



TANA WATER WORKS DEVELOPMENT AGENCY

FRAME WORK AGREEMENT

PROCUREMENT OF CONTRACTORS FOR CONSTRUCTION OF WATER SUPPLY INFRASTRUCTURE

TENDER NO: TWWDA/FA/004/2023-2026

TENDER DOCUMENT

CLOSING DATE: Thursday, 21st September 2023 at 10.00 a.m.

Employer

Tana Water Works Development
Agency
P. O. Box 1292 – 10100
NYERI

Contents

TENDER DOCUMENTS FOR PROCUREMENT OF SMALLWORKS	1
INVITATION TO TENDER	2
PROCURING ENTITY: [Tana Water Works Development Agency]	2
CONTRACT NAME AND DESCRIPTION:	2
A. Address for obtaining further information and for purchasing tender documents	2
B. Address for Submission of Tenders.	3
C. Address for Opening of Tenders.	3
PART 1 - TENDERING PROCEDURES	4
SECTION I: INSTRUCTIONS TO TENDERERS	5
A General Provisions	5
2. Fraud and Corruption	5
3. Eligible Tenderers	5
4. Eligible Goods, Equipment, and Services	7
5. Tenderer's Responsibilities	7
B. Contents of Tender Documents	7
6. Sections of Tender Document	7
PART 1 Tendering Procedures	9
PART 2 Works Requirements	9
PART 3 Conditions of Contract and Contract Forms	9
7. Site Visit	9
8. Pre-Tender Meeting	9
9. Clarification and amendments of Tender Documents	9
10. Amendment of Tendering Document	10
C. Preparation of Tenders	10
11. Cost of Tendering	10
12. Language of Tender	10
13. Documents Comprising the Tender	10
14. Form of Tender and Schedules	11
15. Alternative Tenders	11
16. Tender Prices and Discounts	11

17. Currencies of Tender and Payment	12
18. Documents Comprising the Technical Proposal	12
19. Documents Establishing the Eligibility and Qualifications of the Tenderer.....	12
20. Period of Validity of Tenders	13
21. Tender Security.....	13
22. Format and Signing of Tender	14
D. Submission and Opening of Tenders	14
24. Deadline for Submission of Tenders	15
25. Late Tenders	15
26. Withdrawal, Substitution, and Modification of Tenders.....	15
27. Tender Opening	16
E. Evaluation and Comparison of Tenders	16
28. Confidentiality.....	16
29. Clarification of Tenders.....	17
30. Deviations, Reservations, and Omissions	17
31. Determination of Responsiveness.....	17
32. Non-material Non-conformities.....	17
33. Arithmetical Errors.....	18
34. Currency provisions.....	18
35. Margin of Preference and Reservations	18
36. Nominated Subcontractors.....	18
37. Evaluation of Tenders	18
38. Comparison of Tenders	19
39. Abnormally Low Tenders	19
40. Abnormally High Tenders	19
41. Unbalanced and/or Front-Loaded Tenders	19
42. Qualifications of the Tenderer.....	20
43. Best Evaluated Tender	20
44. Procuring Entity's Right to Accept Any Tender, and to Reject Any or All Tenders.	20
F. Award of Contract	21
45. Award Criteria	21
46. Notice of Intention to enter into a Contract.....	21
47. Standstill Period	21

48. Debriefing by the Procuring Entity	21
49. Letter of Award	21
50. Signing of Contract.....	21
51. Appointment of Adjudicator	21
52. Performance Security	22
53. Publication of Procurement Contract.....	22
54. Procurement Related Complaints and Administrative Review	22
Section II - Tender Data Sheet (TDS).....	23
SECTION III - EVALUATION AND QUALIFICATION CRITERIA	27
1. General Provisions	27
2. Preliminary examination for Determination of Responsiveness	27
4. Multiple Contracts	30
OPTION 1	26
OPTION 2	27
5. Alternative Tenders (ITT 13.1)	30
7. Post qualification and Contract award (ITT 39), more specifically,	30
a) History of non-performing contracts:.....	31
b) Pending Litigation.....	31
c) Litigation History	31
8. QUALIFICATION FORM SUMMARY	29
QUALIFICATION FORMS	32
1. FORM EQU: EQUIPMENT	32
2. FORM PER -1	33
Contractor's Representative and Key Personnel Schedule	33
Contractor' Representative and Key Personnel	33
Declaration	35
4. TENDERER'S QUALIFICATION WITHOUT PRE-QUALIFICATION	36
4.1 FORM ELI -1.1	36
4.2 FORM ELI -1.2	37
4.3 FORM CON – 2	38
4.4 FORM FIN – 3.1:	39
4.5 FORM FIN – 3.2:	41
4.6 FORM FIN – 3.3:	41
4.7 FORM FIN – 3.4:	42
No.42	
Name of Contract.....	42
Procuring Entity's	42
4.8 FORM EXP - 4.1	43
4.9 FORM EXP - 4.2(a).....	44
4.10 FORM EXP - 4.2 (a) (cont.)	44
4.11 FORM EXP - 4.2(b)	45
OTHER FORMS	47

5. FORM OF TENDER	47
(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022).....	47
A. TENDERER'S ELIGIBILITY- CONFIDENTIAL BUSINESS QUESTIONNAIRE	50
Instruction to Tenderer	50
(a) Tenderer's details	50
(e) DISCLOSURE OF INTEREST- Interest of the Firm in the Procuring Entity	51
ii) Conflict of interest disclosure	51
B. CERTIFICATE OF INDEPENDENT TENDER DETERMINATION.....	53
C. SELF - DECLARATION FORMS.....	54
SELF DECLARATION THAT THE PERSON/TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE	55
DECLARATION AND COMMITMENT TO THE CODE OF ETHICS	56
D. APPENDIX 1- FRAUD AND CORRUPTION	57
1. Purpose	57
3. Requirements	57
TENDER-SECURING DECLARATION FORM.....	61
Appendix to Tender.....	62
Schedule of Currency requirements	62
PART II - WORK REQUIREMENTS	63
SECTION V - DRAWINGS	58
SECTION VI - SPECIFICATIONS.....	58
SECTION VII- BILLS OF QUANTITIES	60
1. Objectives	60
2. Day work Schedule	60
3. Provisional Sums	60
4. The Bills of Quantities	60
PART III - CONDITIONS OF CONTRACT AND CONTRACT FORMS	75
SECTION VIII - GENERAL CONDITIONS OF CONTRACT	61
General Conditions of Contract	61
A. General	61
1. Definitions	61
B. Time Control	71
P = A + B Im/Io	77
E. Finishing the Contract	78
SECTION IX - SPECIAL CONDITIONS OF CONTRACT	81
FORM No 1: NOTIFICATION OF INTENTION TO AWARD	84
FORMAT	84
6. How to make a complaint	86
Signature: Name: Title/position: Telephone: Email:	86
FORM NO 4: CONTRACT AGREEMENT	89
FORM NO. 5 - PERFORMANCE SECURITY	90

[Option 1 - Unconditional Demand Bank Guarantee]	90
FORM No. 6 - PERFORMANCE SECURITY	92
[Option 2- Performance Bond]	92
PERFORMANCE BOND No.:	92
FORM NO. 7 - ADVANCE PAYMENT SECURITY	94
FORM NO. 8 - RETENTION MONEY SECURITY	95
[Demand Bank Guarantee]	95
FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM	96
(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022).....	96

TENDER DOCUMENT FOR PROCUREMENT OF CONTRACTORS FOR CONSTRUCTION OF WATER SUPPLY INFRASTRUCTURE – FRAME WORK AGREEMENT

1) NAME AND CONTACT ADDRESSES OF PROCURING ENTITY

NAME: Tana Water Works Development Agency

ADDRESS: P.O BOX 1292-10100, NYERI

Email: ceo@tanawwda.go.ke

2) Invitation to Tender (ITT) NO... TWWDA/FA/004/2023 - 2026.....

3) Name Tender..... PROCUREMENT OF CONTRACTORS FOR CONSTRUCTION OF WATER SUPPLY INFRASTRUCTURE – FRAME WORK AGREEMENT

INVITATION TO TENDER

PROCURING ENTITY: TANA WATER WORKS DEVELOPMENT AGENCY

~~CONTRACT NAME AND DESCRIPTION~~ PROCUREMENT OF CONTRACTORS FOR CONSTRUCTION OF WATER SUPPLY INFRASTRUCTURE – FRAME WORK AGREEMENT

1. The *Tana Water Works Development Agency*) invites sealed tenders for Construction Of Water Supply Infrastructure under Frame Work Agreement, within TWWDA's area of jurisdiction.
2. Tendering will be conducted under open competitive method (National/ using a standardized [Framework Agreement](#) tender document. Tendering is open to all qualified and interested Tenderers.

Tenders will be awarded on basis of Framework Agreement.

3. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours [*i.e. 0800 to 1700 hours*] at the address given below.
4. A complete set of [Frame Work Agreement](#) tender documents may be purchased or obtained by interested tenders upon payment of a non- refundable fees of *Kes,1000 only* in cash or Banker's Cheque and payable to the address given below. Tender documents may be obtained electronically from the Website(s) www.tanawwda.go.ke . Tender documents obtained electronically will be free of charge.
5. Tender documents may be viewed and downloaded for free from the website (www.tanawwda.go.ke). Tenderers who download the tender document must forward their particulars immediately to (ceo@tanawwda.go.ke , +254724259891 and P.O BOX 1292-10100, NYERI) to facilitate any further clarification or addendum.
6. Tenders shall be quoted in Kenya Shillings and shall include all taxes. Tenders shall remain valid for 182 days from the date of opening of tenders.
7. All Tenders must be accompanied by a duly filled “*Tender-Securing Declaration Form*” as appropriate.
8. The Tenderer shall chronologically serialize all pages of the tender documents submitted.
9. Completed tenders must be delivered to the address below on or before **Thursday, 21st September 2023 at 10:00 am**. Electronic Tenders **will not** be permitted.
10. 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.
11. Late tenders will be rejected.
10. The addresses referred to above are:

CHIEF EXECUTIVE OFFICER
TANA WATER WORKS DEVELOPMENT AGENCY
P.O BOX 1292-10100, NYERI

A. Address for obtaining further information and for purchasing tender documents

- 1) Name of Procuring Entity: **Tana Water Works Development Agency**
- 2) Physical address for hand Courier Delivery to an office or Tender Box (Baden Powell Road, Nyeri, Maji House)
- 3) Postal Address- P.O Box 1292-10100, NYERI
- 4) Insert name, telephone number and e-mail address of the officer to be contacted: - CEO, +254724259891, ceo@tanawwda.go.ke



B. Address for Submission of Tenders.

- 1) Name of Procuring Entity: **Tana Water Works Development Agency**
- 2) Postal Address (CEO, Tana Water Works Development Agency, P.O Box 1292-10100, NYERI)
- 3) Physical address for hand Courier Delivery to an office or Tender Box (Nyeri, Baden Powell Road, Maji House)

C. Address for Opening of Tenders.

- 1) Name of Procuring Entity: **Tana Water Works Development Agency**
- 2) Physical address for the location (Nyeri, Baden Powell Road, Maji House)

[Authorized Official (name, designation, Signature and date)]

Name Eng. Philip Gichuki

Designation: Chief Executive Officer, TWWDA

Signature:  _____ Date: 28th August 2023

PART 1 - TENDERING PROCEDURES

SECTION I: INSTRUCTIONS TO TENDERERS

A General Provisions

1. Scope of Tender

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

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, Tenderers 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 (*wives, 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. A tenderer may be considered to have a conflict of interest for the purpose of this tendering process, if the tenderer:
- Directly or indirectly controls, is controlled by or is under common control with another tenderer; or
 - 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 Tender Document 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 award and signature. A JV tenderer shall be given opportunity to seek such exemption as a condition of award and signature of contract. Application for exemption from the Competition Authority of Kenya may be accessed from the website www.cak.go.ke
- 3.14 A Kenyan tenderer shall 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 appropriately following the 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 qualifications to 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 and shall further provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Winning Tender conforming to the basic technical requirements shall be considered by the Procuring Entity. 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 shall be 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 its Tender 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 by a 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 Intention to 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 in writing.**

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 a ward.

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. The evaluation and award of contracts will be based on Packages.

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 may be.

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 a 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 Tender has 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 21 days 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 Framework Agreement.

50.2 Within fourteen (14) days of receipt of the Framework 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 TENDERS
	A. General
ITT 1.1	The name of the contract is: PROCUREMENT OF CONTRACTORS FOR CONSTRUCTION OF WATER SUPPLY INFRASTRUCTURE UNDER FRAMEWORK CONTRACT. The reference number of the Contract is: TWWDA/FA/004/2023-2026
ITT 2.3	The Information made available on competing firms is as follows: NOT APPLICABLE
ITT 2.4	The firms that provided consulting services for the contract being tendered for are: NOT APPLICABLE
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: [NOT APPLICABLE] .
ITT3.12	The NCA registration certificate to be required before award and signing of the contract shall be of category: Water Works NCA 7 and above _____
ITT 6.1	All documents referred to under section 6.1 shall form part of the contract and must all be submitted having been chronologically paginated as had been uploaded in the Blank tender document and stamped on every page.
B. Contents of Tender Document	
8.1	(A) Pre-Tender conference shall not take place at the following date, time and place: Date: _____ Time: _____ Place: _____ (B) A pre-arranged pretender visit of the site of the works shall not take place at the following date, time and place: Date: _____ Time: _____ Place: _____
ITT 8.2	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than Date: (Thursday, 21st September 2023 at 10.00 a.m.) . (ii) The Procuring Entity will publish its response at the website: www.tanawwda.go.ke
ITT 8.4	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender site visit will be published is NOT APPLICABLE .
ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: (1) Name of Procuring Entity: Tana Water Works Development Agency

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	<p>(2) Physical address for hand Courier Delivery to an office or Tender Box: Nyeri, Baden Powell Road, Maji House</p> <p>(3) Postal Address: P.O Box 1292-10100, NYERI</p> <p>(4) Insert name, telephone number and e-mail address of the officer to be contacted: Chief Executive Officer, TANA WATER WORKS DEVELOPMENT AGENCY, P.O BOX 1292-10100, NYERI, Email: ceo@tanawwda.go.ke</p>
C. Preparation of Tenders	
ITP 13.1 (h)	<p>The Tenderer shall submit the following additional documents in its Tender:</p> <ol style="list-style-type: none"> 1. Registration with Ministry of Water, Sanitation and Irrigation Class “D” and above for water works construction. 2. Valid Tax Compliance Certificate 3. List of Directors with respective shareholding & details of citizenship – Attach CR12 (not more than 6 months` old) 4. Audited Accounts for the last three years (i.e. within the period of 2020 to 2021 which must be signed by the auditor and the directors) 5. Copy of a valid NSSF compliance certificate 6. Copy of a valid NHIF compliance certificate 7. Copy of Company Registration Certificate under the Companies Act, Cap 486 and in existence for at least Five (5) years. 8. Company profile and key staff resumes (i.e Project Manager, Site Agent etc) 9. Registered office, including physical address of the current office 10. A duly filled, signed and stamped Confidential Business Questionnaire form and other tendering forms as listed under section IV of the tender document.
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: Not Applicable
ITT 16.5	The prices quoted by the Tenderer shall be: Fixed
ITT 20.1	The Tender validity period shall be 182 days .
ITT 20.3 (a)	<p>a) The Number of days beyond the expiry of the initial tender validity period will be days: N/A</p> <p>(b) The Tender price shall be adjusted by the following percentages of the tender price: N/A</p> <p>(i) By __ N/A __% of the local currency portion of the Contract price adjusted to reflect local inflation during the period of extension, and:</p> <p>(ii) By __ N/A __% the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension:</p>
ITT 21.1	<i>[If a Tender Security shall be required, a Tender-Securing Declaration shall not be required, and vice versa.]</i>

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	<p>A Tender Security “shall be” required.</p> <p>A Tender-Securing Declaration “shall not be” required.</p> <p>If a Tender Security shall be required, the amount and currency of the Tender Security shall be: ...KES. 300,000.....</p>
ITT 21.2 (d)	The other Tender Security shall be : N/A
ITT 21.5	On the Performance Security, other documents required shall be: Evidence of Insurances
ITT 22.1	In addition to the original of the Tender, the number of copies is: 1 Copy
ITT 22.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: <u>Power of Attorney</u>
D. Submission and Opening of Tenders	
ITT 24.1	<p>(A) For <u>Tender submission purposes only</u>, the Procuring Entity’s address is:</p> <p>(1) Name of Procuring Entity: Tana Water Works Development Agency</p> <p>(2) Postal Address (P.O BOX 1292-10100, NYERI)</p> <p>(3) Physical address for hand Courier Delivery to an office or Tender Box: Nyeri, Baden Powell Road, Maji House</p> <p>(4) Date and time for submission of Tenders <u>Thursday, 21st September 2023 at 10.00 a.m.</u></p> <p>(5) Tenderers shall not submit tenders electronically.</p>
ITT 27.1	<p>The Tender opening shall take place at the time and the address for Opening of Tenders provided below:</p> <p>(1) Name of Procuring Entity: Tana Water Works Development Agency</p> <p>(2) Physical address for the location: Nyeri, Baden Powell Road, Maji House</p> <p>(3) State date and time of tender opening Thursday, 21st September 2023 at 10.15 a.m.</p>
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
E. Evaluation, and Comparison of Tenders	
ITT 32.3	The adjustment shall be based on the “ average ” price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
ITT 35.2	The invitation to tender is extended to the following groups that qualify for Reservations <u> N/A </u>
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: Maximum percentage of subcontracting permitted is: 30% of the total contract amount . Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience. (Sub-contracting of 30% of total contract should be approved by the Procuring entity)
ITT 36.3	The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: N/A
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 Kenya chapter of chartered institute of arbitrators, P.O Box 50163-00200, Nairobi at a cost as stipulated in their guidelines.
ITT 52.2	Other documents required are: NCA Registration Certificate - Water Works NCA 7 and above.
ITT 54.1	<p>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:</p> <p>For the attention: <i>Eng. Philip Gichuki</i></p> <p>Title/position: <i>Chief Executive Officer</i></p> <p>Procuring Entity: <i>Tana Water Works Development Agency</i></p> <p>Email address: ceo@tanawwda.go.ke</p> <p>In summary, a Procurement-related Complaint may challenge any of the following:</p> <p>(i) the terms of the Tender Documents; and</p> <p>(ii) the Procuring Entity's decision to award the contract.</p>

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 may be 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. (i) 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.

	MANDATORY REQUIREMENTS	Yes	No	Remarks (Fail or Pass) at the bottom
	Submission of valid documents under listed: -			
1.	Valid Tax Compliance Certificate			
2.	List of Directors with respective shareholding & details of citizenship – Attach CR12 (not more than 6 months` old)			
3.	Audited Accounts for the last three years (i.e. within the period of 2020 to 2022 which must be signed by the auditor and the directors)			
4.	Copy of the Firm’s valid NSSF compliance certificate			
5.	Copy of the Firm’s valid NHIF compliance certificate			
6.	Copy of Company Registration Certificate under the Companies Act, Cap 486 and in existence for at least Five (5) years.			
7.	A copy of current Registrations Certificate as a Water Works Contractor by The Ministry of Water, Sanitation and Irrigation Class D for Water Works Borehole Drilling for the current year			
8.	Tender Security as described in the ITT 21.1.			
9.	Company profile and key staff resumes (i.e. Project Manager, Site Agent, Inspector of works, Surveyor)			
10.	Copy of valid business permit/ Registered office, including physical address of the current office.			
11.	Filled Tender document shall be chronologically serialized on every page of the document			
12.	Filled Tender document shall be stamped on every page of the document			
13.	Form of Tender MUST be duly filled, stamped and signed by an authorized person and any Cancellations in the Form of Bid MUST be countersigned			
14.	The BoQ MUST be duly filled, stamped and signed by an authorized person and any cancellations in BoQs MUST be Countersigned			
15.	The Bidder MUST provide Power of Attorney to the person signing the tender			
16.	A duly filled, signed and stamped Confidential Business Questionnaire form.			
17.	Litigation History Form.			
18.	Completed proposal must be returned in one (1) original and 1 (1) copy clearly marked and bound.			
	REMARKS			

(ii) Stage 2- Technical Evaluation

In this stage bidders are to be evaluated on marks. Any bidder who does not achieve at least 75% in this stage will not proceed to stage 3.

TECHNICAL EVALUATION			
NO.	PARAMETER		MAXIMUM SCORE
1.	Relevant Experience Experience as prime contractor in the construction of at least three (3) projects of similar nature and complexity of the works (to comply with this requirement, the works should be at least 75 percent complete).	Must attach copies of award letter and completion letter and any other proofs 1. Experience >3Projects – 20 marks	

		2. Experience 2 Projects – 10 Marks 3. Experience of 1 Project – 5 Marks 4. Experience of 0 project – 0 Marks	
		Total	20
2.	EQUIPMENT <ul style="list-style-type: none"> • Semi-automatic electro-fusion Bonding Machine for HDPE Pipes (50- 315mm dia) (3 marks) • Poker vibrator (2 marks) • Concrete mixer (3 marks) • Excavator/ backhoe loader (3 marks) • Truck/Tipper (2 marks) • Portable dewatering pump (3 marks) • Mechanical Pressure Testing Equipment (for pipelines up to PN 16) (3 marks) • Rock Breaker (3 marks) • Mobile Compressor (3 marks) 	Proof of ownership Co-owned Leased agreement signed and deposited with commission of oath Proof of log books and lease agreement and proof of Mechanical Conditions of Plants and Equipment 'required/attached. (maximum 25mks)	25
		Total	25
KEY PERSONNEL			
PROJECT MANAGER (Maximum 10marks)	QUALIFICATION Bachelor Degree or Higher National Diploma in Civil/Water Engineering or Construction Technology [attach copies of qualification. Relevant experience (10years)	Degree	6
		Higher Diploma	3
		5-10 years	4
		1-5 years	2
SITE AGENT/ENGINEER (Maximum 10marks)	QUALIFICATION Degree in Civil /Water /Building Engineering or equivalent and registered with EBK or KETRB. Professional Qualification Relevant experience (10years)	Degree	5
		Diploma	3
		EBK	3
		KETRB	2
		5-10 years	2
		1-5 years	2
INSPECTOR OF WORKS (Maximum 5 marks)	QUALIFICATION Diploma in Civil /Water /Building Engineering or equivalent Relevant experience (5 Years)	Diploma	3
		Certificate	2
		5 years and above.	2
		0-5 years	1
Surveyor (Maximum 5 marks)	QUALIFICATION Minimum Diploma in Survey or equivalent. Relevant experience	Diploma	3
		Certificate	2
		5 years and above.	2

	(5 Years)	0-5 years	1
	Total		30marks
Financial capacity (maximum 25marks)	Audited accounts Financial capability of the firm based on information provided in the last two years audited accounts 2020,2021		10
	Line of credit of over 10Million		5
	Bank statement (last six months to date of tender)		6
Proposed program (work methodology and schedule)	Detailed work methodology		4
		Total	25
		GRAND TOTAL	100

(iii) FINANCIAL EVALUATION

At this stage, bidders’ financial quotations will be ranked from the lowest to the highest. The 10 lowest evaluated bidders will be qualified for the Frame Work Agreement.

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,** if 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;** if permitted under ITT 35.2(d): N/A
.....

4. Multiple Contracts

N/A

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 payment) sufficient to meet the construction cash flow of Kenya a Shillings **KES. 10 Million** _____.
- ii) Minimum average annual construction turnover of Kenya Shillings **25 Million** equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 3 years.
 - iii) At least **3** No. 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 **8 Million** equivalent.
 - iv) Contractor's Representative and Key Personnel, which are specified as: **Project Manager, Site Agent/Engineer, Inspector of Works and Surveyor.**
 - v) Contractors key equipment listed on the table "Contractor's Equipment" below and more specifically listed as **Semi-automatic electro-fusion Bonding Machine for HDPE Pipes (50- 315mm dia), Poker vibrator, Concrete mixer, Excavator/ backhoe loader, Truck/Tipper, Portable dewatering pump, Mechanical Pressure Testing Equipment (for pipelines up to PN 16), Rock Breaker and Mobile Compressor** _____
 - 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 5 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 5 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.

QUALIFICATION FORMS

1. FORMEQU: EQUIPMENT

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or 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 <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> 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	

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

1.	Title of position: Contractor's Representative	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
2.	Title of position: [_____]	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
3.	Title of position: [_____]	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
4.	Title of position: [_____]	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
5.	Title of position: [insert title]	
	Name of candidate	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment: for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>

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]: <i>[title of position from Form PER-1]</i>		
Personnel information	Name:	Date of birth:
	Address:	E-mail:
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: <i>[language and levels of speaking, reading and writing skills]</i>	
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
<i>[main project details]</i>	<i>[role and responsibilities on the project]</i>	<i>[time in role]</i>	<i>[describe the experience relevant to this position]</i>

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:	<i>[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]</i>
Time commitment:	<i>[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]</i>

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

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

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

Signature: _____

Date: (day month year): _____ Countersignature

of authorized representative of the Tenderer:

Signature: _____ Date: (day month

year): _____

4. TENDERER'S QUALIFICATION WITHOUT PRE-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: <i>[indicate country of Constitution]</i>
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
<input type="checkbox"/> 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
<input type="checkbox"/> In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 3.5
<input type="checkbox"/> 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 <input type="checkbox"/> 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. <input type="checkbox"/> 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			
<input type="checkbox"/> Contract non-performance did not occur since 1 st January [<i>insert year</i>] specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1.			
<input type="checkbox"/> Contract(s) not performed since 1 st January [<i>insert year</i>] 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)
[<i>insert year</i>]	[<i>insert amount and percentage</i>]	Contract Identification: [<i>indicate complete contract name/number, and any other identification</i>] Name of Procuring Entity: [<i>insert full name</i>] Address of Procuring Entity: [<i>insert street/city/country</i>] Reason(s) for nonperformance: [<i>indicate main reason(s)</i>]	[<i>insert amount</i>]
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3.			
<input type="checkbox"/> Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.			

Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)
		Contract Identification: _____ 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			

<input type="checkbox"/> No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4. <input type="checkbox"/> 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)
<i>[insert year]</i>	<i>[insert percentage]</i>	Contract Identification: <i>[indicate complete contract name, number, and any other identification]</i> Name of Procuring Entity: <i>[insert full name]</i> Address of Procuring Entity: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Procuring Entity" or "Contractor"]</i> Reason(s) for Litigation and award decision <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>

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)					

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
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

*Refer to ITT 15 for the exchange rate

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 statements¹ 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
<i>[indicate year]</i>	<i>[insert amount and indicate currency]</i>		
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				
Award date				
Completion date				
Role in Contract	Prime Contractor <input type="checkbox"/>	Member JV <input type="checkbox"/>	in Management Contractor <input type="checkbox"/>	Sub-contractor <input type="checkbox"/>
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 Name² (as per ITT 34): _____
 ITT No. and title: _____

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

1. Key Activity No One: _

		Information		
Contract Identification				
Award date				
Completion date				
Role in Contract		Prime Contractor <input type="checkbox"/>	Member in JV <input type="checkbox"/>	Management Contractor <input type="checkbox"/>
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:				

² If applicable

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

- 2. Activity No. Two
- 3.

tendered for and their total) [insert the total price of all package in words and figures];”.

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 each such commission or gratuity].*

Name of Recipient	Address	Reason	Amount

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

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

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

xviii) **Fraud and Corruption:** We 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 Tender is a JV*. Tenderer is further reminded that it is an offence to give false information on this Form.

(a) Tenderer's details

	ITEM	DESCRIPTION
1	Name of the Procuring Entity	
2	Reference Number of the Tender	
3	Date and Time of Tender Opening	
4	Name of the Tenderer	
5	Full Address and 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 (<i>postal and physical addresses, email, and telephone number</i>) 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 (<i>postal and physical addresses, email, and telephone number</i>) 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) **DISCLOSURE OF INTEREST- Interest of the Firm in the Procuring Entity.**

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

If yes, provide details as follows.

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

ii) **Conflict of interest disclosure**

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

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

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 TENDER DETERMINATION

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

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

1. I have read and I understand the contents of this Certificate;
2. I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am the authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tender on behalf of the Tenderer;
4. For the purposes of this Certificate and the Tender, I understand that the word “competitor” shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
 - a) has been requested to submit a Tender in response to this request for tenders;
 - b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities or experience;
5. The Tenderer discloses that [check one of the following, as applicable]:
 - a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;
 - b) the Tenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;
6. In particular, without limiting the generality of paragraphs (5)(a) or (5)(b) above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - a) prices;
 - b) methods, factors or formulas used to calculate prices;
 - c) the intention or decision to submit, or not to submit, a tender; or
 - d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuant to paragraph (5)(b) above;
7. In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by the procuring authority or as specifically disclosed pursuant to paragraph (5)(b) above;
8. the terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, whichever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5)(b) above.

Name _____ Title _____ Date _____

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

C. SELF - DECLARATION FORMS

FORM SD1

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

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

1. THAT I am the Company Secretary/ Chief Executive/Managing Director/Principal Officer/Director of (*insert name of the Company*) who is a Bidder in respect of Tender No. for (*insert tender title/description*) for (*insert name of the Procuring entity*) and duly authorized and competent to make this statement.
2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.
3. THAT what is deponed to 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 duly authorized and competent to make this statement.

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

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

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

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

.....
(Title)

.....
(Signature)

.....
(Date)

Bidder's Official Stamp

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

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

I do 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 to establish tender prices at artificial non-competitive levels and to deprive the procuring entity of the benefits of free and open competition.
- c) Rejects a proposal for award¹ 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 inspect² 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.

¹For the avoidance of doubt, a party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and tendering, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

² Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Investigating Authority or persons appointed by the Procuring Entity to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

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 provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.
4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) thirty days after the end of the Tender Validity Period.
5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

[signature(s)]

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 complete name of Purchaser]* I/We, the undersigned, declare that:

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

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

or partner or sole proprietor, etc.) Name:

..... Duly authorized to sign the bid

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

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

Appendix to Tender

Schedule of Currency requirements

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

<i>Name of currency</i>	<i>Amounts payable</i>
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 - BILLS OF QUANTITIES

The Bills of Quantities shall be prepared for each Package separately.

(i) Packages involved in the Framework Agreement (N/A)

The Works shall consist of the following packages, and each package shall be described in full as per Section-Bills of Quantities.

No.	Package Description	Locations where the Package will be constructed	Likely Number of Packages	Period of Construction
1	N/A			
2				
3				
4				
5				
6	ETC.			

(ii) BILLS OF QUANTITIES;

The Bills of Quantities shall be prepared for each Package separately.

(iii) Revise the “Sample Bill of Quantities” as follows:

PACKAGE SUMMARY (complete one for each Package)

SUMMARY ITEMS	<i>From Page</i>	<i>Amount</i>
Bill No. 1: Preliminary Items		
Bill No. 2: Work Items		
Bill No 3: Daywork Summary		
Bill No 4: Provisional Sums		
Subtotal of Bills No 1-4		
Allow for any Discounts ⁱ		
TOTAL TENDER PRICE for Package No.....Carried forward to GRAND SUMMARY		

GRAND SUMMARY

SUMMARY ITEMS	<i>From Page</i>	<i>Amount</i>
Package No. 1		
Package No. 2		
Package No. 3		
Package No. 4... ETC.		
Subtotal of Packages 1 to 4 ETC.		
Allow for any Discounts ¹		
Total Tender Price Carried forward to Form of Tender		

SCOPE OF WORKS

The scope of the works includes equipping and servicing of boreholes and construction of civil works at various locations within TWWDA's area of jurisdiction, as and when required.

PREAMBLE TO THE BILLS OF QUANTITIES

GENERAL DIRECTIONS

1. The Conditions of Contract together with the Specification and the Drawings shall be read in conjunction with the Bill of Quantities and in so far as they have any bearing shall be referred to for details of the description, quality, test and strength of material used and the workmanship, conditions, obligations, liabilities and instructions generally which shall be complied with in carrying out this Contract. The cost of complying with all conditions, obligations and liabilities described in the Conditions of Contract and Specification and in the Bill of Quantities, including all overhead charges shall be deemed to be spread over and included in the prices or sums stated by the Contractor in the Bill of Quantities.

2. Each item shall be priced and extended to the "Amount" column by the Contractor with the exception of the items for which a rate only is required or which already have Provisional Sums affixed thereto. If the Contractor omits to price any items in the bill of quantities, then the cost of the work of such items shall be held to be spread over and included in the prices given in the other items of work. The Day work Schedule shall also be completed.

The Bill of Quantities has been divided into sections, where possible. Notwithstanding such division of the Works for convenience of pricing and re-measurement thereof, nothing contained therein shall in any way relieve nor be deemed to relieve the Contractor of his responsibility set forth elsewhere in the contract.

3. The quantities of work and material set forth in the Bill of Quantities are in estimate only and are not to be considered as limiting nor as extending the amount of work to be done and material to be supplied by the Contractor. The Works as completed in accordance with the Contract shall be measured and paid for as described in this Bill of Quantities and in accordance with the Conditions of Contract and Specification.

4. Progress payments in the Interim Certificate referred to in Clause 60 of the Conditions of Contract in respect of "sum" items in the Bill of Quantities shall be by means of interim progress instalments, such instalments not exceeding in aggregate the total of each sum item. Such interim progress instalments shall be assessed by the Engineer based on the extent that the work to be done or liabilities or charges to be incurred by the Contractor under the description of each item bears to the extent of such work, liabilities or charges actually carried out under each sum item from time to time.

Such progress payments in respect of sum items shall be subject to the terms of retention referred to in Clause 60 of the Conditions of Contract.

5. The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:-

km	=	Kilometre
m	=	Metre
mm	=	Millimetre
m ²	=	Square Metre
m ³	=	Cubic Metre
mm ²	=	Square Millimetre
nr.	=	Number
kg	=	Kilogramme
Mg	=	Megagramme (metric tonne)
litre	=	Litre
ml	=	Millilitre (cubic centimetres)

All rates and sums of money quoted in the Bill of Quantities shall be in Kenya Shillings and Cents.

The Contractor is referred to the Additional General Instructions Clause 1 to 17 inclusive hereafter regarding measurement and pricing of the various items in the Bill of Quantities, and these instructions shall be read in conjunction with the Specification, Conditions of Contract and Drawings as stated in 1 above.

6. The following abbreviations are used in the description of items in the Bills of Quantities: -

A.C.	=	Asbestos Cement
C.I.	=	Cast Iron (Grey Iron)
D.I.	=	Ductile Iron
E.O.	=	Extra Over
m.h.	=	Manhole
n.e.	=	Not exceeding
r.c.	=	Reinforced concrete
p.c.	=	Precast Concrete
uPVC	=	unplasticized Poly Vinyl Chloride

PARTICULAR INSTRUCTIONS FOR MEASUREMENTS AND PRICING OF ITEMS IN THE BILL OF QUANTITIES

• 1. Dealing with Water

No measurement will be taken for the construction, maintenance and removal of temporary diversion works or other works including pumping required for dealing with water during the execution of the Works except where specifically required and items appear in the Bill of Quantities.

2. Site Clearance and Demolition

The units of measurement shall be:

(i)	General Site Clearance	square metres
(ii)	General Site clearance for pipelines	metre
(iii)	Removal of trees and stumps	number
(iv)	Demolition of building and structures	sum
(v)	Demolition of pipelines	metre

Girths of trees shall be measured 600 mm above ground level.

There will be no measurement of the stumps of trees which are themselves to be removed.

General Site clearance shall include the removal of trees with a girth less than 500 mm and stumps of diameter less than 150mm.

3. Excavation and Earthworks

(a) The units of measurements shall be:

(i)	Bulk excavation and filling	cubic metre
(ii)	Excavation, filling and compaction for pipelines	metre
(iii)	Excavation in rock, extra over (i) and (ii) above	cubic metre
(iv)	Preparation of surface, trimming of slopes, pitching, soiling and grassing	square metres

(b) Method of Measurement

(i) Earthworks measured by the cubic metre. The measured volume shall be the net-in-situ volume obtained from the difference between the lines, levels and profiles of the ground or rock surface agreed with the Engineer before excavation is commenced and the lines, levels and profiles as shown on the Drawings, or as may be ordered by the Engineer as necessary for the Works. Where the Drawings do not indicate the profiles of the excavation, the measured volume shall be the volume of the voids that would be formed if the completed structure, for which the excavation is performed, were to be lifted vertically out of the ground.

(ii) Pipelines measured by the cubic metre.

Where excavation for pipe runs is measured in the Bill of Quantities by the cubic metre then the measurement shall be taken as the vertical depth from the commencing surface down to formation level and the width of the excavation as 400 mm wider than the nominal internal diameter of the pipe or as directed by the Engineer.

(iii) Pipelines measured by the metre

Depths used for classification in the Bill of Quantities shall be measured from the commencing surface to the inverts of the pipes.

(iv) No measurement will be taken for material excavated beyond the limits and levels specified above.

(c) Item Coverage

No separate payment will be made beyond the rates for excavation for:-

(i) All necessary Temporary Works including dealing with water in the excavation;

- (ii) Any over breakage and any additional working space required and refilling of same;
- (iii) Making good all slips or falls of materials;
- (iv) Trimming of excavation to correct lines levels and profiles;
- (v) Preparation of foundations as specified except where specifically provided for in separate Bill items;
- (vi) Reinstatement of ground along pipelines to its former nature except where specifically provided for in separate Bill items
- (vii) Location, uplifting, transportation, handling and sorting of approved selected material from the excavations for use in the backfilling of trench and other excavations;
- (viii) Backfilling and disposal of materials and removal of surplus to spoil dump all as specified.

(d) Filling:

Normal material from store forming embankments around structures shall be measured by the cubic metre as the net compacted volume of filling comprised within the sections shown on the Drawings to the approval of the Engineer. No extra payment will be made for additional material placed to allow for the effect of settlement.

4. Concrete and Reinforced Concrete

(a) The units of measurement shall be:

- (i) In-situ concrete other than blinding and granolithic concrete cubic metre
- (ii) Blinding concrete and granolithic concrete with the thickness stated square metre

(b) Method of measurement:

All cast-in-situ concrete will be the quantity calculated from the dimensions shown on the Drawings or as approved by the Engineer. No deductions in the measurement will be made for:

- (i) Mortar beds;
- (ii) chamfers, ducts, chases, fillets, splays, drips, rebates, recesses, grooves and the like, not exceeding 0.005 square metres in cross sectional area;
- (iii) Bolt holes, pockets, sockets, mortices and the like formed in the concrete not exceeding 0.1 cubic metres in volume.
- (iv) Cast in components each less than 0.1 cubic metres in volume;
- (v) Reinforcement and other metal sections.

(c) Item coverage:

No separate payment will be made beyond the rates for concrete for: -

- (i) Trial mixes (for Specification Classes of concrete only);
- (ii) Supply of cement, water and processed aggregates;
- (iii) Supply and placing of mortar beds or rendering as specified;
- (iv) Mixing, transporting, placing, compacting, surface tamping to provide UI finish, protecting and curing the concrete;
- (v) hacking, cleaning and roughening by wet sand blasting, scrubbling or other means concrete surfaces on or against which further concrete is to be placed;
- (vi) Rubbing down faces;
- (vii) shuttering and waterstops to construction joints, not expressly required by the Engineer, Keys and the like.
- (viii) Providing samples and testing of materials and concrete;
- (ix) Provision and use of admixtures;
- (x) Placing and compacting concrete around steel reinforcement and other cast in components;
- (xi) Placing and compacting concrete at varying heights;
- (xii) Creating falls, cambers and shaped profiles;

- (xiii) Formwork to edge of concrete in blinding layers;
- (xiv) All additional concrete to fill overbreak and/or working space;
- (xv) Where concretes of different cement contents are required to be placed simultaneously in the same life of concrete;
- (xvi) Placing and compacting concrete to inclined or battered faces including any necessary upper surfaces formwork inclined at an angle of less than 15° to the horizontal.

5. Precast Concrete

(a) The units of measurement shall be:

- (i) Beams, slabs, segmental units: number
- (ii) Copings, sills and the like of uniform cross-section: metre

(b) The term "precast concrete" applies to any concrete unit or member cast on site but not in its final position and to concrete units or members manufactured off site.

(c) Item coverage:

No separate payment will be made beyond the rates for precast concrete for:

- (i) trial mixes;
- (ii) reinforcement, cement and processed aggregates;
- (iii) formwork, surface finishing, lifting devices and bearing plates;
- (iv) forming sockets, holes, grooves, rebates recesses and ducts; and except where otherwise indicated,
- (v) handling, laying and fixing the units in position;
- (vi) aligning members and units, adjusting levels and soffit profiles, and temporary fixing to prevent displacement;
- (vii) cutting and trimming copings, sills and the like to size.

6. Steel Reinforcement

(a) The Units of measurement shall be:

- (i) Steel rod reinforcement kilogramme (kg)
- (ii) Steel fabric reinforcement square metres
- (iii) Steel dowels of stated diameter and length number

(b) Method of measurement:

The weight of steel rod reinforcement shall be calculated on the basis that steel weighs 7,850 kgs per cubic metre. The steel rod reinforcement shall be measured as the net theoretical calculated weight of the steel actually used in the work (including laps as specified) in accordance with the bending schedules prepared by the Engineer with no allowance being made in the measurement thereof for rolling margin or otherwise. Tying wire shall not be measured.

Fabric reinforcement shall be measured as the area of work covered, the weight per square metre being stated.

(c) Item coverage:

No separate payment will be made beyond the rates for steel reinforcement for:

- (i) Supplying, cutting to length, cleaning, bending, hooking, waste incurred by cutting, handling;
- (ii) Placing and fixing in the required position, including binding wire or other approved material;
- (iii) Placing supports and spacers;
- (iv) Extra fabric reinforcement in laps;
- (v) In the case of dowels - drilling holes or forming pockets in the structure and casting dowels into their final position.

7. Formwork

(a) The units of measurement shall be:

- (i) General formwork square metre
- (ii) Formwork less than 300mm wide metre
- (iii) Boxouts, pockets, etc. of stated size number
- (iv) Rebates, chases, etc. of staged size metre

(b) Method of measurement

Subject to the limitations stated below general formwork will be measured as the superficial area of formwork actually in contact with the finished face of the concrete but no deduction shall be made for openings in formwork of 0.4 square metres or less.

Formwork shall not be measured:

- (i) for forming construction joints (whether shown or not on the Drawings), skewbacks, stunt ends, steppings, bonding chases, keys and the like;
- (ii) for forming boxouts, pockets, etc., of stated size that are measured by number;
- (iii) for forming rebates, chases, etc., of stated size that are measured by the metre;
- (iv) to edge of concrete in blinding layers;
- (v) to upper surfaces of concrete inclined at angle of less than 15° to the horizontal.

(c) Classification of formwork;

Plane formwork shall be classified according to its angle of inclination as follows:-

Class	Angle of inclination to the vertical
Horizontal	5E- 90E
Sloping	10E- 85E
Battered	0E- 10E
Vertical	0E

(d) Item coverage:

No separate payment will be made beyond the rates for formwork for:

- (i) falsework, centering, fabricating, assembling, cutting, fitting and fixing in position and taking all measurement necessary to produce the required profiles;
- (ii) forming cambers or falls;
- (iii) linings and taking all measures necessary to produce the required finish to the surfaces of the concrete;
- (iv) cutting and fitting around projecting members, pipes reinforcement and the like;

- (v) forming fillets, chamfers, splays, drips, rebates, recesses, grooves and the like not exceeding 0.0025 square metre in cross-sectional area, unless itemised in the Bill of Quantities.
- (vi) maintaining in place until it is struck and allowing for any variation from the minimum period for striking arising from prevailing weather conditions.
- (vii) striking, taking down and removing;
- (viii) any additional concrete provided in lieu of formwork to fill overbreak or working space.

8. Building in Plant, Equipment and Pipework

Items appear in the Bill of Quantities for building-in plant equipment and pipework. The rates in the Bill of Quantities shall include for all materials, formwork, etc. required for such building-in. No additional payment will be made should the Contractor choose to form boxouts, pockets, etc., and grout in at a later date.

9. Unshuttered Surfaces

The unit of measurement shall be square metre

Unshuttered surfaces are described in the Specification. Items are provided where appropriate for surface finish type U2, U3 and U4 and the rates entered under these items shall include for all material, plant and labour required to finish the unshuttered concrete as specified.

No measurement shall be made for the normal screeded finish type U1.

10. Breaking out Reinforced Concrete and Blockwork

(a) The units of measurement shall be:

- (i) Breaking out, section thickness stated or shown on the Drawings -cubic metres
- (ii) Making good perimeter of permanent openings, section thickness stated or shown on the Drawings square metre
- (iii) Building in pipe work, etc of stated size number

(b) Method of measurement:

- (i) Breaking out. The section thicknesses stated or shown on the Drawings are nominal thicknesses only. For measurement the thicknesses of the sections shall be as measured on Site.
- (ii) Making good. For measurement purposes the perimeter shall be that existing after any making good of permanent openings. The perimeters and section thicknesses shall be as measured on site. The rates in the Bill of Quantities shall include for all materials, formwork, etc. and for filling of overbreak.

(c) Item coverage:

No separate payment will be made beyond the rates for breaking out for:

- (i) All equipment necessary;
- (ii) Any temporary supports, staging and the like;
- (iii) Any overbreak;
- (iv) Material for building in pipes and supporting the pipe;
- (v) Formwork;
- (vi) Removal of broken out materials off site;
- (vii) Cutting through reinforcement.

11. Pipes and Pipe work

(a) The units of measurement shall be:

- (i) Pipelines : metre
- (ii) Pipework, fittings and valves : number

(b) Method of measurement:

- (i) Lengths of pipelines shall be measured net as laid along their centre lines.
- (ii) Short lengths of pipes, the dimensions of which are detailed in the Bill of Quantities, shall be measured by number.
- (iii) Lengths of drainage pipes built into manholes and other chambers shall be measured from the inside faces of chambers.

(c) Item coverage:

No separate payment will be made beyond the rates for pipes and pipework for:-

- (i) Cost of supplying all pipes, jointing materials and short lengths to suit fittings;
- (ii) All necessary cutting and waste;
- (iii) All plant, labour and materials required for handling, distribution, laying and jointing in position;
- (iv) Testing of the pipe system.

12. Pipework Ancillaries

(a) The units of measurement shall be:

- (i) Beds, haunches and surrounds: metre
- (ii) Concrete stools and thrust and anchor blocks: cubic metre

(b) Method of measurement:

- (i) Separate measurement shall not be made for beds to haunched or surrounded pipes where the same material is used for beds and haunches or beds and surrounds respectively.

(c) Item coverage:

No separate payment will be made beyond the rates for thrust blocks, surrounds and the like for:

- (i) Excavation including working space;
- (ii) Formwork type F1 finish;
- (iii) Providing unshuttered surfaces to type U1.

13. Structural and Miscellaneous Metal Work

(a) The units of measurement shall be:

- (i) Structural and miscellaneous metal work including stairways, landings, walkways and platforms . Megagramme (Metric tonne)
- (ii) Ladders, handrails and the like metre
- (iii) Flooring, duct covers and the like square metre
- (iv) Tanks number

(b) Method of measurement:

The weight of mild steel to B.S 4360 grades 43A1 and 43A shall be taken for measurement as 7,850 kg/cu. m.

The measurement of metal work in (a) (i), including bolts, washers, and all other fixing shall be the net theoretical calculated weights of metalwork used in the work in accordance with the Drawings or as ordered by the Engineer. No allowance shall be made in the measurement thereof for rolling margin and other permissible deviations from standard weights.

(c) Item coverage:

No separate payment will be made beyond the rates for metal work for:

- (i) Cost of supplying materials;
- (ii) moulding, fabricating, welding, drilling, machining, screwing, galvanizing or painting as may be specified.
- (iii) Handling, transporting, hoisting, fitting and fixing in position complete;
- (iv) supply of all fixings;
- (v) Painting after erection as specified;

14. **Brickwork, Blockwork and Masonry**

(a) The units of measurements shall be:

- (i) Brickwork, blockwork and masonry not exceeding 1 metre in thickness
square metres
- (ii) Brickwork, blockwork and masonry exceeding 1 metre in thickness
cubic metres
- (iii) Damp proof courses, wall thickness stated metre

(b) Method of measurement:

- (i) Volumes and areas measured for brickwork, blockwork and masonry shall include the volumes and areas of joints.
- (ii) No deduction or addition to the volumes and areas measured shall be made for rebates, projecting courses or other surface features each less than 0.05 square metre in cross sectional area.
- (iii) No deduction from the Volumes and areas measured shall be made for holes and openings in walls or surfaces each less than 0.25 square metre in cross-sectional area.
- (iv) Areas shall be measured at the centre lines of brickwork, blockwork and masonry.

(c) Item coverage:

No separate payment will be made beyond the rates for the rates for brickwork, blockwork and masonry for:

- (i) Jointing, pointing and fair-faced work, in any type of bond including all rough and fair cutting;
- (ii) Plinths, corbels, bull noses, chases, rebates, quoins, brick copings string courses and the like;
- (iii) Centering and all temporary supports;
- (iv) Bonding into existing work;
- (v) Protection of work;
- (vi) Building in pipes, holdfasts, bolts and the like and forming openings less than 0.25 square metre in cross section;
- (vii) Ties and reinforcement.

15. **Roofing**

(a) The units of measurement shall be:

- (i) Galvanized corrugated sheet iron or proprietary sheet metal roofing SM
- (ii) Translucent panels, extra over (i) above square metre

(b) Method of measurement:

- (i) Roofing shall be measured net as the overall area of finished roofing.

(c) Item coverage:

No separate payment will be made beyond the rates for roofing for:

- (i) Cutting to length, waste and laps;
- (ii) Fixings, flashing, ridges and closure pieces.

16. Doors and Windows

(a) The unit of measurement shall be number.

(b) The rate in the Bill of Quantities shall include for the supply and building-in of all frames, glazing and all iron mongery as specified.

17. Refurbishment of Valves

Valves shall be refurbished as follows:-

- (a) Cut off water by closing up stream valve.
- (b) Remove bolts attaching bonnet (top half) to body (bottom half).
- (c) Withdraw bonnet including stem (spindle) and wedge (gate), leaving body only in pipeline.
- (d) Place steel blanking plate and gasket and bolt in position.
- (e) Turn on water.

The time for the above shall be kept to an absolute minimum by loosening bolts etc. early and shall not exceed one hour.

Valve interiors shall be fully stripped inspected and cleaned (wire brushed) in a workshop and reassembled, greased with new gland packing and new external bolts and gaskets. Any worn out parts e.g. spindles shall be replaced as instructed.

When valves have been refurbished, the water shall be turned off, the blanking plate removed, the interior of the body cleaned by wire brushing and the valve reassembled. The time for the above shall be kept to an absolute minimum and shall not exceed one hour.

The rate in the BoQ for refurbishment shall include for all labour, plant and tools to turn off and on the water supply for the removal, stripping, inspection, cleaning and reassembly of the valve both on site and in the workshop, for the supply of the temporary blanking plate, gasket and bolts, and for the supply of new gland packing, new gaskets and bolts and all oils and greases.

The Contractor shall be paid extra for the material costs only of any additional parts he is instructed to renew e.g. spindles and wedges.

18. Measurement and Payment for Gabions

(a) Chain Link Fencing, Weld mesh etc.:

The unit of measurement for chain link fencing weld mesh etc for the manufacture of gabions will be per square metre, calculated from the area required to construct the boxes as shown on the drawings or directed by the Engineer without allowing for waste.

The rate shall include for supplying, transporting to any point on the site, cutting, waste, bending, welding or binding, placing in position and binding, and all labour, tools plant, supervision, overheads and profit.

(b) Rock Fill to Gabions:

The unit measurement shall be per cubic metre of rock fill calculated from the volume of the boxes shown on the drawing or directed by the Engineer. The rate shall include for providing and selecting rock or boulders, transporting to any point on site, hand packing inside boxes trimming and compaction of surface to receive boxes, and all labour, plant, supervision, over-heads and profit.

(c) Any excavation and backfilling required to place gabions in cut will be paid for as "Excavation for Structure". No additional payment will be made for filling behind gabions placed in front of embankments or *fills* and any additional work shall be included in the rate for earthworks.

INSERT BILLS OF QUANTITIES HERE

BILL OF QUANTITIES (BOQ)					
CONSTRUCTION OF WATER SUPPLY INFRASTRUCTURE					
BILL No.1 - PRELIMINARY & GENERAL ITEMS					
Item	Description	Unit	Qty	BOQ Rate	Amount (Ksh)
A	CLASS A: GENERAL ITEMS				
A1*	CONTRACTUAL REQUIREMENTS				
A110	Allow for Provision of Performance bond for the works	Item	1		-
A120	Allow for provision of Contractor's All Risk Insurance of works.	Item	1		-
A2	SPECIFIED REQUIREMENTS				
A221	Allow for transportation of Engineer's staff to and from site during construction period.	Km	1		-
A233	Allow for works setting out, marking and pegging as may be necessary.	m	1		-
A260.1	Provision for pressure testing of the laid mains. Rate to include supply of all materials and equipment required, casting of concrete thrust blocks and or support to the pipe during the testing and cost for preparation and Submission of test results.	m	1		-
A260.2	Allow for flushing and sterilization of laid mains. Rate to include supply of all materials, chemicals and equipment, sampling and transportation of the samples to certified quality testing institution, fees payable to the testing institution and cost for preparation and submission of test results.	m	1		-
A3*	METHOD-RELATED CHARGES				
A311	Allow for provision and maintenance of contractor's temporary site office/camp/store and removal on completion of the contract. Rate to include purchase of all required office stationery and payment for all utilities required.	Month	1		-
A323	Allow for provision of Security guarding of all the works including lighting as necessary during the contract period.	Month	1		-
A352	Allow for setting up of project signboards and removal after project completion (Location as directed on site). Rate to include for licence fees payable to City Council of Nairobi.	Nr	1		-

A35 7	Allow for de-watering of works during the contract period.	Month	1		-
A42 0	Allow for relocation of underground services such as water pipes, sewer lines and underground cables as instructed by the Engineer.	m	1		-
A51 0	Allow for road cutting, microtunneling and/or working on road verges permits from relevant roads authorities including KURA, KeRRA, KeNHA and Relevant County Government. Rate to include all materials, labour, equipment and reinstatement of the roads to standards, drawings and instructions issued by County Government/Road authorities and charges in respect of microtunneling permits, notices and diversions.	m	1		-
A64 0.2	Allow for preparation and submission to the employer 1no. Set of virograph and 2no. Sets of blue print copies (A1 size) of as-built drawings for the laid water line. Note that chamber positions in the layout should be actual (geo-referenced to the national grid).	Item	1		-
TOTAL BILL No. 1 CARRIED TO GRAND SUMMARY					-
BILL No. 2: MEASURED WORKS					
B	CLASS B: SITE INVESTIGATION				
B1*	TRIAL PITS AND TRENCHES				
	Excavate Trial pits to ascertain location of underground services, existing pipes and subsurface ground conditions including preparation of reports.				
B11 2	Trial pit in material other than rock; depth 1 - 2m	nr	1		-
B12 3	Trial pit in material which includes rock; depth 1 - 2m	nr	1		-
D	CLASS D: DEMOLITION AND SITE CLEARANCE				
	<i>Demolition and removal of natural and artificial particles, objects and obstructions which are above the original surface and reinstatement to original status.</i>				
D10 0	General clearance, maximum of 1.5m on either side of the centerline of the water line route where applicable.	SM	1		-
I	CLASS I: PIPEWORK - PIPES				
	<i>Include Supply, handling, delivery to site, laying and jointing of pipes. Rate to include excavation and backfilling of trenches depth n.e 1.5m, cutting to size, fixing and fuse jointing of HDPE pipes and socket jointing, mechanical couplings or steel flanges in case of GI pipes. All steel fittings shall be manufactured to AWWA C200. The working pressures and wall thicknesses shall conform to ISO 559 Series B while HDPE pipes specifications conforms to ISO 4427 standard</i>				
I310	OD 20MM HDPE PIPE(PN 12.5)	m	1		
I311	OD 25MM HDPE PIPE(PN12.5)	m	1		
I312	OD 32MM HDPE PIPE(PN 12.5)	m	1		
I313	OD 50MM HDPE(PN12.5)	m	1		
I314	OD 63MM HDPE (PN 12.5)	m	1		
I315	OD 90MM HDPE (PN 12.5)	m	1		
I316	OD 110MM HDPE (PN 12.5)	m	1		
I317	OD 140MM HDPE (PN 12.5)	m	1		
I318	OD 160MM HDPE (PN 12.5)	m	1		
I319	OD 200MM HDPE (PN 12.5)	m	1		
I320	DN 25mm GI Class B pipe	m	1		

I321	DN 32mm GI Class B pipe	m	1		
I322	DN 38mm GI Class B pipe	m	1		
I323	DN 50mm GI Class B pipe	m	1		
I324	DN 63mm GI Class B pipe	m	1		
I325	DN 75mm GI Class B pipe	m	1		
I326	DN 100mm GI Class B pipe	m	1		
I327	DN 150mm GI Class B pipe	m	1		
I328	DN 200mm GI Class B pipe	m	1		
J	CLASS J: PIPEWORK - FITTINGS AND VALVES				
	<i>Supply and fix the following fittings. Rate to include for transportation to site and installation costs and Contractor's overhead.</i>				
J1	13mm GI 90° Bend	No.	1		
J2	13mm GI 90° Elbow	No.	1		
J3	13mm GI Gate valve	No.	1		
J4	13mm GI socket	No.	1		
J5	13mm GI Union	No.	1		
J6	13mm hexagonal nipples	No.	1		
J7	13mm GI Taps	No.	1		
J8	13mm GI Valve Sockets	No.	1		
J9	13mm GI Tee Equal	No.	1		
J10	13mm GI Air Valves	No.	1		
J11	13mm GI Non-Return valve	No.	1		
J12	20mm GI 90° Bend	No.	1		
J13	20mm GI 90° Elbow	No.	1		
J14	20mm GI Gate valve	No.	1		
J15	20mm GI socket	No.	1		
J16	20mm GI Union	No.	1		
J17	20mm hexagonal nipples	No.	1		
J18	20mm GI Taps	No.	1		
J19	20mm GI Valve Sockets	No.	1		
J20	20mm GI Tee Equal	No.	1		
J21	20mm GI Air Valves	No.	1		
J22	20mm GI Non-Return valve	No.	1		
J23	25mm GI 90° Bend	No.	1		
J24	25mm GI 90° Elbow	No.	1		
J25	25mm GI Gate valve	No.	1		
J26	25mm GI socket	No.	1		
J27	25mm GI Union	No.	1		
J28	25mm hexagonal nipples	No.	1		
J29	25mm GI Taps	No.	1		
J30	25mm GI Valve Sockets	No.	1		
J31	25mm GI Tee Equal	No.	1		
J32	25mm GI Air Valves	No.	1		
J33	25mm GI Non-Return valve	No.	1		
J34	32mm GI 90° Bend	No.	1		
J35	32mm GI 90° Elbow	No.	1		
J36	32mm GI Gate valve	No.	1		
J37	32mm GI socket	No.	1		

J38	32mm GI Union	No.	1		
J39	32mm hexagonal nipples	No.	1		
J40	32mm GI Taps	No.	1		
J41	32mm GI Valve Sockets	No.	1		
J42	32mm GI Tee Equal	No.	1		
J43	32mm GI Air Valves	No.	1		
J44	32mm GI Non-Return valve	No.	1		
J45	38mm GI 90° Bend	No.	1		
J46	38mm GI 90° Elbow	No.	1		
J47	38mm GI Gate valve	No.	1		
J48	38mm GI socket	No.	1		
J49	38mm GI Union	No.	1		
J50	38mm hexagonal nipples	No.	1		
J51	38mm GI Taps	No.	1		
J52	38mm GI Valve Sockets	No.	1		
J53	38mm GI Tee Equal	No.	1		
J54	38mm GI Air Valves	No.	1		
J55	38mm GI Non-Return valve	No.	1		
J56	50mm GI 90° Bend	No.	1		
J57	50mm GI 90° Elbow	No.	1		
J58	50mm GI Gate valve	No.	1		
J59	50mm GI socket	No.	1		
J60	50mm GI Union	No.	1		
J61	50mm hexagonal nipples	No.	1		
J62	50mm GI Taps	No.	1		
J63	50mm GI Valve Sockets	No.	1		
J64	50mm GI Tee Equal	No.	1		
J65	50mm GI Air Valves	No.	1		
J66	50mm GI Non-Return valve	No.	1		
J67	63mm GI 90° Bend	No.	1		
J68	63mm GI 90° Elbow	No.	1		
J69	63mm GI Gate valve	No.	1		
J70	63mm GI socket	No.	1		
J71	63mm GI Union	No.	1		
J72	63mm hexagonal nipples	No.	1		
J73	63mm GI Taps	No.	1		
J74	63mm GI Valve Sockets	No.	1		
J75	63mm GI Tee Equal	No.	1		
J76	63mm GI Air Valves	No.	1		
J77	63mm GI Non-Return valve	No.	1		
J78	75mm GI 90° Bend	No.	1		
J79	75mm GI 90° Elbow	No.	1		
J80	75mm GI Gate valve	No.	1		
J81	75mm GI socket	No.	1		
J82	75mm GI Union	No.	1		
J83	75mm hexagonal nipples	No.	1		
J84	75mm GI Taps	No.	1		

J85	75mm GI Valve Sockets	No.	1		
J86	75mm GI Tee Equal	No.	1		
J87	75mm GI Air Valves	No.	1		
J88	75mm GI Non-Return valve	No.	1		
J89	100mm GI 90° Bend	No.	1		
J90	100mm GI 90° Elbow	No.	1		
J91	100mm GI Gate valve	No.	1		
J92	100mm GI socket	No.	1		
J93	100mm GI Union	No.	1		
J94	100mm hexagonal nipples	No.	1		
J95	100mm GI Taps	No.	1		
J96	100mm GI Valve Sockets	No.	1		
J97	100mm GI Tee Equal	No.	1		
J98	100mm GI Air Valves	No.	1		
J99	100mm GI Non-Return valve	No.	1		
J100	DN 20 Mechanical coupling	No.	1		
J101	DN 25 Mechanical coupling	No.	1		
J102	DN 50 Mechanical coupling	No.	1		
J103	DN 50 Mechanical coupling	No.	1		
J104	DN75 Mechanical coupling	No.	1		
J105	DN 100 Mechanical coupling	No.	1		
J106	DN 150 Mechanical coupling	No.	1		
J107	DN 200 Mechanical coupling	No.	1		
J108	DN 50 Flange adaptor	No.	1		
J109	DN 75 Flange adaptor	No.	1		
J110	DN 100 Flange adaptor	No.	1		
J111	DN 150 Flange adaptor	No.	1		
J112	DN 200 Flange adaptor	No.	1		
J113	DN 50 Steel plain flange.	No.	1		
J114	DN75 Steel plain flange	No.	1		
J115	DN 100 Steel plain flange.	No.	1		
J116	DN 150 Steel plain flange.	No.	1		
J117	DN 200 Steel plain flange.	No.	1		
K	CLASS K: PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES				
K23 1.1	Supply materials, deliver to site and construct 1000x1000mm and varying diameter but n.e 1.5m deep natural stones masonry chambers including their RC cover slabs and locking mechanism.	Nr	1		-
K23 1.2	Supply and fix fabricated DN200mm, 1.2m deep, PVC valve sleeves complete with locking mechanism, padlock and keys for the isolation valves.	Nr	1		-
K73 1	Allow for breaking up, temporary and permanent reinstatement of earth roads to standard.	m	1		-
K74 1.1	Allow for breaking up, temporary and permanent reinstatement of cabro paved surfaces to standard.	m	1		-
K75 1	Allow for breaking up, temporary and permanent reinstatement of field drains, closed / open concrete / masonry lined drains to standard.	m	1		-

K82 0	Supply and erect marker posts for the pipeline and appurtenances with suitable engraving to suit the appurtenance marked (LV, SV, AV, WO or FH) and painted blue with engravings white.	Nr	1		-
K86 1	Provide for tie-in works between the new works and existing water pipes.	Nr	1		-
L	CLASS L: PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				
L1*	<i>Extras to excavation and backfilling for pipes in trenches. Rate to include excavation and backfilling of excavations, preparation of excavation surfaces; upholding sides of the excavation and disposal of excess excavated material.</i>				
L11 1	Extras to excavation of hard material (hard rock) as per the specifications	m ³	1		-
L11 2	Extras to excavation of mass concrete surfaces	m ³	1		-
L2*	<u><i>Special pipe laying methods</i></u>				
L23 1	Installation of the water pipeline across tarmac surfaced roads using pipe jacking/ microtunneling technology for nominal bore not exceeding 200mm. Rate to include all materials, labour, equipment and reinstatement of the roads to standards, drawings and instructions issued by NCCG/Road authorities and charges in respect of microtunneling permits, notices and diversions.	m	1		-
	<u><i>Pipe Bedding and Surround as per Standard Details</i></u>				
L52 0	Surrounds with imported granular material for trench in rock	m ³	1		-
L54 0	Surrounds with Class C15/20 mass concrete for road crossings.	m ³	1		-
	<u><i>Supply materials and cast class 15 mass concrete thrust blocks for bends, tees, blank ends and anchor blocks for tapers, gate valves and vertical bends to Engineer's specifications.</i></u>				
L73 0	Concrete thrust and anchor blocks, volume 0.2- 0.5m ³	m ³	1		-
TOTAL BILL No. 2 CARRIED TO GRAND SUMMARY					-

BILLS SUMMARY PAGE

Item No.	Item Description	Amount (Kshs)
1	BILL No.1 - PRELIMINARY & GENERAL ITEMS	-
2	BILL No. 2: MEASURED WORKS	-
3	SUB TOTAL	-
4	ADD 5% CONTIGENCIES	-
5	SUB TOTAL	-
6	ADD 16% VAT	-
7	GRAND TOTAL	-

SECTION VI - TECHNICAL SPECIFICATIONS.

1.1 Introduction

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

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

1.1.1 Location

The site for the proposed works is **located within TWWDA's area of jurisdiction i.e. Meru, Kirinyaga, Embu, Tharaka Nithi and Nyeri Counties.**

1.1.2 Scope of Works

The Works consist of: supply and Installation of solar panels and associated cabling; supply of all materials and erection of solar panels mounting structure; supply and installation of 24m³ galvanized pressed steel water tank; supply all materials and erection of 12m high tank elevation structure; supply of all materials and construction of pump control house, fencing works, guard house and installation of submersible pump at a recommended depth and any other structural details as described in the BoQ.

1.2 Extent of Contracts

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

1.3 Precedence of Contract Documents

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

- (i) Provision of the Standard or Special Specifications shall take precedence over those of the General Conditions of Contract.
- (ii) Provision of the Special Specifications shall take precedence over the Standard Specifications unless otherwise indicated.
- (iii) Details shown or noted on the Contract drawings shall take precedence over the requirements of both the Standard and the Special Specifications.
- (iv) Detailed Drawings shall take precedence over General Drawings.
- (v) Within the Standard Specifications, the provisions of any section particular to the provisions at variance shall take precedence over the General Section, and within any section clauses particular

to the provisions at variance shall take precedence over those not so particular. The foregoing order of precedence shall apply also to sections and clauses of the Special Specifications.

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

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

1.4 Standards

In the specifications, Bills of Quantities, and Drawing reference has been made to relevant British Standard Specifications and Codes of Practice- to which the materials and workmanship should comply with. However, the materials and workmanship complying with equivalent Kenya Bureau of Standards (KEBS) or International Standards Organization (I.S.O) standard for that particular material or workmanship will also be acceptable.

Mixture of different Standards in one trade will not be allowed. For instance, if pipes are to be provided to KEBS Standard, then all the pipes in the works are to be to KEBS Standard.

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

1.5 Quality of Materials and Workmanship

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

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

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

1.6 Trade Names

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

1.7 Samples

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

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

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

1.8 Testing

As provided in Clause 36 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.

A Provisional Sum item has been included in Bills of Quantities for testing of materials and workmanship as directed by the Engineer at the Independent Laboratory.

The Contractor will be reimbursed receipted cost of testing carried out by the laboratory as the work progresses.

1.9 Programme for the Execution of Works

- (i) In accordance with Clause 14 of the Conditions of Contract, the Contractor upon receiving Engineer's order to commence shall within 7 days draw up a working programme setting out order in which the works are to be carried out with appropriate dates thereof together with delivery dates for materials. The Contractor shall together with his work programme supply an expenditure chart showing monthly anticipated expenditure.
- (ii) The programme shall be deemed to have taken into account normal variations in climatic conditions to provide for completion of the works in the order and within the times specified therein.
- (iii) The order in which it is proposed to execute the permanent works shall be subject to adjustment and approval by the Engineer, and Contractor's price shall be held to include for any reasonable and necessary adjustment required by the Engineer during the course of the works.
- (iv) The Contractor shall carry out the contract in accordance with the programme agreed with the Engineer, but he shall in no manner be relieved by the Engineer's approval of the programme of his obligations to complete the works in the prescribed order and by the prescribed completion date and he shall from time to time review his progress and make such amendments to his rate or executions of the works as may be necessary to fulfil these obligations.
- (v) Once the proposed programme is approved by the Engineer, the Contractor shall not depart from the programme without the written consent of the Engineer. In the event of unforeseen difficulties or disturbances arising, which forces the Contractor to depart from the approved programme of works, he shall advise the Engineer in writing of such occurrences without delay

and submit proposals for any necessary remedial measures, for which he shall obtain the Engineer's approval before putting such measures into effect.

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

1.10 Substantial (Practical) Completion

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

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

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

1.11 Nominated Sub-Contractors and Nominated Supplies

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

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

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

- (i) Allowing the use of standing scaffolding, providing special scaffolding, maintenance and alteration of all scaffolding, retention of all scaffolding until such time as all relevant Sub-Contractor's works are complete and removal of all scaffolding on completion.
- (ii) Providing equipment and labour for unloading and hoisting Sub-Contractor's materials.
- (iii) Providing space for office accommodation, and for storage of plant and materials; allowing use of sanitary accommodation; the supply of all necessary water, power, lighting and watching and clearing away all rubbish.

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

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

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

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

1.12 Entry upon Land, Working Site and Adjoining Lands

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

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

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

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

The Contractor shall on his own accord obtain rights of admission, and Right of using all other areas which are necessary for storing and manufacturing, or for setting up site offices and Resident Engineer's office or whatsoever will be necessary.

No separate payment will be made to the Contractor on account of these items and the Contractor must make due allowance for them in his rates.

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

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

1.13 Preservation of Survey Beacons

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

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

1.14 Land for Camp Site

The Employer shall make available free of charge to the Contractor all land on under or through which the works other than Temporary Works are to be executed or carried out all as indicated in the Drawings or as detailed in the Specifications. Such land shall exclude land for Resident Engineer's offices and

land required by the Contractor for his own camps, offices, houses, temporary works or any other purpose.

1.15 Existing Services

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

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

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

1.16 Damage to Services

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

1.17 Temporary Roads and Traffic Control

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

1.18 Road Closure

Where a road used by the Contractor for delivery of any materials used in the works is closed under Section 71 of the Traffic Ordinance Act 1962 or amendments thereto, the contractor shall obey such closure order and use alternative roads.

1.19 Road and Railway Crossing and Traffic Control

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

1.20 Protection from Water

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

1.21 Weather Conditions

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

1.22 Protection from Weather

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

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

1.23 Explosive and Blasting

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

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

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

1.24 Liaison with Police, etc.

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

1.25 Provision of Water

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

1.26 Temporary Lighting

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

1.27 Sanitation

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

The site shall be kept in a clean and proper sanitary condition. No nuisance shall be committed on or around work, and latrines for the workmen and staff shall be 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.

1.28 Medical Facilities

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

1.29 Signboards

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

1.30 Setting Out and Survey Equipment

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

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

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

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

<u>Description</u>	<u>No.</u>
(a) 2 m ranging rods	6
(b) Modern Universal Theodolite and Tripod	1
(c) Automatic level and Tripod	1

(d)	4 level staff with leveling bubble	2
(e)	100 m steel tape	2
(f)	50 m steel tape	2
(g)	3 m pocket tapes	3

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

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

1.31 Backfilling of Holes and trenches

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

1.32 Inspection of Works

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

1.33 Cleaning Up of Site

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

1.34 Testing of Water-Retaining Structure

All water-retaining structures shall on completion be tested for water tightness in the following manner. The structure shall be filled with potable water in stage and held at each stage for such time as the Engineer may require. Should any dampness or leakage occur at any stage, the water shall be drained off and the defects made good. The procedure shall be continued and finally the structure shall after a period allowed for absorption remain full for seven days. Within those seven days, the level of the surface of the water should be recorded and measurements made at intervals of 24 hours. The total leak must not exceed 0.3% of the total volume of water in the tested structure.

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

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

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

1.35 Testing of Roofs

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

1.36 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.

1.37 Contractor's Superintendence

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

1.38 Transport of Workmen

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

1.39 Normal Working Hours

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

1.40 Transport, Travelling and Leave

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

1.41 Compliance with Statutes and Local Regulations

In addition to requirements of Clause 26 of the Conditions of Contract, the Contractor shall be responsible for acquainting himself with all current valid Statute Ordinance or Bye-Laws or Regulations provided in the Bills of Quantities. This applies to training Levy and other similar taxes for which no claims on the part of the Contractor other than the one inserted in the Bills of Quantities will be allowed.

1.42 Accommodation for Workmen

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

1.43 Storage Space and Sheds

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

1.44 Office for the Contractor

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

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

1.45 Office for the Engineer's Representative

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

1.46 Housing for the Engineers Staff

The employer shall provide housing for Engineers Staff

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

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

- 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 water-borne 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).

1.48 Attendance upon Resident Engineer and Resident Engineer' s Staff

For duration of the Contract.

- i) The Contractor shall provide all assistance including labourers, chainmen, clerks and junior staff as and when required by the resident Engineer for checking, setting out surveying measuring or for testing of work. The Contractor shall also provide a full time typist in Resident Engineer's office.
- ii) The Contractor shall provide all tools and protective clothing, wooden pegs, iron pins and pickets, water cement and aggregate for concreting, transport for labourers and materials as may be required by the resident Engineer and his staff for checking, settling out, surveying, measuring or testing or the work.

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

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

1.49 Insurance

All buildings, furniture and equipment provided by the Contractor for the Engineer's representative shall be insured by the Contractor against loss or damage by accident, fire, theft and other risks ordinarily

insured against for the duration of the contract. The theft shall include personal belongings of the tenants in the Resident Engineer's staff houses.

1.50 Transport for Engineer's Representative

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

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

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

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

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

1.51 Removal of Camps

On the completion of the contract, the contractor shall, if so requested take down and remove all structures connected with his camp and shall take up all pipes, drains and culverts, backfill trenches, fill up all latrine pits, 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.

1.52 Site Meetings

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

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

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

2. SITE CLEARANCE

2.1 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 except services mentioned in Clause 2.13 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.

2.2 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.

2.3 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.

3. EARTHWORKS.

3.1 General

Excavation shall be made to such lengths, depths and inclinations as may be necessary for construction of the works or as shown on the drawings or as the Engineer may direct.

3.2 Definitions of Materials

For the purpose of these specifications, materials of earthworks are defined as follows:

- (a) **Rock:** Solid mass of mineral material, exceeding 0.25 m cubic metres in volume, such hardness and texture that it cannot be broken down with a hand-drifting pick.
- (b) **Common Material:** All earth materials which do not meet the common requirement of rock as defined in "Rock" above.

3.3 Classification of Excavation

The Engineer or his representative and the Contractor or his representative shall be present during classification of materials.

Where the terms "Rock excavation" and "Common excavation" or "Excavation" are used in these specifications the following definitions shall apply.

3.3.1 Rock Excavation

Rock excavation includes all solid rock in place which cannot be removed until loosed by blasting, barring, wedging, and all boulders or detached pieces of solid rock more than 0.25 cubic metres in

volume. Solid rock under this class, is defined as sound rock of such hardness and texture that it cannot be loosened or broken down by hand-drifting picks

All materials containing more than 50 per cent by volume of boulders exceeding 0.25 cubic metre in volume shall be classified as rock excavation.

3.3.2 Common Excavation

Common excavation includes all material other than rock excavation including, but not restricted to earth, gravel, and also such hard and soft or disintegrated rock together with all boulders or detached pieces of solid rock not exceeding 0.5 cubic metre in volume.

3.4 Stripping of Topsoil

3.4.1 Stripping

Stripping shall consist of removing transporting and disposing of topsoil, stumps, roots buried logs, debris humus and similar objectionable matter.

Areas to be stripped are all areas required for permanent constructional works, borrow-pits and embankment fills.

The limits of stripping shall extend 2 metres beyond the limits of excavation or toes of fills. The depth of stripping shall normally be 0.2m, but deeper stripping might be needed to remove stumps

3.4.2 Disposal

Materials from stripping suitable as topsoil shall be spread in approved areas. All other non-combustible materials shall be buried in approved disposal area, covered with minimum of 0.5 m of excavation spoil. These disposal areas shall be left with neatly graded surfaces and stable slopes that assure drainage. Alternatively, the non-combustible material shall be removed from the area by the Contractor.

3.5 Excavation in Open Cut

3.5.1 General

All open cut excavation shall be performed in accordance with this section to the lines, grades and dimensions shown on the drawings or as directed by the Engineer. The Engineer reserves his right to at any time during the progress of the work to vary the slopes or dimensions of the excavation from those previously specified.

All necessary precautions shall be taken to preserve the material below and beyond the lines of all excavation in the soundest possible condition. Any damage to the work due to the Contractor's operations, including shattering of the material beyond the required excavation lines, shall be repaired at the expense of and by the Contractor. Any and all excess excavation for the convenience of the Contractor for any purpose or reason, except as may be ordered in writing by the Engineer and whether or not due to the fault of the contractor shall be at the expense of the Contractor. Where required to complete the work, all such excess excavation and over-excavation shall be filled with compacted concrete Grade concrete 10 furnished and placed at the expenses of and by the Contractor.

All excavations for structure foundations shall be performed in the dry.

If excavations are carried out in roads, footpaths, separators or within 5m of buildings, the contractor is requested to execute the work in a way that will minimise damage and disturbances. In general vertically sided excavation will be required in such places and the necessary timbering or other support must be provided. The Undercutting of excavation sides will not be permitted.

The Engineer reserves his right to direct the contractor as to the length of trenches or parts of bulk excavations which shall be opened up at any one time. In case of excavations in roads, and in other cases which in the opinion of the Engineer are likely to cause interference to the public, the Contractor shall organize his operations in such a way as to reduce to a minimum the interval between opening up and Backfilling the excavations.

No permanent work shall commence until the Engineer has inspected and approved the excavation.

3.5.2 Mechanical Excavation

- (a) A mechanical excavator shall be employed only if the sub-Soil is suitable and will allow timbering of trenches or other excavations to be kept sufficiently closed up to ensure that no slips fall or disturbance of the ground takes place or there are no pipes, cables, mains or other services or property which may be disturbed or damaged by its use.
- (b) When mechanical excavators are used, a sufficient depth Of materials shall be left over the bottom of the excavation to ensure that the ground at finished excavation level is not damaged or disturbed in any way. The excavations shall then be completed by hand to the finished levels required.

3.5.3 Rock Excavation

The Contractor shall notify the Engineer on each occasion when he considers that he is entitled to payment of excavation in rock and shall not fill in any excavation concerned, until it has been inspected by the Engineer.

No payment for excavation in rock shall be made unless the Engineer has inspected the excavation and certified in writing the quantities involved.

The Contractor shall trim all rock faces in cutting according to the dimensions shown on the drawings and upon completion leave them safe from rock falls to the satisfaction of the Engineer.

On any work requiring the use of explosives, the Contractor shall employ men experienced in blasting and these men must be in possession of current blasting certificate. The purchase, transport, storage and use of explosives 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 rate for excavation and quarrying, for all expenses incurred in meeting these 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, and the contractor shall take all practical precautions for the protection of persons, properties and the Works.

Slopes shattered or loosened by blasting shall be taken down at the expenses of and by the Contractor. The Contractor's blasting and other operations in excavation shall be such that they will yield as much suitable material as possible for the construction.

3.5.4 Foundation for Structures

- (a) **Common materials:** The bottom and site slopes of common material upon or against which concrete is to be placed shall be finished accurately to the established lines and grades, and loose materials on surfaces so prepared shall be moistened with water and stamped or rolled with suitable tools and equipment to form a firm foundation for the concrete structure. If, at any point in common material, material is excavated beyond the established excavation lines, for any reason except by written orders from excavation lines, for reason except by written orders from the Engineer, then the over-excavation resulting voids shall be filled with consolidated concrete

Grade 10 at the Contractors expenses. If the excavation is carried out in advance a protective layer of 150 mm thickness shall be left above the foundation level until immediately before the Contractor is ready to pour the blinding concrete.

- (b) **Rock materials:** The bottom and side slopes of rock material upon or against which concrete is to be placed shall be excavated to the required dimensions as shown on the drawings or established by the Engineer. No material will be permitted to extend within the neat lines of the structure. If, at any point in the rock material, material is excavated beyond limits required to receive the structure, the additional excavation shall be filled solidly with concrete Grade 10.

All soft or loose material shall be removed by the use of stiff brooms, picks, hammer or jets and any cavities backfilled with concrete Grade 10, grout or compacted rock fill as directed.

- (c) **Level and Dimensions of foundations:** Levels and dimensions of foundation shown on the drawings may be changed by the Engineer to suit actual site conditions. The additional volume shall be measured net and paid according to the rate in the Bills of Quantities.

3.5.5. Trench Excavations for Pipe Laying

All surface material including top soil which differs in any nature whatsoever from the sub-strata, shall in every case be carefully set aside and stored separately from other excavated material. No extra claim will be allowed for setting aside surface mater or topsoil for later use.

Trench excavation shall be carried out with great care, true to line and gradient and as near as practicable to the size required for construction of the permanent work. Nowhere shall the external dimensions of the excavations be less than the dimensions of the permanent work shown on the Drawings or directed by the Engineer.

If the bottom of the excavation becomes weathered prior to pipe laying, due to fault of the contractor, the weather soil shall be replaced with suitable compacted material to the original formation level at the contractor's expenses. The pipe trench shall be excavated to a depth of 150 mm below the invert level of the pipe and refilled with sand, gravel or other selected material free from stones and well rammed in order to provide a smooth bed for the pipes.

Where concrete pipes are laid in concrete, the pipe trench shall be excavated to a depth of 150 mm below the invert level of the pipe and the width shall be equal to breadth of concrete bedding for the pipes plus 150 mm on either side.

Excavation for pipe trenches shall be of sufficient depth to give a minimum cover of 800 mm over the top of the pipe. Where pipes/sewers cross under roads, minimum cover shall be 1 mm or such cover as may directed by the Road Authority.

Where the pipeline is required to be laid at depth, which does not satisfy the minimum cover conditions set out above, the ground surface shall be brought up to the required level by banking the backfill or as directed by the Engineer.

No pipes shall be laid and no excavation filled in or covered with concrete until the formation has been inspected and permission to proceed with the work obtained.

Where P.V.C. or Polythene pipes are being laid, the bottom of the trench must be completely free from stones, and a smooth bed of fine material must be provided. Where the bed of the trench for P.V.C or polythene pipes is excavated in rock, it must be excavated to a depth of not less than 100mm below the bottom of the pipe, and refilled with selected fine granular material to make a smooth bed for the pipe.

The width of the trench to be excavated will depend on the size and type of pipe being laid. Sufficient width must be excavated to allow the pipe to be correctly bedded and aligned, and to allow for the joints to be correctly made. Generally, the grade of the pipe will conform to the grade of the ground, but the excavation must be deepened where necessary to avoid backfill in any section. Generally, the pipeline will slope downwards. Minimum gradients are shown on the drawings.

Any Excavated material stored on site for Backfilling or other purpose shall be deposited alongside the excavation at a minimum distance of 0.5m on such a manner that it will cause no damage and as little inconvenience as possible.

3.5.5 Timbering of Excavations

The Contractor shall supply and fix aside the limits of the permanent works all the timber necessary for support of sides and bottoms of the excavation, for security of adjacent structures and properties and for every other purpose for which it may be required, all to the satisfaction of the Engineer. The Contractor shall maintain such supports until in the opinion of the Engineer, the works is sufficiently advanced to permit the withdrawal of the support. Such withdrawal shall be executed only under the personal supervision of a competent foreman.

The Engineer may order excavations to be timbered or to be closed timbered or may order timbering to be driven ahead of the excavation, or may order the adoption of any other method of supporting the sides and bottoms of the excavation as may appear to be necessary, and the Contractor shall adopt and shall make no charge for executing the adopted method.

The contractor shall be responsible for any injury to the work and any consequential damage caused by or arising out of the insufficiency of the support he provides for his excavations or caused by or arising out of the removal of that support, and any advice permission approval or instruction given by the Engineer relative to the support or removal thereof shall not relieve the Contractor of his responsibility.

Any instruction given by the Engineer will be directed to the provision of stronger support than that proposed by the contractor, and will be given only when, in the opinion of the Engineer, the support proposed by the Contractor is insufficient.

Where timber has been used in excavation any such timber left in position shall be at the expense of the contractor except where the Engineer has ordered the timber to be left in place with the prior approval of the Engineer. The timber approved or ordered to be left in place will be paid for at the rates entered in the Bills of Quantities.

For the purpose of this Clause the words "timber" and timbering be construed to include trench sheeting and steel or concrete sheet piling or any other means adopted by the Contractor for supporting excavations.

3.5.6. Excavation to be kept Free from Water

Where excavations are required below the existing water level, the Contractor shall make arrangements to keep the excavation dry and shall produce drawings and written explanations of the method to be used to enable the Engineer to determine the adequacy of the method, before commencing the excavation.

The Contractor shall give due regard to the possibility of floods and provide all pumps, timbering, coffer dams, sheet piling and other equipment necessary for keeping the excavations free from water.

Every precaution shall be taken not to diminish the bearing capacity of the soil below foundation. Well points or pump pits are to be outside the foundation area to prevent flows in upward direction.

All sumps and drains are to be filled in or otherwise made good as directed by the Engineer on completion of the relevant part of the works.

The costs of all the above precautions shall be allowed for in the rates inserted in the Bills of Quantities.

3.5.7. Refilling Excavations

No Backfilling or refilling shall commence without the Engineer's approval

The refilling of excavation shall be commenced as soon as practicable after the permanent works have been tested where so required and inspected and approved by the Engineer. In particular, the back filling of trenches shall be carried out expeditiously to reduce lengths of trenches open at any one time.

As soon as P.V.C. or polythene pipes are laid and joined in their final positions, they should be protected from possible damage by carefully back filling of line with granular material brought up to about 150 mm over the top of the pipe, for the full width of the trench, and well compacted.

Joints must be left open for inspection until the pressure test is completed.

Backfilling shall be executed with selected materials in 150mm layers (300 mm layers if a mechanical hammer is used) each layer being well rammed and watered to obtain maximum compaction. Care shall be taken to ensure that no stone or other work, is placed within 300 mm of such work.

Water in excess shall not be used in settling of the back filling.

Back filling over steel pipes shall be generally as described above, except that the initial protective filling around the pipe is not necessary.

Regardless of the means of backfilling adopted, it is the Contractor's responsibility to ensure that he satisfactorily backfills all excavations and causes no damage to permanent work or adjacent structures, and he shall at his own expense take all steps necessary to comply with this obligation.

The Contractor shall at all times be responsible for damage caused to permanent work through his back filling operations or throughout his premature opening to traffic of a backfilled surface.

3.5.9 Reinstatement of Surfaces

Generally, all trenches and backfilled excavations shall be reinstated to equal surface as before excavation.

Trenches in any existing road shall be refilled to the level of natural soil below the road with sub-soil in 75mm layers, each layer being carefully tamped with hammers. The remaining top layer shall be filled to the road surface with materials equal in type, quantity and compaction to materials used for the existing road.

The trench shall then be left to settle for 30 days. At the expiration of this period, the surface shall be made up to level and tamped or rolled to the approval of the Engineer, who will decide on the particular surfacing employed in accordance with the existing surface of the road.

Before expiration of the maintenance period, the Contractor shall make good any defaults in reinstatements.

3.5.10 Removal of Surplus Excavated

Excavated material, which is not added either for backfilling trenches or other excavations or use in embankments or otherwise, shall be removed and disposed of to tipping places obtained by the Contractor. All rubbish and waste material shall similarly be removed by the Contractor. All surplus excavated material shall be spread and levelled in the tipping places in accordance with such directions as the Engineer may give, and the Contractor's rate for disposal shall include for the costs of such operations.

The contractor shall take every practical precaution against causing any nuisance, damage, injury or inconvenience in handling stacking, carting or disposal of excavated materials or any other operations matter or thing in connection therewith.

No excavated material shall be placed in any position here it may be washed away or may be liable to fall or spread into any private property or across a road or footpath, should such occur, the Contractor shall forthwith remove the same at his own costs.

Should the Engineer direct the Contractor to tip surplus excavated materials in a particular place (other than the tipping places obtained by the Contractor) the Contractor shall abide by such instruction and shall make no charge in consequence thereof unless the place specified entails a longer haul than what would be incurred by tipping at the place or places obtained by the Contractor.

Where excavation lines are not shown on the drawings, the excavation will be measured to the most practicable lines, grades, and dimensions as directed by the Engineer.

In the case of bulk excavations, the Contractor shall unless otherwise directed by the Engineer prior to the commencement of any excavation prepare grid plans of the various sites showing the existing ground levels at intervals of not more than 10m. For any particular part of excavation the mean ground level shall be determined from the above aforesaid grid plan and the depth shall be calculated from the above mean ground level.

Pipe trenches are measured in linear metres as one item for each pipe size with a minimum width and depth as indicated on the drawings. Extra excavation for deeper trenches will be measured on cubic metres and paid for where ordered by the Engineer.

Rates for excavation shall include for all labour, equipment; preparation of bottoms for receiving concrete or granular soul beds; for forming joint holes where applicable, for preserving surfaces of excavation; for returning excavated material as rammed backfill and for carting away surplus to dump.

Rate for excavation shall also include for working in a manner that causes no interference with the stability of adjacent structure and properties, for the cost of all timber or other support left in place unless ordered or approved to left in place unless ordered or approved to be left in place by the Engineer; for ground stabilization by means of de-watering, chemical processed or other approved method whether effected by floods, storms or otherwise for the provision and sealing of temporary channels, drains and dumps; ;for temporarily storing excavated materials required for backfill or other purposes; for temporarily supporting, protecting, diverting, maintaining utility services; for maintaining flows in sewers and water found necessary for the proper execution and safety of the works.

Further, the rates in the Bills of Quantities for excavation in open cut shall include the entire cost of:

- (a) Transportation of material from the excavation to points
Of final use, to disposal areas, to temporary stockpiles and from temporarily stockpiles to points of final use.
- (b) Rehandling excavated materials which have been deposited temporarily in stockpiles.
- (c) Removal of oversize materials from otherwise suitable material disposal for the same.

No extra payment shall be made to the Contractor for working in confined space or if the position of the works as set out or ordered will not allow the use of mechanical excavators.

50% of the rate for excavation, backfilling and disposal of surplus material will become due for payment when trenches have been backfilled to a depth of 150mm over the pipe barrel. Excavation for structure foundations will be authorized for payment of 50% of the rate, when the excavation has been approved and the surface blinded.

3.6 Borrow Pits

No borrow pits will be allowed to be opened on the site unless permission in writing has been obtained from the Engineer.

Before the excavation of an approved borrow area is commenced, the Contractor shall clear the surface and strip the topsoil in accordance with Clause 3 & 4.4.

Borrow excavation shall be regular in width and shape and shall be properly graded and drained and finished with neatly trimmed slope, and if so directed soiled and grassed.

The Contractor shall not be entitled to any additional allowance above the unit prices on accounts of any changes ordered by the amounts of materials to be secured from any borrow area, or on account of the designation by the Engineer of the various portions of the borrow areas from which materials are to be obtained, or on account of the depths of cut which are required to be made.

Measurement for payment of excavation in borrows areas will only include for the quantities of materials utilized for construction of embankments etc. Any costs of excess excavated material, except if directed by the Engineer shall be borne fully by the contractor.

3.6 Hardcore Filling

Hardcore fill shall consist of clean hard broken stone or rubble with measurements not exceeding 150mm in any one direction with sufficient murrum added to fill the interstices. The hardcore shall be well packed, rammed and where possible rolled with a 5 ton roller. Where rolling is impossible, compaction shall be by hand or by mechanical tampers. Before any concrete is laid on hardcore, the hardcore shall be levelled and blinded with fine stone chipping, rolled and watered as necessary. Hardcore filling is measured after compaction.

3.8 Earth Filling

3.8.1 General

Earth not suitable to be used in filling may at any time be rejected by the Engineer. If there is a deficit of soil, the Contractor shall from approved borrow pits supply selected material in the ordered amount.

Before commencement of filling the topsoil shall be removed, if so ordered by the Engineer. The removal of this layer will be separately priced in the Bills of Quantities. The Contractor shall carry out the forming of embankments in accordance with the drawing and shall adhere to the slopes, levels, depths and heights shown thereof.

Before earth filling, the sand or gravel bedding of the pipes, according to the drawings shall be made. Soil filled to 500mm over the top of pipes shall be free from stones and be filled in by hand with the utmost care to avoid replacement of pipes.

3.8.2 Compaction of Fill

The 500mm fill over the pipe shall be compacted carefully by hand. In other areas, after removal of topsoil as specified, fill material shall be spread in even layers over the full width of the area to be filled. Each layer shall not exceed 300mm in thickness after compaction.

The water content of the earth fill material prior to and during compaction shall be distributed uniformly throughout each layer of the material. The allowable ranges of placement water content are based on design considerations. In general, the average placement water content will be required to be maintained at the Proctor Laboratory Standard Optimum Condition. This standard optimum water content is defined as "That water content which will result in a maximum dry unit weight of the soil when subjected to the standard Proctor Compaction Test".

Proctor compaction tests are to be carried out in accordance with BS 1377 and the Contractor shall provide the Engineer with facilities to carry out such tests, or cover the cost of tests carried out elsewhere.

As far as practicable, the material shall be brought to the proper water content in the borrow pit before excavation. Supplementary water, if required, shall be added to the material by sprinkling on the earth fill and shall be mixed uniformly throughout the layer.

Compaction of fill shall be carried out to 95 per cent standard proctor if not otherwise indicated on the drawings.

In case of unsatisfactory compaction test results, the Contractor shall re-compact or remove the fill to the satisfaction of the Engineer.

The number of tests to be made shall be agreed upon by the Engineer and the Contractor at commencement of the work..

The machinery the Contractor intends to use for compaction (pneumatic, vibrating, static or other rollers) must be approved by the Engineer before employment.

The Contractor shall take care that each separate layer is formed with side slopes to ensure that water cannot gather on the surface, thus causing softening of the soil. Compaction shall start from the side of the embankment and continue towards the middle.

On completion of the embankment to formation level and stipulated side slopes, the layer of topsoil mentioned in Clause 4.9 shall be applied.

Earth fill is measured after compaction.

3.8.3 Grass Planting and Top Soil

Top soil shall be selected vegetable soil, well compacted and except where otherwise specified of 150 mm thickness.

The Contractor shall trim the faces of the side slopes to open channels and elsewhere where directed to the dimensions, inclinations and curves shown on the Drawings, remove all excess material and make good all depressions with suitable material.

Where instructed by the Engineer, the Contractor shall plant Kikuyu or other approved grass at the rate of 16 plants per m corresponding to 250mm c/c. The Engineer shall satisfy himself that natural growth of grass will not take place within a reasonable time before instructing the Contractor to grass specified areas.

The Contractor shall be responsible for obtaining suitable grass plants and for making all necessary arrangements with the owners and/or occupiers of the land from which they are to be obtained. The Contractor shall be responsible for the preparation of the embankment for the planting, and for maintaining adequate grass cover and necessary watering during the Contract and maintenance period.

Topsoiling and grassing are measured in square metres.

3.10 Ant-Proofing

Where an ant-proof course has been specified, it should be made by application of Rentokil termite soil concentrate or equal dilute one part concentrate to forty parts water (by weight) at the rate of 5 litres solution to 1 sq. metre to the whole area of the building immediately before (36 hours maximum) the concrete is poured. Additionally to all critical areas, i.e both sides of wall foundations, piers and porches the application should be 5 litres per running metre. Treatment should not be made when the soil is excessively wet. Precautions should be taken to prevent disturbance of the treated areas before they are covered.

Ant-proofing is measured in square metres

4. CONCRETE WORKS

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

4.2 Materials and Tests.

4.1.1 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.

4.2.2. Aggregates for Concrete

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

The aggregates shall be free from dust, decomposed material, clay, earthly matter, and foreign substances or friable, thin 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.

4.2.3 Water

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

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

4.2.4 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.

4.2.5 Concrete Mixture

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

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

4.2.6 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 cubes at 28 days
20	21 N/mm ²	31.5N/mm ²

25	24.5N/mm ²	36.5 N/mm ²
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For the trial mixes the mix proportions shall be specified under clause 6.3 of BS 8110.

4.2.7. Testing of concrete shall comply with BS 8110

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

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

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

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

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

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

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

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

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

4.28 Standards for Acceptance of Cube Tests.

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

The appropriate strength required may be considered to be satisfied if the requirements in BS5328 : Part 4, clause 3.16, 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.

4.2.9 Slump Tests

Concrete consistency shall be determined by a test carried out in accordance with BS 1881 and at the Contractor's expense.

Unless otherwise specified by the Engineer, the following are the slumps for the particular class of work.

	Compaction by vibrator	Compaction by hand
Reinforced concrete		30 to 60mm
Mass concrete	0 to 30 mm	30 to 80mm

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

4.2.10 Steel Reinforcement

Steel for reinforced concrete shall be store under cover clear of ground and shall comply with BS 4449, BS 4461 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.

4.3 Precast Concrete Units

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

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

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

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

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

4.4 Workmanship

4.4.1. Inspection of Reinforcement and Formwork

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

4.4.2 Mixing of Concrete

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

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

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

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

On the completion of each mixed batch of concrete, the mixer drum shall be completely emptied before a fresh batch is placed therein. On the cessation of work, the mixer and 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 and casting of concrete.

4.4.3 Transport and Placing of Concrete

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

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

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

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

4.4.4 Compaction

After the concrete has been placed in a position it shall be compacted by vibration with a rigid poker type with internal vibrator approved by the Engineer. The Concrete shall be worked well up against the form, joints and around the reinforcement and be free from 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 by an approved external vibrator.

4.4.5 Placing of Concrete under Water

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

4.4.6 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

4.4.7 Construction and Expansion Joints

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

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

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

The fusing of water bars shall be performed in a way so as to secure that the two bars joined over the entire width. The fused joint shall be able to withstand tension and shall be intact after 10 consecutive bendings. The Engineer may request that the fusing is carried out by specialists.

Where shown on the drawings, joints shall be provided with a joint sealing compound. The sealing compound shall be a two component polysulphide rubber sealing compound complying with BS 4254, and the trade mark shall be approved by the Engineer. The compound shall be placed in a chase made by a fillet strip in the formwork. The concrete shall be dry and suitable primer shall be applied to the joint before applying the sealant. The procedure for the workmanship shall be approved by the Engineer before commencement of work, but the contractor shall have the full responsibility for the water tightness of the joints.

It should be noted that the lower part of the concrete walls shall be cast together with the floor slab and no joint directly on the slab will be permitted.

Before depositing fresh concrete against concrete which has already set, the face of the latter shall be roughened to expose the coarse aggregate, all cement latency removed whilst the concrete is still green and the surface thoroughly wetted with water and cleared of foreign matter. Cement mortar grout mixed in the proportion of one part of cement to two parts of sand shall be spread to a thickness of 5 mm over the face of the set concrete before the fresh concrete is deposited.

4.4.8 Curing and Protection of Concrete

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

4.4.9 Finishes of Horizontal Surfaces

Concrete surfaces for floors shall be true to level and falls as shown on the drawings. Water coming to the surface when vibrating shall be removed. After casting the surface shall be smoothed with a wooden flat. After some hours, when the surface has dried up, the surface shall be trowelled smooth with a steel trowel.

All other horizontal surfaces shall have the same surface finish except for the final trowelling with steel trowel.

4.4.10 Finishes of Vertical Surfaces

The shuttering for exposed concrete faces shall be so constructed that the latter shall be true to line and surface. The concrete shall be consolidated as specified against the shuttering to keep the face of the work free from honeycombing and other blemishes.

After removal of the shattering, no concrete surfaces shall be treated in any way until they have been inspected by the Engineer.

If upon removal of the shuttering, the line or surface of the work is, in the opinion of the Engineer, unsightly and not in accordance with the requirements of the Contract, the Contractor shall at his own expense cut out and make good such portions of the work as the Engineer directs.

Rendering over defective surfaces shall not be permitted. Areas of honeycombing shall with the approval of the Engineer be made good immediately upon removal of the shuttering, and isolated superficial air and water holes shall be filled. Care shall be taken not to leave mortar or cement on parts of the surface which have been cast smooth and without pores.

Unless otherwise instructed, the face of exposed concrete placed against shuttering shall after removal of the shuttering be rubbed down with a carborundum stone or in other approved manner to remove fins and other irregularities, and washed perfectly clean.

Concealed concrete faces shall be left as from the shuttering, except that surfaces with honeycombing shall be made good.

4.4.11 Accuracy of Finish

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

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

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.

4.4.12 Construction of Formwork.

All formwork shall be substantially and rigidly constructed of timber or steel or pre-cast concrete or other approved material and shall be true to the shape, line, level and dimensions shown on the Drawings.

Timber shall be well seasoned, free from loose knots and or Formwork of exposed concrete faces be planned to thickness. Faces in contact with concrete shall be free from adhering grout, projecting nails, splits, or other defects that will make the concrete surface. Formwork for foundations and other concealed work may be undresses or rough timber.

All joints shall be sufficiently tight to prevent leakage of cement grout and to avoid the formation of fins or other blemishes, and all faulty joints shall be caulked.

All formwork shall be thoroughly cleaned and coated with an approved type of oil before it is fixed in position. Immediately before concreting the formwork shall be watered thoroughly and washed out to

remove sawdust, shav or other rubbish. Where the appearance of the concrete face is important, the position and direction of the joints shall be as directed.

Fillet strips shall be fixed in the formwork to form a chamfer 20 mm by 20 mm on all external corners of the concrete.

Openings for inspection of the inside of the formwork for walls, beams and similar work and for the escape of wash water shall be formed in such a way that they can be conveniently closed before starting to place the concrete.

Connections between formwork elements shall be constructed to allow for easy removal of the formwork, and shall be either nailed, screwed, bolted, clamped, braced or otherwise fixed securing a sufficient strength to retain the correct shape and line during compaction of the concrete.

Bracing members placed in the formwork to keep two sides of formwork in exact position shall be approved by the Engineer. Holes in the concrete after bracing arrangement shall be made good by plugging with approved material.

Top Formwork shall be provided to concrete faces where the slope exceeds 1 vertical to 2½ horizontal. Such formwork shall be counterweighed or otherwise anchored against floating.

The formwork shall be so designed that the formwork for soffits of slabs and for sides of beams, columns and walls may be removed first leaving the formwork for the soffits of beams and their supports in position. Wedging or other suitable ways of adjustment shall be provided to allow accurate adjustments of the formwork and to allow a gradual removal of the same without jarring the concrete.

On demand the Contractor shall provide such drawings and calculations as necessary for determination of the structural strength of the formwork. The Engineer's approval of such drawings and calculations will not relieve the Contractor of his responsibilities under the Contract.

Formwork shall be erected true to line and braced and strutted to prevent deformation under the weight and pressure of the wet concrete, soffits shall be erected with an upward camber as shown on the Drawings or as directed by the Engineer or of 2 mm for each 1 m of horizontal span.

Re-propping of beams will not be approved except when props are reinstated to relieve the beams of loads in excess of the design load. Vertical props shall be supported on folding wedges on sole-plates, or other measures shall be taken whereby the props can be gently lowered vertically when commencing to remove the formwork.

If, in the opinion of the Engineer, the formwork is faulty, inadequate or does not comply with the specifications, then the Contractor shall at his own cost modify the formwork until it meets the approval of the Engineer.

4.4.13 Mould Oil

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

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

The Contractor shall be responsible for the co-ordination with the Sub-Contractors 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.

4.4.15 Pipes through Water Retaining Walls

Pipes passing through water retaining walls and floors shall, wherever possible, be built into the structure in-situ. Shuttering shall be formed closely to the outside of the pipe, and concrete shall be placed and compacted thoroughly round the pipe.

Pipes, bolts or other steel items cast into the concrete in water retaining structures must not in any way be in contact with the steel reinforcement.

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 hole 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.

4.4.16 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 through 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.

4.4.17 Reinforcement

All bending, cutting and fixing to comply with BS 8110 and BS 4466. 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 4466 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.

5 BUILDERS WORK.

5.1 Concrete Block Walling.

5.1.1 Precast Concrete Blocks.

Concrete block shall comply with BS 6073. The blocks shall be solid or hollow, as specified on drawings, with a minimum compressive strength of 3.5 N/mm², tested as described in BS 6073.

All blocks must be left with good sharp edges. The standard face size of blocks for use in the works shall be 440 mm x 190 mm x 190 mm and this size of blocks shall be used wherever practicable.

No work with concrete blocks shall commence prior to a test report being presented to and accepted by the Engineer.

The contractor shall be responsible for making test blocks and experimenting with available materials to ascertain what mix will be necessary to attain the required strengths. If suitable materials are not available locally, the Contractor shall obtain them from other approved sources.

Manufacture shall be carried out under shelter and after casting, the blocks shall be stacked under shelter to protect them from sun and weather, and properly cured by covering with sand or sacks and sprayed daily for not less than 14 days.

5.1.2 Wall Reinforcement.

Reinforcement in walls made of solid blocks shall, where so specified, consist of a 25mm wide strip of "Exmet" or similar brick reinforcement centrally in joints at approximately 450mm centres (vertically) for the full length of the walls, lapped and crimped 300 mm at running joints and full width of walls at angles and intersections.

5.1.3 Cement.

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

5.1.4 Sand.

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

5.1.5 Mortar.

The cement mortar shall consist of one part of Portland cement to three parts of sand by volume.

The ingredients of mortar shall be measured in proper gauge boxes on a boarded platform, the ingredients being thoroughly mixed dry, and again whilst adding water. In the case of cement/lime mortar the sand and lime shall be mixed first, and then the cement added. All mortar is to be thoroughly mixed to a uniform consistency with only sufficient water to obtain a plastic condition suitable for trowelling. No mortar, that has commenced to seep, is to be used or remixed for use.

5.1.6 Damp-proof course.

All damp-proof courses shall be of bituminous felt to BS 743 weighing not less than 3 Kg per m², free from tears and holes, lapped 150mm at running joints and for full width of wall at angles and intersections and bedded on an including a 12mm levelled screed of cement mortar.

5.1.7 Workmanship.

Blocks shall be laid in regular even courses and shall be bedded in cement mortar consisting of one part of cement to three parts of sand. Before being laid all blocks shall be immersed in water for at least 12 hours. All beds and vertical joints shall be filled completely with mortar when the blocks are laid, and no flushing up will be permitted. No vertical joint in any one course shall be within 100mm of a similar joint in adjacent courses. Beds and joints shall be not less than 10 mm or more than 15mm thick. (Blockwork Tanks accepted).

The courses shall be laid parallel and all perpendiculars shall be truly kept. Reveals and internal and external angles shall be perfectly square and true.

All walls throughout the work shall be carried up evenly, no part being carried up more than 1 m higher than any other part.

The Contractor shall provide proper setting out rods and set out on the same all work showing openings, heights, sills and lintels and shall build the various walls and piers to the thicknesses, widths and heights shown upon the drawings.

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

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

Where block work faces are to be left exposed blocks shall be chosen for their uniformity unmarked faces and shall be finished with a fair face and pointed with a neat joint recessed from the face of the blocks.

Where shown on the Drawings, walls are to be carried up to the underside of the roof sheets and are to be cut on top edge to suit roof slope and flushed up in cement mortar.

All putlog holes shall 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.

In the case of walls receiving plaster, or other in situ facings, put log holes must be filled before any facing is applied and prices must include for additional cost of free-standing scaffolding.

Tolerances as for concrete works.

5.1.8 Blockwork Tanks.

The concrete blocks shall be solid, type A with a minimum compressive strength of 7 N/mm², tested as described in BS 2028.

For circular blockwork tanks the blocks shall be manufactured in the required shape to fit the curvature of the tank, and all blocks shall be immersed in water for 24 hours before being laid.

Care must be taken to ensure that all joints are filled up completely. The horizontal joints to be reinforced as shown on the Drawings, with the reinforcement covered on all sides at least 6 mm of mortar, thus giving a thickness of horizontal joints of approximately 20mm.

No parts of the wall shall be carried up more than one course above any other part of the wall.

Reinforcement and holes for pipes passing through walls and floors shall meet the requirements as specified in Section 4.

Internal plaster shall be of mix 1:2, made water proof by use of approved additive.

5.2 Plasterwork and other Floor, Wall and Ceiling Finishes.

5.2.1 Cement.

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

5.2.2 Sand.

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

5.2.3 Lime.

The lime for plastering shall comply with BS 890 Clause "A" for non-hydraulic lime and shall be as rich as obtainable and to approval. It must be freshly burnt and shall be slaked at least one month before being used by drenching with water, well broken up and mixed and the wet mixture shall be passed through a sieve of 3 mm meshes. Lime putty shall consist of freshly slaked lime as described above, saturated with water until semi -fluid and passed through a fine sieve; it shall be allowed to stand until surplus water has evaporated and it has become of the consistency of thick paste, in no case for a shorter period than one month before being used, during which time it must be kept damp and clean and no portion of it allowed to become dry.

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

5.2.4 Composition of plasters etc.

A mix referred as 1:4 shall mean 1 cubic metre of cement to 4 cubic metres of sand. All other mixes shall be construed in a like manner.

5.2.5 Hacking etc.

The prices for all screed, paving and plastering, etc. shall include for hacking concrete surfaces and for raking out joints of walls 15mm deep and for cross scoring undercoats to form a proper key. Plastering on walls shall be generally being taken to include faces of lintels, beams, etc. in same.

5.2.6 Surfaces.

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

5.2.7 Partially or wholly set materials.

Partially or wholly set material will not be allowed to be used or remixed. The plaster mixes etc. must be used within one hour of being combined with water .

5.2.8 Samples.

The Contractor shall prepare sample areas of the screed, pavings and plastering 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.

5.2.9 Finish generally.

All screed and pavings shall be finished smooth, even and truly level unless otherwise specified.

Rendering and plastering shall be finished plumb, square, smooth and even.

All surfaces to be plastered shall be thoroughly wetted before any plastering is commenced.

No plastering will be allowed to take place until all chases for services have been cut, services installed and chased made good.

On no account may finished plaster surface be chased and made good.

All work shall be to the approval of the Engineer and any work not complying with the above shall be hacked away and replaced at the Contractor's expense.

5.2.10 Arises and angles.

All arises and angles shall be clean and sharp or slightly rounded or thumb-coved as directed including neatly forming mitres.

5.2.11 Making good.

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

5.2.12 Prices to include.

In addition to the fore-going, prices are to include for all labour, angles and arises, all fair edges, for making good up to or stopping to a line and the required level at top of skirtings or angles where directed and for making good up to windows, door frames and similar.

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

5.2.13 Cement pavings, screed etc.

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.

5.2.14 Cement rendering.

Cement rendering shall consist of cement and sand mix 1:4 to not less than 15mm finished thickness and be finished to a true and even surface.

5.2.15 Protection.

All work shall be adequately protected against damage, to the satisfaction of the Engineer until the works are handed over to the Engineer.

5.2 Carpentry and Joinery

5.3.1 Timber materials.

All timber shall be in accordance with the latest approved Grading rules issued by the Government of Kenya or other competent authority (Legal Notice No. 358). The quality shall be as First (or Prime) Grade.

All timber work to be carried out in accordance with BS 1186 and CP 112.

Any of the following timber may be used:

<u>Standard Common Name</u>	<u>Botanical Name</u>
Podocarpus	Podocarpus Spp
Cedar	Juniperus Procera
African mahogany (Munyama)	Khaya anthotheca
Mininga	Pterocarpus Angloensis
Mvule	Chrophora Excelsa

All timber, as it arrives on the site, shall be inspected by the Engineer, and any timber brought on the site and not complying with the specification or not approved, must be removed forthwith from the site, and only timber as approved shall be used in the works.

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

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

All timber shall be seasoned to a moisture content of not more than 15%.

5.3.2 Boards and sheets.

Fibreboard shall be 12mm "Celotex" or other approved fibreboard complying with BS 1142, Part 3.

Plywood shall be laminated board faced on in both sides with 4mm plywood. Exposed edges shall be lipped with 20mm hardwood and rates shall include for leaping.

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

Flush doors shall be 445mm thick, and shall be obtained from an approved manufacturer. The doors shall comply with BS 459, Part 2. External doors shall be framed, ledged and braced as shown on the drawings, and they shall comply with BS 459, Part 4.

5.3.3 Workmanship.

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

No nails, screws or bolts are to be fixed in any split end. If splitting is likely, or is encountered in the course of the work, holes for nails must be bent at right angles to the grain.

Lead holes are to be bored for all screws. When the use of bolts is specified, the holes are to be bored from both sides of the timber. Nuts must be brought up tight, but care is to be taken to avoid crushing of the timber under the washers.

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

All joiner's work shall be cut out and framed together as soon after the commencement of the building as is practicable, but not to be wedged up or glued until the building is ready for fixing same. Any portions that warp, wind or develop shakes or other defects within twelve months after completion of the works shall be removed and new ones fixed in their place together with all other work which may be affected thereby, all at the Contractor's own expense.

All work shall be properly mortised, tenoned, housed, shouldered, dovetailed, notched, pinned, braided, etc., as directed and to the satisfaction of the Engineer and all properly glued up with the best quality glue.

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

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

Round wood plugs shall not be used. All work described as plugged shall be fixed with screws to plugs formed by drilling concrete, walls, etc., with a proper tool of suitable size and filling the holes completely with "Expandet" raw plastic or "Rawplugs" in accordance with the Manufacturer's instructions.

Where intended to be in contact with stone, concrete blocks, cement or plaster, the backs and other faces of all doors, windows and other frames and linings, posts, architectural skirtings, fillets and fascias shall be treated with two coats of wood preservative before fixing.

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

Any fixed joinery which in the opinion of the Engineer is liable to become bruised or damaged in any way shall be completely cased and protected by the Contractor until the completion of the works.

5.3.4 Inspection and Testing.

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

5.3.5 Clearing Up.

The Contractor is to clear out and destroy or remove all cut ends, shavings and other wood waste from all parts of the building and the Site as the work progresses and at the conclusion of the work. This is to prevent accidental borer infestation and to discourage termites and decay.

5.3.6 Prices to Include.

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

The Contractors rates must also include for bedding frames, sills, etc., in mortar or dressing surfaces of walls etc.

5.4 Roofing.

The roof covering and fittings shall be as specified in the drawings or in the bill of quantities. The roofing material should be laid and fixed in strict accordance with the manufacturer's instructions.

Fixing to be of approved type and quality.

5.4.1 Protection.

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

5.5 Steelwork.

5.5.1 Materials.

All materials shall be the best of their respective kinds and free from defects. The materials in all stages of transportation handling and stacking shall be kept clean and injury from breaking, bending and distortion prevented.

All steel and steel sections shall comply with BS 4, BS 4360 and BS 4848.

All steel shall be of approved manufacture and the Contractor shall on request deliver to the Engineer a manufacturer's test certificate for all steel used.

All structural steel shall be of grade 43A according to BS 4360.

Steel for handrails, screens etc. can be of a lower grade, but all steel shall be weldable and the grade shall be approved by the Engineer.

Electrodes shall be according to BS 639.

All electrodes shall be of a class appropriate to the steel. Bolts and nuts shall be according to BS 4190.

5.5.2 Workmanship.

Workmanship for all steelwork shall generally follow the requirements in BS 449 and BS 5135.

The contractor shall prepare all the necessary workshop drawings, which shall be approved by the Engineer. The Engineer's approval shall not in any way relieve the Contractor of his responsibility for the workshop drawings in accordance with the contract drawings and specifications

All welding of structural steel shall be carried out in the Contractors workshop and the whole structure or parts thereof shall be test assembled in the workshop before delivery to the site.

Should any doubt arise as to the quality of the steel or the welds, the Engineer may require testing carried out. If the results show insufficient quality of materials or workmanship, the Contractor shall cover all expenses related to the tests and shall replace all materials and welds found unsatisfactory.

5.5.3 Ladders.

All ladders in tanks etc shall be galvanized steel pipes in accordance with BS 1387 "medium class", and shall be made to the dimensions shown on the drawings.

5.6 Ironmongery and other Fittings.

All ironmongery shall be approved by the Engineer. The approved samples shall be regarded as the standard for work.

5.6.1 Locks.

All locks and ironmongery shall be with screws, etc. to match. Before the door etc. is painted, handles shall be removed, carefully stored and refixed after completion of painting. Locks shall be oiled and left in perfect working order.

25 mm diameter rubber door stops shall be provided at all doors and securely plugged and screwed to floors or walls.

All external doors shall be provided with locks of cylinder type. All internal doors to be provided with approved latch locks and handles. All locks shall have two keys with attached labels with door references before being handed over to the Engineer.

5.6.2 Sanitary Fittings.

All sanitary fittings shall be approved manufacture and installed in accordance with the manufacturer's recommendations.

5.7 Glazing.

5.7.1 Glass.

All glass shall comply with BS 952 and be free from flaws, bubbles, specks and other imperfections.

Glass panes shall be cut to sizes to fit the opening with not more than 2 mm play all round and where puttied shall be clipped to the frames.

Clear sheet glass shall be ordinary glazing quality.

5.7.2 Cleaning.

On completion, remove all broken, scratched or cracked panes and replace with new to the satisfaction of the Engineer. Clean inside and out with approved liquid cleaner. On no account shall windows be cleaned by scraping with glass.

5.8 Painting, Decorating and other Surface Treatment.

5.8.1 Approved Specialist.

All work under this trade must be executed by an approved specialist unless the Engineer agrees otherwise. Paint shall be of approved manufacture.

5.8.2 General.

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

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

5.8.3 Painting generally.

All materials to be applied externally shall be of exterior quality and/or recommended by the manufacturers for external use, all in accordance with BS 4800 or similar.

All materials shall be delivered on site intact in the original sealed drums or tins and shall be mixed and applied strictly in accordance with the manufacturer's instruction and to the approval of the Engineer.

Unless specially instructed or approved by the Engineer, no paints are to be thinned or otherwise adulterated, but are to be used as supplied by the manufacturers and direct from the tins.

The priming, undercoats and finishing coats shall each be of differing tints and the priming and undercoats shall be the correct brands and tints to suit the respective finishing coats in accordance with the manufacturer's instruction. All finishing coats shall be of colours and tints selected by the Engineer. Each coat must be approved by the Engineer before the next coat is applied.

All paints, emulsion paints and distempers shall be applied by means of a brush or spray gun or rollers of an approved type where so agreed by the Engineer.

No painting is to be done in wet weather or on surfaces which are not thoroughly dry.

Each coat shall be properly dry and in the case of oil or enamel paints shall be well rubbed down with fine glass paper before the next coat is applied. The paint work shall be finished smooth and free from brush marks.

The rates for painting shall include for preparation of surfaces, rubbing down between each coat, stopping, knotting, etc. and all other work in connection and as described and as necessary to obtain a first class and proper finish to the Engineer's approval.

5.8.4 Samples.

The Contractor shall furnish at the earliest possible opportunity before work commences and at his own cost, samples of painting for the Engineer's approval and any further samples in the case of rejection.

Such samples when approved, shall be the minimum standard for the work to which they apply. If required by the Engineer, the Contractor is to provide at his own expense samples of paints, etc., with containers and cases to be forwarded carriage paid by the Contractor for analysis at a laboratory.

Colour cards of all paints, etc. shall be submitted to the Engineer.

The Engineer may reject any materials or workmanship not in his opinion up to the approved sample, and these must be removed from the site without delay.

5.8.5 Preparation and Priming of Plaster etc. Surfaces.

Surfaces shall be perfectly smooth, free from defects and ready for decoration. All such surfaces shall be allowed to dry for a minimum period of six weeks, stopped with approved plaster compound stopping and rubbed down flush, as necessary, and then be thoroughly brushed down and left free from all efflorescence, dirt and dust immediately prior to decorating.

Plaster surfaces, which are to be finished with emulsion, oil or enamel paint, shall be primed with an alkali resisting primer complying with the particular paint Manufacturer's specification and applied in accordance with their instructions.

Fibreboard or similar surfaces shall be lightly brushed down to remove all dirt, dust and loose particles and have all nail holes or other defects stopped with an approved plaster compound stopping rubbed down flush and left with a texture to match surrounding material.

5.8.6 Preparation and Priming of Metalwork.

All surfaces shall be thoroughly brushed down with wire brushes and scraped where necessary to remove all scale, rust, etc. immediately prior to decorating. Where severe rust exists and if approved by the Engineer, a proprietary de-rusting solution may be used in accordance with the manufacturer's instructions.

Shop primed and unprimed surfaces shall be given one coat of metal chromate primer or lead oxide primer.

Galvanized surfaces shall be treated before priming with an approved proprietary mordant or de-greasing solution. The surfaces shall be thoroughly washed down with water, allowed to dry and primed as last.

Coated surfaces already treated with bituminous solution, shall be scraped to remove soft parts and then receive two isolating coats of aluminium primer or other approved anti-tar primer.

5.8.7 Preparation and Priming Woodwork.

All woodwork shall be rubbed down, all knots, covered with a thick coat of good shellac or aluminium knotting; primed with one coat of approved ready-mixed proprietary wood primer and all cracks, nail holes, defects and uneven surfaces, etc., stopped and faced up with hard stopping rubbed down flush.

5.8.8 Wood preservative.

All woodwork in contact with walling or plaster shall be treated after cutting and preparation but before assembly or fixing with one coat of approved wood preservative. The solution is to be brushed on all faces of all timbers, unless exposed to view and painted.

5.8.9 Cement Paint.

Shall be super snowcem or equal and approved. Two coats shall be applied after preparation as specified above.

5.8.10 Emulsion Paint.

After preparation as specified above a minimum of three coats shall be applied using a thinning medium or water only as recommended by the Manufacturer.

An approved plaster primer tinted to match may be substituted for the first coat.

5.8.11 Enamel Paint.

Apply two undercoats and one finishing coat, after preparation and priming as specified above.

5.8.12 Ironmongery.

Where instructed, all ironmongery shall be removed from joinery, steel windows and louvres before panting is commenced, and shall be cleaned and renovated if necessary and refixed after completion of painting.

5.8.13 Painting Items.

As billed here- after shall include for preparing and priming surfaces as above described.

5.8.14 Lining of Chemical Tanks.

The lining of chemical tanks with "EPOBOND" and "EPOFLOOR" shall be carried out by specialists approved for such work by the manufacturer or his agent.

The preparation of the surface to receive the above products must either be carried out by specialist or by the Contractor in which case the manufacturers or his agents written approval of the preparation of the surface shall be obtained prior to the application of the product.

5.8.14 Cover Up.

Cover all floors, fittings, etc. with dust sheets when executing all painting and decorating work.

5.8.15 Clean and Touch Up.

Paint splashes. Spots and stains shall be removed from, floors. Wood-work, etc., any damaged surfaces touched up and the whole of the work left clean and perfect upon completion and during the maintenance period.

6 PIPEWORK

General

All pipes, couplings gaskets lubricants seals, coupling machinery etc; necessary for the proper construction of the pipe work as detailed in the Bill of Quantities and drawings shall be supplied by the contractor.

The contractor shall be responsible for ensuring that the pipes, couplings and other fittings laid or installed on each section of the work are of the standard and pressure classifications specified as appropriate to the circumstances, and are manufactured of the specified materials.

The Engineer reserves his right to refuse any materials that in his opinion is inferior.

The Engineer has the right to test any material upon delivery and materials found defective shall be replaced forthwith by the contractor.

If the contractor procures materials of different specifications in respect of flanges and threads etc, he shall at his own cost provide all adaptors and other fittings necessary to make connections to the satisfaction of the Engineer.

All materials shall be marked as specified in the relevant current British or ISO standards for easy identification.

6.1 Handling and Storing of Pipes and Fittings

The method of transportation, handling and storing of pipes and fittings shall be in accordance with the manufacturer's recommendations.

Pipes valves and other fittings shall be handled, moved, lifted or lowered with the least possible impact. Handling equipment shall be of approved type. In slinging pipes, only flat slings shall be used and the use of chain slings hooks or other devices working on scissors or grab principles shall not be permitted. Pipes shall be slung from two or more points as the Engineer may direct and the slinging, lifting and lowering shall be in the hands of a competent and experienced man.

Pipes storage shall be supported clear of the ground on approved supports adequately braced to prevent rolling. They shall not be stacked more than four tiers high without the approval of the Engineer. Materials of different classification shall be stored separately. All pipes and associated materials shall at all times be protected from sun and dirt to the satisfaction of the Engineer.

No valves shall be lifted by the spindle. Valves and other fittings shall not be stacked more than one tier high without the permission of the Engineer and they shall not be stored in a dirty place or condition.

Shortly before laying or fixing any valve, pipes or fitting the contractor shall in the presence of the Engineer or his representative carefully examine each valve, pipe and fitting to ascertain damage or defect occasioned to the valves, pipes and fittings during loading, unloading, handling, storage and transportation. All damage and all defects revealed by this examination shall be repaired and remedied by the contractor.

6.2 Laying and Jointing of Pipes

All laying and jointing of pipes except jointing of PVC and polythene pipes shall be in conformity with BS 6700 and BS 8010.

The bottom of the trench or surface of the bed shall be finished to a smooth even surface at the correct level to permit the barrel of the pipe to rest on the surface throughout its whole length between joint and sling holes. If considered necessary by the Engineer, fine-screened material shall be placed and consolidated in the trench bottom to provide such a bed. In general the preparation of the trench bottom and bed shall be completed for a length of one pipe in advance of the pipe-laying.

The bottom of the trench and pipe bed shall be inspected by the Engineer, and only when passed as satisfactory shall pipe-laying commence.

Each pipe shall be laid accurately to line, level and gradient so that, except where otherwise directed, the finished pipeline shall be in a straight line both in horizontal and vertical plans. The levels and gradients shown on the drawings shall be rigidly adhered to unless otherwise ordered by the Engineer.

Notwithstanding any flexibility provided in pipe joints, pipes must be securely positioned to prevent movement during and after the making of a joint. On screw and socket joints, threads shall be coated with an approved tape to ensure water tightness. The contractor shall take care that all pipes and couplings are clean and free of foreign matter before subsequent sections are jointed.

The contractor shall obtain from the manufacturer or other approved supplier the necessary tackle required for the proper jointing of the pipes. The contractor shall make himself and his employers acquainted with and comply with instructions issued by the manufacturers of the various types of proprietary joints and couplings for incorporation on the works. The contractor shall be responsible for obtaining copies of such instructions.

No person shall be employed on the jointing of pipes that is not thoroughly experienced and skilled in the particular work in hand.

Pipes shall not be cut without the permission of the Engineer. The cut shall be made with an approved mechanical pipe cutter and the edges of the cut shall be clean, true and square. Threading of steel pipes shall be done with an approved device.

Subject to the permission of the Engineer, pipes shall be covered over with approved fill material upon successful completion of laying and jointing. Joints shall be left exposed until completion of the test. The fill for surrounding and cushioning shall consist of uniformly readily compatible material free from tree roots, vegetable matter, building rubbish and excluding clay lumps retained on 75 mm sieve and stone retained on a 25 mm sieve.

The materials for bedding shall, where ordered, consist of suitable selected materials obtained from the excavations or from approved borrow pits and transported to the location where they are required. Upon successful completion of the pressure test the pipeline shall be back-filled as specified.

The contractor shall provide concrete indicator posts at every place where the change in class of pipe occurs with engraved marking on the post indicating class of pipe and direction.

The rate for pipework shall include for supplying, storing, handling, laying and jointing of pipes and is measured in linear metres. The rates shall also include for leveling of the trench bottom, compacting the foundation, and embedding the pipe together with the materials used for bedding all to the satisfaction of the Engineer.

6.3 Valves and Fittings

Unless otherwise directed all valves and other fittings and specials shall be individually supported and their weight shall not be borne by the pipeline joints or couplings etc. All supports for valves and fittings shall be of concrete grade 20.

Air valves shall be installed at high points in the pipeline as shown on the drawings. Before the valves are installed all the air nozzles shall be probed to see that they are clear. No air valves shall be stored before erection in the open in sunlight, or upside down to expose the balls and air cavities.

Scour valves shall be installed at low points in the pipelines as shown on the drawings. The contractor shall be in agreement with the Engineer on the exact position of scour valves in particular situations. Scour valves shall, where possible, discharge in the direction of natural drainage and at such a distance from the works as to preclude erosional effects.

Unless otherwise directed the controlling valve for a scour shall be installed not more than 1.5m from the main pipeline.

Ends of all scours shall be protected from intrusion of animals and other foreign matter by suitable screening securely fixed to the pipe end.

Valve penstocks and other fittings shall be securely fixed and where required extension spindles and headstocks shall be properly aligned and fixed in a vertical position unless otherwise directed.

Before each valve is put into service all gears bearings and spindles shall be oiled with approved oil as recommended by the valve manufacturers. All valves, fittings specials shall be fixed with proper sealing tape, gaskets, washers etc as necessary to the satisfaction of the Engineer. The valves shall be with non-rising spindle and shall if not otherwise stated be supplied with handwheels.

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.

6.4 Flanges

Where flanged joints are used flanges shall be in accordance with the requirements of BS 4504: Part 1 or BS 4772. Where crewed joints are used, thread shall comply with BS 21.

The minimum pressure rating shall be for a working pressure of 1.0 N/mm² (approximately 100 metres head) corresponding to NP 10 flanges. The hydraulic test pressure shall not exceed 1.6 N/mm².

Flanges in pipelines with higher-pressure rating shall be for the ratings specified in the Bill of Quantities.

Bolts nuts and washers shall comply with the requirements of BS 4190 and BS 4320. Gaskets shall fulfill the requirements of BS 2494 and shall have a minimum thickness of 2mm. The names of manufacturers and specifications of the products offered shall be provided at the time of tender.

6.5 Ductile Iron

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

Joints shall be either "Viking Johnson" or flanged joints as specified in the drawings and the bill of quantities.

Before any other joint is used written approval of the Engineer must be obtained. Pipes and fittings shall be coated inside and outside with a hot material complying with the requirements of BS 4164 or with cold applied material complying with BS 3416 type II material.

6.6 Grey Iron or Cast-Iron

Grey iron or cast iron pipes and fittings shall comply with BS 4622 or ISO/R13. The pressure rating of the pipes shall be for a minimum working pressure of 1.0 N/mm² (approximately 100 metres head) and a hydraulic test pressure of 1.6N/mm².

Joints, internal and external coatings to be as specified in clause 505, Ductile Iron.

6.7 Steel

Steel pipes and fittings shall comply with BS 534, BS 1387 or BS 3601. Pipes complying with BS 1387 shall be of "Medium" or "Heavy" classes as specified in the Bills of Quantities and Drawings.

6.8 Unplasticised Polyvinyl Chloride Pipes

All uPVC pipes and fittings shall comply with KS ISO 1452-2:2009,

Pipes indicated with a pressure class shall conform to the following minimum working pressures:

PN 6 – 0.6 N/mm²

PN 8 – 0.8 N/mm²

PN 10 – 1.0 N/mm²

PN 12.5 – 1.25 N/mm²

PN 16 – 1.6 N/mm²

All fittings shall be of pressure class “PN 16” and be manufactured of cast iron, PVC or steel. Joints to be plain sockets for gluing with solvent cement for nominal sizes equal to or smaller than – 50mm and mechanical joints (Rubber ring) for nominal sizes equal to or bigger than – 90 mm.

For both types of joints the manufacturer’s jointing instructions must be strictly adhered to. PVC pipes and fittings shall be stored under cover, which fully protects the material from sunlight.

6.9 Precast Concrete

Precast concrete pipes and fittings shall comply with BS 556: 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.

6.10 Protection of Pipes

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

- (i) Bedding concrete shall have a width of at least 300mm bigger than the external diameter of the pipe and shall support at least the bottom quarter of the pipe circumference. It shall have a minimum depth of 150 mm measured under the pipe throughout.
- (ii) Bedding and hunching shall comprise a concrete bed with a minimum width of 300 mm more than the external diameter of the pipe and a minimum thickness of 150 mm below the pipe, and haunching with a minimum thickness of 150 mm on both sides of the pipe. The top of the hunching 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.

6.11 Testing of Pressure Mains

Pressure pipelines (together with all fittings and valves incorporated in the mains) shall, before being covered, be tested with water as specified in BS 6700.

At least two days' notice must be given in writing to the Engineer before pressure testing is commenced.

6.12 Water Pressure Test

The water test pressure to be applied will be 1.5 times the nominal working pressure for the class of pipe being tested. The Engineer, however, reserves the right to alter this figure.

Mainwork 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 airvalves 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.

6.13 Cleaning and Sterilisation 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 6700.

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.

6.14 Auxiliary Works

(a) Valve Chamber

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

(b) Thrust Blocks and Anchors

The contractor shall provide thrust blocks at all bends, tees and whenever else instructed by the Engineer or indicated in the drawing.

Enlargements shall be excavated in sides and bottom of the trench to accommodate anchorages and thrust blocks.

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

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

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

(c) Road Crossings

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

(d) Painting

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

(e) Indicator Posts

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

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

7 ELECTRICAL-MECHANICAL WORKS

7.1 Motors

All motors shall unless otherwise stated be suitable for a 415/240 volt, 3 phase, 50 cycles, wire power supply, and shall be operated through star delta start control system.

The motors shall be constructed in accordance with CP 1015, and shall be protected as per the Government Electrical Specifications.

The motor speed shall be 1450 or 2900 RPM as specified. The motor shall be foot mounted squirrel cage, drip-proof, or totally enclosed suitable for an ambient temperature of 30°C. The motor shall be designed for continuous running. Each motor shall be capable of an overlaid of 10% above its rated output at the rated voltage for a period of one hour without sustaining damage.

The rate output of the motor shall be the maximum house power absorbed by the pump under the described condition of head and discharge, plus an allowance for loss of power in couplings etc.

Electrically drives pumps, shall, if not otherwise stated be directly coupled via flexible couplings to the motors. Motors and pumps shall be fitted to common rigid steel frames bolted to concrete plinths.

Proper alignment of motor and pump must be guaranteed.

7.2 Pumps

The pumps shall be of the centrifugal type with cast iron casings. The shaft shall be prepared for direct connection via flexible couplings to the electrical motors.

Pump casing shall have interchangeable bronze wear rings. The impellers shall be of bronze or high-grade cast iron dynamically balanced to ensure smooth running. The impeller shaft shall be of steel and fitted with renewable bronze protecting sleeves wherever it is in contact with the pumped water. Mechanical seals shall be provided unless approved otherwise. It shall be stated in the tender documents if other materials are offered.

For horizontal type pumps, the impeller shaft shall be carried by oil or grease lubricated ball roller bearings of heavy-duty type.

The pump casings, bearings, shaft, impellers and gaskets must be executed of materials suitable for many years continuous operation in a water system.

If materials other than cast iron, bronze or stainless steel are included in the pump, it cannot be approved unless a written guarantee for 10 years performance is produced, giving free replacement including labour in case of fault.

All pipe connections shall be flanged, and prices shall include for the necessary tapers, gaskets, bolts etc. for connecting up to the pipe diameters and to the extent shown on the drawings or instructed by the Engineer.

The pump type and size shall be chosen so as to ensure that the pump is working with an efficiency of not less than 90% of the peak efficiency. Performance curves, efficiency curves and power demand curves shall accompany the Tender, with clear indication of the capacity and efficiency for the pump with the specified head.

The high lift pumps shall be horizontal multi-stage centrifugal pumps of approved manufacture. The capacity for each pump shall be approximately 101m³/hr at a total head of 30m and one pump standby in parallel at the same head.

Two pressure gauges in metric units are to be provided at each pump. The pressure gauges are to be connected to the delivery and suction sides of the pump by use of approved copper pipes fitted with an isolating cock.

ELECTRO – MECHANICAL WORKS SPECIFICATIONS

1. ELECTRICAL WORKS

1.1. REGULATIONS AND STANDARDS

The complete electrical installation shall be carried out by a competent Contractor and in accordance with the specifications and compliance with the following;

- (a). Kenya Bureau of Standards 32
- (b). Regulations for the Electrical Equipment of Buildings (Latest Edition) issued by the Institution of Electrical Engineers of Great Britain.
- (c). IEC standards and Electric Power Act and the Rules made there under.
- (d). Kenya Power & Lighting Co. Ltd Regulations and Bye-Laws.
- (e). Government Electric Specifications GES 1 and 2 which can be viewed at the office of the Chief Electrical Engineer, Ministry of Roads, Public Works and Housing.
- (g). Industrial Safety Regulations currently in force.

SWITCH GEAR, STARTER PANELS AND OTHER ENCLOSURES

Unless otherwise specified, all shall be surface mounting, water tight, corrosion resistant, vermin-proof, termite-proof, dust-proof and resistant to attack by oils and grease. They shall be fabricated from heavy gauge 16 swg, folded, spangled, galvanized and rust protected sheet steel of minimum thickness 1.5mm. They shall be finished in a two tone, heat resistant, non-peeling-off stoved gray enamel paint or epoxy powder coating.

1.2. ELECTRIC CABLES

Unless otherwise specified, all cables shall be made of copper material and conform to BSS 6004, 600/1000 volts grade.

- (i). **UNARMoured CABLES:** They shall be PVC insulated.
- (ii). **ARMoured CABLES:** They shall be PVC SWA PVC copper cables.
- (iii). **BOREHOLE CABLES:** They shall be made from tough flexible rubber material that will not allow water to seep through when submerged in the borehole water.

1.3 GS CABLE TRUNKING

The trunking shall be manufactured from heavy duty hot dip galvanized mild steel sheet of minimum thickness 1.25 mm with screw-in and twist-to lock top lid.

1.4 PUMP SET STARTER

It shall be 3 phase, 415 vac, 50/60 Hz Direct-On line. It shall be in a water tight, front access, hinged door, lockable enclosure, comprising of the following components among others fully wired and labelled. The starter shall be fully wired and 3 No. sets of schematic and control wiring drawings MUST be supplied along with the starter. - Appropriate rating contactors / appropriate rating thermal overload. - Push buttons (green marked "START", black marked "STOP/RESET"). - Integral TPN (MCB) type 2. - 1 No. 50x50mm AC ammeter of appropriate range. - 1 No. 50x50mm AC voltmeter of range 0-500 vac.c/w protection MCB/fuse. - Over/Under voltage and phase failure protection relay set at 380 and 440 vac. - 2 No. Water level control relays. - Pilot

indicator lights (green marked "PUMP RUN", red marked "OVER LOAD TRIPPED", yellow marked 'BOREHOLE LOW', etc..... - Hours run counter range 0-99999 hours. - Cable terminal blocks of appropriate rating. 33

1.5 BOREHOLE MOTOR (AS GRUNDFOS OR APPROVED EQUIVALENT)

The motor shall be the two pole cased asynchronous, 3 phase, 415 vac, squirrel cage, induction type, continuously rated and of minimum CLASS "B" insulation. The entire body including the shaft shall be made of heavy duty stainless steel material. The motor shall be supplied complete with 3 lead copper tail cable.

1.6 BOREHOLE PUMP (AS GRUNDFOS OR APPROVED EQUIVALENT)

The pumps shall be the high pressure, vertical mounting, multi-stage, centrifugal type running at a full load speed of not less than 2800 rpm. The entire pump body including the strainer, cable guard, non- return valve, impellers, shaft, locking nuts and washers shall be made of heavy duty stainless steel material. The bearings shall be the water lubricated type, wear resistant. The impeller(s) shall be hydraulically and dynamically balanced.

1.7 WATER LEVEL CONTROL ELECTRODES

All the electrodes shall be made of stainless steel material AISI 304 as Omron F03-01, Londex, Asco or similar approved quality made of stainless steel. The borehole electrodes shall be of size 6.0 mm diameter and 120mm length (D6x120mm) and in their tough moulded shrouds.

1.8 BOREHOLE COMBINED PIPE AND CASING CLAMP

The clamp shall be the heavy duty type. It shall comprise of 3 pieces; the bottom half clamps to the borehole casing, while the top portion which rests on the top of the casing clamps to the pipe column and holds it centrally in the casing bore.

1.9 BOREHOLE SUNDRIES

Unless otherwise specified, the words "BOREHOLE SUNDRIES" shall mean the following items to be used in the installation, support and inter-connection of the borehole pump and drop pipes to the rising mains. Unless otherwise specified, the GI fittings shall be of the same diameter as the drop pipes. - Rolls of 6 water proof adhesive rubber tape and cable ties. - Tee, sockets, nipples, 90o slow bends and plug. - 2 Liters of Boss black type COLAS RC.

1.10 RC CABLE AND PIPE ROUTE MARKERS

They shall be of size 1100mmLx200mmWx80mmT with the words "POWER CABLE" OR "WATER PIPE" in 40mm height letters mould cast in black indelible colour in the concrete. They shall be cast using Y8 RC concrete of mix ratio (mix ratio 1:3:6).

1.11 HATARI TILES

The tiles shall be used to cover the underground armoured cables for protection against mechanical damage. They shall be of size 300mmLx150mmWx30mmT with the word "HATARI" in 40mm height letters mould cast in the concrete. They shall be pre-cast using concrete of mix ratio (mix ratio 1:3:6).

1.12 GS BOREHOLE PROTECTION COVER

The cover shall be all weather-proof, rectangular in shape with pitched top (3o).The cover shall be fabricated from hot dip galvanized heavy gauge (16 swg) sheet steel plate of minimum thickness 1.75mm.It shall have GS solid handles and pad locking facilities on the opposite sides. The cover shall be in an L-SHAPED steel frame (25x25x2.5mm thick).

1.13 WIRING METHODS OF ELECTRICAL INSTALLATIONS AT MEDIUM AND LOW VOLTAGE

- (i). SYSTEM "A" Plastic insulated cables enclosed in screwed steel conduit or trunking on the surface of walls and ceilings or in the roof space.
- (ii). SYSTEM "B" Plastic insulated wires armoured cables laid on the surface of walls, cable trays, in cable trenches or ducts.

(iii). SYSTEM “C” Plastic insulated cables clipped to the roof members and run in metal or plastic conduit drops concealed in walls or ducts formed in the fabric of the building.

1.14 SYSTEM BONDING

All non-conducting metallic parts which form part of the electrical system or are within the vicinity/route of the electrical system shall be effectively bonded to the main earthing system.

1.15 EARTHING SYSTEM

All the electrical installation earthing conductors shall be connected to the earth electrode through an earth lead. The earth lead shall be firmly connected to the electrode by means of the clamp, after which a thin film of grease or Vaseline shall be applied at the clamp area for protection against corrosion.

1.16 STAND ALONE PHOTOVOLTAIC SOLAR ARRAY PANEL ASSEMBLY

1.16 (a) MOUNTING STRUCTURE

The mounting frame structure shall be of high quality steel material that does not rust.

The tenderer shall fill in the following information pertaining to the solar equipment offered at the time of tendering. The tender must submit comprehensive technical literature and brochure to support the information filled.

ITEM NAME	PARAMETER	SPECIFICATIONS	OFFERED
A. SOLAR ARRAY	Make		
	Model/Type		
	Max. output power (kwp)		
	Solar cell type		
	Cell voltage		
	Cell operating temperature		
	Substrate material		
	Superstrate material		
	Manufacturer		

1.17 ELECTRICAL INSTALLATION RESULTS

The Contractor shall at the end of the electrical installation work carry out electrical tests on the system and ensure that the results are compliant with the I.E.E. Regulations and Kenya Power & Lighting Co. Ltd Regulations and Bye Laws currently in force before the system performance tests are carried out.

Electrical parameters to be tested are:-

- Insulation between phases - Mega ohms
- Insulation between phases and earth - Mega ohms
- Earth continuity test - ohms
- Earth Electrode test - ohms
- Earth loop impedance test - ohms
- Earth lead test - ohms

1.18 AVAILABILITY OF SPARE PARTS

The Contractor shall indicate local registered companies which stock spares and carry out repairs/maintenance or of the equipment (motor, pump starter etc) that he/she has offered.

1.19 TECHNICAL LITERATURE

- a) The bidder **MUST** submit adequate technical literature to assist in evaluation the literature information shall **INCLUDE**: -

- Performance curves for the solar array pump set (Capacity VS Head, Efficiency, Power Production, Power consumption, etc).
- Make, type model and country of origin of the solar array, pump, motor, pump starter etc.
- Specifications of materials used in the construction of the components of the pump, motor etc.
- Any other information the bidder may deem is important in evaluation as well as BOOSTING his/her chances of winning the bid.

b) **THE WINNER OF THE BID MUST SUBMIT THE FOLLOWING**

- 1NO. set of the User Manual for the pump set
- Written Warranty document of minimum 12 months for the Solar array, pump set, starter etc.
- 1NO. Set of original film and 3NO. Sets each of as-fitted electrical schematic drawings, control wiring drawings for main switch gear, pump starter, cabling and water pipe lay out between boreholes and tank.

c) **FAILURE TO SUBMIT**

- Failure to submit 1.19 (a) will result to disqualification (N/A)
- Failure to submit 1.19 (b) will lead to the delay in the release of retention money (N/A)

SECTION VII - DRAWINGS

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

SUPPLEMENTARY INFORMATION

**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 identify defined 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 works** are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.
- 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) **Equipment** 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** is 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 Quantities⁶, and
 - i) any other document **listed in the SCC** as forming part of the Contract.

⁶In lump sum contracts, delete “Bill of Quantities” and replace with “Activity Schedule.”

2.4 Framework Agreement.

- 2.4.1 The Parties shall enter into a Framework Agreement within 28 days after the Contractor receives the Letter of Acceptance, unless the Particular Conditions establish otherwise. The Framework Agreement shall be based upon FORM No. 3 – FRAMEWORK AGREEMENT annexed to the Particular Conditions. The costs of stamp duties and similar charges (if any) imposed by law in connection with entry into the Framework Agreement shall be borne by the Procuring Entity.
- 2.4.2 The Framework Agreement establishes the terms and conditions that will govern the contract awarded during the term of the Framework Agreement. The Framework Agreement establishes for the procurement works by package as and when required, over the specified period of time. The Framework Agreement does not commit a Procuring Entity to procure, nor a Firm to supply. The Framework Agreement allows the Procuring Entity to call the Contractor to commence the works on a particular package in a specified location within the duration of the agreement.
- 2.4.3 This Framework Agreement does not guarantee the contractor of being called for a contract to start and no commitment is made with regard to possible number of packages to carry out.
- 2.4.4 This Framework Agreement does exclude the Procuring Entity from the right to procure the same Works from other firms.
- 2.4.5 This Framework Agreement does not stop the Procuring Entity from removing the contractor from the same Agreement.
- 2.4.6 FAs shall be established for a maximum period of three (3) years. The Procuring Entity may with the Consent of the Contractor extend this Agreement if the agreement period is less than three (3) years, if the initial engagement has been satisfactory.
- 2.4.7 Call-off Contracts; for work on a package to start, the Procuring Entity shall issue a notice of acceptance of a particular package requesting the contractor to furnish a Performance Security and to start the works thereafter, and providing the contractor with details of location where the works, are to be carried out. The call-off statement shall specify the objectives, tasks, deliverables, timeframes and price or price mechanism. The price for individual call-off contracts shall be based on the prices detailed in the Framework Agreement.

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 by any person employed by or contracted to him except the Contractor.
 - b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the Procuring Entity's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.
- 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:
- loss of or damage to the Works, Plant, and Materials;
 - loss of or damage to Equipment;
 - loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
 - 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 complete them by 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 and carry 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.

245 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.

246 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.

247 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 any other rights it may have, refer the matter to a competent court of law.

248 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.

- 262 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.
- 263 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.
- 264 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.

312 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

321 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

331 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

341 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.

342 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

351 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 Price⁷

361 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 Price⁸

371 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.

372 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

381 All Variations shall be included in updated Programs⁹ produced by the Contractor.

382 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.

383 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

384 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.

⁷In lump sum contracts, replace GCC Sub-Clauses 36.1 as follows:

36.1 The Contractor shall provide updated Activity Schedules within 14 days of being instructed to by the Project Manager. The Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to monitor and control the performance of activities on which basis the Contractor will be paid. If payment for materials on site shall be made separately, the Contractor shall show delivery of Materials to the Site separately on the Activity Schedule.

⁸In lump sum contracts, replace entire GCC Clause 37 with new GCC Sub-Clause 37.1, as follows:

The Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor's own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.

⁹In lump sum contracts, add "and Activity Schedules" after "Programs." ¹⁰In lump sum contracts, delete this paragraph.

39.

- 39.1 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning
- 39.2 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
- 39.3 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.
- 39.4 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 any other benefits to the Procuring Entity, without compromising the functionality of the Works.
- 39.5 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.

40. Cash Flow Forecasts

- 40.1 When the Program¹¹, 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.

41. Payment Certificates

- 41.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.
- 41.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.
- 41.3 The value of work executed shall be determined by the Project Manager.
- 41.4 The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed¹².
- 41.5 The value of work executed shall include the valuation of Variations and Compensation Events.
- 41.6 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.
- 41.7 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: $(\text{corrected tender price} - \text{tender price}) / \text{tender price} \times X$

42. Payments

- 421 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.
- 422 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.
- 423 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.
- 424 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.

43. Compensation Events

43.1 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 be let.
- 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.

432 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.

433 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.

¹¹In lump sum contracts, add “or Activity Schedule” after “Program.”

¹²In lump sum contracts, replace this paragraph with the following: “The value of work executed shall comprise the value of completed activities in the Activity Schedule.”

434 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.

44. Tax

441 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 30 days before the submission of 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.

45. Currency of Payment

45.1 All payments under the contract shall be made in Kenya Shillings

46. Price Adjustment

46.1 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:

$$P = A + B \frac{I_m}{I_o}$$

where:

P is the adjustment factor for the portion of the

Contract Price payable.

A and B are coefficients¹³ **specified in the SCC**, representing the non-adjustable and adjustable portions, respectively, of the Contract Price payable and I_m is the index prevailing at the end of the month being invoiced and I_o is the index prevailing 30 days before Bid opening for inputs payable.

46.2 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.

47. Retention

47.1 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.

47.2 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.

48. Liquidated Damages

48.1 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.

48.2 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.

49. Bonus

49.1 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.

50. Advance Payment

50.1 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.

50.2 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.

50.3 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.

51. Securities

51.1 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.

52. Dayworks

52.1 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.

52.2 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.

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

53. Cost of Repairs

53.1 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

54. Completion

54.1 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.

55. Taking Over

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

56. Final Account

56.1 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.

¹³The sum of the two coefficients A and B should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the non-adjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other non-adjustable components. The sum of the adjustments for each currency are added to the Contract Price.

57. Operating and Maintenance Manuals

57.1 If “as built” Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the SCC.

57.2 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.

58. Termination

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

58.2 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.

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

58.4 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.

58.5 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 or not.

59. Payment upon Termination

59.1 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.

592 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.

60. Property

60.1 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.

61. Release from Performance

61.1 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 <i>Tana Water Works Development Agency, P.O. Box 1292-10100 Nyeri</i>
GCC 1.1 (u)	The Intended Completion Date for the whole of the Works shall be <i>[insert date]</i> <i>[If different dates are specified for completion of the Works by section (“sectional completion” or milestones), these dates should be listed here]</i>
GCC 1.1 (x)	The Project Manager is <i>Chief Manager Technical Services, P.O. Box 1292-10100, Nyeri.</i>
GCC 1.1 (z)	The Site is located <i>within TWWDA’s area of jurisdiction</i> and is defined in drawings No. <i>[insert numbers]</i>
GCC 1.1 (cc)	The Start Date shall be <i>[insert date]</i> .
GCC 1.1 (gg)	The Works consist of : supply and Installation of solar panels and associated cabling; supply of all materials and erection of solar panels mounting structure; supply and installation of 24m ³ galvanized pressed steel water tank; supply all materials and erection of 12m high tank elevation structure; supply of all materials and construction of pump control house, fencing works, guard house and installation of submersible pump at a recommended depth and any other structural details as described in the BoQ.
GCC 2.2	Sectional Completions are: <i>[N/A]</i>
GCC 5.1	The Project Manager <i>may delegate</i> any of his duties and responsibilities.
GCC 8.1	Schedule of other contractors: <i>[insert Schedule of Other Contractors, if appropriate]</i>
GCC 9.1	<p>Key Personnel GCC 9.1 is replaced with the following:</p> <p>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.</p> <p><i>[insert the name/s of each Key Personnel agreed by the Procuring Entity prior to Contract signature.]</i></p>
GCC 13.1	The minimum insurance amounts and deductibles shall be: <ul style="list-style-type: none"> (a) for loss or damage to the Works, Plant and Materials: <i>[insert amounts]</i>. (b) For loss or damage to Equipment: <i>[insert amounts]</i>. (c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	<p>connection with Contract <i>[insert amounts]</i>.</p> <p>(d) for personal injury or death:</p> <p>(i) of the Contractor's employees: <i>[amount]</i>.</p> <p>(ii) of other people: <i>[amount]</i>.</p>
GCC 14.1	Site Data are: <i>[list Site Data]</i>
GCC 20.1	<p>The Site Possession Date(s) shall be: Not later than the Commencement Day, except for the following parts (if applicable, with detailed description of parts concerned:</p> <p style="text-align: center;">_____14_____ days after Commencement Date</p>
GCC 23.1 & GCC 23.2	<p>Appointing Authority for the Adjudicator: Chairman of the Institution of Engineers of Kenya</p> <p>Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: As per the Chartered Institute of Arbitrators' Guidelines.</p>
B. Time Control	
GCC 26.1	The Contractor shall submit for approval a Program for the Works within 14 days from the date of the Letter of Acceptance.
GCC 26.3	<p>The period between Program updates is 30 days.</p> <p>The amount to be withheld for late submission of an updated Program is Kshs.5000 per day</p>
C. Quality Control	
GCC 34.1	The Defects Liability Period is: 365 days .
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 N/A of the reduction in the Contract Price. N/A
GCC 44.1	The currency of the Procuring Entity's Country is: Kenya Shillings
GCC 45.1	<p>The Contract "is not" subject to price adjustment in accordance with GCC Clause 45, and the following information regarding coefficients "does not" apply.</p> <p>The coefficients for adjustment of prices are:</p> <p>(a) <i>[insert percentage]</i> percent nonadjustable element (coefficient A) N/A</p> <p>(b) <i>[insert percentage]</i> percent adjustable element (coefficient B) N/A</p> <p>(c) The Index I for shall be <i>[insert index]</i>. N/A</p>
GCC 46.1	The proportion of payments retained is: 10%
GCC 47.1	The liquidated damages for the whole of the Works are 0.1% of the contract sum per day. The maximum amount of liquidated damages for the whole of the Works is 10% of the final Contract Price.
GCC 48.1	The Bonus for the whole of the Works is N/A . The maximum amount of Bonus for the whole of

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	the Works is N/A
GCC 49.1	The Advance Payments shall be: N/A
GCC 50.1	<p>The Performance Security amount is 10% of Contract Sum.</p> <p>(a) Performance Security – Bank Guarantee: in the amount(s) of <i>[insert related figure(s)]</i> percent of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract Amount.</p>
E. Finishing the Contract	
GCC 56.1	<p>The date by which operating and maintenance manuals are required is: 6 months after substantial completion</p> <p>The date by which “as built” drawings are required is: 6 months after substantial completion</p>
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 Kshs.100,000 for each .
GCC 58.2 (g)	The maximum number of days is: 100 days
GCC 59.1	The percentage to apply to the value of the work not completed, representing the Procuring Entity’s additional cost for completing the Works, is 10% of the uncompleted works .

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 in the Tender Information Form on 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: *Tana Water Works Development Agency*
- 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) **The successful tenderers:**

Package No.	Name of successful Tenderer	Address of the successful Tenderer	Contract price of the successful Tenderer
Package No.			
Package No.			
Package No.			
Package No.			
Package No.			
Package No.			

- ii) **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.

Package No.	Name of Tenderer	Address of the Tenderer	Tender price	evaluated price
Package No.				
Package No.				
Package No.				
Package No.				
Package No.				
Package No.				

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 debriefing expires at midnight on [insert date] (local time).
- b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (5) Business Days of receipt of this Notification of Intention to Award.
- c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:
 - i) Attention: [insert full name of person, if applicable]
 - ii) Title/position: [insert title/position]
 - ii) Agency: [insert name of Procuring Entity]
 - iii) Email address: [insert email address]
- d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (3) Business Days of 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 notify you and confirm the date that the extended Standstill Period will end.
- e) The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise

you in writing how the debriefing will take place and confirm the date and time.

- f) If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Days from the date of publication of the Contract Award Notice.

6. How to make a complaint

- a) Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, [insert date] (local time).
- b) Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:
 - i) Attention: [insert full name of person, if applicable]
 - ii) Title/position: [insert title/position]
 - iii) Agency: [insert name of Procuring Entity]
 - iv) Email address: [insert email address]
- c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.
- d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available from the Website info@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 tendering process, and is the recipient of a Notification of Intention to Award.
 - ii) The complaint can only challenge the decision to award the contract.
 - iii) You must submit the complaint within the period stated above.
 - iv) You must include, in your complaint, all of the information required to support your complaint.

7. Standstill Period

- i) DEADLINE: The Standstill Period is due to end at midnight on [insert date] (local time).
- ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.
- iii) The Standstill Period may be extended as stated in paragraph Section 5 (d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature: _____ **Name:** _____

Title/position: _____ **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 ofdated the...day of20.....in the matter of Tender No.....of20..... 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 of20.....

SIGNED

Board Secretary



FORM NO 3: LETTER OF AWARD

[letterhead paper of the Procuring Entity] [date]

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* “for contract Package No... .. (amount.....), Packages No... .. (amount.....), Packages No... .. (amount.....). etc. are hereby accepted by (name of Procuring Entity).

“You are requested to arrange to sign the Framework Agreement within 28 days in accordance with the Conditions of Contract. On being instructed to commence the contract on any of the packages you have won, by a call-off notification, you will be requested to furnish for the particular package a Performance Security within 28 days in accordance with the Conditions of Contract, and for that purpose, using 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 or date of issuance of a certificate of completion, whichever is earlier 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.*

¹The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency of the Contract or a freely convertible currency acceptable to the Beneficiary.

²Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from



the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.

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 Bond holder to action]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: _____ *[insert name and Address of 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 Obligee (hereinafter called “the Procuring Entity”) in the amount of _____ for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.
2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the _____ day of _____, 20, for _____ in accordance with the documents, plans, specifications, and amendments 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 PAYMENT GUARANTEE No.: _____ [Insert guarantee reference number] **Guarantor:**
_____ [Insert name and address of place of issue, unless indicated in the letterhead]

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ (in words) is to be made against an advance payment guarantee.
3. At the request of the Contractor, we as Guarantor, 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, 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.

The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency of the advance payment as specified in the Contract.

¹Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.

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]

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

¹The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.

²Insert a date that is twenty-eight days after the expiry of retention period after the actual completion date of the contract. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.



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]

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

Details of beneficial ownership Form

	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-----	Directly.....	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?:	1. Exercises significant influence or control over the Company body of the Company (tenderer) 2. Is this influence or control
	National identity card number or Passport number		----- % of shares% of voting rights		
	Personal Identification Number (where applicable)		Indirectly----	Indirectly-----		
	Nationality		----- % of shares	% of voting rights		



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)
Date of birth [dd/mm/yyyy]				Direct.....	exercised directly or indirectly?
Postal address				...	Direct.....
Residential address					
Telephone number				Indirect.....	Indirect.....
Email address				
Occupation or profession					
2.	Full Name	Directly----- ----- % of shares	Directly.....% 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			2. Is this right held directly or indirectly?:	2. Is this influence or control exercised directly or indirectly?
	Personal Identification Number (where applicable)	Indirectly---- ----- % of shares	Indirectly----- % of voting rights	Direct.....	Direct.....
	Nationality(ies)			...	
	Date of birth [dd/mm/yyyy]				
	Postal address			Indirect.....	Indirect.....
	Residential address			
	Telephone number				
	Email address				
	Occupation or profession				
3.					
e.t					
.c					

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

[Email: info@ppra.go.ke](mailto:info@ppra.go.ke)

