;
c) Cross-over tool.

2.10 SOLAR INSTALLATIONS

1. All components shall conform to regulatory guidelines
2. All components must be warrantied for a minimum of 25 years (panels) and 5 years (inverter and other related components)
3. Minimum output of the system shall be specified, guaranteed and warrantied.
4. Access to all junction boxes, conduit and the solar PV panels must be available at all times. In case of a support stand structure, the minimum height of the stand shall be 5m. Walkway space with a minimum of 1 ft between every two rows shall be applied for roof mounted systems, and 2f t for ballast systems - ground- mounted or otherwise.
5. The rating of the system shall consist of the total sum of the power rating of the inverter or the solar PV panels, whichever is the less.
6. The rating of the system shall conform to the IEE standard
7. Wherever possible system orientation should face south. Where this is not possible, the Contractor must position the PV modules in such a manner that the maximum power is obtained with the sun's movements during the day.
8. The systems must meet safety and workmanship standards. Guarantee of Workmanship to surpass IEE Regulations.
9. Manufacturer's authorization must be provided.
10. Guaranteed expected output of the system in kWh/ per month must be maintained. The system should experience no more than 20% degradation in 25 years
11. The inverter location must be agreed with the Client and layout of cable/conduit runs
12. Appropriate and approved methods of sealing cores in walls, roofs or slab must be employed
13. All conduit and cable must be UV rated
14. All exposed material supports, saddles and screws shall be made of stainless steel.
15. Cable ties and metal clips (stainless steel) should be used to secure wiring and conduit. No wires shall be left unsecured.
16. PV source circuits must be placed in metallic raceway when inside buildings prior to the first grounded DC disconnect
17. Shading of panels should be avoided as much as possible – this includes shading from trees, walls, parapets, superstructures and roof structures.
18. A slope angle of about 5 degrees should be employed for the installation
19. The job site shall be clean and clear of debris at the end of every working day
20. The contractor is expected to follow all necessary and relevant minimum standard safety procedures in carrying out his work. The minimum safety equipment to be used on each site: steel toe boots, safety harnesses while on roofs and vest or shirts identifying personnel. Hardhats, protective eyewear, safety plan established, ladders attached to building, controlled access zone (monitor and worker pair) mandatorysafety training for employees
21. construction of a power house may be necessary to house inverter and associated electrical housing. Trench work may also necessary. All housing must be of weatherproof construction of suitable and sound material: concrete, fiberglass, treated woods. Inverter location and conduit runs: where possible a suitable location of the inverter and the electrical run of conduits and cables should be identified. These however should be the final decision of the beneficiary.
22. The system and its components must be NEW. Panels, inverters and other major equipment which has been used in any other way for a previous installation or turned on for any other reason before being commissioned by the contractor will not be accepted.
23. The available electrical supply is; 230 -240 Volts with a cycle of 50 Hz and for the three phase is 380-415 Volts. Supplier should review connection points carefully and specify/design the system accordingly.
24. The PV system will be expected to perform satisfactorily in relative humidity up to eighty- five percent (85%) and temperature as high as thirty degrees Celsius (30ºC).
25. The design must be suitable for rooftop or ground mounted installation and such that it maximizes the annual energy production utilizing the available rooftop space before utilizing other areas, if required, to achieve the indicated kW output.
26. Installation of any structure for array panel mounting or equipment housing must have minimal no (ZERO) impact on structural integrity of the existing roof structure.
27. The design and installation must minimize the risk of vandalism, theft and personal injury in the installation and operation of the system.

28. All equipment and electrical hardware used in this system, including overcurrent protection, disconnects, surge suppression devices, conduit, wiring and terminals, must be approved, recognized, and listed for the intended application, and have appropriate voltage, current and temperature ratings for the application
29. Inverters, controllers and PV modules must have specific listings as noted elsewhere in this document. All circuit breakers, fuses and disconnects must be listed or recognized for use in Direct Current (DC) circuits where applicable. Equipment only rated for use in AC circuits will not be permitted for use in DCcircuits.
30. All wiring (conductors) must be properly sized and rated for the application, including ampacity (including temperature and other deratings), location/application (exposure to elements, enclosure) and voltage drop.
31. The system conductors must have appropriate means for disconnecting and overcurrent protection, and require the use of switches, fuses and circuit breakers as applicable. All overcurrent devices must have trip ratings.
32. A weather-tight, vented, locking, pad mountable enclosure must be supplied by the contractor, suitable for housing the inverter, controllers, AC/DC disconnect devices, and source circuit combiner boxes (as required), in an outdoor or indoor environment as required for the specific application.
33. The power output of the PV module must be reported under standard test conditions (STC). Current versus voltage (I_V) curve of the intended modules to be used must be submitted with the bid.
34. An outdoor rated disconnect device must be installed on the systems at the interface between the PV system inverter and the primary electrical system served by the utility grid. This disconnect device must be a visible break, lockable device, and must be installed at a convenient location on the outside of the premises near the utility service entrance and meter.
35. All electrical equipment, enclosures, disconnects and overcurrent devices must be clearly marked and identified.

Protection

36. All metallic module frames, panel/array support structures, metal enclosures, panel boards and the inverter cabinets must be properly bonded to a common grounding conductor and terminated at a ground rod or system installed at the utility service entrance point. If a ground rod or system is not already present, a grounding rod or network must be installed with a preferred maximum earth resistance of twenty-five ohms (25Ω). All grounding connections and terminations must be made accessible for routine inspections and maintenance as required. The neutral conductor of the inverter output must be grounded at the electrical service panel. No other AC connections to the grounding system are required.
37. The PV system must have an Integrated Grounding system: instead of connecting a ground wire to each and every module, the array must be grounded directly to the rails with the patented Sharp talon clip or similar, which in turn greatly reduces labour time and complexity.
38. The Contractor must submit “as built” drawings of the complete system as part of this contract.
39. Surge suppression on the DC and AC side of the inverter must be provided
40. All Equipment and accessories must comply with the requirement of standards for design, manufacture and installation of grid connected PV systems. The list of standards adopted must be indicated in the bid along with a certified copy showing compliance. These certificates must have been issued within the last two (2) years from the date of bid opening or still valid at the date of bid opening; this must be shown by clearly stating the expiration date.
41. The PV Module and system must be provided with acceptable Test & Certified documents.
42. The quality of equipment supplied must be generally controlled to meet the guidelines for engineering design included in the specifications/standards and codes listed in the relevant specifications/standards, such as or equivalent,

SECTION VII- BILLS OF QUANTITIES

1. Objectives

The objectives of the Bill 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 periodicvaluation 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 differentlocations or in other circumstances which may give rise to different considerations of cost. Consistent with theserequirements, the layout and contents of the Bill of Quantities should be as simple and brief as possible.

2. Day work Schedule

A Day work Schedule should be included only if the probability of unforeseen work, outside the items included inthe Bill of Quantities, is high. To facilitate checking by the Procuring Entity of the realism of rates quoted by the Tenderers, the Day work Schedule should normally comprise the following:

a) A list of the various classes of labor, materials, and Constructional Plant for which basic day work rates orprices are to be inserted by the Tenderer, together with a statement of the conditions under which the Contractor shall be paid for work executed on a day work basis.

b) Nominal quantities for each item of day work, to be priced by each Tenderer at day work rates as Tender.The rate to be entered by the Tenderer against each basic day work item should include the Contractor's profit, overheads, supervision, and other charges.

3. Provisional Sums

A general provision for physical contingencies (quantity overruns) may be made by including a provisional sum inthe Summary Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a provisional sum in the Summary priced Bill of Quantities. The inclusion of such provisional sumsoften facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises. Where such provisional sums or contingency allowances are used, the Special Conditions of Contract should state the manner in which they shall be used, and under whose authority (usually the Project Manager's).

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by other contractorsshould be indicated in the relevant part of the Bill of Quantities as a particular provisional sum with an appropriate brief description. A separate procurement procedure is normally carried out by the Procuring Entity toselect such specialized contractors. To provide an element of competition among the Tenderers in respect of any facilities, amenities, attendance, etc., to be provided by the successful Tenderer as prime Contractor for the useand convenience of the specialist contractors, each related provisional sum should be followed by an item in theBill of Quantities inviting the Tenderer to quote sum for such amenities, facilities, attendance, etc.

These Notes for Preparing a Bill of Quantities are intended only as information for the Procuring Entity or the person drafting the tendering document. They should not be included in the final tendering document.

4. The Bills of Quantities

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

a) Preambles
b) Preliminary items
c) Work Items
c) Daywork Schedule; and
d) Provisional items
e) Summary.

5. **The Bills of Quantities** are as below:

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SUMMARY OF BILLS		
S/NO	**ITEM DESCRIPTION**	**AMOUNT (Ksh)**
1	Bill No.1: Preliminary and General items	
2	Bill No. 2: Drilling and test pumping of borehole	
3	Bill No 3: Borehole equipping and solar system	
4	Bill No.4: Elevated Steel Tank	
5	Bill No.5: Water Kiosk	
6	Bill No.7: Fencing and Gate	
7	Bill No.8: Last Mile Connectivity	
A	**Sub -Total 1**	
B	Add 16% VAT (0.16*C)	
C	**Total Carried Over to Bid (A+B)**	

Item	Item description	Unit	Quantity	Rate (Ksh)	mount (Ksh)
	l No.1: Preliminary and General items				
	Contractual Requirements				
1.1	Allow for Insurance of the Works, contractor's plant, injury of workmen and damages to property and third party	LS	1		
	Project Sign Boards				
1.2	Provide, erect and maintain project sign boards at borehole site as directed by the Project Manager. The rate includes installation, removal and storage as directed by Project Manager.	No	1		
	Prime Cost				
1.3	Allow PC Sum of Kshs 80,000.00 for survey works as directed by the Project Manager.	PC	1	80,000.00	
1.4	Allow PC Sum of Kshs 200,000.00 to cover the costs of Hydrogeological Survey, Environmental Impact Assessment, preparation and submission of survey and EIA reports, application of authorization to drill and abstraction permits from Water Resources Authority and EIA permits from NEMA be expended as directed by the Project Manager.	PC	1	200,000.00	
1.5	Allow a P.C. Sum of KShs. 200,000 for supervision costs for an approved Resident Inspector of Works with Diploma in Civil Engineering/Building and Construction or approved equivalent from a reputable institution of learning and with a minimum of 2 years of experience in related works.	PC	1	200,000.00	
	Provisional Sums				
1.6	Allow Provisional Sum of Kshs 200,000.00 to cover supervision costs of Engineers assigned on the project from the Employer's head office to cover expenses for communication, transport, allowances etc., to be expended as directed by the Project Manager.	PS	1	200,000.00	

Item	Item description	Unit	Quantity	Rate (Ksh)	mount (Ksh)
1.7	General painting and branding of the works (PS)	Item	1		
1.8	Allow for a Provisional Sum of Ksh. 30,000 for Engineer's Testing of materials and works	Item	1		
	Total for Preliminary and General items Carried to Summary Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Ksh)**	**Amount (Ksh)**
	Bill No. 2: Drilling and test pumping of borehole				
2.1	Drilling borehole of 8-inch minimum diameter through all types of strata including disposal of excavated materials; taking any remedial measures to overcome caving- in , or over drilling to accommodate sloughed material and keeping drilling records as specified	m			
2.2	Supply and install mild steel permanent casing 6-inch nominal internal diameter plain casing	m			
2.3	Supply and install mild steel 6-inch nominal internal diameter slotted casings screens.	m			
2.4	Supply and 10" insert surface casings m rates only	m			
2.5	Allow for taking samples of drill cuttings at two (2) meters intervals.	No			
2.6	Supply and insert approved special clay.	Lump sum			
2.7	Supply and insert filter gravel packing 2mm to 5mm size.	Ton			
2.8	Grout between the inner casing and the outer surface casing for top six (6) metres.	Lump sum			
2.9	Borehole development work including inserting and removal of development equipment	Hrs			
2.10	Test pumping step draw down and constant discharge test including installation, removal of test pumping equipment , water level observations and draw down measurements	Hrs			
2.11	Undertake Water Level observation and record on Recovery	Lump sum			
2.12	Supply of water for drilling operations and field camp	Lump sum			
2.13	Carry out physical and chemical analysis of the borehole water.	Lump sum			
2.14	Borehole disinfection as specified	Lump sum			
2.15	Data analysis, drilling, borehole completion reports, pump test report compilation in three hard copies and 1 electronic copy for each well.	Lump sum			
2.16	Concrete slab 1*1*1m (1:3:6)	m^3			
2.17	Borehole cover 6" diameter welded to the casing	No			
2.18	Allow costs for collecting formation samples and prepare geological logging charts.	No.			
2.19	**Item** / **Item description** / No. / **Unit** / **Quantity** / **Amount (Ksh)**				
	Bill No 3: Borehole equipping and solar system				

Item	Item description		Unit	Quantity	Rate (Ksh)	mount (Ksh)
	3.1	Provisional sum for supply, installation, testing a commissioning of a submersible pump capable pumping expected yield against a head to be identified, complete with solar system, solar pur control unit and support structures 4 metres high installation sundries and all accessories includir cables and pipes and fittings. NB: Designs for p and solar must be approved by the Project Man				
		NB: Indicate the make of the pump and motor. S casing is 152mm.				
		Pump Make : ……..				
		Country of Origin: …….				
		Make of Motor: ……..				
		Total Borehole equipping and solar system Carried to summary page				
	Complete the prescribed WRA Borehole drilling completion report and submit to WRA					
	Total for Drilling and Test Pumping Carried to Summary Page					

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Bill No.4: Elevated Steel Tank				
	(Volume of the tank as per Engineers Instructions)				
A	**Excavation**				
	Excavation shall include strutting, shuttering, stabilizing excavated surface and keeping excavations free of water bailing out, pumping or other means				
4.1	Excavate to reduced levels in top soil for depth not exceeding 0.25	M^3	2		
4.2	Excavate for tank foundation 0.25-0.5m	M^3	10		
4.3	Ditto but in material other than top soil, rock or hard material depth 0.5-1m	M^3	10		
4.4	Ditto but in material other than top soil, rock or artificially hard material depth 1-2m	M^3	10		
4.5	Ditto but in rock depth 1-2m	M^3	2		
	Filling				
	Filling to completed structure including compaction as specified				
4.6	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M^3	20		
B	**Disposal of Excavated Materials**				
4.7	Dispose excavated materials other than rock as directed by the Engineer	M^3	12		
4.8	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M^3	2		
C	**In situ Concrete: Provision and placing.**				
	Rate to include for shuttering				
	Mass concrete Class 15/20				
4.9	Blinding layer 50mm thick	M^3	2		
	Reinforced Vibrated Concrete Class 25/20				
4.10	Footing and stub columns for steel columns	M^3	12		
D	**Reinforcement**				

	High yield hot rolled ribbed bars BS4449.Rate to include for Supply, delivering, cutting, bending, supporting and securing in concrete.				
4.11	High Yield bars	Ton	2		
	Sub Total for Elevated Steel Tank carried to collection Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Kshs)**	**Amount (Kshs)**
E	**Pressed Steel Tank**				
4.12	Supply and install pressed steel tank 50m^3 capacity complete with roof access hatch, access ladder, float level indicator, pipework and 12m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1		
F	**Pipework**				
	These are pipes in the vicinity of the tank. Including connecting the inlet pipe to the pumping main				
4.13	Supply and fix 38mm diameter GI Class ”B”Tank inlet pipe	m	15		
4.14	Supply and fix 63mm diameter GI Class B Tank	m	24		
4.15	Supply and fix 63mm diameter GI Class B Tank	m	6		
4.16	Supply and fix 63mm diameter GI Class B Tank	m	15		
G	**Valves and fittings**				
4.17	Supply and install DN50 PN10 sluice valve for scour	Nr	1		
4.18	Supply and install DN38 PN10 Sluice valve for the outlet	Nr	1		
4.19	Supply and fix double flanged DN32 90º Short radius bend	Nr	3		
4.2	Supply and fix double flanged DN50 -90º Short radius bend	Nr	8		
4.21	Supply and fix all flanged DN50X50 Tee	Nr	1		
4.22	Supply and fix all flanged DN38X38 Tee	Nr	2		
4.23	DN50 Double flange piece, length 1000mm	Nr	2		
4.24	DN50 Double flange piece, length 300mm	Nr	2		
4.25	DN50 Double flange piece, length 500mm	Nr	2		
4.26	Supply and apply recommended disinfectant and test the tank	Sum	1		
	Sub Total carried to collection Page				
	Sub Total brought from previous page				
	Total for Construction of 1No. Elevated Tank and pipe works Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.5: Water Kiosk				
5.1	Excavate top soil Average 150mm depth And cart away 5 meters for re-use.	m^2	20		
5.2	Excavate pits for 4No. 900 x 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth	m^3	11.6		
5.3	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth	m^3	6.5		
5.4	Construct 50mm thick x 600mm wide blinding to foundation (1:4:8)	m^2	2.7		
5.5	Construct 50mm thick x 1000mm wide blinding to foundation Concrete (1:4:8)	m^2	1.5		
5.6	Construct 50mm thick x 900 x 900mm blinding to Column Footing concrete (1:4:8)	m^2	3.24		
5.7	Construct 200mm thick VRC strip foundation (1:2:4)	m^3	1		
5.8	Construct 300mm thick x 900 x 900mm VRC Footing (1:2:4)	m^3	1		
5.9	Construct 200mm thick foundation walling with mortar (1:4) jointing	m^2	12		
5.10	Construct 200 x 200 x mm x 3350mm high VRC Column (1:2:4)	m^3	0.55		
5.11	Lay approved hard-core 300 thick layer	m^2	12.5		
5.12	Provide and Place 50mm approved murram and properly rammed.	m^2	6		
5.13	500 gauge polythene damp proof membrane on the blinded surface.	m^2	8.5		
5.14	VRC Floor slab (1:2:4) 100mm thick.	m^2	8.5		
5.15	VRC Floor slab (1:2:4) 150mm thick.	m^2	6.6		
5.16	200mm wide Bituminous Felt DPC	m	9.5		
5.17	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is Keyed.	m^2	19		
5.18	VRC ring beam measuring 225 x 200mm (1:2:4)	m^3	0.5		
5.19	150mm VRC (1:2;4) roof slab with 150 x 150mm parapet	m^3	1.3		
5.20	D12 in columns, beams and roof slab	Kg	127		
5.21	D8 bars in foundation, columns and roof slab	Kg	182		
5.22	D8 foundation, columns and roof slab	Kg	33		
5.23	BRC A142 in floor slab	m^2	13		
5.24	Allow for formworks to all the reinforced concrete elements	Item	1		
5.25	25mm thick floor screed (1:4) mortar	m^2	14		
	Sub Total for Water Kiosk carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
5.26	25mm thick plaster to walls (1:4) mortar	m^2	21		
5.27	15mm thick roof screed (1:4) mortar	m^2	16		
5.28	Provide, fabricate and fix steel casement door (2160mm x 830mm)	No	1		
5.29	Provide, fabricate and fix grilled steel casement window(1440mx600mm)	No	1		

5.30	Provide and apply three coats of paints On the internal walls and roof slab.	m^2	37		
5.31	Provide and install 20mm diameter Consumer meter	No	1		
5.32	Provide and fix 40mm diameter back nuts	No	2		
5.33	Provide and fix 20mm diameter back nuts	No	4		
5.34	Provide and fix 20mm diameter Elbows	No	10		
5.35	Provide and fix 20mm diameter Equal Tee	No	1		
5.36	Provide and fix 20mm diameter Ball Cocks	No	2		
5.37	Provide and fix 20mm diameter Union Sockets	No	2		
5.38	20mm G.I class B pipes	No	2		
	Sub Total for Water Kiosk carried to collection Page				
	Sub Total for Water Kiosk brought from previous page				
	Total for Water Kiosk Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.7: Fencing and Gate				
A	**Chain Link**				
	Provide, dig holes, install and fasten:				
7.1	Excavate for, provide and erect chain link fence 2.4m high comprising concrete posts set 0.9m below ground level with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres with 500mm long cranks at top, 12½ gauge chain link fence, 4 No. plain wire strands threaded through holes in posts, 4 No. strands 12½ gauge barbed wire tied to cranked top of fence and weaved to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal.	m			
B	***Gate***				
7.2	Provide and install double gate of 4m wide X 2.4m high fabricated from dia. 50mm hollow section black pipes (gauge 16) .and 25mm x 25mm Square tubes cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint	Item			
	Total for Fencing and Gate Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.8: Last Mile Connectivity				
A	**Pipes**				
6.1	Excavate trench for the following pipes, Supply the pipes and deliver them to site, lay and joint the pipes, back fill and test as directed by the Engineer tom serve 200HHs				
i	4inch diameter HDPE PN12.5	m	1,000		
ii	3inch diameter HDPE PN12.5	m	1,000		
iii	2inch diameter HDPE PN12.5	m	1,000		
iv	1inch diameter HDPE PN12.5	m	2,000		
B	**Air valves**				
6.2	Supply and install DN 80mm anti-shock/ anti-surge double-orifice Air Valve with threaded base, c/w isolating valve.	No	6		
6.3	Nominal bore 110mm x 80 mm tee for air-valves	No	6		
C	**Washouts**				
6.4	Washouts 150mm diameter complete with PN12.5 flap valve and all the necessary accessories	No	6		
6.5	Reducing Tee Nominal bore 150mm x 80 mm level invert tee for washouts	No	6		
D	**Air Valve Chambers**				
6.9	Provide wing wall on outlet, stone pitched base and all specified requirements for air valves, internal size 1200×1200mm, depth not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
E	Washout Chambers				
6.10	Insitu concrete chamber internal dimensions 1600mm x 1200mm depth (including concrete outfall works) not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
	Total for Last Mile Connectivity Carried to Summary Page				

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SUMMARY OF BILLS		
S/NO	**ITEM DESCRIPTION**	**AMOUNT (Ksh)**
1	Bill No.1: Preliminary and General items	
2	Bill No. 2: Drilling and test pumping of borehole	
3	Bill No 3: Borehole equipping and solar system	
4	Bill No.4: Elevated Steel Tank	
5	Bill No.5: Water Kiosk	
6	Bill No.7: Fencing and Gate	
7	Bill No.8: Last Mile Connectivity	
A	**Sub -Total 1**	
B	Add 16% VAT (0.16*C)	
C	**Total Carried Over to Bid (A+B)**	

Item	Item description	Unit	Quantity	Rate (Ksh)	mount (Ksh)
	l No.1: Preliminary and General items				
	Contractual Requirements				
1.1	Allow for Insurance of the Works, contractor's plant, injury of workmen and damages to property and third party	LS	1		
	Project Sign Boards				
1.2	Provide, erect and maintain project sign boards at borehole site as directed by the Project Manager. The rate includes installation, removal and storage as directed by Project Manager.	No	1		
	Prime Cost				
1.3	Allow PC Sum of Kshs 80,000.00 for survey works as directed by the Project Manager.	PC	1	80,000 .00	
1.4	Allow PC Sum of Kshs 200,000.00 to cover the costs of Hydrogeological Survey, Environmental Impact Assessment, preparation and submission of survey and EIA reports, application of authorization to drill and abstraction permits from Water Resources Authority and EIA permits from NEMA be expended as directed by the Project Manager.	PC	1	200,00 0.00	
1.5	Allow a P.C. Sum of KShs. 200,000 for supervision costs for an approved Resident Inspector of Works with Diploma in Civil Engineering/Building and Construction or approved equivalent from a reputable institution of learning and with a minimum of 2 years of experience in related works.	PC	1	200,00 0.00	
	Provisional Sums				

Item	Item description	Unit	Quantity	Rate (Ksh)	mount (Ksh)
1.6	Allow Provisional Sum of Kshs 200,000.00 to cover supervision costs of Engineers assigned on the project from the Employer's head office to cover expenses for communication, transport, allowances etc., to be expended as directed by the Project Manager.	PS	1	200,000.00	
1.7	General painting and branding of the works (PS)	Item	1		
1.8	Allow for a Provisional Sum of Ksh. 30,000 for Engineer's Testing of materials and works	Item	1		
	Total for Preliminary and General items Carried to Summary Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Ksh)**	**Amount (Ksh)**
	Bill No. 2: Drilling and test pumping of borehole				
2.1	Drilling borehole of 8-inch minimum diameter through all types of strata including disposal of excavated materials; taking any remedial measures to overcome caving- in , or over drilling to accommodate sloughed material and keeping drilling records as specified	m			
2.2	Supply and install mild steel permanent casing 6-inch nominal internal diameter plain casing	m			
2.3	Supply and install mild steel 6-inch nominal internal diameter slotted casings screens.	m			
2.4	Supply and 10" insert surface casings m rates only	m			
2.5	Allow for taking samples of drill cuttings at two (2) meters intervals.	No			
2.6	Supply and insert approved special clay.	Lump sum			
2.7	Supply and insert filter gravel packing 2mm to 5mm size.	Ton			
2.8	Grout between the inner casing and the outer surface casing for top six (6) metres.	Lump sum			
2.9	Borehole development work including inserting and removal of development equipment	Hrs			
2.10	Test pumping step draw down and constant discharge test including installation, removal of test pumping equipment , water level observations and draw down measurements	Hrs			
2.11	Undertake Water Level observation and record on Recovery	Lump sum			
2.12	Supply of water for drilling operations and field camp	Lump sum			
2.13	Carry out physical and chemical analysis of the borehole water.	Lump sum			
2.14	Borehole disinfection as specified	Lump sum			

Item	Item description	Unit	Quantity	Rate (Ksh)	mount (Ksh)
2.15	Data analysis, drilling, borehole completion reports, pump test report compilation in three hard copies and 1 electronic copy for each well.	Lump sum			
2.16	Concrete slab 1*1*1m (1:3:6)	m^3			
2.17	Borehole cover 6" diameter welded to the casing	No			
2.18	Allow costs for collecting formation samples and prepare geological logging charts.	No.			
2.19	**Item** / **Item description** **Bill No 3: Borehole equipping and s** 3.1 Provisional sum for supply, installation commissioning of a submersible pump pumping expected yield against a hea identified, complete with solar system, control unit and support structures 4 m installation sundries and all accessorie cables and pipes and fittings. NB: Des and solar must be approved by the Pr NB: Indicate the make of the pump an casing is 152mm. Pump Make : …….. Country of Origin: ……. Make of Motor: …….. **Total Borehole equipping and solar Carried to summary page** Complete the prescribed WRA Borehole drilling completion report and submit to WRA	No.			
	Total for Drilling and Test Pumping Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Bill No.4: Elevated Steel Tank				
	(Volume of the tank as per Engineers Instructions)				
A	**Excavation**				
	Excavation shall include strutting, shuttering, stabilizing excavated surface and keeping excavations free of water bailing out, pumping or other means				
4.1	Excavate to reduced levels in top soil for depth not exceeding 0.25	M^3	2		
4.2	Excavate for tank foundation 0.25-0.5m	M^3	10		
4.3	Ditto but in material other than top soil, rock or hard material depth 0.5-1m	M^3	10		
4.4	Ditto but in material other than top soil, rock or artificially hard material depth 1-2m	M^3	10		
4.5	Ditto but in rock depth 1-2m	M^3	2		
	Filling				
	Filling to completed structure including compaction as specified				
4.6	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M^3	20		

B	**Disposal of Excavated Materials**				
4.7	Dispose excavated materials other than rock as directed by the Engineer	M^3	12		
4.8	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M^3	2		
C	**In situ Concrete: Provision and placing.**				
	Rate to include for shuttering				
	Mass concrete Class 15/20				
4.9	Blinding layer 50mm thick	M^3	2		
	Reinforced Vibrated Concrete Class 25/20				
4.10	Footing and stub columns for steel columns	M^3	12		
D	**Reinforcement**				
	High yield hot rolled ribbed bars BS4449.Rate to include for Supply, delivering, cutting, bending, supporting and securing in concrete.				
4.11	High Yield bars	Ton	2		
	Sub Total for Elevated Steel Tank carried to collection Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Kshs)**	**Amount (Kshs)**
E	**Pressed Steel Tank**				
4.12	Supply and install pressed steel tank 50m^3 capacity complete with roof access hatch, access ladder, float level indicator, pipework and 12m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1		
F	**Pipework**				
	These are pipes in the vicinity of the tank. Including connecting the inlet pipe to the pumping main				
4.13	Supply and fix 38mm diameter GI Class "B"Tank inlet pipe	m	15		
4.14	Supply and fix 63mm diameter GI Class B Tank	m	24		
4.15	Supply and fix 63mm diameter GI Class B Tank	m	6		
4.16	Supply and fix 63mm diameter GI Class B Tank	m	15		
G	**Valves and fittings**				
4.17	Supply and install DN50 PN10 sluice valve for scour	Nr	1		
4.18	Supply and install DN38 PN10 Sluice valve for the outlet	Nr	1		
4.19	Supply and fix double flanged DN32 90º Short radius bend	Nr	3		
4.2	Supply and fix double flanged DN50 -90º Short radius bend	Nr	8		
4.21	Supply and fix all flanged DN50X50 Tee	Nr	1		
4.22	Supply and fix all flanged DN38X38 Tee	Nr	2		
4.23	DN50 Double flange piece, length 1000mm	Nr	2		
4.24	DN50 Double flange piece, length 300mm	Nr	2		
4.25	DN50 Double flange piece, length 500mm	Nr	2		

4.26	Supply and apply recommended disinfectant and test the tank	Sum	1		
	Sub Total carried to collection Page				
	Sub Total brought from previous page				
	Total for Construction of 1No. Elevated Tank and pipe works Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.5: Water Kiosk				
5.1	Excavate top soil Average 150mm depth And cart away 5 meters for re-use.	m^2	20		
5.2	Excavate pits for 4No. 900 x 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth	m^3	11.6		
5.3	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth	m^3	6.5		
5.4	Construct 50mm thick x 600mm wide blinding to foundation (1:4:8)	m^2	2.7		
5.5	Construct 50mm thick x 1000mm wide blinding to foundation Concrete (1:4:8)	m^2	1.5		
5.6	Construct 50mm thick x 900 x 900mm blinding to Column Footing concrete (1:4:8)	m^2	3.24		
5.7	Construct 200mm thick VRC strip foundation (1:2:4)	m^3	1		
5.8	Construct 300mm thick x 900 x 900mm VRC Footing (1:2:4)	m^3	1		
5.9	Construct 200mm thick foundation walling with mortar (1:4) jointing	m^2	12		
5.10	Construct 200 x 200 x mm x 3350mm high VRC Column (1:2:4)	m^3	0.55		
5.11	Lay approved hard-core 300 thick layer	m^2	12.5		
5.12	Provide and Place 50mm approved murram and properly rammed.	m^2	6		
5.13	500 gauge polythene damp proof membrane on the blinded surface.	m^2	8.5		
5.14	VRC Floor slab (1:2:4) 100mm thick.	m^2	8.5		
5.15	VRC Floor slab (1:2:4) 150mm thick.	m^2	6.6		
5.16	200mm wide Bituminous Felt DPC	m	9.5		
5.17	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is Keyed.	m^2	19		
5.18	VRC ring beam measuring 225 x 200mm (1:2:4)	m^3	0.5		
5.19	150mm VRC (1:2;4) roof slab with 150 x 150mm parapet	m^3	1.3		
5.20	D12 in columns, beams and roof slab	Kg	127		
5.21	D8 bars in foundation, columns and roof slab	Kg	182		
5.22	D8 foundation, columns and roof slab	Kg	33		
5.23	BRC A142 in floor slab	m^2	13		
5.24	Allow for formworks to all the reinforced concrete elements	Item	1		
5.25	25mm thick floor screed (1:4) mortar	m^2	14		
	Sub Total for Water Kiosk carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
5.26	25mm thick plaster to walls (1:4) mortar	m^2	21		
5.27	15mm thick roof screed (1:4) mortar	m^2	16		
5.28	Provide, fabricate and fix steel casement door (2160mm x 830mm)	No	1		
5.29	Provide, fabricate and fix grilled steel casement window(1440mx600mm)	No	1		

5.30	Provide and apply three coats of paints On the internal walls and roof slab.	m^2	37		
5.31	Provide and install 20mm diameter Consumer meter	No	1		
5.32	Provide and fix 40mm diameter back nuts	No	2		
5.33	Provide and fix 20mm diameter back nuts	No	4		
5.34	Provide and fix 20mm diameter Elbows	No	10		
5.35	Provide and fix 20mm diameter Equal Tee	No	1		
5.36	Provide and fix 20mm diameter Ball Cocks	No	2		
5.37	Provide and fix 20mm diameter Union Sockets	No	2		
5.38	20mm G.I class B pipes	No	2		
	Sub Total for Water Kiosk carried to collection Page				
	Sub Total for Water Kiosk brought from previous page				
	Total for Water Kiosk Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.7: Fencing and Gate				
A	**Chain Link**				
	Provide, dig holes, install and fasten:				
7.1	Excavate for, provide and erect chain link fence 2.4m high comprising concrete posts set 0.9m below ground level with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres with 500mm long cranks at top, 12½ gauge chain link fence, 4 No. plain wire strands threaded through holes in posts, 4 No. strands 12½ gauge barbed wire tied to cranked top of fence and weaved to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal.	m			
B	***Gate***				
7.2	Provide and install double gate of 4m wide X 2.4m high fabricated from dia. 50mm hollow section black pipes (gauge 16) .and 25mm x 25mm Square tubes cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint	Item			
	Total for Fencing and Gate Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.8: Last Mile Connectivity				
A	**Pipes**				
6.1	Excavate trench for the following pipes, Supply the pipes and deliver them to site, lay and joint the pipes, back fill and test as directed by the Engineer tom serve 200HHs				
i	4inch diameter HDPE PN12.5	m	1,000		
ii	3inch diameter HDPE PN12.5	m	1,000		
iii	2inch diameter HDPE PN12.5	m	1,000		
iv	1inch diameter HDPE PN12.5	m	2,000		
B	**Air valves**				
6.2	Supply and install DN 80mm anti-shock/ anti-surge double-orifice Air Valve with threaded base, c/w isolating valve.	No	6		
6.3	Nominal bore 110mm x 80 mm tee for air-valves	No	6		
C	**Washouts**				
6.4	Washouts 150mm diameter complete with PN12.5 flap valve and all the necessary accessories	No	6		
6.5	Reducing Tee Nominal bore 150mm x 80 mm level invert tee for washouts	No	6		
D	**Air Valve Chambers**				
6.9	Provide wing wall on outlet, stone pitched base and all specified requirements for air valves, internal size 1200×1200mm, depth not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
E	Washout Chambers				
6.10	Insitu concrete chamber internal dimensions 1600mm x 1200mm depth (including concrete outfall works) not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
	Total for Last Mile Connectivity Carried to Summary Page				

LOT 3. KIPCHOBET BH

SUMMARY OF BILLS		
S/NO	**ITEM DESCRIPTION**	**AMOUNT (Ksh)**
1	Bill No.1: Preliminary and General items	
2	Bill No. 2: Drilling and test pumping of borehole	
3	Bill No 3: Borehole equipping and solar system	
4	Bill No.4: Elevated Steel Tank	
5	Bill No.5: Water Kiosk	
6	Bill No.7: Fencing and Gate	
7	Bill No.8: Last Mile Connectivity	
A	**Sub -Total 1**	
B	Add 16% VAT (0.16*C)	
C	**Total Carried Over to Bid (A+B)**	

Item	Item description	Unit	Quantity	Rate (Ksh)	mount (Ksh)
	l No.1: Preliminary and General items				
	Contractual Requirements				
1.1	Allow for Insurance of the Works, contractor's plant, injury of workmen and damages to property and third party	LS	1		
	Project Sign Boards				
1.2	Provide, erect and maintain project sign boards at borehole site as directed by the Project Manager. The rate includes installation, removal and storage as directed by Project Manager.	No	1		
	Prime Cost				
1.3	Allow PC Sum of Kshs 80,000.00 for survey works as directed by the Project Manager.	PC	1	80,000.00	
1.4	Allow PC Sum of Kshs 200,000.00 to cover the costs of Hydrogeological Survey, Environmental Impact Assessment, preparation and submission of survey and EIA reports, application of authorization to drill and abstraction permits from Water Resources Authority and EIA permits from NEMA be expended as directed by the Project Manager.	PC	1	200,000.00	
1.5	Allow a P.C. Sum of KShs. 200,000 for supervision costs for an approved Resident Inspector of Works with Diploma in Civil Engineering/Building and Construction or approved equivalent from a reputable institution of learning and with a minimum of 2 years of experience in related works.	PC	1	200,000.00	
	Provisional Sums				
1.6	Allow Provisional Sum of Kshs 200,000.00 to cover supervision costs of Engineers assigned on the project from the Employer's head office to cover expenses for communication, transport, allowances etc., to be expended as directed by the Project Manager.	PS	1	200,000.00	
1.7	General painting and branding of the works (PS)	Item	1		

Item	Item description	Unit	Quantity	Rate (Ksh)	mount (Ksh)
1.8	Allow for a Provisional Sum of Ksh. 30,000 for Engineer's Testing of materials and works	Item	1		
	Total for Preliminary and General items Carried to Summary Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Ksh)**	**Amount (Ksh)**
	Bill No. 2: Drilling and test pumping of borehole				
2.1	Drilling borehole of 8-inch minimum diameter through all types of strata including disposal of excavated materials; taking any remedial measures to overcome caving- in , or over drilling to accommodate sloughed material and keeping drilling records as specified	m			
2.2	Supply and install mild steel permanent casing 6-inch nominal internal diameter plain casing	m			
2.3	Supply and install mild steel 6-inch nominal internal diameter slotted casings screens.	m			
2.4	Supply and 10" insert surface casings m rates only	m			
2.5	Allow for taking samples of drill cuttings at two (2) meters intervals.	No			
2.6	Supply and insert approved special clay.	Lump sum			
2.7	Supply and insert filter gravel packing 2mm to 5mm size.	Ton			
2.8	Grout between the inner casing and the outer surface casing for top six (6) metres.	Lump sum			
2.9	Borehole development work including inserting and removal of development equipment	Hrs			
2.10	Test pumping step draw down and constant discharge test including installation, removal of test pumping equipment , water level observations and draw down measurements	Hrs			
2.11	Undertake Water Level observation and record on Recovery	Lump sum			
2.12	Supply of water for drilling operations and field camp	Lump sum			
2.13	Carry out physical and chemical analysis of the borehole water.	Lump sum			
2.14	Borehole disinfection as specified	Lump sum			
2.15	Data analysis, drilling, borehole completion reports, pump test report compilation in three hard copies and 1 electronic copy for each well.	Lump sum			
2.16	Concrete slab 1*1*1m (1:3:6)	m^3			
2.17	Borehole cover 6" diameter welded to the casing	No			
2.18	Allow costs for collecting formation samples and prepare geological logging charts.	No.			
2.19	**Item** **Item description**	No.	**Unit**	**Qua ntity**	**Amount (Ksh)**
	Bill No 3: Borehole equipping and solar system				

Item	Item description		Unit	Quantity	Rate (Ksh)	mount (Ksh)
	3.1	Provisional sum for supply, installation, testing a commissioning of a submersible pump capable pumping expected yield against a head to be identified, complete with solar system, solar pur control unit and support structures 4 metres high installation sundries and all accessories includir cables and pipes and fittings. NB: Designs for p and solar must be approved by the Project Man				
		NB: Indicate the make of the pump and motor. S casing is 152mm.				
		Pump Make : ……..				
		Country of Origin: …….				
		Make of Motor: ……..				
		Total Borehole equipping and solar system Carried to summary page				
	Complete the prescribed WRA Borehole drilling completion report and submit to WRA					
	Total for Drilling and Test Pumping Carried to Summary Page					

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Bill No.4: Elevated Steel Tank				
	(Volume of the tank as per Engineers Instructions)				
A	**Excavation**				
	Excavation shall include strutting, shuttering, stabilizing excavated surface and keeping excavations free of water bailing out, pumping or other means				
4.1	Excavate to reduced levels in top soil for depth not exceeding 0.25	M^3	2		
4.2	Excavate for tank foundation 0.25-0.5m	M^3	10		
4.3	Ditto but in material other than top soil, rock or hard material depth 0.5-1m	M^3	10		
4.4	Ditto but in material other than top soil, rock or artificially hard material depth 1-2m	M^3	10		
4.5	Ditto but in rock depth 1-2m	M^3	2		
	Filling				
	Filling to completed structure including compaction as specified				
4.6	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M^3	20		
B	**Disposal of Excavated Materials**				
4.7	Dispose excavated materials other than rock as directed by the Engineer	M^3	12		
4.8	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M^3	2		
C	**In situ Concrete: Provision and placing.**				
	Rate to include for shuttering				
	Mass concrete Class 15/20				
4.9	Blinding layer 50mm thick	M^3	2		
	Reinforced Vibrated Concrete Class 25/20				
4.10	Footing and stub columns for steel columns	M^3	12		
D	**Reinforcement**				

	High yield hot rolled ribbed bars BS4449.Rate to include for Supply, delivering, cutting, bending, supporting and securing in concrete.				
4.11	High Yield bars	Ton	2		
	Sub Total for Elevated Steel Tank carried to collection Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Kshs)**	**Amount (Kshs)**
E	**Pressed Steel Tank**				
4.12	Supply and install pressed steel tank 50m^3 capacity complete with roof access hatch, access ladder, float level indicator, pipework and 12m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1		
F	**Pipework**				
	These are pipes in the vicinity of the tank. Including connecting the inlet pipe to the pumping main				
4.13	Supply and fix 38mm diameter GI Class "B"Tank inlet pipe	m	15		
4.14	Supply and fix 63mm diameter GI Class B Tank	m	24		
4.15	Supply and fix 63mm diameter GI Class B Tank	m	6		
4.16	Supply and fix 63mm diameter GI Class B Tank	m	15		
G	**Valves and fittings**				
4.17	Supply and install DN50 PN10 sluice valve for scour	Nr	1		
4.18	Supply and install DN38 PN10 Sluice valve for the outlet	Nr	1		
4.19	Supply and fix double flanged DN32 90º Short radius bend	Nr	3		
4.2	Supply and fix double flanged DN50 -90º Short radius bend	Nr	8		
4.21	Supply and fix all flanged DN50X50 Tee	Nr	1		
4.22	Supply and fix all flanged DN38X38 Tee	Nr	2		
4.23	DN50 Double flange piece, length 1000mm	Nr	2		
4.24	DN50 Double flange piece, length 300mm	Nr	2		
4.25	DN50 Double flange piece, length 500mm	Nr	2		
4.26	Supply and apply recommended disinfectant and test the tank	Sum	1		
	Sub Total carried to collection Page				
	Sub Total brought from previous page				
	Total for Construction of 1No. Elevated Tank and pipe works Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.5: Water Kiosk				
5.1	Excavate top soil Average 150mm depth And cart away 5 meters for re-use.	m^2	20		
5.2	Excavate pits for 4No. 900 x 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth	m^3	11.6		
5.3	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth	m^3	6.5		
5.4	Construct 50mm thick x 600mm wide blinding to foundation (1:4:8)	m^2	2.7		
5.5	Construct 50mm thick x 1000mm wide blinding to foundation Concrete (1:4:8)	m^2	1.5		
5.6	Construct 50mm thick x 900 x 900mm blinding to Column Footing concrete (1:4:8)	m^2	3.24		
5.7	Construct 200mm thick VRC strip foundation (1:2:4)	m^3	1		
5.8	Construct 300mm thick x 900 x 900mm VRC Footing (1:2:4)	m^3	1		
5.9	Construct 200mm thick foundation walling with mortar (1:4) jointing	m^2	12		
5.10	Construct 200 x 200 x mm x 3350mm high VRC Column (1:2:4)	m^3	0.55		
5.11	Lay approved hard-core 300 thick layer	m^2	12.5		
5.12	Provide and Place 50mm approved murram and properly rammed.	m^2	6		
5.13	500 gauge polythene damp proof membrane on the blinded surface.	m^2	8.5		
5.14	VRC Floor slab (1:2:4) 100mm thick.	m^2	8.5		
5.15	VRC Floor slab (1:2:4) 150mm thick.	m^2	6.6		
5.16	200mm wide Bituminous Felt DPC	m	9.5		
5.17	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is Keyed.	m^2	19		
5.18	VRC ring beam measuring 225 x 200mm (1:2:4)	m^3	0.5		
5.19	150mm VRC (1:2;4) roof slab with 150 x 150mm parapet	m^3	1.3		
5.20	D12 in columns, beams and roof slab	Kg	127		
5.21	D8 bars in foundation, columns and roof slab	Kg	182		
5.22	D8 foundation, columns and roof slab	Kg	33		
5.23	BRC A142 in floor slab	m^2	13		
5.24	Allow for formworks to all the reinforced concrete elements	Item	1		
5.25	25mm thick floor screed (1:4) mortar	m^2	14		
	Sub Total for Water Kiosk carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
5.26	25mm thick plaster to walls (1:4) mortar	m^2	21		
5.27	15mm thick roof screed (1:4) mortar	m^2	16		
5.28	Provide, fabricate and fix steel casement door (2160mm x 830mm)	No	1		
5.29	Provide, fabricate and fix grilled steel casement window(1440mx600mm)	No	1		

5.30	Provide and apply three coats of paints On the internal walls and roof slab.	m^2	37		
5.31	Provide and install 20mm diameter Consumer meter	No	1		
5.32	Provide and fix 40mm diameter back nuts	No	2		
5.33	Provide and fix 20mm diameter back nuts	No	4		
5.34	Provide and fix 20mm diameter Elbows	No	10		
5.35	Provide and fix 20mm diameter Equal Tee	No	1		
5.36	Provide and fix 20mm diameter Ball Cocks	No	2		
5.37	Provide and fix 20mm diameter Union Sockets	No	2		
5.38	20mm G.I class B pipes	No	2		
	Sub Total for Water Kiosk carried to collection Page				
	Sub Total for Water Kiosk brought from previous page				
	Total for Water Kiosk Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.7: Fencing and Gate				
A	**Chain Link**				
	Provide, dig holes, install and fasten:				
7.1	Excavate for, provide and erect chain link fence 2.4m high comprising concrete posts set 0.9m below ground level with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres with 500mm long cranks at top, 12½ gauge chain link fence, 4 No. plain wire strands threaded through holes in posts, 4 No. strands 12½ gauge barbed wire tied to cranked top of fence and weaved to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal.	m			
B	***Gate***				
7.2	Provide and install double gate of 4m wide X 2.4m high fabricated from dia. 50mm hollow section black pipes (gauge 16) .and 25mm x 25mm Square tubes cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint	Item			
	Total for Fencing and Gate Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.8: Last Mile Connectivity				
A	**Pipes**				
6.1	Excavate trench for the following pipes, Supply the pipes and deliver them to site, lay and joint the pipes, back fill and test as directed by the Engineer tom serve 200HHs				
i	4inch diameter HDPE PN12.5	m	1,000		
ii	3inch diameter HDPE PN12.5	m	1,000		
iii	2inch diameter HDPE PN12.5	m	1,000		
iv	1inch diameter HDPE PN12.5	m	2,000		
B	**Air valves**				
6.2	Supply and install DN 80mm anti-shock/ anti-surge double-orifice Air Valve with threaded base, c/w isolating valve.	No	6		
6.3	Nominal bore 110mm x 80 mm tee for air-valves	No	6		
C	**Washouts**				
6.4	Washouts 150mm diameter complete with PN12.5 flap valve and all the necessary accessories	No	6		
6.5	Reducing Tee Nominal bore 150mm x 80 mm level invert tee for washouts	No	6		
D	**Air Valve Chambers**				
6.9	Provide wing wall on outlet, stone pitched base and all specified requirements for air valves, internal size 1200×1200mm, depth not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
E	Washout Chambers				
6.10	Insitu concrete chamber internal dimensions 1600mm x 1200mm depth (including concrete outfall works) not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
	Total for Last Mile Connectivity Carried to Summary Page				

LOT 4. BLU HILLS BH

SUMMARY OF BILLS		
S/NO	**ITEM DESCRIPTION**	**AMOUNT (Ksh)**
1	Bill No.1: Preliminary and General items	
2	Bill No. 2: Drilling and test pumping of borehole	
3	Bill No 3: Borehole equipping and solar system	
4	Bill No.4: Elevated Steel Tank	
5	Bill No.5: Water Kiosk	
6	Bill No.7: Fencing and Gate	
7	Bill No.8: Last Mile Connectivity	
A	**Sub -Total 1**	
B	Add 16% VAT (0.16*C)	
C	**Total Carried Over to Bid (A+B)**	

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	No.1: Preliminary and General items				
	Contractual Requirements				
1.1	Allow for Insurance of the Works, contractor's plant, injury of workmen and damages to property and third party	LS	1		
	Project Sign Boards				
1.2	Provide, erect and maintain project sign boards at borehole site as directed by the Project Manager. The rate includes installation, removal and storage as directed by Project Manager.	No	1		
	Prime Cost				
1.3	Allow PC Sum of Kshs 80,000.00 for survey works as directed by the Project Manager.	PC	1	80,000.00	
1.4	Allow PC Sum of Kshs 200,000.00 to cover the costs of Hydrogeological Survey, Environmental Impact Assessment, preparation and submission of survey and EIA reports, application of authorization to drill and abstraction permits from Water Resources Authority and EIA permits from NEMA be expended as directed by the Project Manager.	PC	1	200,000.00	
1.5	Allow a P.C. Sum of KShs. 200,000 for supervision costs for an approved Resident Inspector of Works with Diploma in Civil Engineering/Building and Construction or approved equivalent from a reputable institution of learning and with a minimum of 2 years of experience in related works.	PC	1	200,000.00	
	Provisional Sums				
1.6	Allow Provisional Sum of Kshs 200,000.00 to cover supervision costs of Engineers assigned on the project from the Employer's head office to cover expenses for communication, transport, allowances etc., to be expended as directed by the Project Manager.	PS	1	200,000.00	
1.7	General painting and branding of the works (PS)	Item	1		

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
1.8	Allow for a Provisional Sum of Ksh. 30,000 for Engineer's Testing of materials and works	Item	1		
	Total for Preliminary and General items Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Bill No. 2: Drilling and test pumping of borehole				
2.1	Drilling borehole of 8-inch minimum diameter through all types of strata including disposal of excavated materials; taking any remedial measures to overcome caving- in , or over drilling to accommodate sloughed material and keeping drilling records as specified	m			
2.2	Supply and install mild steel permanent casing 6-inch nominal internal diameter plain casing	m			
2.3	Supply and install mild steel 6-inch nominal internal diameter slotted casings screens.	m			
2.4	Supply and 10" insert surface casings m rates only	m			
2.5	Allow for taking samples of drill cuttings at two (2) meters intervals.	No			
2.6	Supply and insert approved special clay.	Lump sum			
2.7	Supply and insert filter gravel packing 2mm to 5mm size.	Ton			
2.8	Grout between the inner casing and the outer surface casing for top six (6) metres.	Lump sum			
2.9	Borehole development work including inserting and removal of development equipment	Hrs			
2.10	Test pumping step draw down and constant discharge test including installation, removal of test pumping equipment , water level observations and draw down measurements	Hrs			
2.11	Undertake Water Level observation and record on Recovery	Lump sum			
2.12	Supply of water for drilling operations and field camp	Lump sum			
2.13	Carry out physical and chemical analysis of the borehole water.	Lump sum			
2.14	Borehole disinfection as specified	Lump sum			
2.15	Data analysis, drilling, borehole completion reports, pump test report compilation in three hard copies and 1 electronic copy for each well.	Lump sum			
2.16	Concrete slab 1*1*1m (1:3:6)	m^3			
2.17	Borehole cover 6" diameter welded to the casing	No			
2.18	Allow costs for collecting formation samples and prepare geological logging charts.	No.			

2.19	Item	Item description	No.	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
		Bill No 3: Borehole equipping and solar system					

Item	Item description		Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	3.1	Provisional sum for supply, installation, testin commissioning of a submersible pump capab pumping expected yield against a head to be identified, complete with solar system, solar p control unit and support structures 4 metres h installation sundries and all accessories inclu cables and pipes and fittings. NB: Designs fo and solar must be approved by the Project M				
		NB: Indicate the make of the pump and moto casing is 152mm.				
		Pump Make : ……..				
		Country of Origin: …….				
		Make of Motor: ……..				
		Total Borehole equipping and solar syster Carried to summary page				
	Complete the prescribed WRA Borehole drilling completion report and submit to WRA					
	Total for Drilling and Test Pumping Carried to Summary Page					

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Bill No.4: Elevated Steel Tank				
	(Volume of the tank as per Engineers Instructions)				
A	**Excavation**				
	Excavation shall include strutting, shuttering, stabilizing excavated surface and keeping excavations free of water bailing out, pumping or other means				
4.1	Excavate to reduced levels in top soil for depth not exceeding 0.25	M^3	2		
4.2	Excavate for tank foundation 0.25-0.5m	M^3	10		
4.3	Ditto but in material other than top soil, rock or hard material depth 0.5-1m	M^3	10		
4.4	Ditto but in material other than top soil, rock or artificially hard material depth 1-2m	M^3	10		
4.5	Ditto but in rock depth 1-2m	M^3	2		
	Filling				
	Filling to completed structure including compaction as specified				
4.6	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M^3	20		
B	**Disposal of Excavated Materials**				
4.7	Dispose excavated materials other than rock as directed by the Engineer	M^3	12		
4.8	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M^3	2		
C	**In situ Concrete: Provision and placing.**				
	Rate to include for shuttering				
	Mass concrete Class 15/20				
4.9	Blinding layer 50mm thick	M^3	2		
	Reinforced Vibrated Concrete Class 25/20				
4.10	Footing and stub columns for steel columns	M^3	12		
D	**Reinforcement**				

	High yield hot rolled ribbed bars BS4449.Rate to include for Supply, delivering, cutting, bending, supporting and securing in concrete.				
4.11	High Yield bars	Ton	2		
	Sub Total for Elevated Steel Tank carried to collection Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Kshs)**	**Amount (Kshs)**
E	**Pressed Steel Tank**				
4.12	Supply and install pressed steel tank 50m^3 capacity complete with roof access hatch, access ladder, float level indicator, pipework and 12m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1		
F	**Pipework**				
	These are pipes in the vicinity of the tank. Including connecting the inlet pipe to the pumping main				
4.13	Supply and fix 38mm diameter GI Class ”B”Tank inlet pipe	m	15		
4.14	Supply and fix 63mm diameter GI Class B Tank	m	24		
4.15	Supply and fix 63mm diameter GI Class B Tank	m	6		
4.16	Supply and fix 63mm diameter GI Class B Tank	m	15		
G	**Valves and fittings**				
4.17	Supply and install DN50 PN10 sluice valve for scour	Nr	1		
4.18	Supply and install DN38 PN10 Sluice valve for the outlet	Nr	1		
4.19	Supply and fix double flanged DN32 90º Short radius bend	Nr	3		
4.2	Supply and fix double flanged DN50 -90º Short radius bend	Nr	8		
4.21	Supply and fix all flanged DN50X50 Tee	Nr	1		
4.22	Supply and fix all flanged DN38X38 Tee	Nr	2		
4.23	DN50 Double flange piece, length 1000mm	Nr	2		
4.24	DN50 Double flange piece, length 300mm	Nr	2		
4.25	DN50 Double flange piece, length 500mm	Nr	2		
4.26	Supply and apply recommended disinfectant and test the tank	Sum	1		
	Sub Total carried to collection Page				
	Sub Total brought from previous page				
	Total for Construction of 1No. Elevated Tank and pipe works Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.5: Water Kiosk				
5.1	Excavate top soil Average 150mm depth And cart away 5 meters for re-use.	m^2	20		
5.2	Excavate pits for 4No. 900 x 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth	m^3	11.6		
5.3	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth	m^3	6.5		
5.4	Construct 50mm thick x 600mm wide blinding to foundation (1:4:8)	m^2	2.7		
5.5	Construct 50mm thick x 1000mm wide blinding to foundation Concrete (1:4:8)	m^2	1.5		
5.6	Construct 50mm thick x 900 x 900mm blinding to Column Footing concrete (1:4:8)	m^2	3.24		
5.7	Construct 200mm thick VRC strip foundation (1:2:4)	m^3	1		
5.8	Construct 300mm thick x 900 x 900mm VRC Footing (1:2:4)	m^3	1		
5.9	Construct 200mm thick foundation walling with mortar (1:4) jointing	m^2	12		
5.10	Construct 200 x 200 x mm x 3350mm high VRC Column (1:2:4)	m^3	0.55		
5.11	Lay approved hard-core 300 thick layer	m^2	12.5		
5.12	Provide and Place 50mm approved murram and properly rammed.	m^2	6		
5.13	500 gauge polythene damp proof membrane on the blinded surface.	m^2	8.5		
5.14	VRC Floor slab (1:2:4) 100mm thick.	m^2	8.5		
5.15	VRC Floor slab (1:2:4) 150mm thick.	m^2	6.6		
5.16	200mm wide Bituminous Felt DPC	m	9.5		
5.17	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is Keyed.	m^2	19		
5.18	VRC ring beam measuring 225 x 200mm (1:2:4)	m^3	0.5		
5.19	150mm VRC (1:2;4) roof slab with 150 x 150mm parapet	m^3	1.3		
5.20	D12 in columns, beams and roof slab	Kg	127		
5.21	D8 bars in foundation, columns and roof slab	Kg	182		
5.22	D8 foundation, columns and roof slab	Kg	33		
5.23	BRC A142 in floor slab	m^2	13		
5.24	Allow for formworks to all the reinforced concrete elements	Item	1		
5.25	25mm thick floor screed (1:4) mortar	m^2	14		
	Sub Total for Water Kiosk carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
5.26	25mm thick plaster to walls (1:4) mortar	m^2	21		
5.27	15mm thick roof screed (1:4) mortar	m^2	16		
5.28	Provide, fabricate and fix steel casement door (2160mm x 830mm)	No	1		
5.29	Provide, fabricate and fix grilled steel casement window(1440mx600mm)	No	1		

5.30	Provide and apply three coats of paints On the internal walls and roof slab.	m^2	37		
5.31	Provide and install 20mm diameter Consumer meter	No	1		
5.32	Provide and fix 40mm diameter back nuts	No	2		
5.33	Provide and fix 20mm diameter back nuts	No	4		
5.34	Provide and fix 20mm diameter Elbows	No	10		
5.35	Provide and fix 20mm diameter Equal Tee	No	1		
5.36	Provide and fix 20mm diameter Ball Cocks	No	2		
5.37	Provide and fix 20mm diameter Union Sockets	No	2		
5.38	20mm G.I class B pipes	No	2		
	Sub Total for Water Kiosk carried to collection Page				
	Sub Total for Water Kiosk brought from previous page				
	Total for Water Kiosk Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.7: Fencing and Gate				
A	**Chain Link**				
	Provide, dig holes, install and fasten:				
7.1	Excavate for, provide and erect chain link fence 2.4m high comprising concrete posts set 0.9m below ground level with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres with 500mm long cranks at top, 12½ gauge chain link fence, 4 No. plain wire strands threaded through holes in posts, 4 No. strands 12½ gauge barbed wire tied to cranked top of fence and weaved to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal.	m			
B	***Gate***				
7.2	Provide and install double gate of 4m wide X 2.4m high fabricated from dia. 50mm hollow section black pipes (gauge 16) .and 25mm x 25mm Square tubes cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint	Item			
	Total for Fencing and Gate Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.8: Last Mile Connectivity				
A	**Pipes**				
6.1	Excavate trench for the following pipes, Supply the pipes and deliver them to site, lay and joint the pipes, back fill and test as directed by the Engineer tom serve 200HHs				
i	4inch diameter HDPE PN12.5	m	1,000		
ii	3inch diameter HDPE PN12.5	m	1,000		
iii	2inch diameter HDPE PN12.5	m	1,000		
iv	1inch diameter HDPE PN12.5	m	2,000		
B	**Air valves**				
6.2	Supply and install DN 80mm anti-shock/ anti-surge double-orifice Air Valve with threaded base, c/w isolating valve.	No	6		
6.3	Nominal bore 110mm x 80 mm tee for air-valves	No	6		
C	**Washouts**				
6.4	Washouts 150mm diameter complete with PN12.5 flap valve and all the necessary accessories	No	6		
6.5	Reducing Tee Nominal bore 150mm x 80 mm level invert tee for washouts	No	6		
D	**Air Valve Chambers**				
6.9	Provide wing wall on outlet, stone pitched base and all specified requirements for air valves, internal size 1200×1200mm, depth not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
E	Washout Chambers				
6.10	Insitu concrete chamber internal dimensions 1600mm x 1200mm depth (including concrete outfall works) not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
	Total for Last Mile Connectivity Carried to Summary Page				

LOT 5 MANGU BH

SUMMARY OF BILLS		
S/NO	**ITEM DESCRIPTION**	**AMOUNT (Ksh)**
1	Bill No.1: Preliminary and General items	
2	Bill No. 2: Drilling and test pumping of borehole	
3	Bill No 3: Borehole equipping and solar system	
4	Bill No.4: Elevated Steel Tank	
5	Bill No.5: Water Kiosk	
6	Bill No.7: Fencing and Gate	
7	Bill No.8: Last Mile Connectivity	
A	**Sub -Total 1**	
B	Add 16% VAT (0.16*C)	
C	**Total Carried Over to Bid (A+B)**	

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	No.1: Preliminary and General items				
	Contractual Requirements				
1.1	Allow for Insurance of the Works, contractor's plant, injury of workmen and damages to property and third party	LS	1		
	Project Sign Boards				
1.2	Provide, erect and maintain project sign boards at borehole site as directed by the Project Manager. The rate includes installation, removal and storage as directed by Project Manager.	No	1		
	Prime Cost				
1.3	Allow PC Sum of Kshs 80,000.00 for survey works as directed by the Project Manager.	PC	1	80,000.00	
1.4	Allow PC Sum of Kshs 200,000.00 to cover the costs of Hydrogeological Survey, Environmental Impact Assessment, preparation and submission of survey and EIA reports, application of authorization to drill and abstraction permits from Water Resources Authority and EIA permits from NEMA be expended as directed by the Project Manager.	PC	1	200,000.00	
1.5	Allow a P.C. Sum of KShs. 200,000 for supervision costs for an approved Resident Inspector of Works with Diploma in Civil Engineering/Building and Construction or approved equivalent from a reputable institution of learning and with a minimum of 2 years of experience in related works.	PC	1	200,000.00	
	Provisional Sums				
1.6	Allow Provisional Sum of Kshs 200,000.00 to cover supervision costs of Engineers assigned on the project from the Employer's head office to cover expenses for communication, transport, allowances etc., to be expended as directed by the Project Manager.	PS	1	200,000.00	
1.7	General painting and branding of the works (PS)	Item	1		

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
1.8	Allow for a Provisional Sum of Ksh. 30,000 for Engineer's Testing of materials and works	Item	1		
	Total for Preliminary and General items Carried to Summary Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Ksh)**	**Amount (Ksh)**
	Bill No. 2: Drilling and test pumping of borehole				
2.1	Drilling borehole of 8-inch minimum diameter through all types of strata including disposal of excavated materials; taking any remedial measures to overcome caving- in , or over drilling to accommodate sloughed material and keeping drilling records as specified	m			
2.2	Supply and install mild steel permanent casing 6-inch nominal internal diameter plain casing	m			
2.3	Supply and install mild steel 6-inch nominal internal diameter slotted casings screens.	m			
2.4	Supply and 10" insert surface casings m rates only	m			
2.5	Allow for taking samples of drill cuttings at two (2) meters intervals.	No			
2.6	Supply and insert approved special clay.	Lump sum			
2.7	Supply and insert filter gravel packing 2mm to 5mm size.	Ton			
2.8	Grout between the inner casing and the outer surface casing for top six (6) metres.	Lump sum			
2.9	Borehole development work including inserting and removal of development equipment	Hrs			
2.10	Test pumping step draw down and constant discharge test including installation, removal of test pumping equipment , water level observations and draw down measurements	Hrs			
2.11	Undertake Water Level observation and record on Recovery	Lump sum			
2.12	Supply of water for drilling operations and field camp	Lump sum			
2.13	Carry out physical and chemical analysis of the borehole water.	Lump sum			
2.14	Borehole disinfection as specified	Lump sum			
2.15	Data analysis, drilling, borehole completion reports, pump test report compilation in three hard copies and 1 electronic copy for each well.	Lump sum			
2.16	Concrete slab 1*1*1m (1:3:6)	m^3			
2.17	Borehole cover 6" diameter welded to the casing	No			
2.18	Allow costs for collecting formation samples and prepare geological logging charts.	No.			
2.19	**Item** **Item description**	No.	**Unit**	**Qua ntity** **R (K**	**Amount (Ksh)**
	Bill No 3: Borehole equipping and solar system				

Item	Item description		Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	3.1	Provisional sum for supply, installation, testin commissioning of a submersible pump capab pumping expected yield against a head to be identified, complete with solar system, solar p control unit and support structures 4 metres h installation sundries and all accessories inclu cables and pipes and fittings. NB: Designs fo and solar must be approved by the Project M				
		NB: Indicate the make of the pump and moto casing is 152mm.				
		Pump Make : ……..				
		Country of Origin: …….				
		Make of Motor: ……..				
		Total Borehole equipping and solar syster Carried to summary page				
	Complete the prescribed WRA Borehole drilling completion report and submit to WRA					
	Total for Drilling and Test Pumping Carried to Summary Page					

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Bill No.4: Elevated Steel Tank				
	(Volume of the tank as per Engineers Instructions)				
A	**Excavation**				
	Excavation shall include strutting, shuttering, stabilizing excavated surface and keeping excavations free of water bailing out, pumping or other means				
4.1	Excavate to reduced levels in top soil for depth not exceeding 0.25	M^3	2		
4.2	Excavate for tank foundation 0.25-0.5m	M^3	10		
4.3	Ditto but in material other than top soil, rock or hard material depth 0.5-1m	M^3	10		
4.4	Ditto but in material other than top soil, rock or artificially hard material depth 1-2m	M^3	10		
4.5	Ditto but in rock depth 1-2m	M^3	2		
	Filling				
	Filling to completed structure including compaction as specified				
4.6	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M^3	20		
B	**Disposal of Excavated Materials**				
4.7	Dispose excavated materials other than rock as directed by the Engineer	M^3	12		
4.8	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M^3	2		
C	**In situ Concrete: Provision and placing.**				
	Rate to include for shuttering				
	Mass concrete Class 15/20				
4.9	Blinding layer 50mm thick	M^3	2		
	Reinforced Vibrated Concrete Class 25/20				
4.10	Footing and stub columns for steel columns	M^3	12		
D	**Reinforcement**				

	High yield hot rolled ribbed bars BS4449.Rate to include for Supply, delivering, cutting, bending, supporting and securing in concrete.				
4.11	High Yield bars	Ton	2		
	Sub Total for Elevated Steel Tank carried to collection Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Kshs)**	**Amount (Kshs)**
E	**Pressed Steel Tank**				
4.12	Supply and install pressed steel tank 50m^3 capacity complete with roof access hatch, access ladder, float level indicator, pipework and 12m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1		
F	**Pipework**				
	These are pipes in the vicinity of the tank. Including connecting the inlet pipe to the pumping main				
4.13	Supply and fix 38mm diameter GI Class "B"Tank inlet pipe	m	15		
4.14	Supply and fix 63mm diameter GI Class B Tank	m	24		
4.15	Supply and fix 63mm diameter GI Class B Tank	m	6		
4.16	Supply and fix 63mm diameter GI Class B Tank	m	15		
G	**Valves and fittings**				
4.17	Supply and install DN50 PN10 sluice valve for scour	Nr	1		
4.18	Supply and install DN38 PN10 Sluice valve for the outlet	Nr	1		
4.19	Supply and fix double flanged DN32 90º Short radius bend	Nr	3		
4.2	Supply and fix double flanged DN50 -90º Short radius bend	Nr	8		
4.21	Supply and fix all flanged DN50X50 Tee	Nr	1		
4.22	Supply and fix all flanged DN38X38 Tee	Nr	2		
4.23	DN50 Double flange piece, length 1000mm	Nr	2		
4.24	DN50 Double flange piece, length 300mm	Nr	2		
4.25	DN50 Double flange piece, length 500mm	Nr	2		
4.26	Supply and apply recommended disinfectant and test the tank	Sum	1		
	Sub Total carried to collection Page				
	Sub Total brought from previous page				
	Total for Construction of 1No. Elevated Tank and pipe works Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.5: Water Kiosk				
5.1	Excavate top soil Average 150mm depth And cart away 5 meters for re-use.	m^2	20		
5.2	Excavate pits for 4No. 900 x 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth	m^3	11.6		
5.3	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth	m^3	6.5		
5.4	Construct 50mm thick x 600mm wide blinding to foundation (1:4:8)	m^2	2.7		
5.5	Construct 50mm thick x 1000mm wide blinding to foundation Concrete (1:4:8)	m^2	1.5		
5.6	Construct 50mm thick x 900 x 900mm blinding to Column Footing concrete (1:4:8)	m^2	3.24		
5.7	Construct 200mm thick VRC strip foundation (1:2:4)	m^3	1		
5.8	Construct 300mm thick x 900 x 900mm VRC Footing (1:2:4)	m^3	1		
5.9	Construct 200mm thick foundation walling with mortar (1:4) jointing	m^2	12		
5.10	Construct 200 x 200 x mm x 3350mm high VRC Column (1:2:4)	m^3	0.55		
5.11	Lay approved hard-core 300 thick layer	m^2	12.5		
5.12	Provide and Place 50mm approved murram and properly rammed.	m^2	6		
5.13	500 gauge polythene damp proof membrane on the blinded surface.	m^2	8.5		
5.14	VRC Floor slab (1:2:4) 100mm thick.	m^2	8.5		
5.15	VRC Floor slab (1:2:4) 150mm thick.	m^2	6.6		
5.16	200mm wide Bituminous Felt DPC	m	9.5		
5.17	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is Keyed.	m^2	19		
5.18	VRC ring beam measuring 225 x 200mm (1:2:4)	m^3	0.5		
5.19	150mm VRC (1:2;4) roof slab with 150 x 150mm parapet	m^3	1.3		
5.20	D12 in columns, beams and roof slab	Kg	127		
5.21	D8 bars in foundation, columns and roof slab	Kg	182		
5.22	D8 foundation, columns and roof slab	Kg	33		
5.23	BRC A142 in floor slab	m^2	13		
5.24	Allow for formworks to all the reinforced concrete elements	Item	1		
5.25	25mm thick floor screed (1:4) mortar	m^2	14		
	Sub Total for Water Kiosk carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
5.26	25mm thick plaster to walls (1:4) mortar	m^2	21		
5.27	15mm thick roof screed (1:4) mortar	m^2	16		
5.28	Provide, fabricate and fix steel casement door (2160mm x 830mm)	No	1		
5.29	Provide, fabricate and fix grilled steel casement window(1440mx600mm)	No	1		

5.30	Provide and apply three coats of paints On the internal walls and roof slab.	m^2	37		
5.31	Provide and install 20mm diameter Consumer meter	No	1		
5.32	Provide and fix 40mm diameter back nuts	No	2		
5.33	Provide and fix 20mm diameter back nuts	No	4		
5.34	Provide and fix 20mm diameter Elbows	No	10		
5.35	Provide and fix 20mm diameter Equal Tee	No	1		
5.36	Provide and fix 20mm diameter Ball Cocks	No	2		
5.37	Provide and fix 20mm diameter Union Sockets	No	2		
5.38	20mm G.I class B pipes	No	2		
	Sub Total for Water Kiosk carried to collection Page				
	Sub Total for Water Kiosk brought from previous page				
	Total for Water Kiosk Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.7: Fencing and Gate				
A	**Chain Link**				
	Provide, dig holes, install and fasten:				
7.1	Excavate for, provide and erect chain link fence 2.4m high comprising concrete posts set 0.9m below ground level with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres with 500mm long cranks at top, 12½ gauge chain link fence, 4 No. plain wire strands threaded through holes in posts, 4 No. strands 12½ gauge barbed wire tied to cranked top of fence and weaved to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal.	m			
B	***Gate***				
7.2	Provide and install double gate of 4m wide X 2.4m high fabricated from dia. 50mm hollow section black pipes (gauge 16) .and 25mm x 25mm Square tubes cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint	Item			
	Total for Fencing and Gate Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.8: Last Mile Connectivity				
A	**Pipes**				
6.1	Excavate trench for the following pipes, Supply the pipes and deliver them to site, lay and joint the pipes, back fill and test as directed by the Engineer tom serve 200HHs				
i	4inch diameter HDPE PN12.5	m	1,000		
ii	3inch diameter HDPE PN12.5	m	1,000		
iii	2inch diameter HDPE PN12.5	m	1,000		
iv	1inch diameter HDPE PN12.5	m	2,000		
B	**Air valves**				
6.2	Supply and install DN 80mm anti-shock/ anti-surge double-orifice Air Valve with threaded base, c/w isolating valve.	No	6		
6.3	Nominal bore 110mm x 80 mm tee for air-valves	No	6		
C	**Washouts**				
6.4	Washouts 150mm diameter complete with PN12.5 flap valve and all the necessary accessories	No	6		
6.5	Reducing Tee Nominal bore 150mm x 80 mm level invert tee for washouts	No	6		
D	**Air Valve Chambers**				
6.9	Provide wing wall on outlet, stone pitched base and all specified requirements for air valves, internal size 1200×1200mm, depth not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
E	Washout Chambers				
6.10	Insitu concrete chamber internal dimensions 1600mm x 1200mm depth (including concrete outfall works) not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
	Total for Last Mile Connectivity Carried to Summary Page				

LOT 6. KABIANGA BH

SUMMARY OF BILLS		
S/NO	**ITEM DESCRIPTION**	**AMOUNT (Ksh)**
1	Bill No.1: Preliminary and General items	
2	Bill No. 2: Drilling and test pumping of borehole	
3	Bill No 3: Borehole equipping and solar system	
4	Bill No.4: Elevated Steel Tank	
5	Bill No.5: Water Kiosk	
6	Bill No.7: Fencing and Gate	
7	Bill No.8: Last Mile Connectivity	
A	**Sub -Total 1**	
B	Add 16% VAT (0.16*C)	
C	**Total Carried Over to Bid (A+B)**	

Item	Item description	Unit	Quantity	Rate (Ksh)	mount (Ksh)
	l No.1: Preliminary and General items				
	Contractual Requirements				
1.1	Allow for Insurance of the Works, contractor's plant, injury of workmen and damages to property and third party	LS	1		
	Project Sign Boards				
1.2	Provide, erect and maintain project sign boards at borehole site as directed by the Project Manager. The rate includes installation, removal and storage as directed by Project Manager.	No	1		
	Prime Cost				
1.3	Allow PC Sum of Kshs 80,000.00 for survey works as directed by the Project Manager.	PC	1	80,000.00	
1.4	Allow PC Sum of Kshs 200,000.00 to cover the costs of Hydrogeological Survey, Environmental Impact Assessment, preparation and submission of survey and EIA reports, application of authorization to drill and abstraction permits from Water Resources Authority and EIA permits from NEMA be expended as directed by the Project Manager.	PC	1	200,000.00	
1.5	Allow a P.C. Sum of KShs. 200,000 for supervision costs for an approved Resident Inspector of Works with Diploma in Civil Engineering/Building and Construction or approved equivalent from a reputable institution of learning and with a minimum of 2 years of experience in related works.	PC	1	200,000.00	
	Provisional Sums				
1.6	Allow Provisional Sum of Kshs 200,000.00 to cover supervision costs of Engineers assigned on the project from the Employer's head office to cover expenses for communication, transport, allowances etc., to be expended as directed by the Project Manager.	PS	1	200,000.00	
1.7	General painting and branding of the works (PS)	Item	1		

Item	Item description	Unit	Quantity	Rate (Ksh)	mount (Ksh)
1.8	Allow for a Provisional Sum of Ksh. 30,000 for Engineer's Testing of materials and works	Item	1		
	Total for Preliminary and General items Carried to Summary Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Ksh)**	**Amount (Ksh)**
	Bill No. 2: Drilling and test pumping of borehole				
2.1	Drilling borehole of 8-inch minimum diameter through all types of strata including disposal of excavated materials; taking any remedial measures to overcome caving- in , or over drilling to accommodate sloughed material and keeping drilling records as specified	m			
2.2	Supply and install mild steel permanent casing 6-inch nominal internal diameter plain casing	m			
2.3	Supply and install mild steel 6-inch nominal internal diameter slotted casings screens.	m			
2.4	Supply and 10" insert surface casings m rates only	m			
2.5	Allow for taking samples of drill cuttings at two (2) meters intervals.	No			
2.6	Supply and insert approved special clay.	Lump sum			
2.7	Supply and insert filter gravel packing 2mm to 5mm size.	Ton			
2.8	Grout between the inner casing and the outer surface casing for top six (6) metres.	Lump sum			
2.9	Borehole development work including inserting and removal of development equipment	Hrs			
2.10	Test pumping step draw down and constant discharge test including installation, removal of test pumping equipment , water level observations and draw down measurements	Hrs			
2.11	Undertake Water Level observation and record on Recovery	Lump sum			
2.12	Supply of water for drilling operations and field camp	Lump sum			
2.13	Carry out physical and chemical analysis of the borehole water.	Lump sum			
2.14	Borehole disinfection as specified	Lump sum			
2.15	Data analysis, drilling, borehole completion reports, pump test report compilation in three hard copies and 1 electronic copy for each well.	Lump sum			
2.16	Concrete slab 1*1*1m (1:3:6)	m^3			
2.17	Borehole cover 6" diameter welded to the casing	No			
2.18	Allow costs for collecting formation samples and prepare geological logging charts.	No.			
2.19	**Item** **Item description** **Bill No 3: Borehole equipping and solar system**	No.	**Unit**	**Quantity**	**Amount (Ksh)**

Item	Item description		Unit	Quantity	Rate (Ksh)	mount (Ksh)
	3.1	Provisional sum for supply, installation, testing a commissioning of a submersible pump capable pumping expected yield against a head to be identified, complete with solar system, solar pur control unit and support structures 4 metres high installation sundries and all accessories includir cables and pipes and fittings. NB: Designs for p and solar must be approved by the Project Man				
		NB: Indicate the make of the pump and motor. S casing is 152mm.				
		Pump Make : ……..				
		Country of Origin: …….				
		Make of Motor: ……..				
		Total Borehole equipping and solar system Carried to summary page				
	Complete the prescribed WRA Borehole drilling completion report and submit to WRA					
	Total for Drilling and Test Pumping Carried to Summary Page					

Item	Item description	Unit	Quantity	Rate (Ksh)	Amount (Ksh)
	Bill No.4: Elevated Steel Tank				
	(Volume of the tank as per Engineers Instructions)				
A	**Excavation**				
	Excavation shall include strutting, shuttering, stabilizing excavated surface and keeping excavations free of water bailing out, pumping or other means				
4.1	Excavate to reduced levels in top soil for depth not exceeding 0.25	M^3	2		
4.2	Excavate for tank foundation 0.25-0.5m	M^3	10		
4.3	Ditto but in material other than top soil, rock or hard material depth 0.5-1m	M^3	10		
4.4	Ditto but in material other than top soil, rock or artificially hard material depth 1-2m	M^3	10		
4.5	Ditto but in rock depth 1-2m	M^3	2		
	Filling				
	Filling to completed structure including compaction as specified				
4.6	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M^3	20		
B	**Disposal of Excavated Materials**				
4.7	Dispose excavated materials other than rock as directed by the Engineer	M^3	12		
4.8	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M^3	2		
C	**In situ Concrete: Provision and placing.**				
	Rate to include for shuttering				
	Mass concrete Class 15/20				
4.9	Blinding layer 50mm thick	M^3	2		
	Reinforced Vibrated Concrete Class 25/20				
4.10	Footing and stub columns for steel columns	M^3	12		
D	**Reinforcement**				

	High yield hot rolled ribbed bars BS4449.Rate to include for Supply, delivering, cutting, bending, supporting and securing in concrete.				
4.11	High Yield bars	Ton	2		
	Sub Total for Elevated Steel Tank carried to collection Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Kshs)**	**Amount (Kshs)**
E	**Pressed Steel Tank**				
4.12	Supply and install pressed steel tank 50m^3 capacity complete with roof access hatch, access ladder, float level indicator, pipework and 12m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1		
F	**Pipework**				
	These are pipes in the vicinity of the tank. Including connecting the inlet pipe to the pumping main				
4.13	Supply and fix 38mm diameter GI Class "B"Tank inlet pipe	m	15		
4.14	Supply and fix 63mm diameter GI Class B Tank	m	24		
4.15	Supply and fix 63mm diameter GI Class B Tank	m	6		
4.16	Supply and fix 63mm diameter GI Class B Tank	m	15		
G	**Valves and fittings**				
4.17	Supply and install DN50 PN10 sluice valve for scour	Nr	1		
4.18	Supply and install DN38 PN10 Sluice valve for the outlet	Nr	1		
4.19	Supply and fix double flanged DN32 90º Short radius bend	Nr	3		
4.2	Supply and fix double flanged DN50 -90º Short radius bend	Nr	8		
4.21	Supply and fix all flanged DN50X50 Tee	Nr	1		
4.22	Supply and fix all flanged DN38X38 Tee	Nr	2		
4.23	DN50 Double flange piece, length 1000mm	Nr	2		
4.24	DN50 Double flange piece, length 300mm	Nr	2		
4.25	DN50 Double flange piece, length 500mm	Nr	2		
4.26	Supply and apply recommended disinfectant and test the tank	Sum	1		
	Sub Total carried to collection Page				
	Sub Total brought from previous page				
	Total for Construction of 1No. Elevated Tank and pipe works Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.5: Water Kiosk				
5.1	Excavate top soil Average 150mm depth And cart away 5 meters for re-use.	m^2	20		
5.2	Excavate pits for 4No. 900 x 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth	m^3	11.6		
5.3	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth	m^3	6.5		
5.4	Construct 50mm thick x 600mm wide blinding to foundation (1:4:8)	m^2	2.7		
5.5	Construct 50mm thick x 1000mm wide blinding to foundation Concrete (1:4:8)	m^2	1.5		
5.6	Construct 50mm thick x 900 x 900mm blinding to Column Footing concrete (1:4:8)	m^2	3.24		
5.7	Construct 200mm thick VRC strip foundation (1:2:4)	m^3	1		
5.8	Construct 300mm thick x 900 x 900mm VRC Footing (1:2:4)	m^3	1		
5.9	Construct 200mm thick foundation walling with mortar (1:4) jointing	m^2	12		
5.10	Construct 200 x 200 x mm x 3350mm high VRC Column (1:2:4)	m^3	0.55		
5.11	Lay approved hard-core 300 thick layer	m^2	12.5		
5.12	Provide and Place 50mm approved murram and properly rammed.	m^2	6		
5.13	500 gauge polythene damp proof membrane on the blinded surface.	m^2	8.5		
5.14	VRC Floor slab (1:2:4) 100mm thick.	m^2	8.5		
5.15	VRC Floor slab (1:2:4) 150mm thick.	m^2	6.6		
5.16	200mm wide Bituminous Felt DPC	m	9.5		
5.17	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is Keyed.	m^2	19		
5.18	VRC ring beam measuring 225 x 200mm (1:2:4)	m^3	0.5		
5.19	150mm VRC (1:2;4) roof slab with 150 x 150mm parapet	m^3	1.3		
5.20	D12 in columns, beams and roof slab	Kg	127		
5.21	D8 bars in foundation, columns and roof slab	Kg	182		
5.22	D8 foundation, columns and roof slab	Kg	33		
5.23	BRC A142 in floor slab	m^2	13		
5.24	Allow for formworks to all the reinforced concrete elements	Item	1		
5.25	25mm thick floor screed (1:4) mortar	m^2	14		
	Sub Total for Water Kiosk carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
5.26	25mm thick plaster to walls (1:4) mortar	m^2	21		
5.27	15mm thick roof screed (1:4) mortar	m^2	16		
5.28	Provide, fabricate and fix steel casement door (2160mm x 830mm)	No	1		
5.29	Provide, fabricate and fix grilled steel casement window(1440mx600mm)	No	1		

5.30	Provide and apply three coats of paints On the internal walls and roof slab.	m^2	37		
5.31	Provide and install 20mm diameter Consumer meter	No	1		
5.32	Provide and fix 40mm diameter back nuts	No	2		
5.33	Provide and fix 20mm diameter back nuts	No	4		
5.34	Provide and fix 20mm diameter Elbows	No	10		
5.35	Provide and fix 20mm diameter Equal Tee	No	1		
5.36	Provide and fix 20mm diameter Ball Cocks	No	2		
5.37	Provide and fix 20mm diameter Union Sockets	No	2		
5.38	20mm G.I class B pipes	No	2		
	Sub Total for Water Kiosk carried to collection Page				
	Sub Total for Water Kiosk brought from previous page				
	Total for Water Kiosk Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.7: Fencing and Gate				
A	**Chain Link**				
	Provide, dig holes, install and fasten:				
7.1	Excavate for, provide and erect chain link fence 2.4m high comprising concrete posts set 0.9m below ground level with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres with 500mm long cranks at top, 12½ gauge chain link fence, 4 No. plain wire strands threaded through holes in posts, 4 No. strands 12½ gauge barbed wire tied to cranked top of fence and weaved to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal.	m			
B	***Gate***				
7.2	Provide and install double gate of 4m wide X 2.4m high fabricated from dia. 50mm hollow section black pipes (gauge 16) .and 25mm x 25mm Square tubes cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint	Item			
	Total for Fencing and Gate Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.8: Last Mile Connectivity				
A	**Pipes**				
6.1	Excavate trench for the following pipes, Supply the pipes and deliver them to site, lay and joint the pipes, back fill and test as directed by the Engineer tom serve 200HHs				
i	4inch diameter HDPE PN12.5	m	1,000		
ii	3inch diameter HDPE PN12.5	m	1,000		
iii	2inch diameter HDPE PN12.5	m	1,000		
iv	1inch diameter HDPE PN12.5	m	2,000		
B	**Air valves**				
6.2	Supply and install DN 80mm anti-shock/ anti-surge double-orifice Air Valve with threaded base, c/w isolating valve.	No	6		
6.3	Nominal bore 110mm x 80 mm tee for air-valves	No	6		
C	**Washouts**				
6.4	Washouts 150mm diameter complete with PN12.5 flap valve and all the necessary accessories	No	6		
6.5	Reducing Tee Nominal bore 150mm x 80 mm level invert tee for washouts	No	6		
D	**Air Valve Chambers**				
6.9	Provide wing wall on outlet, stone pitched base and all specified requirements for air valves, internal size 1200×1200mm, depth not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
E	Washout Chambers				
6.10	Insitu concrete chamber internal dimensions 1600mm x 1200mm depth (including concrete outfall works) not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
	Total for Last Mile Connectivity Carried to Summary Page				

LOT.7 ST PETERS KAMASAI PRY

SUMMARY OF BILLS		
S/NO	**ITEM DESCRIPTION**	**AMOUNT (Kshs)**
1	Bill No.1: Preliminary and General items	
2	Bill No. 2: Drilling and test pumping of borehole	
3	Bill No 3: Borehole equipping and solar system	
4	Bill No.4: Elevated Steel Tank	
5	Bill No.5: Water Kiosk	
6	Bill No.7: Fencing and Gate	
7	Bill No.8: Last Mile Connectivity	
A	**Sub -Total 1**	
B	Add 16% VAT (0.16*C)	
C	**Total Carried Over to Bid (A+B)**	

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.1: Preliminary and General items				
	Contractual Requirements				
1.1	Allow for Insurance of the Works, contractor's plant, injury of workmen and damages to property and third party	LS	1		
	Project Sign Boards				
1.2	Provide, erect and maintain project sign boards at borehole site as directed by the Project Manager. The rate includes installation, removal and storage as directed by Project Manager.	No	1		
	Prime Cost				
1.3	Allow PC Sum of Kshs 80,000.00 for survey works as directed by the Project Manager.	PC	1	80,000.00	
1.4	Allow PC Sum of Kshs 200,000.00 to cover the costs of Hydrogeological Survey, Environmental Impact Assessment, preparation and submission of survey and EIA reports, application of authorization to drill and abstraction permits from Water Resources Authority and EIA permits from NEMA be expended as directed by the Project Manager.	PC	1	200,000.00	
1.5	Allow a P.C. Sum of KShs. 200,000 for supervision costs for an approved Resident Inspector of Works with Diploma in Civil Engineering/Building and Construction or approved equivalent from a reputable institution of learning and with a minimum of 2 years of experience in related works.	PC	1	200,000.00	
	Provisional Sums				
1.6	Allow Provisional Sum of Kshs 200,000.00 to cover supervision costs of Engineers assigned on the project from the Employer's head office to cover expenses for communication, transport, allowances etc., to be expended as directed by the Project Manager.	PS	1	200,000.00	
1.7	General painting and branding of the works (PS)	Item	1		
1.8	Allow for a Provisional Sum of Ksh. 30,000 for Engineer's Testing of materials and works	Item	1		
	Total for Preliminary and General items Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No. 2: Drilling and test pumping of borehole				
2.1	Drilling borehole of 8-inch minimum diameter through all types of strata including disposal of excavated materials; taking any remedial measures to overcome caving- in , or over drilling to accommodate sloughed material and keeping drilling records as specified	m			
2.2	Supply and install mild steel permanent casing 6-inch nominal internal diameter plain casing	m			
2.3	Supply and install mild steel 6-inch nominal internal diameter slotted casings screens.	m			
2.4	Supply and 10" insert surface casings m rates only	m			
2.5	Allow for taking samples of drill cuttings at two (2) meters intervals.	No			
2.6	Supply and insert approved special clay.	Lump sum			
2.7	Supply and insert filter gravel packing 2mm to 5mm size.	Ton			
2.8	Grout between the inner casing and the outer surface casing for top six (6) metres.	Lump sum			
2.9	Borehole development work including inserting and removal of development equipment	Hrs			
2.10	Test pumping step draw down and constant discharge test including installation, removal of test pumping equipment , water level observations and draw down measurements	Hrs			
2.11	Undertake Water Level observation and record on Recovery	Lump sum			
2.12	Supply of water for drilling operations and field camp	Lump sum			
2.13	Carry out physical and chemical analysis of the borehole water.	Lump sum			
2.14	Borehole disinfection as specified	Lump sum			
2.15	Data analysis, drilling, borehole completion reports, pump test report compilation in three hard copies and 1 electronic copy for each well.	Lump sum			
2.16	Concrete slab 1*1*1m (1:3:6)	m^3			
2.17	Borehole cover 6" diameter welded to the casing	No			
2.18	Allow costs for collecting formation samples and prepare geological logging charts.	No.			
2.19	Complete the prescribed WRA Borehole drilling completion report and submit to WRA	No.			
	Total for Drilling and Test Pumping Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No 3: Borehole equipping and solar system				

3.1	Provisional sum for supply, installation, testing and commissioning of a submersible pump capable of pumping expected yield against a head to be identified, complete with solar system, solar pumping control unit and support structures 4 metres high, installation sundries and all accessories including cables and pipes and fittings. NB: Designs for pump and solar must be approved by the Project Manager.	PC	1		
	NB: Indicate the make of the pump and motor. Size of casing is 152mm.				
	Pump Make : ……..				
	Country of Origin: …….				
	Make of Motor: ……..				
	Total Borehole equipping and solar system Carried to summary page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Kshs)**	**Amount (Kshs)**
	Bill No.4: Elevated Steel Tank				
	(Volume of the tank as per Engineers Instructions)				
A	**Excavation**				
	Excavation shall include strutting, shuttering, stabilizing excavated surface and keeping excavations free of water bailing out, pumping or other means				
4.1	Excavate to reduced levels in top soil for depth not exceeding 0.25	M^3	2		
4.2	Excavate for tank foundation 0.25-0.5m	M^3	10		
4.3	Ditto but in material other than top soil, rock or hard material depth 0.5-1m	M^3	10		
4.4	Ditto but in material other than top soil, rock or artificially hard material depth 1-2m	M^3	10		
4.5	Ditto but in rock depth 1-2m	M^3	2		
	Filling				
	Filling to completed structure including compaction as specified				
4.6	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M^3	20		
B	**Disposal of Excavated Materials**				
4.7	Dispose excavated materials other than rock as directed by the Engineer	M^3	12		
4.8	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M^3	2		
C	**In situ Concrete: Provision and placing.**				
	Rate to include for shuttering				
	Mass concrete Class 15/20				
4.9	Blinding layer 50mm thick	M^3	2		
	Reinforced Vibrated Concrete Class 25/20				
4.10	Footing and stub columns for steel columns	M^3	12		
D	**Reinforcement**				
	High yield hot rolled ribbed bars BS4449.Rate to include for Supply, delivering, cutting, bending, supporting and securing in concrete.				
4.11	High Yield bars	Ton	2		
	Sub Total for Elevated Steel Tank carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
E	**Pressed Steel Tank**				
4.12	Supply and install pressed steel tank 24m^3 capacity complete with roof access hatch, access ladder, float level indicator, pipework and 12m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1		
F	**Pipework**				
	These are pipes in the vicinity of the tank. Including connecting the inlet pipe to the pumping main				
4.13	Supply and fix 38mm diameter GI Class "B"Tank inlet pipe	m	15		
4.14	Supply and fix 63mm diameter GI Class B Tank	m	24		
4.15	Supply and fix 63mm diameter GI Class B Tank	m	6		
4.16	Supply and fix 63mm diameter GI Class B Tank	m	15		
G	**Valves and fittings**				
4.17	Supply and install DN50 PN10 sluice valve for scour	Nr	1		
4.18	Supply and install DN38 PN10 Sluice valve for the outlet	Nr	1		
4.19	Supply and fix double flanged DN32 90° Short radius bend	Nr	3		
4.2	Supply and fix double flanged DN50 -90° Short radius bend	Nr	8		
4.21	Supply and fix all flanged DN50X50 Tee	Nr	1		
4.22	Supply and fix all flanged DN38X38 Tee	Nr	2		
4.23	DN50 Double flange piece, length 1000mm	Nr	2		
4.24	DN50 Double flange piece, length 300mm	Nr	2		
4.25	DN50 Double flange piece, length 500mm	Nr	2		
4.26	Supply and apply recommended disinfectant and test the tank	Sum	1		
	Sub Total carried to collection Page				
	Sub Total brought from previous page				
	Total for Construction of 1No. Elevated Tank and pipe works Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.5: Water Kiosk				
5.1	Excavate top soil Average 150mm depth And cart away 5 meters for re-use.	m^2	20		
5.2	Excavate pits for 4No. 900 x 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth	m^3	11.6		
5.3	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth	m^3	6.5		
5.4	Construct 50mm thick x 600mm wide blinding to foundation (1:4:8)	m^2	2.7		
5.5	Construct 50mm thick x 1000mm wide blinding to foundation Concrete (1:4:8)	m^2	1.5		
5.6	Construct 50mm thick x 900 x 900mm blinding to Column Footing concrete (1:4:8)	m^2	3.24		
5.7	Construct 200mm thick VRC strip foundation (1:2:4)	m^3	1		
5.8	Construct 300mm thick x 900 x 900mm VRC Footing (1:2:4)	m^3	1		
5.9	Construct 200mm thick foundation walling with mortar (1:4) jointing	m^2	12		
5.10	Construct 200 x 200 x mm x 3350mm high VRC Column (1:2:4)	m^3	0.55		
5.11	Lay approved hard-core 300 thick layer	m^2	12.5		
5.12	Provide and Place 50mm approved murram and properly rammed.	m^2	6		
5.13	500 gauge polythene damp proof membrane on the blinded surface.	m^2	8.5		
5.14	VRC Floor slab (1:2:4) 100mm thick.	m^2	8.5		
5.15	VRC Floor slab (1:2:4) 150mm thick.	m^2	6.6		
5.16	200mm wide Bituminous Felt DPC	m	9.5		
5.17	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is Keyed.	m^2	19		
5.18	VRC ring beam measuring 225 x 200mm (1:2:4)	m^3	0.5		
5.19	150mm VRC (1:2;4) roof slab with 150 x 150mm parapet	m^3	1.3		
5.20	D12 in columns, beams and roof slab	Kg	127		
5.21	D8 bars in foundation, columns and roof slab	Kg	182		
5.22	D8 foundation, columns and roof slab	Kg	33		
5.23	BRC A142 in floor slab	m^2	13		
5.24	Allow for formworks to all the reinforced concrete elements	Item	1		
5.25	25mm thick floor screed (1:4) mortar	m^2	14		
	Sub Total for Water Kiosk carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
5.26	25mm thick plaster to walls (1:4) mortar	m^2	21		
5.27	15mm thick roof screed (1:4) mortar	m^2	16		
5.28	Provide, fabricate and fix steel casement door (2160mm x 830mm)	No	1		

5.29	Provide, fabricate and fix grilled steel casement window(1440mx600mm)	No	1		
5.30	Provide and apply three coats of paints On the internal walls and roof slab.	m^2	37		
5.31	Provide and install 20mm diameter Consumer meter	No	1		
5.32	Provide and fix 40mm diameter back nuts	No	2		
5.33	Provide and fix 20mm diameter back nuts	No	4		
5.34	Provide and fix 20mm diameter Elbows	No	10		
5.35	Provide and fix 20mm diameter Equal Tee	No	1		
5.36	Provide and fix 20mm diameter Ball Cocks	No	2		
5.37	Provide and fix 20mm diameter Union Sockets	No	2		
5.38	20mm G.I class B pipes	No	2		
	Sub Total for Water Kiosk carried to collection Page				
	Sub Total for Water Kiosk brought from previous page				
	Total for Water Kiosk Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.7: Fencing and Gate				
A	**Chain Link**				
	Provide, dig holes, install and fasten:				
7.1	Excavate for, provide and erect chain link fence 2.4m high comprising concrete posts set 0.9m below ground level with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres with 500mm long cranks at top, 12½ gauge chain link fence, 4 No. plain wire strands threaded through holes in posts, 4 No. strands 12½ gauge barbed wire tied to cranked top of fence and weaved to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal.	m			
B	***Gate***				
7.2	Provide and install double gate of 4m wide X 2.4m high fabricated from dia. 50mm hollow section black pipes (gauge 16) .and 25mm x 25mm Square tubes cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint	Item			
	Total for Fencing and Gate Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.8: Last Mile Connectivity				
A	**Pipes**				
6.1	Excavate trench for the following pipes, Supply the pipes and deliver them to site, lay and joint the pipes, back fill and test as directed by the Engineer tom serve 200HHs				
i	4inch diameter HDPE PN12.5	m	1,000		
ii	3inch diameter HDPE PN12.5	m	1,000		
iii	2inch diameter HDPE PN12.5	m	1,000		
iv	1inch diameter HDPE PN12.5	m	2,000		
B	**Air valves**				
6.2	Supply and install DN 80mm anti-shock/ anti-surge double-orifice Air Valve with threaded base, c/w isolating valve.	No	6		
6.3	Nominal bore 110mm x 80 mm tee for air-valves	No	6		
C	**Washouts**				
6.4	Washouts 150mm diameter complete with PN12.5 flap valve and all the necessary accessories	No	6		
6.5	Reducing Tee Nominal bore 150mm x 80 mm level invert tee for washouts	No	6		
D	**Air Valve Chambers**				
6.9	Provide wing wall on outlet, stone pitched base and all specified requirements for air valves, internal size 1200×1200mm, depth not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
E	Washout Chambers				
6.10	Insitu concrete chamber internal dimensions 1600mm x 1200mm depth (including concrete outfall works) not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
	Total for Last Mile Connectivity Carried to Summary Page				

LOT.8 KAPSIGOT BH

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.1: Preliminary and General items				
	Contractual Requirements				
1.1	Allow for Insurance of the Works, contractor's plant, injury of workmen and damages to property and third party	LS	1		
	Project Sign Boards				
1.2	Provide, erect and maintain project sign boards at borehole site as directed by the Project Manager. The rate includes installation, removal and storage as directed by Project Manager.	No	1		
	Prime Cost				
1.3	Allow PC Sum of Kshs 80,000.00 for survey works as directed by the Project Manager.	PC	1	80,000.00	
1.4	Allow PC Sum of Kshs 200,000.00 to cover the costs of Hydrogeological Survey, Environmental Impact Assessment, preparation and submission of survey and EIA reports, application of authorization to drill and abstraction permits from Water Resources Authority and EIA permits from NEMA be expended as directed by the Project Manager.	PC	1	200,000.00	
1.5	Allow a P.C. Sum of KShs. 200,000 for supervision costs for an approved Resident Inspector of Works with Diploma in Civil Engineering/Building and Construction or approved equivalent from a reputable institution of learning and with a minimum of 2 years of experience in related works.	PC	1	200,000.00	
	Provisional Sums				
1.6	Allow Provisional Sum of Kshs 200,000.00 to cover supervision costs of Engineers assigned on the project from the Employer's head office to cover expenses for communication, transport, allowances etc., to be expended as directed by the Project Manager.	PS	1	200,000.00	
1.7	General painting and branding of the works (PS)	Item	1		
1.8	Allow for a Provisional Sum of Ksh. 30,000 for Engineer's Testing of materials and works	Item	1		
	Total for Preliminary and General items Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No. 2: Drilling and test pumping of borehole				
2.1	Drilling borehole of 8-inch minimum diameter through all types of strata including disposal of excavated materials; taking any remedial measures to overcome caving- in , or over drilling to accommodate sloughed material and keeping drilling records as specified	m			
2.2	Supply and install mild steel permanent casing 6-inch nominal internal diameter plain casing	m			
2.3	Supply and install mild steel 6-inch nominal internal diameter slotted casings screens.	m			
2.4	Supply and 10" insert surface casings m rates only	m			
2.5	Allow for taking samples of drill cuttings at two (2) meters intervals.	No			
2.6	Supply and insert approved special clay.	Lump sum			
2.7	Supply and insert filter gravel packing 2mm to 5mm size.	Ton			
2.8	Grout between the inner casing and the outer surface casing for top six (6) metres.	Lump sum			
2.9	Borehole development work including inserting and removal of development equipment	Hrs			
2.10	Test pumping step draw down and constant discharge test including installation, removal of test pumping equipment , water level observations and draw down measurements	Hrs			
2.11	Undertake Water Level observation and record on Recovery	Lump sum			
2.12	Supply of water for drilling operations and field camp	Lump sum			
2.13	Carry out physical and chemical analysis of the borehole water.	Lump sum			
2.14	Borehole disinfection as specified	Lump sum			
2.15	Data analysis, drilling, borehole completion reports, pump test report compilation in three hard copies and 1 electronic copy for each well.	Lump sum			
2.16	Concrete slab 1*1*1m (1:3:6)	m^3			
2.17	Borehole cover 6" diameter welded to the casing	No			
2.18	Allow costs for collecting formation samples and prepare geological logging charts.	No.			
2.19	Complete the prescribed WRA Borehole drilling completion report and submit to WRA	No.			
	Total for Drilling and Test Pumping Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No 3: Borehole equipping and solar system				
3.1	Provisional sum for supply, installation, testing and commissioning of a submersible pump capable of pumping expected yield against a head to be identified, complete with solar system, solar pumping control unit and support structures 4 metres high, installation sundries and all accessories including cables and pipes and fittings. NB: Designs for pump and solar must be approved by the Project Manager.	PC	1		
	NB: Indicate the make of the pump and motor. Size of casing is 152mm.				
	Pump Make : ……..				
	Country of Origin: ……				
	Make of Motor: ……..				
	Total Borehole equipping and solar system Carried to summary page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Kshs)**	**Amount (Kshs)**
	Bill No.4: Elevated Steel Tank				
	(Volume of the tank as per Engineers Instructions)				
A	**Excavation**				
	Excavation shall include strutting, shuttering, stabilizing excavated surface and keeping excavations free of water bailing out, pumping or other means				
4.1	Excavate to reduced levels in top soil for depth not exceeding 0.25	M^3	2		
4.2	Excavate for tank foundation 0.25-0.5m	M^3	10		
4.3	Ditto but in material other than top soil, rock or hard material depth 0.5-1m	M^3	10		
4.4	Ditto but in material other than top soil, rock or artificially hard material depth 1-2m	M^3	10		
4.5	Ditto but in rock depth 1-2m	M^3	2		
	Filling				
	Filling to completed structure including compaction as specified				
4.6	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M^3	20		
B	**Disposal of Excavated Materials**				
4.7	Dispose excavated materials other than rock as directed by the Engineer	M^3	12		
4.8	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M^3	2		
C	**In situ Concrete: Provision and placing.**				
	Rate to include for shuttering				
	Mass concrete Class 15/20				
4.9	Blinding layer 50mm thick	M^3	2		
	Reinforced Vibrated Concrete Class 25/20				
4.10	Footing and stub columns for steel columns	M^3	12		

D	**Reinforcement**				
	High yield hot rolled ribbed bars BS4449.Rate to include for Supply, delivering, cutting, bending, supporting and securing in concrete.				
4.11	High Yield bars	Ton	2		
	Sub Total for Elevated Steel Tank carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
E	**Pressed Steel Tank**				
4.12	Supply and install pressed steel tank 24m^3 capacity complete with roof access hatch, access ladder, float level indicator, pipework and 12m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1		
F	**Pipework**				
	These are pipes in the vicinity of the tank. Including connecting the inlet pipe to the pumping main				
4.13	Supply and fix 38mm diameter GI Class "B"Tank inlet pipe	m	15		
4.14	Supply and fix 63mm diameter GI Class B Tank	m	24		
4.15	Supply and fix 63mm diameter GI Class B Tank	m	6		
4.16	Supply and fix 63mm diameter GI Class B Tank	m	15		
G	**Valves and fittings**				
4.17	Supply and install DN50 PN10 sluice valve for scour	Nr	1		
4.18	Supply and install DN38 PN10 Sluice valve for the outlet	Nr	1		
4.19	Supply and fix double flanged DN32 90º Short radius bend	Nr	3		
4.2	Supply and fix double flanged DN50 -90º Short radius bend	Nr	8		
4.21	Supply and fix all flanged DN50X50 Tee	Nr	1		
4.22	Supply and fix all flanged DN38X38 Tee	Nr	2		
4.23	DN50 Double flange piece, length 1000mm	Nr	2		
4.24	DN50 Double flange piece, length 300mm	Nr	2		
4.25	DN50 Double flange piece, length 500mm	Nr	2		
4.26	Supply and apply recommended disinfectant and test the tank	Sum	1		
	Sub Total carried to collection Page				
	Sub Total brought from previous page				
	Total for Construction of 1No. Elevated Tank and pipe works Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.5: Water Kiosk				
5.1	Excavate top soil Average 150mm depth And cart away 5 meters for re-use.	m^2	20		
5.2	Excavate pits for 4No. 900 x 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth	m^3	11.6		
5.3	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth	m^3	6.5		
5.4	Construct 50mm thick x 600mm wide blinding to foundation (1:4:8)	m^2	2.7		
5.5	Construct 50mm thick x 1000mm wide blinding to foundation Concrete (1:4:8)	m^2	1.5		
5.6	Construct 50mm thick x 900 x 900mm blinding to Column Footing concrete (1:4:8)	m^2	3.24		
5.7	Construct 200mm thick VRC strip foundation (1:2:4)	m^3	1		
5.8	Construct 300mm thick x 900 x 900mm VRC Footing (1:2:4)	m^3	1		
5.9	Construct 200mm thick foundation walling with mortar (1:4) jointing	m^2	12		
5.10	Construct 200 x 200 x mm x 3350mm high VRC Column (1:2:4)	m^3	0.55		
5.11	Lay approved hard-core 300 thick layer	m^2	12.5		
5.12	Provide and Place 50mm approved murram and properly rammed.	m^2	6		
5.13	500 gauge polythene damp proof membrane on the blinded surface.	m^2	8.5		
5.14	VRC Floor slab (1:2:4) 100mm thick.	m^2	8.5		
5.15	VRC Floor slab (1:2:4) 150mm thick.	m^2	6.6		
5.16	200mm wide Bituminous Felt DPC	m	9.5		
5.17	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is Keyed.	m^2	19		
5.18	VRC ring beam measuring 225 x 200mm (1:2:4)	m^3	0.5		
5.19	150mm VRC (1:2;4) roof slab with 150 x 150mm parapet	m^3	1.3		
5.20	D12 in columns, beams and roof slab	Kg	127		
5.21	D8 bars in foundation, columns and roof slab	Kg	182		
5.22	D8 foundation, columns and roof slab	Kg	33		
5.23	BRC A142 in floor slab	m^2	13		
5.24	Allow for formworks to all the reinforced concrete elements	Item	1		
5.25	25mm thick floor screed (1:4) mortar	m^2	14		
	Sub Total for Water Kiosk carried to collection Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
5.26	25mm thick plaster to walls (1:4) mortar	m^2	21		
5.27	15mm thick roof screed (1:4) mortar	m^2	16		
5.28	Provide, fabricate and fix steel casement door (2160mm x 830mm)	No	1		

5.29	Provide, fabricate and fix grilled steel casement window(1440mx600mm)	No	1		
5.30	Provide and apply three coats of paints On the internal walls and roof slab.	m^2	37		
5.31	Provide and install 20mm diameter Consumer meter	No	1		
5.32	Provide and fix 40mm diameter back nuts	No	2		
5.33	Provide and fix 20mm diameter back nuts	No	4		
5.34	Provide and fix 20mm diameter Elbows	No	10		
5.35	Provide and fix 20mm diameter Equal Tee	No	1		
5.36	Provide and fix 20mm diameter Ball Cocks	No	2		
5.37	Provide and fix 20mm diameter Union Sockets	No	2		
5.38	20mm G.I class B pipes	No	2		
	Sub Total for Water Kiosk carried to collection Page				
	Sub Total for Water Kiosk brought from previous page				
	Total for Water Kiosk Carried to Summary Page				
Item	**Item description**	**Unit**	**Quantity**	**Rate (Kshs)**	**Amount (Kshs)**
	Bill No.7: Fencing and Gate				
A	**Chain Link**				
	Provide, dig holes, install and fasten:				
7.1	Excavate for, provide and erect chain link fence 2.4m high comprising concrete posts set 0.9m below ground level with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres with 500mm long cranks at top, 12½ gauge chain link fence, 4 No. plain wire strands threaded through holes in posts, 4 No. strands 12½ gauge barbed wire tied to cranked top of fence and weaved to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal.	m			
B	***Gate***				
7.2	Provide and install double gate of 4m wide X 2.4m high fabricated from dia. 50mm hollow section black pipes (gauge 16) .and 25mm x 25mm Square tubes cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint	Item			
	Total for Fencing and Gate Carried to Summary Page				

Item	Item description	Unit	Quantity	Rate (Kshs)	Amount (Kshs)
	Bill No.8: Last Mile Connectivity				
A	**Pipes**				
6.1	Excavate trench for the following pipes, Supply the pipes and deliver them to site, lay and joint the pipes, back fill and test as directed by the Engineer tom serve 200HHs				
i	4inch diameter HDPE PN12.5	m	1,000		
ii	3inch diameter HDPE PN12.5	m	1,000		
iii	2inch diameter HDPE PN12.5	m	1,000		
iv	1inch diameter HDPE PN12.5	m	2,000		
B	**Air valves**				
6.2	Supply and install DN 80mm anti-shock/ anti-surge double-orifice Air Valve with threaded base, c/w isolating valve.	No	6		
6.3	Nominal bore 110mm x 80 mm tee for air-valves	No	6		
C	**Washouts**				
6.4	Washouts 150mm diameter complete with PN12.5 flap valve and all the necessary accessories	No	6		
6.5	Reducing Tee Nominal bore 150mm x 80 mm level invert tee for washouts	No	6		
D	**Air Valve Chambers**				
6.9	Provide wing wall on outlet, stone pitched base and all specified requirements for air valves, internal size 1200×1200mm, depth not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
E	Washout Chambers				
6.10	Insitu concrete chamber internal dimensions 1600mm x 1200mm depth (including concrete outfall works) not exceeding;				
i	1.5m	No	6		
ii	1.5 - 2.0m	No			
iii	2.0 - 2.5m	No			
iv	2.5 - 3.0m	No			
	Total for Last Mile Connectivity Carried to Summary Page				

LOT 9.KAPCHELELACHBEI 225 M3 WATER TANK

BILL No. 1- 225 m3 MASONRY STORAGE TANKS

Preliminary & general

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
No.				(KES)	(KES)
A	Insurance against Injury to Third Party Persons and Damage to Property	Item	PC SUM		150,000.00
B	Allow a provisional sum of Kenya shillings Five Hundred Thousand (200,000.00) for Project Supervision and Management to be used as per Engineers instructions	Item	PC SUM		200,000.00
C	Allow a provisional sum of Kenya shillings Fifty Thousand (50,000.00) only for use in tie in works between the existing and new works	Item	PC SUM		50,000.00
TOTAL CARRIED FORWARD TO SUMMARY SHEET					**400,000.00**

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (KES)	AMOUNT (KES)
	A2 ; TESTING OF THE WORKS				
	Testing, Disinfection & Flushing of Pipelines and Fittings associated with the tank and the tank itself. Pressure Testing exc.12 bar but not exc.25 bar.				
	Testing to include for water tightness as specified in the specifications				
A260.1	Testing and Commissioning of the installed tank as specified (100m3)	nr	1		
A260.2	Testing and Commissioning of pipes as specified.	m	75		
	B2 ; DEMOLITION OF EXISTING STRUCTURE				
	Mobilize machinery, demolish and cart away unsuitable material as directed by Engineer				
E200	Provide for demolition of existing 100M3 tank and cart away	LS	1		

	E3 ; EXCAVATIONS FOR FOUNDATIONS				
	Excavate below stripped surface to formation level in common material. Retain approved material for back- filling / filling and cart away unsuitable material to tip as directed by Engineer				
E311	Excavation of topsoil depth not exceeding 0.25m	m3	17		
E322	Excavation of material other than top soil rock or artificial hard material depth 0.25 - 0.5m	m3	17		
E323	Excavation for material other than topsoil rock or any other artificial hard material; maximum depth 0.5 - 1.0 m	m3	40		
E33	Excavation of foundation in rock	m3	10		
	E5 ; Disposal of Excavation Material				
E512	Trimming of excavated surfaces; material other than topsoil, rock or artificial hard material	m2	30.4		
E524	Preparation of excavated surfaces to receive fill and permanent works; materials other than topsoil or rock	m2	30.4		
E525	Preparation of excavated surfaces to receive fill and permanent works; in rock	m2	30.4		
E531	Disposal of excavated topsoil	m3	16.62		
E532	Disposal of excavated material other than top soil rock or artificial hard material	m3	56.51		
E532	Disposal of excavated rock	m3	10		
	E6 ; FILLING				
E632	THICK RED SOIL COMPACTED TO 98% MDD inlayers not exceeding 200mm as shown by RE		26.59		
E635	Provide and fill with imported 300mm gravel compacted to 98% MDD in layers not exceeding 150mm		9.97		
TOTAL CARRIED FORWARD TO NEXT PAGE					
ITEM	**DESCRIPTION**	**UNIT**	**QUANTITY**	**RATE**	**AMOUNT**
No.				**(KES)**	**(KES)**

TOTAL FROM PREVIOUS PAGE					
E637	Provide and fill hard core with hard basaltic or equivalent stone, well compacted and blinded with crushed stone to a finished thickness of 250mm under the reservoir and valve chamber to stated depth or thickness	m3	23.27		
	F ; INSITU CONCRETE				
	Provision of Concrete				
F253	Designed mix; Grade C35A; Cement to BS12 and 20mm maximum aggregate size	m3	70		
F400	Prescribed mix; Grade C15P; 20 mm aggregate; Cement to BS12	m3	3		
	Placing of Concrete				
	Place, compact and cure concrete in the following elements of the structure as per details on Drawings				
	Mass Concrete; Class 15/20				
	F6 ; Mass concrete				
F611	75mm thick lean concrete blinding with mix ratio (1:3:6) under the reservoir base slab, foundation and valve chamber	m3	3		
	F7 ; Reinforced Concrete class 30				
F723	Floor slab, bases and foundation footings	m3	26		
F732	Suspended slabs (Top roof) thickness 200 - 250 mm	m3	12		
F785	For overflow chamber complete with the base opening	m3	2		
	Walling				
N	Shaped quarry stones bedded and jointed in cement and sand (1:3) mortar and reinforced with 3/2No. Y10 bars on each course:				
	300mm/250mm Thick Walling	m^2	100		
	G ; CONCRETE ANCILLARIES				
	G2 ; Fair Finish Formwork				
G215	Plane vertical sides for both external and internal walls	m2	108		
G245	Plane horizontal sides for both external and internal walls	m2	354		

G282	Columns; 300x300mm	m2	10		
G284	Column head; 8 No. column heads	m2	15		
	G5 ; Reinforcement; deformed high yield steel bars to BS 4449, HT = 425 N/mm2				
G529	Nominal size 8,10,12,16,25 mm	Ton	4.5		
G562	Steel fabric BS4483 ; A252 square mesh; nominal mass 3 - 4kg/m2	LS	3		
TOTAL CARRIED FORWARD TO NEXT PAGE					
ITEM	**DESCRIPTION**	**UNIT**	**QUANTITY**	**RATE**	**AMOUNT**
No.				**(KES)**	**(KES)**
TOTAL FROM PREVIOUS PAGE					
	G6 ; Joints				
G611	Open surface plain;average width n.e. 0.5 m	m	24		
G621	Open surface with filler; average width n.e.0.5 m	m	24		
G652	Plastic water stops average width 150mm - 200 mm	m	24		
G654	Plastic or rubber water stop in floor/wall base joints; Average width 350mm	m	24		
G670	Sealant 20 x 20 mm rebate with plysulphide joint sealant	m	47		
	Inserts; Excluding supply of the fittings				
G832.1	Inlet, outlet, overflow and washout pipe inserts into concrete	Nr	4		
G832.2	Roof vents inserts in concrete	Nr	8		
G832.3	Roof drain inserts in concrete	Nr	4		
G831.1	Perforated Roof drain pipe inserts in concrete	m	30		
	PRECAST CONCRETE in accordance with Clause 4.28	-			
	Manufacture, erection, joining and fixing of precast concrete units				
H511	600x600x50mm concrete paving blocks for walkways and footpaths laid on 50mm thick sand bed	No.	48.7		
H711	DN 150 precast concrete culvert discharge including headwalls	m	10		
H711	DN 500 precast concrete culvert discharge including headwalls	m	10		

	SITE WORKS				
	PIPEWORK – FITTINGS AND VALVES				
1299	Supply of Precast concrete pipes to be used as underground drainage. The rate to include for, supply instalation and backfilling of the pipes as per Engineers instruction	LS			
1999	Supply of pipes and fittings to be used for the connection of the tank, inlet , outlet, overflow and scour as shown in the drawings. Rate to include for laying jointing and any other fittings used for connection	LS			
TOTAL CARRIED FORWARD TO NEXT PAGE					
ITEM	**DESCRIPTION**	**UNIT**	**QUANTITY**	**RATE (KES)**	**AMOUNT CERT 01 (KES)**
TOTAL FROM PREVIOUS PAGE					
	PIPE WORK - MANHOLES AND PIPEWORK				
	ANCILLARIES.				
	-				
K233.1	Reservoir Scour/Overflow chamber without roof cover slab as detailed; 200mm thick walls, depth 1.0 - 2.0m,4m2 plan area	No.	1		
K234.1	Reservoir Inlet Valve Chamber as detailed; 200mm thick walls, depth 1.0 - 2.0m, 6m2 plan area	No.	1		
	Miscellaneous Metalwork				
	Rate to include supply, delivery, fixing and inclusive of				
	foundation where applicable				
N130.1	Stainless Steel internal access ladder with safety loops, stringers and landing rail	m	20		
N130.2	Galvanised Mild Steel external access ladder with landing rails and stringers	m	20		
N190	Provide and fix 6 mm sheet metal access cover with 40x40 angle iron frame with latch and safety lock for valve chamber and reservoir	No	2		
N190	Galvanized mild steel air vents as shown on the drawings.	m	16		

	CLASS X: MISCELLANEOUS WORKS				
	Gate and Fencing Specifications as shown on Drawing and Directed By Engineer				
X135	2.4m high Concrete post, chain-link and barbed wire fence complete with stay posts as per drawing	m	90		
X231	Provision and erection of 1m wide pedestrian side metal bars gate as shown on Drawings	No.	1		
X236	Provision and erection of 4.0m wide double leaf metal bars gate as shown on the drawings	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY SHEET					

Kapchelelachbei 225 M3 Water Tank

SUMMARY OF BILLS OF QUANTITIES

BILL No.	**DESCRIPTION**	**AMOUNT**
1	Preliminary and General	
2	225M3 Masonry Tank	
	SUB-TOTAL	
	Add 16% VAT	
TOTAL		

KAPCHELELACHBEI 225 M3 WATER TANK BILLS OF QUANTITIES

LOT 10. TAGITECH COMMUNITY WATER PROJECT					
(Borehole Equipping and solarization, rising main, distribution pipelines, Rehabilitation of masonry tank & Kiosks, Installation of UPVC plastic tanks and fencing of borehole area)					
BILL OF QUANTITIES					
S/No.	**Item Description**	**Unit**	**Qty**	**Rate (Ksh.)**	**Amount (Ksh.)**
1.1	Provide, erect, maintain and remove on completion of the project a sign board as directed by the Engineer	LS	1		50,000.00
1.2	Allow prime cost for insurance of workers	Item	Ls	100,000	100,000.00
1.3	Allow a Provisional sum of Kshs.250,000 for project supervision and Management to be used as per the Engineer's instructions	LS		250,000.00	250,000.00
	Sub Total Bill No.1 carried to summary				**470,000.00**
	Bill No 2: Installation of Solar system				

	Supply, install and test the solar system as instructed by the engineer.				
2.1	30 No. crystalline PV solar modules (545W rating) to provide a maximum power output of 16,350Wand a reserve capacity over the rated power requirement of the pump. The 30 pieces will be wired in series of 2 string each of 15 solar panels to provide the voltage requirement of the pump. The rate to include installation accessories for the same.	Item	1		
2.2	Supply and fix controller Converter that as DAYLIFF SV3 11KW 3PH SUNVERTER that incorporates alarm functions of over current, under current, over speed, over temperature, reverse polarities, low water with integrated MPPT.	Item	1		
2.3	3 metres high galvanized Steel ground mount support structure for mounting the solar panels in item 2.1 above	Item	1		
2.4	Allow 10% on items 2.1,2 and 2.3 above for transport, Electrical connections between pump and controller; and Cable Connections between pump, controller and the solar modules.	%	10		
	Sub Total 2 carried to Summary				
	Bill No 3: Borehole Equipping				
3.1	Supply, install and test a submersible Pump (as Pedrollo or equivalent) delivering 18 m^3/hr to a head of 170 metres with a motor. The rate to include 75mm diameter Upvc draw down pipes,10mm^2-4 core submersible cable,a pair of electrode cables,a pair of electrodes,float switch, Non-return valve and any other necessary accessories	Item	Ls		
	Sub Total Bill No. 3 carried to summary				
	Bill No 4: Borehole Development and Test Pumping				
4.1	Conduct Camera inspection and borehole development for the 125m borehole	Item	LS		

4.2	Mobilize machinery and carry out test pumping for 48hr to include physical and chemical analysis	Hrs	48		
	Sub Total 4: carried to Summary				
	Bill No 5: Rising Pipeline				
5.1	Supply and install well-head	No	1		
5.2	Provide the necessary materials and construct 1200mm x1200mm x 1200mm high masonry chamber to enclose the wellhead. The rate to include 1000mm x 1000mm heavy gauge lockable manhole cover.	Item	1		
5.3	Excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround material from the excavations.				
5.3.1	In normal soil to receive 2" diameter pipe. Pipeline trench to be 0.6m and not exceeding 1.5m.	cm	150		
5.3.2	Ditto but in hard ground to receive 2'' diameter pipe. Pipeline trench to be 0.6m and not exceeding 1.5m.	cm	75		
5.4	Provide, excavate, lay, joint and test the following pipes and fittings. Rates to include for all jointing materials, cuttings, wastages and anchorage.				
5.4.1	2 1/2" Gate Valve as Peglar	No	1		
5.4.4	2 1/2" Gate Valve as Peglar	No	2		
5.4.5	75mm dia. GI pipes class B	M	12		
5.4.6	75mm HDPE Pipes PN 16	M	500		
5.4.7	Add 10% for items 5.4.1, 5.4.2, 5.4.3, 5.4.4, 5.4.5 and 5.4.6 above fittings. All HDPE fittings to be PN 12.5	%	10		
	Sub Total 5: carried to Summary				
	Bill No 6: Distribution pipeline				
6.1	**Excavation**				
	Excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround material from the excavations.				
6.1.1	In normal soil to receive 2" diameter pipe. Pipeline trench to be 0.6m and not exceeding 1.5m.	CM	3000		

6.1.2	Ditto but in hard ground to receive 2'' diameter pipe. Pipeline trench to be 0.6m and not exceeding 1.5m.	CM	1500		
6.2	**Pipework**				
	Provide, lay, joint and test the following pipes and fittings. Rates to include for all jointing materials, cuttings, wastages and anchorage.Rates to also include Excavation and backfilling				
6.2.1	63 mm HDPE PN 12.5	M	6000		
6.2.2	50 mm HDPE PN 12.5	M	4000		
6.2.2	Allow 10% for fittings on item 5.2.1				
6.3	**Communal Water Points**				
	Construct to completion, test and commission 10No. Public water points as per the following specification and as directed by the engineer's representative on site. Erect a masonry and concrete stand for the water points. Masonry blocks to provide the wall of the stand with joints made of mortar of cement sand mixes (1:3). Mass concrete slab of Class 20/20 to be cast on hand packed hardcore.				
6.3.1	Excavate for communal water points foundation from existing ground level and not exceeding 1.50m deep.	CM	13.5		
6.3.2	Hardcore	CM	8		
6.3.3	Mass concrete for the floor slab	CM	4		
6.3.4	Masonry wall, 0.9 m long by 0.9 m high	SM	8.1		
6.3.5	Provide, lay, joint and test the necessary pipe and fittings to reduce the 2" pipe and provide 3/4" water collection points. (Provide 3No. water tap for every water point)	No.	10		
6.3.6	Provide materials and rehabilitate 100M3 ground level masonry water tank, water Kiosk and pump house to engineers satisfaction.	Item	Ls		
6.3.7	Supply and install 2 No. UPVC 5m3 water tanks to include all plumbing works as directed by engineer on site.	Item	Ls		
6.3.6	Construct to completion 10 No masonry 500mm x 500mmx450mm masonry manholes complete with 2 No. gate valves and manhole covers	No	10		
	Sub Total 6:carried to Summary				
	Bill No 6: Fencing off the borehole area				

7.1	Excavate for fencing posts bases from existing ground level and not exceeding 1.50m deep. (225 x 225x500mm deep holes)	No	46		
	Concrete Work				
7.2	50 mm blinding bed under holes for fencing posts	CM	0.1		
7.3	Mass Concrete 1:2:4 - 20mm gauge mix in 225x225x450 Bases for concrete fencing posts	CM	1		
7.40	Concrete posts (Height 8 feet spaced at 3 m c/c)	No	35		
7.5	Concrete posts for bracing at corners and at every 30m span (Height 8 feet)	No	12		
	Gates				
7.6	Provide 4000 x 1950mm high vehicular gate with external frame of 75 x 75 x 3mm SHS, vertical bracing of 75 x 75 x 3 mm spaced @ 500mm c/c, horizontal frame of 50 x 50 x 2mm spaced @ 300mm c/c fixed all fixed to external frame by welding	No	1		
	High Tensile wire (12G)				
7.7	Supply and fix 6 strands of high tensile (4.5mm) galvanized iron wire on the fencing posts	M	612		
	Chain Link				
7.8	Supply and install 6 feet high, 14G chain link (2.5mm link wire) as per the provided drawing	SM	185		
	Sub Total 7; carried to Summary				

TAGITECH COMMUNITY WATER PROJECT

(Borehole Equipping and solarization, rising main, distribution pipelines, Rehabilitation of masonry tank & Kiosks, Installation of UPVC plastic tanks and fencing of borehole area)

SUMMARY PAGE

Bill No.	Description	Amount (Ksh.)
1	Preliminaries and General conditions	
2	Solarization	
3	Borehole Equipping	
4	Borehole Development and Test Pumping	
5	Rising pipeline	
6	Distribution pipeline	
7	Fencing off the borehole area	
	Sub Total	
	16% VAT	
	Grand Total	

PART III - CONDITIONS OF CONTRACT AND CONTRACT FORMS

SECTION VIII - GENERAL CONDITIONS OF CONTRACT

These General Conditions of Contract (GCC), read in conjunction with the Special Conditions of Contract (SCC) and other documents listed therein, should be a complete document expressing fairly the rights and obligations of both parties.
These General Conditions of Contract have been developed on the basis of considerable international experience in the drafting and management of contracts, bearing in mind a trend in the construction industry towards simpler, more straightforward language.
The GCC can be used for both smaller admeasurement contracts and lump sum contracts.

General Conditions of Contract

A. General

1. Definitions

1.1 Bold face type is used to identifyee terms.

a) **The Accepted Contract** Amount means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.
b) **The Activity Schedule** is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.
c) **The Adjudicator** is the person appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.
d) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.
e) **Compensation Events** are those defined in GCC Clause 42 hereunder.
f) **The Completion Date** is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 53.1.
g) **The Contract** is the Contract between the Procuring Entity and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.
h) **The Contractor** is the party whose Bid to carry out the Works has been accepted by the Procuring Entity.
i) **The Contractor's Bid** is the completed bidding document submitted by the Contractor to the Procuring Entity.
j) **The Contract Price** is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.
k) **Days** are calendar days; months are calendar months.
l) **Day work**s are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.
m) **A Defect** is any part of the Works not completed in accordance with the Contract.
n) **The Defects** Liability Certificate is the certificate issued by Project Manager upon correction of defects by the Contractor.
o) **The Defects Liability Period** is the period **named in the SCC** pursuant to Sub-Clause 34.1 and calculated from the Completion Date.
p) **Drawings** means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Procuring Entity in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.
q) **The Procuring Entity** is the party who employs the Contractor to carry out the Works, **as specified in the SCC,** who is also the Procuring Entity.
r) **Equipmen**t is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

s) **"In writing" or "written"** means hand-written, type-written, printed or electronically made, and resulting in a permanent record;

t) The Initial Contract Price is the Contract Price listed in the Procuring Entity's Letter of Acceptance.

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

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

w) **Plant i**s any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

x) **The Project Manager** is the person **named in the SCC** (or any other competent person appointed by the Procuring Entity and notified to the Contractor, to act in replacement of the Project Manager) who is

Responsible for supervising the execution of the Works and administering the Contract.

y) **SCC** means Special Conditions of Contract.

z) **The Site** is the area of the works as **defined as such in the SCC**.

aa) **Site Investigation Reports** are those that were included in the bidding document and are factual and interpretative reports about the surface and subsurface conditions at the Site.

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

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

dd) **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.

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

ff) **A Variation** is an instruction given by the Project Manager which varies the Works.

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

2. Interpretation

21 In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.

22 If sectional completion is specified in the SCC, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

23 The documents forming the Contract shall be interpreted in the following order of priority:

a) Agreement,
b) Letter of Acceptance,
c) Contractor's Bid,
d) Special Conditions of Contract,
e) General Conditions of Contract, including Appendices,
f) Specifications,
g) Drawings,
h) Bill of Quantities[6], and
i) another document **listed in the SCC** as forming part of the Contract.

3. Language and Law

3.1 The language of the Contract is English Language and the law governing the Contract are the Laws of Kenya.

3.2 Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Procuring Entity's Country when

a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country; or

b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

4. Project Manager's Decisions

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

5. Delegation

5.1 Otherwise **specified in the SCC,** the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.

6. Communications

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

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 Procuring Entity 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, and the Procuring Entity between the dates given in the Schedule of Other Contractors, as **referred to in the SCC.** The Contractor shall also provide facilities and services for them as described in the Schedule. The Procuring Entity may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

9. Personnel and Equipment

9.1 The Contractor shall employ the key personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of key personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.

9.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

9.3 If the Procuring Entity, Project Manager or Contractor determines, that any employee of the Contractor be determined to have engaged in Fraud and Corruption during the execution of the Works, then that employee shall be removed in accordance with Clause 9.2 above.

10. Procuring Entity's and Contractor's Risks

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

11. Procuring Entity's Risks

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

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

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

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

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

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

aa) a Defect which existed on the Completion Date,

bb) an event occurring before the Completion Date, which was not itself a Procuring Entity's risk, or

cc) the activities of the Contractor on the Site after the Completion Date.

12. Contractor's Risks

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

13. Insurance

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

a) loss of or damage to the Works, Plant, and Materials;

b) loss of or damage to Equipment;

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

d) personal injury or death.

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

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

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

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

14. Site Data

14.1 The Contractor shall be deemed to have examined any Site Data **referred to in the SCC**, supplemented by any information available to the Contractor.

15. Contractor to Construct the Works

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

16. The Works to Be Completed by the Intended Completion Date

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

17. Approval by the Project Manager

17.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.

17.2 The Contractor shall be responsible for design of Temporary Works.

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

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

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

18. Safety

18.1 The Contractor shall be responsible for the safety of all activities on the Site.

19. Discoveries

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

20. Possession of the Site

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

21. Access to the Site

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

22. Instructions, Inspections and Audits

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

22.2 The Contractor shall keep, and shall make all reasonable efforts to cause its Subcontractors and sub-consultants to keep, accurate and systematic accounts and records in respect of the Works in such form and details as will clearly identify relevant time changes and costs.

22.3 The Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Procuring Entity and/or persons appointed by the Public Procurement Regulatory Authority to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Public Procurement Regulatory Authority. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 25.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Public Procurement Regulatory Authority's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Public Procurement Regulatory Authority's prevailing sanctions procedures).

23. Appointment of the Adjudicator

23.1 The Adjudicator shall be appointed jointly by the Procuring Entity and the Contractor, at the time of the Procuring Entity's issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority designated in the SCC, to appoint the Adjudicator within 14 days of receipt of such request.

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

24. Settlement of Claims and Disputes

24.1 Contractor's Claims

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

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

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

24.1.4 The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Procuring Entity's liability, the Project Manager may, after receiving any notice under this Sub-Clause, monitor the record- keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project Manager.

24.1.5 Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

a) this fully detailed claim shall be considered as interim;
b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Project Manager May reasonably require; and
c) the Contractor shall send a final claim within 30 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.

24.1.6 Within 42 days after receiving a Notice of a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within the above defined time period.

24.1.7 Within the above defined period of 42 days, the Project Manager shall proceed in accordance with Sub-Clause

24.1.8 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the

additional payment (if any) to which the Contractor is entitled under the Contract.

24.1.9 Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

24.1.10 If the Project Manager does not respond within the timeframe defined in this Clause, either Party may consider that the claim is rejected by the Project Manager and any of the Parties may refer to Arbitration in accordance with Sub-Clause 24.4 [Arbitration].

24.1.11 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause 24.3.

242 Amicable Settlement

24.2.1 Where a notice of a claim has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a notice of a claim in accordance with Sub-Clause 24.1 above should move to commence arbitration after the fifty-sixth day from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

243 Matters that may be referred to arbitration

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

a) The appointment of a replacement Project Manager upon the said person ceasing to act.
b) Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.
c) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
e) Any dispute arising in respect of war risks or war damage.
f) All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless the Procuring Entity and the Contractor agree otherwise in writing.

244 Arbitration

24.4.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 24.3 shall be finally settled by arbitration.

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

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

24.4.4 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.

24.4.5 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.

24.4.6 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Project Manager, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Project Manager from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

24.4.7 Neither Party shall be limited in the proceedings before the arbitrators to the evidence, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.

24.4.8 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Project Manager shall not be altered by reason of any arbitration being conducted during the progress of the Works.

24.4.9 The terms of the remuneration of each or all the members of Arbitration shall be mutually agreed upon by the

Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

24.5 Arbitration with National Contractors

24.5.1 If the Contract is with national contractors, arbitration proceedings will be conducted in accordance with the Arbitration Laws of Kenya. In case of any claim or dispute, such claim or dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed, on the request of the applying party, by the Chairman or Vice Chairman of any of the following professional institutions;

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

24.5.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.

24.6 Alternative Arbitration Proceedings

24.6.1 Alternatively, the Parties may refer the matter to the Nairobi Centre for International Arbitration (NCIA) which offers a neutral venue for the conduct of national and international arbitration with commitment to providing institutional support to the arbitral process.

24.7 Failure to Comply with Arbitrator's Decision

24.7.1 The award of such Arbitrator shall be final and binding upon the parties.

24.7.2 In the event that a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to other rights it may have, refer the matter to a competent court of law.

24.8 Contract operations to continue

24.8.1 Notwithstanding any reference to arbitration herein,

a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
b) the Procuring Entity shall pay the Contractor any monies due the Contractor.

25. Fraud and Corruption

25.1 The Government requires compliance with the country's Anti-Corruption laws and its prevailing sanctions policies and procedures as set forth in the Constitution of Kenya and its Statutes.

25.2 The Procuring Entity requires the Contractor to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

B. Time Control

26. Program

26.1 Within the time stated in the SCC, after the date of the Letter of Acceptance, 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. In the case of a lump sum contract, the activities in the Program shall be consistent with those in the Activity Schedule.

26.2 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.

26.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period stated in the SCC. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount stated in the SCC 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. In the case of a lump sum contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.

26.4 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.

27. Extension of the Intended Completion Date

27.1 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.

27.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

28. Acceleration

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

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

29. Delays Ordered by the Project Manager

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

30. Management Meetings

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

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

31. Early Warning

31.1 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.

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

C. Quality Control

32. Identifying Defects

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

33. Tests

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

34. Correction of Defects

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

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

35. Uncorrected Defects

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

D. Cost Control

36. Contract Price[7]

36.1 The Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.

37. Changes in the Contract Price[8]

37.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change. The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Procuring Entity.

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

38. Variations

38.1 All Variations shall be included in updated Programs9 produced by the Contractor.

38.2 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.

38.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.

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

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

38.6 If the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 39.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work

38.7 Value Engineering: The Contractor may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following;

a) the proposed change(s), and a description of the difference to the existing contract requirements;
b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs) the Procuring Entity may incur in implementing the value engineering proposal; and
c) a description of any effect(s) of the change on performance/functionality.

38.8 The Procuring Entity may accept the value engineering proposal if the proposal demonstrates benefits that:

a) accelerate the contract completion period; or
b) reduce the Contract Price or the life cycle costs to the Procuring Entity; or
c) improve the quality, efficiency, safety or sustainability of the Facilities; or
d) yield another benefits to the Procuring Entity, without compromising the functionality of the Works.

38.9 If the value engineering proposal is approved by the Procuring Entity and results in:

a) a reduction of the Contract Price; the amount to be paid to the Contractor shall be the **percentage specified in the SCC** of the reduction in the Contract Price; or
b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the Contractor shall be the full increase in the Contract Price.

39. Cash Flow Forecasts

39.1 When the Program[11], is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

40. Payment Certificates

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

40.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

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

40.4 The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed12.

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

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

40.7 Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (which would be the tender price), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: *(corrected tender price – tender price)/tender price X 100*.

41. Payments

41.1 Payments shall be adjusted for deductions for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of each certificate. If the Procuring Entity makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.

41.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

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

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

42. Compensation Events

42.1 The following shall be Compensation Events:

d) The Procuring Entity does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.

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

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

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

h) The Project Manager unreasonably does not approve a subcontract to belt.

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

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

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

l) The advance payment is delayed.

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

n) The Project Manager unreasonably delays issuing a Certificate of Completion.

42.2 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.

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

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

43. Tax

43.1 The Project Manager shall adjust the Contract Price if taxes, duties, other levies are changed between the date30 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 44.

44. Currency y of Payment

44.1 All payments under the contract shall be made in Kenya Shillings

45. Price Adjustment

45.1 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC.** If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies:

P = A + B Im/Io

where: Pis the adjustment factor for the portion of the Contract Price payable.

A and B are coefficients[13] **specified in the SCC,** representing the non-adjustable and adjustable portions, respectively, of the Contract Price payable and Im is the index prevailing at the end of the month being invoiced and IOC is the index prevailing 30 days before Bid opening for inputs payable.

45.2 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

46. Retention

46.1 The Procuring Entity shall retain from each payment due to the Contractor the proportion stated in the **SCC** until Completion of the whole of the Works.

46.2 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC 53.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an "on demand" Bank guarantee.

47. Liquidated Damages

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

47.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 41.1.

48. Bonus

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

49. Advance Payment

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

49.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

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

50. Securities

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

51. Dayworks

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

51.2 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.

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

52. Cost of Repairs

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

E. Finishing the Contract

53. Completion

53.1 The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the whole of the Works is completed.

54. Taking Over

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

55. Final Account

55.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

56. Operating and Maintenance Manuals

56.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the SCC.

56.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the SCC pursuant to GCC Sub-Clause 56.1, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the SCC** from payments due to the Contractor.

57. Termination

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

57.2 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 Procuring Entity or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

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

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

f) the Contractor does not maintain a Security, which is required;

g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the SCC**; or

h) if the Contractor, in the judgment of the Procuring Entity has engaged in Fraud and Corruption, as defined in paragraph 2.2 a of the Appendix A to the GCC, in competing for or in executing the Contract, then the Procuring Entity may, after giving fourteen (14) days written notice to the Contractor, terminate the Contract and expel him from the Site.

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

57.4 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.

57.5 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 GCC Sub-Clause 56.2 above, the Project Manager shall decide whether the breach is fundamental ornot.

58. Payment upon Termination

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

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

59. Property

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

60. Release from Performance

60.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Procuring Entity or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

SECTION IX - SPECIAL CONDITIONS OF CONTRACT

Except where otherwise specified, all Special *Conditions of Contract should be filled in by the Procuring Entity prior to issuance of the bidding document. Schedules and reports to be provided by the Procuring Entity should be annexed.*

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	A. General
GCC 1.1 (q)	The Procuring Entity is: State Department for Wildlife Address P. O. BOX 41394 -00100 NAIROBI
GCC 1.1 (u)	The Intended Completion Date for the whole of the Works shall be: AS PER THE WORK PLAN
GCC 1.1 (x)	The Project Manager is: Principal Secretary, State Department for Wildlife
GCC 1.1 (z)	The Sites are located at Kericho,Nakuru and Baringo Counties
GCC 1.1 (cc)	The Start Date shall be immediately after contract award
GCC 1.1 (gg)	*The Works consist of Drilling, Installation and Equipping; and Civil Works for Boreholes*
GCC 2.2	Sectional Completions are: *N/A*
GCC 5.1	The Project manager *shall not* delegate any of his duties and responsibilities.
GCC 8.1	Schedule of other contractors: *N/A*
GCC 9.1	**Key Personnel** GCC 9.1 is replaced with the following: 9.1 Key Personnel are the Contractor's personnel named in this GCC 9.1 of the Special Conditions of Contract. The Contractor shall employ the Key Personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of Key Personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid. [insert the name/s of each Key Personnel agreed by the Procuring Entity prior to Contract signature.]
GCC 13.1	The minimum insurance amounts and deductibles shall be: (a) for loss or damage to the Works, Plant and Materials: *[insert amounts]*.N/A (b) For loss or damage to Equipment: *[insert amounts]*.N/A (c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract *[insert amounts]*.N/A (d) for personal injury or death: (i) of the Contractor's employees: *[amount]*.N/A (ii) of other people: *[amount]*.N/A

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
GCC 14.1	Site Data are: *N/A*
GCC 20.1	The Site Possession Date(s) shall be: immediately after contract signing
GCC 23.1 & GCC 23.2	Appointing Authority for the Adjudicator:.N/A
	Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: *[insert hourly fees and reimbursable expenses]*.n/a
B. Time Control	
GCC 26.1	The Contractor shall submit for approval a Program for the Works within *[7 days]* days from the date of the Letter of Acceptance.
GCC 26.3	The period between Program updates is *30* days…... The amount to be withheld for late submission of an updated Program is N/A
C. Quality Control	
GCC 34.1	The Defects Liability Period is: *6 MONTHS (180* days) from the date the Final Completion Certificate is issued
D. Cost Control	
GCC 38.9	If the value engineering proposal is approved by the Procuring Entity the amount to be paid to the Contractor shall be____% *(insert appropriate percentage. The percentage is normally up to 50%)* of the reduction in the Contract Price.
GCC 44.1	The currency of the Procuring Entity's Country is: *Kenya Shillings*
GCC 45.1	The Contract *is not* subject to price adjustment in accordance with GCC Clause 45, and the following information regarding coefficients *[specify "does" or "does not"]* apply. *[Price adjustment is mandatory for contracts which provide for time of completion exceeding 18 months]* The coefficients for adjustment of prices are: (a) *[insert percentage]* percent nonadjustable element (coefficient A). (ib) *[insert percentage]* percent adjustable element (coefficient B). (c) The Index I for shall be *[insert index]*.
GCC 46.1	The proportion of payments retained is: *[10%]* *[The retention amount is usually 10 percent.]*
GCC 47.1	The liquidated damages for the whole of the Works are *0.05%* per day. The maximum amount of liquidated damages for the whole of the Works is *[insert percentage]* of the final Contract Price. *[Usually liquidated damages are set between 0.05 percent and 0.10 percent per day, and the total amount is not to exceed between 5 percent and 10 percent of the Contract Price. If Sectional Completion and Damages per Section have been agreed, the latter should be specified here]*

GCC 48.1	N/A

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
GCC 49.1	N/A
GCC 50.1	N/A Contract Amount. (b) **Performance Security** – Performance Bond: 5% of Contract Sum/Price
E. Finishing the Contract	
GCC 56.1	The date by which operating and maintenance manuals are required is *ON COMPLETION* The date by which "as built" drawings are required is *ON COMPLETION*
GCC 56.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required in GCC 58.1 is *[insert amount in local currency]*.
GCC 57.2 (g)	The maximum number of days is: *[insert number; consistent with Clause 47.1 on liquidated damages]*.
GCC 58.1	The percentage to apply to the value of the work not completed, representing the Procuring Entity's additional cost for completing the Works, is *[insert percentage]*.

FORM No 1: NOTIFICATION OF INTENTION TO AWARD

This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender. Send this Notification to the Tenderer's Authorized Representative named inthe Tender Information Formon the format below.

FORMAT

1. For the attention of Tenderer's Authorized Representative
   - *i)* Name: *[insert Authorized Representative's name]*
   - *ii)* Address: *[insert Authorized Representative's Address]*
   - *iii)* Telephone: *[insert Authorized Representative's telephone/fax numbers]*
   - *iv)* Email Address: *[insert Authorized Representative's email address]*

   [IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

2. Date of transmission: [*email*] on [*date*] (local time)

   This Notification is sent by (*Name and designation*) _____

3. Notification of Intention to Award

   - *i)* Procuring Entity: *[insert the name of the Procuring Entity]*
   - *ii)* Project: *[insert name of project]*
   - *iii)* Contract title: *[insert the name of the contract]*
   - *iv)* Country: *[insert country where ITT is issued]*
   - *v)* ITT No: *[insert ITT reference number from Procurement Plan]*

   This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

4. Request a debriefing in relation to the evaluation of your tender

   Submit a Procurement-related Complaint in relation to the decision to award the contract.

   a) The successful tenderer

      i) Name of successful Tender_____

      ii) Address of the successful Tender _____

      iii) Contract price of the successful Tender Kenya Shillings_____(in words_____)

   b) Other Tenderers

   Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out. For Tenders not evaluated, give one main reason the Tender was unsuccessful.

SNo	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why not Evaluated
1				
2				
3				
4				
5				

(Note a) State NE if not evaluated

5. How to request a debriefing

a) DEADLINE: The deadline to request a debriefingexpires at midnight on [*insert date*](*local time*).

b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (5) Business Days of receipt of this Notification of Intention toAward.

c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefingas follows:

i) Attention: [*insert full nameof person, if applicable*]

ii) Title/position: [*insert title/position*]

ii) Agency: [*insert nameof Procuring Entity*]

iii) Email address: [*insert emailaddress*]

d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (3) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (3) Days after the date that the debriefing is provided. If this happens, we will notifyyou and confirmthe date that the extended Standstill Period will end.

e) The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writinghow the debriefing will take place and confirmthe date and time.

f) If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, wewill provide the debriefing as soon as practicable, and normally no later than fifteen (15) Days from the date of publication of the ContractAward Notice.

6. How to make a complaint

a) Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, [*insert date*] (local time).

b) Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:

i) Attention: [*insert full nameof person, if applicable*]

ii) Title/position: [*insert title/position*]

iii) Agency: [*insert nameof Procuring Entity*]

iv) Email address: [*insert emailaddress*]

c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available fromthe Websiteinfo@ppra.go.ke or complaints@ppra.go.ke.

You should read these documents before preparing and submitting your complaint.

e) There are four essential requirements:

i) You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tenderingprocess, and is the recipient of a Notification of Intention toAward.

ii) The complaint can onlychallenge the decisionto award the contract.

iii) Youmust submit the complaint within the period stated above.

iv) You must include, in your complaint, all of the information required to support your complaint.

7. Standstill Period

i) DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).

ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.

iii) The Standstill Period may be extended as stated in paragraph Section 5 (d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature:_____ **Name:**_____

Title/position:_____ **Telephone:**___ **Email:** _____

FORM NO. 2 - REQUEST FOR REVIEW

FORM FOR REVIEW (r.203(1))

PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

APPLICATION NO……. OF…….….20……...

BETWEEN

……...……. APPLICANT

AND

……RESPONDENT (Procuring Entity)

Request for review of the decision of the…… (Name of the Procuring Entity of ……dated the…day of …….20…….in the matter of Tender No……..…of ……..20….. for..... (Tender description).

REQUEST FOR REVIEW

I/We……, the above named Applicant(s), of address: Physical address…….P. O. Box No.....Tel. No……..Email....., hereby request the Public Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the following grounds , namely:

1.

2.

By this memorandum, the Applicant requests the Board for an order/orders that:

1.

2.

SIGNED …….(Applicant) Dated on…….day of ……/…20……

FOR OFFICIAL USE ONLY Lodged with the Secretary Public Procurement Administrative Review Board on.....day of ……....20….……

SIGNED

Board Secretary

FORM NO 3: LETTER OF AWARD

[letterhead papermouth Procuring Entity] [date]

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers, is hereby accepted by ..... (*name of Procuring Entity)*.

You are requested to furnish the Performance Security within 30 days in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the Tender Document.

Authorized Signature:.....

Name and Title of Signatory:.....

Name of Procuring Entity.....

Attachment: *Contract Agreement*.....

FORM NO 4: CONTRACT AGREEMENT

THIS AGREEMENT made the_____day of_____, 20____, between _____of_____(hereinafter "the Procuring Entity"), of the one part, and_____of_____(hereinafter "the Contractor"), of the other part:

WHEREAS the Procuring Entity desires that the Works known as_____should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Procuring Entity and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
   a) the Letter of Acceptance
   b) the Letter of Tender
   c) the addenda Nos_____(if any)
   d) the Special Conditions of Contract
   e) the General Conditions of Contract;
   f) the Specifications
   g) the Drawings*;* and
   h) the completed Schedules and any other documents forming part of the contract.

3. In consideration of the payments to be made by the Procuring Entity to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Procuring Entity to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Entity 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 hereto have caused this Agreement to be executed in accordance with the Laws of Kenya on the day, month and year specified above.

Signed and sealed by_____(for the Procuring Entity)

Signed and sealed by_____(for the Contractor).

FORM NO. 5 - PERFORMANCE SECURITY

[Option 1 - Unconditional Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[insert name and Address of* Procuring Entity*]* **Date:** _____

_____ *[Insert date of issue]*

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

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ dated _____ with (*name of Procuring Entity*) _____ (the Procuring Entity as the Beneficiary), for the execution of _____ (hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

3. At the request of the Contractor, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (*in words*),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

4. This guarantee shall expire, no later than the …. Day of ……, 2. .....[2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

5. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

[Name of Authorized Official, signature(s) and seals/stamps].

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

FORM No. 6 - PERFORMANCE SECURITY

[Option 2– Performance Bond]

[Note: Procuring Entities are advised to use Performance Security – Unconditional Demand Bank Guarantee instead of Performance Bond due to difficulties involved in calling Bondholder to action]
[Guarantor letterhead or SWIFT identifier code]

Beneficiary: _____ *[insert name and Address or* Procuring Entity*]* **Date:** _____ *[Insert date of issue]*.

PERFORMANCE BOND No.: _____

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

1. By this Bond _____ as Principal (hereinafter called "the Contractor") and _____] as Surety (hereinafter called "the Surety"), are held and firmly bound unto _____] as Oblige (hereinafter called "the Procuring Entity") in the amount of _____ for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firm lekythoses presents.

2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the _____ day of _____, 20 , for _____ in accordance with the documents, plans, specifications, and amendments thereto, which to the extent herein provided for, are by reference made part hereof and are hereinafter referred to as the Contract.

3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:
   1) complete the Contract in accordance with its terms and conditions; or
   2) obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or
   3) pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.

4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named herein or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.

6. In testimony whereof, the Contractor has hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this day _____ of _____ 20_____.

SIGNED ON _____ on behalf of By__ in the capacity of In the

presence of

SIGNED ON _____ on behalf of By_ in the capacity of In the

presence of

FORM NO. 7 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[Insert name and Address of* Procuring Entity*]*
Date: _____ *[Insert date of issue]*

ADVANCE PAYMENTGUARANTEE No.: _____ *[Insert guarantee reference number]* **Guarantor:** _____ **[***Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ *dated* _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ (*inwords*) is to be made against an advance payment guarantee.

3. At the request of the Contractor, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (*in words* _____)[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
   a) has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
   b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Contractor on its account number _____ at _____.

5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the _____ day of _____, 2 ,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months][one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

FORM NO. 8 - RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____*[Insert name and Address of* Procuring Entity*]*

Date:_____*[Insert date of issue]*

Advance payment guarantee no. *[Insert guarantee reference number]*

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

1. We have been informed that_____*[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Contractor") has entered into Contract No. _____*[insert reference number of the contract]* dated_____with the Beneficiary, for the execution of_____*[insert name of contract and brief description of* Works*]* (hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of *[*insert the second half of the Retention Money] is to be made against a Retention Money guarantee.

3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]*_____(*[insert amount in words*_____*])*[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number_____at_____*[insert name and address of Applicant's bank]*.

5. This guarantee shall expire no later than the …..... Day of ….....……, 2. .....[2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year],* in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM

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

INSTRUCTIONS TO TENDERERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer pursuant to Regulation 13 (2A) and 13 (6) of the Companies (Beneficial Ownership Information) Regulations, 2020. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the legal person (tenderer) or arrangements or a natural person on whose behalf a transaction is conducted, and includes those persons who exercise ultimate effective control over a legal person (Tenderer) or arrangement.

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

Name of the Tender Title/Description:_____*[insert name of the assignment]* to:

_____*[insert complete name of Procuring Entity]*

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

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

Details of beneficial ownership

	Details of all Beneficial Owners		**% of shares a person holds in the company Directly or indirectly**	**% of voting rights a person holds in the company**	**Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer** (Yes / No)	**Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)**
1.	Full Name		Directly---------- % of shares Indirectly---------- % of shares	Directly…….% of voting rights Indirectly---------- % of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No---- 2. Is this right held directly or indirectly?: Direct…… Indirect……..	**1.** Exercises significant influence or control over the Company body of the Company (tenderer**)** Yes -----No---- **2.** Is this influence or control exercised directly or indirectly? Direct…….. Indirect……
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					
	Nationality					
	Date of birth *[dd/mm/yyyy]*					
	Postal address					
	Residential address					
	Telephone number					
	Email address					
	Occupation or profession					
2.	Full Name		Directly---------- % of shares Indirectly---------- % of shares	Directly…….% of voting rights Indirectly---------- % of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No----	1. Exercises significant influence or control over the Company body of the Company (tenderer**)** Yes -----No----
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					

	Details of all Beneficial Owners		% of shares a person holds in the company Directly or indirectly	% of voting rights a person holds in the company	Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer (Yes / No)	Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)
	Nationality(ies)				2. Is this right held directly or indirectly?: Direct…… Indirect……	2. Is this influence or control exercised directly or indirectly? Direct…….. Indirect……
	Date of birth *[dd/mm/yyyy]*					
	Postal address					
	Residential address					
	Telephone number					
	Email address					
	Occupation or profession					

II) Am fully aware that beneficial ownership information above shall be reported to the Public Procurement Regulatory Authority together with other details in relation to contract awards and shall be maintained in the Government Portal, published and made publicly available pursuant to Regulation 13(5) of the Companies (Beneficial Ownership Information) Regulations, 2020.(Notwithstanding this paragraph Personally Identifiable Information in line with the Data Protection Act shall not be published or made public). *Note that Personally Identifiable Information (PII) is defined as any information that can be used to distinguish one person from another and can be used to deanonymize previously anonymous data. This information includes National identity card number or Passport number, Personal Identification Number, Date of birth, Residential address, email address and Telephone number.*

III)In determining who meets the threshold of who a beneficial owner is, the Tenderer must consider a natural person who in relation to the company:

(a) holds at least ten percent of the issued shares in the company either directly or indirectly;

(b) exercises at least ten percent of the voting rights in the company either directly or indirectly;

(c) holds a right, directly or indirectly, to appoint or remove a director of the company; or

(d) exercises significant influence or control, directly or indirectly, over the company.

IV) What is stated to herein above is true to the best of my knowledge, information and belief.

*Name of the Tenderer..... *[insert complete name of the Tenderer]*_____

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

Designation of the person signing the Tender..... [insert complete title of the person signing the Tender]

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

Date this ..... [insert date of signing] day of.....[Insert month], [insert year]

Bidder Official Stamp