



**COUNTY GOVERNMENT OF NYERI  
DEPARTMENT OF AGRICULTURE, LIVESTOCK & AQUACULTURE DEVELOPMENT  
NATIONAL AGRICULTURAL VALUE CHAIN DEVELOPMENT PROJECT (NAVCDP)**

**REQUEST FOR BIDS**

**Small Works**

(One-Envelope Bidding Process)

**Procurement of:**

**CONSTRUCTION WORKS FOR KIHUYO AND MARAGIMA/TAGWA IRRIGATION  
PROJECTS, NYERI COUNTY**

**RFB NO:**

**KE-NYERI COUNTY-500251-CW-RFB**

**Project:** NATIONAL AGRICULTURAL VALUE CHAIN DEVELOPMENT PROJECT  
(NAVCDP)

**Employer:** DEPARTMENT OF AGRICULTURE, LIVESTOCK AND  
AQUACULTURE DEVELOPMENT COUNTY GOVERNMENT  
OF NYERI

**Country:** KENYA

**Issued on:** 7<sup>TH</sup> JULY 2026

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## Standard Procurement Document

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**DEPARTMENT OF AGRICULTURE, LIVESTOCK & AQUACULTURE DEVELOPMENT**  
**COUNTY GOVERNMENT OF NYERI**

**Specific Procurement Notice**

**Request for Bids Small**

**Works**

**(One-Envelope Bidding Process)**

**Country:** KENYA

**Name of Project:** NATIONAL AGRICULTURAL VALUE CHAIN  
DEVELOPMENT PROJECT (NAVCDP)

**Contract Title:** CONSTRUCTION WORKS FOR KIHUYO AND MARAGIMA/TAGWA  
IRRIGATION PROJECTS, NYERI COUNTY

Loan No.IDA-70640

RFB Reference No.: KE-NYERI COUNTY-500251-CW-RFB

- 1.The Government of Kenya (GoK) has received financing from the World Bank toward the cost of the National Agricultural Value Chain Development Project (NAVCDP), and intends to apply part of the proceeds toward payments under the contract for Construction Works for Kihuyo and Maragima/Tagwa Irrigation Projects, Nyeri County. For this contract, the Borrower shall process the payments using the Direct Payment disbursement method, as defined in the World Bank's Disbursement Guidelines for Investment Project Financing.
- 2.The Department of Agriculture, Livestock and Aquaculture Development, County Government of Nyeri, now invites sealed Bids from eligible Bidders for Construction Works for Kihuyo and Maragima/Tagwa Irrigation Projects, Nyeri County that includes majorly Sedimentation basin construction, Excavation and installation of pipeline works, conservation and protection work. The time for completion is 180 calendar days.

3. Bidding will be conducted through national competitive procurement using a Request for Bids (RFB) as specified in the World Bank's "Procurement Regulations for IPF Borrowers" First Published July 2016 and Revised Fourth Edition November 2020 ("Procurement Regulations") and is open to all Bidders as defined in the Procurement Regulations.
4. Interested eligible Bidders may obtain further information from the County Government of Nyeri website [www.nyeri.go.ke](http://www.nyeri.go.ke) and inspect the Bidding document during office hours 0800 to 1700 hours East African Time (EAT) at the address given below:

**Chief Officer**  
**Department of Agriculture, Livestock & Aquaculture Development**  
**County Government of Nyeri**  
**P.O. Box 1112 - 10100 Nyeri.**  
**E-mail: [coagriculturenyeri@gmail.com](mailto:coagriculturenyeri@gmail.com)/**  
**[Navcdpnyeri@gmail.com](mailto:Navcdpnyeri@gmail.com)**

**Attention:**  
**The County Project Coordinator**  
**National Agricultural Value Chain Development Project**  
**(NAVCDP)**

5. The bidding document in English may be viewed, inspected and obtained free of charge by interested eligible Bidders from the County Government of Nyeri website [www.nyeri.go.ke](http://www.nyeri.go.ke) or Public Procurement Information Portal: [www.tenders.go.ke](http://www.tenders.go.ke).
6. Bids must be delivered to the address below on or before **6<sup>th</sup> August, 2026 at 1100 Hours EAT**. Electronic Bidding will not be permitted. Late Bids will be rejected. Bids will be publicly opened in the presence of the Bidders designated representatives and anyone who chooses to attend at the address below on **6<sup>th</sup> August, 2026 at 1100 Hours EAT**.
7. All Bids must be accompanied by a Bid Security of **KES. 980,000.00 (Kenya Shillings Nine Hundred and Eighty Thousand Only)**.

**NB: There will be a mandatory pre-tender site visit for the above tender on, 21<sup>st</sup> July 2026 at 10.00 a.m. Bidders to assemble at the Nyeri County Governor's office parking lot located in Nyeri Town Hall along Kenyatta way.**

# **PART 1 – Bidding Procedures**

## **Section I - Instructions to Bidders**

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## Section I - Instructions to Bidders

### A. General

#### 1.Scope of Bid

1.1 In connection with the Specific Procurement Notice - Request For Bids (RFB), specified in the Bid Data Sheet (BDS), the Employer, as specified **in the BDS**, issues this bidding document for the provision of Works as specified in Section VII, Works' Requirements. The name, identification and number of lots (contracts) of this RFB are specified **in the BDS**.

1.2 Throughout this bidding document:

- (a) the term **“in writing”** means communicated in written form (e.g. by mail, e-mail, and fax, including if specified **in the BDS**, distributed or received through the electronic- procurement system used by the Employer) with proof of receipt;
- (b) if the context so requires, **“singular”** means **“plural”** and vice versa;
- (c) **“Day”** means calendar day, unless otherwise specified as **“Business Day”**. A Business Day is any day that is an official working day of the Borrower. It excludes the Borrower's official public holidays;
- (d) **“ES”** means environmental and social (including Sexual Exploitation, and Abuse (SEA) and Sexual Harassment (SH));
- (e) **“Sexual Exploitation and Abuse” “(SEA)”** means the following:

**“Sexual Exploitation”** is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;

**“Sexual Abuse”** is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;

- (f) **“Sexual Harassment” “(SH)”** is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature by the Contractor's Personnel with other Contractor's or Employer's Personnel;



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(g) **“Contractor’s Personnel”** is as defined in Sub- Clause 1 (ii) of the General Conditions of Contract; and

(h) **“Employer’s personnel”** is as defined in GCC Sub-Clause 1 (nn) of the General Conditions of Contract.

A non-exhaustive list of (i) behaviors which constitute SEA and (ii) behaviors which constitute SH is attached to the Code of Conduct form in Section IV.

## 2. Source of Funds

2.1 The Borrower or Recipient (hereinafter called “Borrower”) specified **in the BDS** has received or has applied for financing (hereinafter called “funds”) from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called “the Bank”) in an amount specified **in the BDS**, toward the project named **in the BDS**. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this bidding document is issued.

2.2 Payment by the Bank will be made only at the request of the Borrower and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, equipment, plant, or materials, if such payment or import is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the proceeds of the Loan (or other financing).

## 3. Fraud and Corruption

3.1 The Bank requires compliance with the Bank’s Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG’s Sanctions Framework, as set forth in Section VI.

3.2 In further pursuance of this policy, bidders shall permit and shall cause their agents (where declared or not), subcontractors, sub consultants, service providers, suppliers, and personnel, to permit the Bank to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, bid submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

## 4. Eligible Bidders

4.1 A Bidder may be a firm that is a private entity, or a state-owned enterprise or institution, subject to ITB 4.6, or any combination of

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them 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. 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 Bidding process and, in the event the JV is awarded the Contract, during contract execution. Unless specified **in the BDS**, there is no limit on the number of members in a JV.

4.2 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this Bidding process, if the Bidder:

- (a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or
- (b) receives or has received any direct or indirect subsidy from another Bidder; or
- (c) has the same legal representative as another Bidder; or
- (d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
- (e) or 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 Bid; or
- (f) or any of its affiliates has been hired (or is proposed to be hired) by the Employer or Borrower as Project Manager for the Contract implementation;
- (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 project specified in the BDS ITB 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm;
- (h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the contract, and/or the Bid

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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 Bank throughout the procurement process and execution of the contract.

- 4.3 A firm that is a Bidder (either individually or as a JV member) shall not participate in more than one Bid, except for permitted alternative Bids. This includes participation as a Subcontractor in other Bids. Such participation shall result in the disqualification of all Bids in which the firm is involved. A firm that is not a Bidder or a JV member may participate as a subcontractor in more than one Bid.
- 4.4 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.8. A Bidder shall be deemed to have the nationality of a country if the Bidder 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.
- 4.5 A Bidder that has been sanctioned by the Bank, pursuant to the Bank's Anti-Corruption Guidelines, in accordance with its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework as described in Section VI paragraph 2.2 d., shall be ineligible to be prequalified for, initially selected for, bid for, propose for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address specified in the BDS.
- 4.6 Bidders that are state-owned enterprises or institutions in the Employer's Country may be eligible to compete and be awarded a Contract(s) only if they can establish, in a manner acceptable to the Bank, that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not under supervision of the Employer.
- 4.7 A Bidder shall not be under suspension from Bidding by the Employer as the result of the operation of a Bid-Securing or Proposal-Securing Declaration.
- 4.8 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, the Borrower's

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country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; 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, the Borrower's country 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. When the Works are implemented across jurisdictional boundaries (and more than one country is a Borrower, and is involved in the procurement), then exclusion of a firm or individual on the basis of ITB 4.8 (a) above by any country may be applied to that procurement across other countries involved, if the Bank and the Borrowers involved in the procurement agree.

4.9 A Bidder shall provide such documentary evidence of eligibility satisfactory to the Employer, as the Employer shall reasonably request.

4.10 A firm that is under a sanction of debarment by the Borrower from being awarded a contract is eligible to participate in this procurement, unless the Bank, at the Borrower's request, is satisfied that the debarment;

(a) relates to fraud or corruption, and

(b) Followed a judicial or administrative proceeding that afforded the firm adequate due process.

**5. Eligible  
Materials, Equipment  
and Services**

5.1 The materials, equipment and services to be supplied under the Contract and financed by the Bank may have their origin in any country subject to the restrictions specified in Section V, Eligible Countries, and all expenditures under the Contract will not contravene such restrictions. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment and services.

**B. Contents of Bidding Document**

**6. Sections of Bidding  
Document**

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

**PART 1 Bidding Procedures**

- Section I - Instructions to Bidders (ITB)

- 
- Section II - Bid Data Sheet (BDS)
  - Section III - Evaluation and Qualification Criteria
  - Section IV - Bidding Forms
  - Section V - Eligible Countries
  - Section VI - Fraud and Corruption

**PART 2        Works' Requirements**

- Section VII - Works' Requirements

**PART 3        Conditions of Contract and Contract Forms**

- Section VIII - General Conditions of Contract (GCC)
- Section IX - Particular Conditions of Contract (PCC)
- Section X - Contract Forms

- 6.2 The Specific Procurement Notice - Request For Bids (RFB) issued by the Employer is not part of this bidding document.
- 6.3 Unless obtained directly from the Employer, the Employer is not responsible for the completeness of the bidding document, responses to requests for clarification, the minutes of the pre-Bid meeting (if any), or Addenda to the bidding document in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Employer shall prevail.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding document and to furnish with its Bid all information and documentation as is required by the bidding document.

**7. Clarification of  
Bidding Document, Site  
Visit, Pre-Bid Meeting**

- 7.1 A Bidder requiring any clarification of the bidding document shall contact the Employer in writing at the Employer's address specified **in the BDS** or raise its inquiries during the pre-Bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received prior to the deadline for submission of Bids within a period specified **in the BDS**. The Employer shall forward copies of its response to all Bidders who have acquired the bidding document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so specified **in the BDS**, the Employer shall also promptly publish its response at the web page identified in the BDS. Should the

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Clarification result in changes to the essential elements of the bidding document, the Employer shall amend the bidding document following the procedure under ITB 8 and ITB 22.2.

- 7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.
- 7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.
- 7.4 If so specified **in the BDS**, the Bidder's designated representative is invited to attend a pre-Bid meeting and/or a Site of Works visit. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 7.5 The Bidder is requested, to submit any questions in writing, to reach the Employer not later than one week before the meeting.
- 7.6 Minutes of the pre-Bid meeting, if applicable, including the text of the questions asked by Bidders, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the bidding document in accordance with ITB 6.3 Any modification to the bidding document that may become necessary as a result of the pre-Bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-Bid meeting. Nonattendance at the pre-Bid meeting will not be a cause for disqualification of a Bidder.

## **8. Amendment of Bidding Document**

- 8.1 At any time prior to the deadline for submission of bids, the Employer may amend the bidding document by issuing addenda.
- 8.2 Any addendum issued shall be part of the bidding document and shall be communicated in writing to all who have obtained the bidding document from the Employer in accordance with ITB 6. The Employer shall also promptly publish the addendum on the Employer's web page in accordance with ITB 7.1.

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- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may, at its discretion, extend the deadline for the submission of Bids, pursuant to ITB 22.2.

### **C. Preparation of Bids**

#### **9. Cost of Bidding**

- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

#### **10. Language of Bid**

- 10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Employer, shall be written in the language specified **in the BDS**. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified **in the BDS**, in which case, for purposes of interpretation of the Bid, such translation shall govern.

#### **11. Documents Comprising the Bid**

- 11.1 The Bid shall comprise the following:
- (a) **Letter of Bid** prepared in accordance with ITB 12;
  - (b) **Bill of Quantities or Activity Schedule**: completed in accordance with ITB 12 and ITB 14, as specified **in the BDS**;
  - (c) **Bid Security or Bid-Securing Declaration**, in accordance with ITB 19.1;
  - (d) **Alternative Bid**, if permissible, in accordance with ITB 13;
  - (e) **Authorization**: written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.3;
  - (f) **Bidder's Eligibility**: documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to Bid;
  - (g) **Qualifications**: documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the contract if its Bid is accepted;
  - (h) **Conformity**: a technical proposal in accordance with ITB 16;

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(i) any other document required **in the BDS**.

11.2 In addition to the requirements under ITB 11.1, Bids 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 bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed Agreement.

11.3 The Bidder shall furnish in the Letter of Bid information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

**12. Letter of Bid and Schedules**

12.1 The Letter of Bid and Schedules shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.3. All blank spaces shall be filled in with the information requested.

**13. Alternative Bids**

13.1 Unless otherwise specified **in the BDS**, alternative Bids shall not be considered.

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

13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the bidding document must first price the Employer's design as described in the bidding document and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, 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 Bidder with the Most Advantageous Bid conforming to the basic technical requirements shall be considered by the Employer.

13.4 When specified **in the BDS**, Bidders are permitted to submit alternative technical solutions for specified parts of the Works. Such parts will be identified **in the BDS** and described in Section VII, Works' Requirements. The method for their evaluation will be stipulated in Section III, Evaluation and Qualification Criteria.

**14. Bid Prices and Discounts**

14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Activity Schedule or Bill of Quantities shall conform to the requirements specified below.



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- 14.2 The Bidder shall submit a Bid for the whole of the Works described in ITB 1.1 by filling in prices for all items of the Works, as identified in Section IV. Bidding Forms. In case of admeasurement contracts, the Bidder 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 Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities.
- 14.3 The price to be quoted in the Letter of Bid, in accordance with ITB 12.1, shall be the total price of the Bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Letter of Bid in accordance with ITB 12.1.
- 14.5 Unless otherwise specified **in the BDS** and the Conditions of Contract, the prices quoted by the Bidder shall be fixed. If the prices quoted by the Bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data in Section IV- Bidding Forms and the Employer may require the Bidder to justify its proposed indices and weightings.
- 14.6 If so specified in ITB 1.1, Bids are invited for individual lots (contracts) or for any combination of lots (packages). Bidders wishing to offer discounts for the award of more than one Contract shall specify in their Bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4, provided the Bids for all lots (contracts) are opened at the same time.
- 14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of Bids, shall be included in the total Bid price submitted by the Bidder.

## **15. Currencies of Bid and Payment**

- 15.1 The currency(ies) of the Bid and the currency(ies) of payments shall be the same and shall be as specified **in the BDS**.
- 15.2 Bidders may be required by the Employer to justify, to the Employer's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the

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Lump Sum, in which case a detailed breakdown of the foreign currency requirements shall be provided by Bidders.

**16. Documents  
Comprising the Technical  
Proposal**

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

**17. Documents  
Establishing the Eligibility  
and Qualifications of the  
Bidder**

- 17.1 To establish Bidder's eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid, included in Section IV, Bidding Forms.
- 17.2 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract, the Bidder shall provide the information requested in the corresponding information sheets included in Section IV, Bidding Forms.
- 17.3 If a margin of preference applies as specified in accordance with ITB 33.1, domestic Bidders, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITB 33.1.

**18. Period of Validity of  
Bids**

- 18.1 Bids shall remain valid until the date specified **in the BDS** or any extended date if amended by the Employer in accordance with ITB 8. A Bid that is not valid until the date specified **in the BDS**, or any extended date if amended by the Employer in accordance with ITB 8, shall be rejected by the Employer as nonresponsive.
- 18.2 In exceptional circumstances, prior to the date of expiry of the Bid validity, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 19, it shall also be extended for twenty-eight (28) days beyond the extended date for Bid validity. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid, except as provided in ITB 18.3.
- 18.3 If the award is delayed by a period exceeding fifty-six (56) days beyond the date of expiry of the Bid validity specified in accordance with ITB 18.1, the Contract price shall be determined as follows:

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

## 19. Bid Security

19.1 The Bidder shall furnish as part of its Bid, either a Bid-Securing Declaration or a Bid Security as specified **in the BDS**, in original form and, in the case of a Bid Security, in the amount and currency specified **in the BDS**.

19.2 A Bid Securing Declaration shall use the form included in Section IV, Bidding Forms.

19.3 If a Bid Security is specified pursuant to ITB 19.1, the Bid Security shall be a demand guarantee in any of the following forms at the Bidder's option:

- (a) an unconditional guarantee issued by a bank or non-bank financial institution (such as an insurance, bonding or surety company);
- (b) an irrevocable letter of credit;
- (c) a cashier's or certified check; or
- (d) another security specified **in the BDS**,

from a reputable source from an eligible country. If an unconditional guarantee is issued by a non-bank financial institution located outside the Employer's Country, the issuing non-bank financial institution shall have a correspondent financial institution located in the Employer's Country to make it enforceable, unless the Employer has agreed in writing, prior to Bid submission, that a correspondent financial institution is not required. In the case of a bank guarantee, the Bid Security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, or in another substantially similar format approved by the Employer prior to Bid submission. The Bid Security shall be valid for twenty-eight (28) days beyond the original date of expiry of the Bid validity, or beyond any extended date if requested under ITB 18.2.

19.4 If a Bid Security or Bid Securing Declaration is specified pursuant to ITB 19.1, any Bid not accompanied by a substantially responsive

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Bid Security or Bid-Securing Declaration shall be rejected by the Employer as non-responsive.

- 19.5 If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the Contract and furnishing the Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security pursuant to ITB 48.
- 19.6 The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required Performance Security. and if required in the BDS, the Environmental and Social (ES) Performance Security.
- 19.7 The Bid Security may be forfeited:
- (a) if a Bidder withdraws its Bid prior to the expiry date of the Bid validity specified by the Bidder on the Letter of Bid, or any extension thereto provided by the Bidder; or
  - (b) if the successful Bidder fails to:
    - (i) sign the Contract in accordance with ITB 47; or
    - (ii) Furnish a Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with ITB 48.
- 19.8 The Bid Security or the Bid-Securing Declaration of a JV shall be in the name of the JV that submits the Bid. If the JV has not been constituted into a legally enforceable JV, at the time of Bidding, the Bid Security or the Bid-Securing Declaration shall be in the names of all future members as named in the letter of intent mentioned in ITB 4.1 and ITB 11.2.
- 19.9 If a Bid Security is not required **in the BDS**, pursuant to ITB 19.1, and;
- (a) if a Bidder withdraws its Bid prior to the expiry date of the Bid validity specified by the Bidder on the Letter of Bid or any extended date provided by the Bidder; or
  - (b) if the successful Bidder fails to:
    - (i) sign the Contract in accordance with ITB 47; or

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- (ii) furnish a Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with ITB 48;

the Borrower may, if provided for **in the BDS**, declare the Bidder ineligible to be awarded a contract by the Employer for a period of time stated **in the BDS**.

**20. Format and Signing of Bid**

- 20.1 The Bidder shall prepare one original of the documents comprising the Bid as described in ITB 11 and clearly mark it “ORIGINAL”. Alternative Bids, if permitted in accordance with ITB 13, shall be clearly marked “ALTERNATIVE”. In addition, the Bidder shall submit copies of the Bid in the number specified **in the BDS**, and clearly mark each of them “COPY.” In the event of any discrepancy between the original and the copies, the original shall prevail.
- 20.2 Bidders shall mark as “CONFIDENTIAL” information in their Bids, which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.
- 20.3 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified **in the BDS** and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid where entries or amendments have been made shall be signed or initialed by the person signing the Bid.
- 20.4 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.
- 20.5 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

**D. Submission and Opening of Bids**

**21. Sealing and Marking of Bids**

- 21.1 The Bidder shall deliver the Bid in a single, sealed envelope (one-envelope Bidding process). Within the single envelope the Bidder shall place the following separate, sealed envelopes:
- (a) in an envelope marked “ORIGINAL”, all documents comprising the Bid, as described in ITB 11; and

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- (b) in an envelope marked “COPIES”, all required copies of the Bid; and
  - (c) if alternative Bids are permitted in accordance with ITB 13, and if relevant:
    - (i) in an envelope marked “ ORIGINAL - ALTERNATIVE BID”, the alternative Bid; and
    - (ii) in the enveloped marked “COPIES – ALTERNATIVE BID” all required copies of the alternative Bid.

21.2 The inner and outer envelopes shall:

- (a) bear the name and address of the Bidder;
- (b) be addressed to the Employer in accordance with ITB 22.1;
- (c) bear the specific identification of this Bidding process specified in accordance with BDS 1.1; and
- (d) Bear a warning not to open before the time and date for Bid opening.

21.3 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

## **22. Deadline for Submission of Bids**

22.1 Bids must be received by the Employer at the address and no later than the date and time specified **in the BDS**. When so specified **in the BDS**, Bidders shall have the option of submitting their Bids electronically. Bidders submitting Bids electronically shall follow the electronic bid submission procedures specified **in the BDS**.

22.2 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the bidding document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

## **23. Late Bids**

23.1 The Employer shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 22. Any Bid received by the Employer after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

## **24. Withdrawal, Substitution, and**

24.1 A Bidder may withdraw, substitute, or modify its Bid 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 ITB 20.3, (except that withdrawal

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## Modification of Bids

Notices do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be:

- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION”; and
  - (b) Received by the Employer prior to the deadline prescribed for submission of Bids, in accordance with ITB 22.
- 24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.
- 24.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the date of expiry of the Bid validity specified by the Bidder on the Letter of Bid or any extended date thereof.

## 25. Bid Opening

- 25.1 Except in the cases specified in ITB 23 and ITB 24.2, the Employer shall publicly open and read out in accordance with this ITB, all Bids received by the deadline, at the date, time and place specified **in the BDS**, in the presence of Bidders’ designated representatives and anyone who chooses to attend. All Bidders, or their representatives and any interested party may attend a public opening. Any specific electronic Bid opening procedures required if electronic bidding is permitted in accordance with ITB 22.1, shall be as specified **in the BDS**.
- 25.2 First, envelopes marked “WITHDRAWAL” shall be opened and read out and the envelope with the corresponding Bid shall not be opened, but returned to the Bidder. No Bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Bid opening.
- 25.3 Next, envelopes marked “SUBSTITUTION” shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Bid opening.
- 25.4 Next, envelopes marked “MODIFICATION” shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a

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valid authorization to request the modification and is read out at bid opening.

- 25.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Price, per lot (contract) if applicable, including any discounts and alternative Bids; the presence or absence of a Bid Security, or Bid Securing Declaration, if required; and any other details as the Employer may consider appropriate.
- 25.6 Only Bids, alternative Bids and discounts that are opened and read out at Bid opening shall be considered further for evaluation. The Letter of Bid and the priced Schedules are to be initialed by representatives of the Employer attending Bid opening in the manner specified **in the BDS**.
- 25.7 The Employer shall neither discuss the merits of any Bid nor reject any Bid (except for late Bids, in accordance with ITB 23.1).
- 25.8 The Employer shall prepare a record of the Bid opening that shall include, as a minimum:
- (a) the name of the Bidder and whether there is a withdrawal, substitution, or modification;
  - (b) the Bid Price, per lot (contract) if applicable, including any discounts;
  - (c) the presence or absence of a Bid Security or Bid-Securing Declaration, if one was required; and
  - (d) any alternative Bids.
- 25.9 The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

#### **E. Evaluation and Comparison of Bids**

### **26. Confidentiality**

- 26.1 Information relating to the evaluation of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with the Bidding process until information on Intention to Award the Contract is transmitted to all Bidders in accordance with ITB 43.



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26.2 Any effort by a Bidder to influence the Employer in the evaluation of the Bids or Contract award decisions may result in the rejection of its Bid.

26.3 Notwithstanding ITB 26.2, from the time of Bid opening to the time of Contract award, if a Bidder wishes to contact the Employer on any matter related to the Bidding process, it shall do so in writing.

## **27. Clarification of Bids**

27.1 To assist in the examination, evaluation, and comparison of the Bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid given a reasonable time for a response. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer'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 Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids, in accordance with ITB 31.

27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its Bid may be rejected.

## **28. Deviations, Reservations, and Omissions**

28.1 During the evaluation of Bids, the following definitions apply:

- (a) "Deviation" is a departure from the requirements specified in the bidding document;
- (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the bidding document; and
- (c) "Omission" is the failure to submit part or all of the information or documentation required in the bidding document.

## **29. Determination of Responsiveness**

29.1 The Employer's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in ITB 11.

29.2 A substantially responsive Bid is one that meets the requirements of the bidding document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:

- (a) if accepted, would:
  - (i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or

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(ii) limit in any substantial way, inconsistent with the bidding document, the Employer's rights or the Bidder's obligations under the proposed Contract; or

(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

29.3 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 16, in particular, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.

29.4 If a Bid is not substantially responsive to the requirements of the bidding document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

### **30. Nonmaterial Nonconformities**

30.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid.

30.2 Provided that a Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

30.3 Provided that a Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only to reflect the price of a missing or non-conforming item or component, by adding the average price of the item or component quoted by substantially responsive Bidders. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Employer shall use its best estimate.

### **31. Correction of Arithmetical Errors**

31.1 Provided that the Bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:

(a) only for admeasurement contracts, if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of

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the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;

- (b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

31.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 31.1, shall result in the rejection of the Bid.

**32. Conversion to Single Currency**

32.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted into a single currency as specified **in the BDS**.

**33. Margin of Preference**

33.1 Unless otherwise specified **in the BDS**, a margin of preference for domestic Bidders<sup>1</sup> shall not apply.

**34. Subcontractors**

34.1 Unless otherwise stated **in the BDS**, the Employer does not intend to execute any specific elements of the Works by subcontractors selected in advance by the Employer, Financial Parts

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

34.3 Bidders may propose subcontracting up to the percentage of total value of contracts or the volume of works as specified **in the BDS**. Subcontractors proposed by the Bidder shall be fully qualified for their parts of the Works.

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<sup>1</sup> An individual firm is considered a domestic Bidder for purposes of the margin of preference if it is registered in the country of the Employer, has more than 50 percent ownership by nationals of the country of the Employer, and if it does not

Subcontract more than 10 percent of the contract price, excluding provisional sums, to foreign contractors. JVs are considered as domestic Bidders and eligible for domestic preference only if the individual member firms are registered in the country of the Employer or have more than 50 percent ownership by nationals of the country of the Employer, and the JV shall be registered in the country of the Borrower. The JV shall not subcontract more than 10 percent of the contract price, excluding provisional sums, to foreign firms. JVs between foreign and national firms will not be eligible for domestic preference.



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### 35. Evaluation of Bids

35.1 The Employer shall use the criteria and methodologies listed in this ITB and Section III, Evaluation and Qualification criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Employer shall determine the Most Advantageous Bid. This is the Bid of the Bidder that meets the Qualification Criteria and whose Bid has been determined to be:

- (a) substantially responsive to the bidding document; and
- (b) the lowest evaluated cost.

35.2 To evaluate a Bid, the Employer shall consider the following:

- (a) the Bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Activity Schedule for admeasurement contracts, but including Day work<sup>2</sup> items, where priced competitively;
- (b) price adjustment for correction of arithmetic errors in accordance with ITB 31.1;
- (c) price adjustment due to discounts offered in accordance with ITB 14.4;
- (d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 32;
- (e) price adjustment for nonconformities in accordance with ITB 30.3; and
- (f) The additional evaluation factors are specified in Section III, Evaluation and Qualification Criteria.

35.3 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 taken into account in Bid evaluation.

35.4 If this bidding document allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated cost of the contract combinations, including any Day work is work carried out following instructions of the Project Manager and paid for on the basis of time spent by workers, and the use of materials and the Contractor's equipment, at the rates quoted in the Bid. For Day work to be priced competitively for Bid evaluation purposes, the Employer must list tentative quantities for individual items to be costed against Day work (e.g., a specific number of tractor driver staff-days, or a specific tonnage of Portland cement), to be multiplied by the Bidders' quoted rates and included in the total Bid price. Discounts offered in the Letter of Bid, is specified in Section III, Evaluation and Qualification Criteria.

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|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>36. Comparison of Bids</b>              | 36.1 The Employer shall compare the evaluated costs of all substantially responsive Bids established in accordance with ITB 35.2 to determine the Bid that has the lowest evaluated cost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>37. Abnormally Low Bids</b>             | <p>37.1 An Abnormally Low Bid is one where the Bid price, in combination with other constituent elements of the Bid, appears unreasonably low to the extent that the Bid price raises material concerns as to the capability of the Bidder to perform the Contract for the offered Bid price.</p> <p>37.2 In the event of identification of a potentially Abnormally Low Bid, the Employer shall seek written clarifications from the Bidder, including detailed price analyses of its Bid 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 bidding document.</p> <p>37.3 After evaluation of the price analyses, in the event that the Employer determines that the Bidder has failed to demonstrate its capability to perform the Contract for the offered Bid Price, the Employer shall reject the Bid.</p> |
| <b>38. Unbalanced or Front Loaded Bids</b> | <p>38.1 If the Bid for an admeasurement contract, which results in the lowest evaluated cost is, in the Employer's opinion, seriously unbalanced or, front loaded, the Employer may require the Bidder to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the Bid price as with the scope of works, proposed methodology, schedule and any other requirements of the bidding document.</p> <p>38.2 After the evaluation of the information and detailed price analyses presented by the Bidder, the Employer may as appropriate:</p> <ul style="list-style-type: none"> <li>(a) accept the Bid; or</li> <li>(b) require that the amount of the Performance Security be increased at the expense of the Bidder to a level not exceeding 20% of the Contract Price; or</li> <li>(c) Reject the Bid.</li> </ul>                                                        |
| <b>39. Qualification of the Bidder</b>     | 39.1 The Employer shall determine to its satisfaction whether the eligible Bidder that is selected as having submitted the lowest evaluated cost and substantially responsive Bid meets the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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Qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

39.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17. The determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the bidding document), or any other firm(s) different from the Bidder.

39.3 An affirmative determination of qualification shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the Bid, in which event the Employer shall proceed to the substantially responsive Bid which offers the next lowest evaluated cost to make a similar determination of that Bidder's qualifications to perform satisfactorily.

**40. Most Advantageous Bid**

40.1 Having compared the evaluated costs of Bids, the Employer shall determine the Most Advantageous Bid. The Most Advantageous Bid is the Bid of the Bidder that meets the Qualification Criteria and whose Bid has been determined to be:

- (a) substantially responsive to the bidding document; and
- (b) The lowest evaluated cost.

**41. Employer's Right to Accept Any Bid, and to Reject Any or All Bids**

41.1 The Employer reserves the right to accept or reject any Bid, and to annul the Bidding process and reject all Bids at any time prior to Contract Award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, Bid securities, shall be promptly returned to the Bidders.

**42. Standstill Period**

42.1 The Contract shall not be awarded earlier than the expiry of the Standstill Period. The Standstill Period shall be ten (10) Business Days unless extended in accordance with ITB 46. The Standstill Period commences the day after the date the Employer has transmitted to each Bidder the Notification of Intention to Award the Contract. Where only one Bid is submitted, or if this contract is in response to an emergency situation recognized by the Bank, the Standstill Period shall not apply.

**43. Notification of Intention to Award**

43.1 The Employer shall send to each Bidder the Notification of Intention to Award the Contract to the successful Bidder. The Notification of Intention to Award shall contain, at a minimum, the following information:



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- (a) the name and address of the Bidder submitting the successful Bid;
  - (b) the Contract price of the successful Bid;
  - (c) the names of all Bidders who submitted Bids, and their Bid prices as readout, and as evaluated;
  - (d) a statement of the reason(s) the Bid (of the unsuccessful Bidder to whom the notification is addressed) was unsuccessful, unless the price information in c) above already reveals the reason;
  - (e) the expiry date of the Standstill Period;
  - (f) Instructions on how to request a debriefing and/or submit a complaint during the standstill period.

#### **F. Award of Contract**

##### **44. Award Criteria**

- 44.1 Subject to ITB 41, the Employer shall award the Contract to the successful Bidder. This is the Bidder whose Bid has been determined to be the Most Advantageous Bid as specified in ITB 40.

##### **45. Notification of Award**

- 45.1 Prior to the expiration of the Bid validity and upon expiry of the Standstill Period, specified in ITB 42.1 or any extension thereof, and, upon satisfactorily addressing any complaint that has been filed within the Standstill Period, the Employer shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification of award (hereinafter and in the Conditions of Contract and Contract Forms called the “Letter of Acceptance”) shall specify the sum that the Employer will pay the Contractor in consideration of the execution of the contract (hereinafter and in the Conditions of Contract and Contract Forms called “the Contract Price”).
- 45.2 Within ten (10) Business Days after the date of transmission of the Letter of Acceptance, the Employer shall publish the Contract Award Notice which shall contain, at a minimum, the following information:
  - (a) name and address of the Employer;
  - (b) name and reference number of the contract being awarded, and the selection method used;
  - (c) names of all Bidders that submitted Bids, and their Bid prices as read out at Bid opening, and as evaluated;

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- (d) names of all Bidders whose Bids were rejected either as nonresponsive or as not meeting qualification criteria, or were not evaluated, with the reasons therefor;
  - (e) the name of the successful Bidder, the final total contract price, the contract duration and a summary of its scope; and
  - (f) Successful Bidder's Beneficial Ownership Disclosure Form, if specified in BDS ITB 47.1.

45.3 The Contract Award Notice shall be published on the Employer's website with free access if available, or in at least one newspaper of national circulation in the Employer's Country, or in the official gazette. The Employer shall also publish the contract award notice in UNDB online.

45.4 Until a formal contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

#### **46. Debriefing by the Employer**

46.1 On receipt of the Employer's Notification of Intention to Award referred to in ITB 43.1, an unsuccessful Bidder has three (3) Business Days to make a written request to the Employer for a debriefing. The Employer shall provide a debriefing to all unsuccessful Bidders whose request is received within this deadline.

46.2 Where a request for debriefing is received within the deadline, the Employer shall provide a debriefing within five (5) Business Days, unless the Employer decides, for justifiable reasons, to provide the debriefing outside this timeframe. In that case, the standstill period shall automatically be extended until five (5) Business Days after such debriefing is provided. If more than one debriefing is so delayed, the standstill period shall not end earlier than five (5) Business Days after the last debriefing takes place. The Employer shall promptly inform, by the quickest means available, all Bidders of the extended standstill period

46.3 Where a request for debriefing is received by the Employer later than the three (3)-Business Day deadline, the Employer should provide the debriefing as soon as practicable, and normally no later than fifteen (15) Business Days from the date of publication of Public Notice of Award of contract. Requests for debriefing received outside the three (3)-day deadline shall not lead to extension of the standstill period.

46.4 Debriefings of unsuccessful Bidders may be done in writing or verbally. The Bidder shall bear their own costs of attending such a debriefing meeting.

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#### 47. Signing of Contract

- 47.1 The Employer shall send to the successful Bidder the Letter of Acceptance including the Contract Agreement, and, if specified in the BDS, a request to submit the Beneficial Ownership Disclosure Form providing additional information on its beneficial ownership. The Beneficial Ownership Disclosure Form, if so requested, shall be submitted within eight (8) Business Days of receiving this request.
- 47.2 The successful Bidder shall sign, date and return to the Employer, the Contract Agreement within twenty-eight (28) days of its receipt.

#### 48. Performance Security

- 48.1 Within twenty-eight (28) days of the receipt of the Letter of Acceptance from the Employer, the successful Bidder shall furnish the Performance Security and, if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with the General Conditions of Contract, subject to ITB 38.2 (b), using for that purpose the Performance Security and ES Performance Security Forms included in Section X, Contract Forms, or another form acceptable to the Employer. If the Performance Security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Employer. A foreign institution providing a bond shall have a correspondent financial institution located in the Employer's Country, unless the Employer has agreed in writing that a correspondent financial institution is not required.
- 48.2 Failure of the successful Bidder to submit the above-mentioned Performance Security and, if required in the BDS, the Environmental and Social (ES) Performance Security, or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Employer may award the Contract to the Bidder offering the next Most Advantageous Bid.

#### 49. Adjudicator

- 49.1 The Employer proposes the person named **in the BDS** to be appointed as Adjudicator under the Contract, at the hourly fee specified **in the BDS**, plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should so state in his Bid. If, in the Letter of Acceptance, the Employer does not agree on the appointment of the Adjudicator, the Employer will request the Appointing Authority designated in the Particular Conditions of Contract (PCC) pursuant to Clause 23.1 of the General Conditions of Contract (GCC), to appoint the Adjudicator.

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**50. Procurement Related  
Complaint**

50.1 The procedures for making a Procurement-related Complaint are as specified in the BDS.

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## Section II - Bid Data Sheet (BDS)

The following specific data for the Works to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

| ITB Reference                   | A. General                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ITB 1.1                         | <p>The number of the Invitation for Bids is: <b>KE-NYERI COUNTY-500251-CW-RFB</b></p> <p>The Employer is: <b>Chief Officer, Department of Agriculture, Livestock &amp; Aquaculture Development, County Government of Nyeri.</b></p> <p>The reference number of the Request for Bids (RFB) is: <b>KE-NYERI COUNTY-500251-CW-RFB</b></p> <p>The name of the RFB is: <b>CONSTRUCTION WORKS FOR KIHUYO AND MARAGIMA/TAGWA IRRIGATION PROJECTS, NYERI COUNTY</b></p> <p>The number and identification of lots (contracts) comprising this RFB is: <b>NOT APPLICABLE (N/A)</b></p> |
| ITB 2.1                         | <p>The Borrower is: <b>The Republic of Kenya; and the Employer is Department of Agriculture, Livestock &amp; Aquaculture Development, County Government of Nyeri, a County Government within the Borrower's Country</b></p> <p>Loan or Financing Agreement amount: <b>US\$ 250 Million</b></p> <p>The name of the Project is: <b>National Agricultural Value Chain Development Project (NAVCDP)</b></p>                                                                                                                                                                      |
| ITB 4.1                         | Maximum number of members in the Joint Venture (JV) shall be: <b>Three</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| ITB 4.5                         | A list of debarred firms and individuals is available on the Bank's external website: <a href="http://www.worldbank.org/debarred-firms">http://www.worldbank.org/debarred-firms</a>                                                                                                                                                                                                                                                                                                                                                                                          |
| B. Contents of Bidding Document |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| <b>ITB 7.1</b> | <p>For <b><u>Clarification of Bid purposes</u></b> only, the Employer's address is:</p> <p><b><i>County Government of Nyeri, Department of Agriculture, Livestock &amp; Aquaculture Development (NAVCDP)</i></b></p> <p>Attention: <b><i>Director, Supply Chain Management Services – Nyeri County</i></b></p> <p>Address: <b><i>P.O. Box 1112 - 10100 Nyeri</i></b></p> <p>Floor/ Room number: <b><i>Nyeri County Hall along Kenyatta Road– Procurement offices constructed with containers labeled Tender Box</i></b> City: <b><i>Nyeri</i></b></p> <p>ZIP Code: <b>10100</b></p> <p>Country: <b><i>Kenya Tel:</i></b></p> |
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|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               | Electronic mail address: <a href="mailto:coagriculturenyeri@gmail.com">coagriculturenyeri@gmail.com</a> / <a href="mailto:Navcdpnyeri@gmail.com">Navcdpnyeri@gmail.com</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>ITB 7.1</b>                | Requests for clarification should be received by the Employer no later than: <b>Fourteen (14) calendar days before bid submission deadline</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>ITB 7.1</b>                | Web page: <a href="http://www.nyeri.go.ke">www.nyeri.go.ke</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>ITB 7.4</b>                | <p>A site visit conducted by the Employer <b>shall be</b> organized</p> <p>Venue of Site Visit: <b>Nyeri County Governor's office parking lot located in Nyeri Town Hall along Kenyatta way.</b></p> <p>Date of Site Visit: <b>21<sup>st</sup> July, 2026 at 1000 hours East African Time (EAT)</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>C. Preparation of Bids</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>ITB 10.1</b>               | <p>The language of the Bid is: <b><i>English</i></b></p> <p>All correspondence exchange shall be in English language.</p> <p>Language for translation of supporting documents and printed literature is English.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>ITB 11.1 (b)</b>           | The following schedules shall be submitted with the Bid: <b><i>the priced Bill of Quantities for admeasurement contracts.</i></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>ITB 11.1 (i)</b>           | <p>The Bidder shall submit the following additional documents in its Bid:</p> <p><b>1 Code of Conduct for Contractor's Personnel (ES)</b></p> <p>The Bidder shall submit its Code of Conduct that will apply to Contractor's Personnel (as defined in Sub- Clause 1 (ii) of the General Conditions of Contract), to ensure compliance with the Contractor's Environmental and Social (ES) obligations under the Contract. The Bidder shall use for this purpose the Code of Conduct form provided in Section IV. No substantial modifications shall be made to this form, except that the Bidder may introduce additional requirements, including as necessary to consider specific Contract issues/risks.</p> <p><b>2 Management Strategies and Implementation Plans (MSIP) to manage the (ES) risks</b></p> <p>The Bidder shall submit Management Strategies and Implementation Plans (MSIPs) to manage the following key Environmental and Social (ES) risks:</p> <p><b>(a) Sexual Exploitation, and Abuse (SEA) prevention and response action plan -</b><br/> <i>The bidder shall prepare and implement a GBV/SEAH prevention and response action plan to prevent, mitigate, and address risks of gender- based violence and sexual exploitation, abuse, and harassment. The plan shall include awareness measures, reporting mechanisms, and referral procedures.</i></p> <p><b>(b) Stakeholder Engagement Plan (SEP) and Information Disclosure –</b><br/> <i>The bidder shall prepare and implement a stakeholder Engagement plan to ensure timely, inclusive, and meaningful consultation with all relevant stakeholders. The plan is to also provide transparent information disclosure, a feedback mechanism, and Documentation of stakeholder inputs.</i></p> |

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|  | <p><b>(c) Occupational Health and Safety (OHS) Management Plan</b> - <i>Provide details of how you will manage occupational health and safety risks, your training proposals, and details of the persons who will be responsible for health and safety on site during the project, including details of their experience managing similar risks. As a minimum, the Health and Safety Management Plan should include the following details:</i></p> <ul style="list-style-type: none"> <li>○ <i>Site Details</i> <ul style="list-style-type: none"> <li>▪ <i>Site Location, Demarcation and safety Plan</i></li> <li>▪ <i>Site instruction and Induction Details</i></li> <li>▪ <i>Location of Health and Safety Kits</i></li> <li>▪ <i>Incident Reporting records</i></li> <li>▪ <i>Welfare Provisions as per the labor management procedures</i></li> </ul> </li> <li>○ <i>Persons Responsible</i> <ul style="list-style-type: none"> <li>▪ <i>Nominated Health and Safety Manager (management team)</i></li> <li>▪ <i>Construction Management Plan ( scheduling of work)</i></li> <li>▪ <i>Identify and disclose Site Foreman</i></li> <li>▪ <i>Identify and designate Site First Aider(s)</i></li> </ul> </li> <li>○ <i>The Health and Safety Management, Pollution Prevention and Control guidelines.</i></li> </ul> <p><b>(d) Community Health and Safety Plan</b> – <i>provide details of how to assess and manage specific risks and impacts to the community arising from Project activities, including, inter alia, records of behavior of Project workers, risks of labor influx, response to emergency situations, and include mitigation measures.</i></p> <p><b>(e) Labor Management Plan</b> – <i>provide details of how you will manage working conditions, workers' relationships, forced labor, grievance mechanisms for workers and grievance mechanisms for other stakeholders (including community level stakeholders), Labor compensation plans, and how you will ensure compliance from suppliers and subcontractors</i></p> <p><b>(f) Traffic Management Plan</b> <i>to ensure the safety of local communities from construction traffic];</i></p> <p><b>(g) Security Management Plan (SMP)</b> – <i>provide details of how to assess and implement measures to manage the security risks of the Project, including the risks of engaging security personnel to safeguard project workers, sites, assets, and activities in the ESMP, in a manner satisfactory to World Bank, and guided by the principles of proportionality and GIIP, and by applicable law, in relation to hiring, rules of conduct, training, equipping, and monitoring of such personnel.</i></p> <p><b>(h) Grievance Redress Mechanism (GRM)</b>-<i>The bidder is required to provide a plan of how to handle grievances emanating from the project workers, including ensuring the Grievance log register and the referral pathways.</i></p> <p><b>(i) Pollution Prevention management plan</b>- <i>The bidder is required to develop a plan that ensures pollution prevention and management, including air pollution, water pollution, and noise pollution</i></p> <p><b>(j) Soil Compaction and soil Erosion</b>- <i>The bidder to develop Soil and Water Conservation Strategies to prevent soil and water erosion.</i></p> <p><b>(k) Damaging of Existing Infrastructure</b> – <i>The bidder shall prepare and implement a detailed mitigation plan to prevent, manage, and promptly repair any damage to existing infrastructure arising during project implementation.</i></p> <p><b>(l) Child welfare Strategy for mothers with young children</b> – <i>The bidder shall prepare a child protection strategy during project implementation to prevent and respond to risks of abuse, exploitation, or harm to children and ensure no engagement of children below 18 years of age, including verification checks for workers. (Submit child labor policy).</i></p> <p><b>(m) Waste Management Plan (WMP)</b> - <i>The Bidder is required to provide a proper plan on how to manage the solid and liquid waste generated.</i></p> |
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|  | <p><b>(n) Labor Influx Management Plans (LIMP)-</b> <i>The Bidder is required to submit a Labor Influx Management Plan with the following elements:</i></p> <ul style="list-style-type: none"> <li>• <i>Plans/proposals for tapping or maximizing the use of labor from the local workforce e.g. unskilled labour</i></li> <li>• <i>Proposals for workers' camp site locations and amenities to be provided to workers that reside within and outside camps, with the objectives of minimizing labor influx to the local community;</i></li> <li>• <i>Provision for signing of worker code of conduct as part of employment contracts and including sanctions for noncompliance;</i></li> <li>• <i>health and safety requirements including worker training/awareness/safety drills and unacceptable conduct toward local community, specifically women, and national laws that make sexual harassment and gender-based violence a punishable offence that is prosecuted;</i></li> </ul> <p><b>(o) Plans and Records of incidences realized on site reported by workers</b></p> <p><b>(p) Quality Assurance Systems -</b> <i>The Bidder shall provide details of the proposed quality assurance system intended to be used to ensure successful, safe and planned access to site; production; field operations; inspection, sampling and site testing; site trials and completion of the works.</i></p> <p><b>(q) Chance Finds/ Cultural Heritage -</b> <i>Develop and implement Chance Finds procedures per ESS 8.</i></p> |
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| <b>ITB 13.1</b>     | Alternative Bids <b>shall not be</b> considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>ITB 13.2</b>     | Alternative times for completion <b>shall not be</b> permitted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>ITB 13.4</b>     | Alternative technical solutions shall be permitted for the following parts of the Works: <b>Not Applicable</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>ITB 14.5</b>     | The prices quoted by the Bidder <b>shall not be</b> subject to adjustment during the performance of the Contract.                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>ITB 15.1</b>     | <p>The price shall be quoted by the Bidder in: <b>Kenya Shillings (KES)</b></p> <p>A Bidder expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's Country (referred to as the "foreign currency requirements") and wishing to be paid accordingly, shall indicate up to three foreign currencies of their choice expressed as a percentage of the Bid price, together with the exchange rates used in the calculations in the appropriate form(s) included in Section IV, Bidding Forms.</p> |
| <b>ITB 18.1</b>     | <i>The Bid shall be valid until:</i> <b>30<sup>th</sup> November, 2026</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>ITB 18.3 (a)</b> | The Bid price shall be adjusted by the following factor(s): <b>Not Applicable</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>ITB 19.1</b>     | <p>A Bid Security <b>shall be</b> required. The amount and currency of the Bid security shall be: <b>Kes. 980,000.00/= (Nine Hundred and Eighty Thousand Shillings Only)</b></p> <p><b>NB: Bid securities shall only be accepted if issued by banks or insurance firms approved and recognized by the Central Bank of Kenya (CBK) and the Public Procurement Regulatory Authority (PPRA). Any bid security issued by an institution not recognized by these bodies shall render the bid non-responsive.</b></p>                                         |
| <b>ITB 19.3 (d)</b> | Other types of acceptable securities: <b>None</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>ITB 20.1</b>     | <p>In addition to the original of the Bid, the number of copies is: <b>ONE hard copy of the original of the Bid</b></p> <p><b>ONE scanned/digital copy on flash disks in PDF format &amp; BoQ in Microsoft Excel format, with the disks clearly labelled should also be submitted. In the event of any discrepancy between the original and the digital copies, the original hard copy shall prevail</b></p>                                                                                                                                            |

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| <b>ITB 20.3</b>                          | <p>The written confirmation of authorization to sign on behalf of the Bidder shall consist of:</p> <p><b>A Power of Attorney – must clearly demonstrate that the signatory has the legal authority to execute and submit the bid on behalf of the company and must be specific to the procurement or contract in question.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>D. Submission and Opening of Bids</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>ITB 22.1</b>                          | <p>For <b><u>Bid submission purposes</u></b> only, the Employer’s address is:<br/> <b>County Government of Nyeri, P. O. Box 1112-10100 Nyeri</b><br/> <b>Attention: The County Secretary</b><br/> <b>Street Address: P. O. Box 1112 – 10100 Nyeri</b><br/> <b>Floor/ Room number: <i>Nyeri County Hall along Kenyatta Road– Procurement offices constructed with containers labeled Tender Box ground floor</i></b><br/> <b>City: Nyeri Town</b><br/> <b>ZIP/Postal Code: 10100- Nyeri</b><br/> <b>Tel:</b><br/> <b>Country: Kenya</b><br/> <b>The deadline for Bid submission is: 6<sup>th</sup> August 2026</b><br/> <b>Time: 1100 Hours EAT</b></p> <p>Bidders <b><i>shall not</i></b> have the option of submitting their Bids electronically.</p> |
| <b>ITB 25.1</b>                          | <p>The Bid opening shall take place at: Governor’s Office<br/> <b>Street Address: Nyeri Town Hall Along Kenyatta Road Floor/</b><br/> <b>Room number: <i>Procurement offices constructed with containers labeled Tender Box ground floor</i></b><br/> <b>City: Nyeri</b><br/> <b>Country: Kenya</b><br/> <b>Telephone:</b><br/> <b>Date: 6<sup>th</sup> August 2026</b><br/> <b>Time: 1100 Hours EAT</b></p>                                                                                                                                                                                                                                                                                                                                           |

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ITB 25.6</b>                             | <p>The Letter of Bid and Schedules shall be initialed by <b>all</b> representatives of the Employer conducting Bid opening.</p> <p><b>Each Bid shall be initialed by all representatives and shall be numbered, any modification to the unit or total price shall be initialed by the Representative of the Employer</b></p>                                                                                        |
| <b>E. Evaluation and Comparison of Bids</b> |                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>ITB 32.1</b>                             | <p>The currency that shall be used for Bid evaluation and comparison purposes to convert at the selling exchange rate all Bid prices expressed in various currencies into a single currency is: <b>Kenya Shillings (Kes)</b></p> <p>The source of exchange rate shall be: <b>The Central Bank of Kenya</b></p> <p>The date for the exchange rate shall be: <b>Deadline for submission of the Bids.</b></p>          |
| <b>ITB 33.1</b>                             | A margin of domestic preference <b>shall not</b> apply.                                                                                                                                                                                                                                                                                                                                                             |
| <b>ITB 34.1</b>                             | At this time the Employer <b>does not intend</b> to execute certain specific parts of the Works by subcontractors selected in advance.                                                                                                                                                                                                                                                                              |
| <b>ITB 34.2</b>                             | <p>The parts of the Works for which the Employer permits Bidders to propose Specialized Subcontractors are designated as follows: <b>Not Applicable</b></p> <p>For the above-designated parts of the Works that may require Specialized Subcontractors, the relevant qualifications of the proposed Specialized Subcontractors will be added to the qualifications of the Bidder for the purpose of evaluation.</p> |
| <b>ITB 34.3</b>                             | <p>Contractor's proposed subcontracting: Maximum percentage of subcontracting permitted is: <b>10.0% of the total contract amount.</b></p> <p>Bidders planning to subcontract more than 10% of total volume of work shall specify, in the Letter of Bid, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their Qualification and experience.</p> |
| <b>F. Award of Contract</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>ITB 47.1</b>                             | The successful Bidder <b>shall</b> submit the Beneficial Ownership Disclosure Form.                                                                                                                                                                                                                                                                                                                                 |
| <b>ITB 49</b>                               | <p>The Adjudicator proposed by the Employer is:</p> <p><b>Evans Lagat, FCI Arb</b><br/> <b>P.O. Box 12661-00100 Nairobi</b><br/> <b>Tel: 020 2020080/ 0721 539630</b><br/> <b>Email address: <a href="mailto:Evans@seslaw.co.ke">Evans@seslaw.co.ke</a></b></p> <p><b><u>Professional Qualifications</u></b><br/> <b>Advocate of the high court of Kenya, over 16 years' experience</b></p>                         |

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | <p><b>Qualified Arbitrator and a fellow of the Chartered Institute of Arbitrators (CIArb)</b></p> <p><b>Certified Public Secretary</b></p> <p><b>Certified Public Accountant</b></p> <p><b>Bachelors of Law Degree (LL.B)</b></p> <p><b>Master of Laws Degree (LL.M)</b></p> <p><b>Arbitrators fee per hour: Kes 25,000 (Kenyan shillings twenty five thousand)</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>ITB 50.1</b> | <p>The procedures for making a Procurement-related Complaint are detailed in the “<a href="#">Procurement Regulations for IPF Borrowers</a> (Annex III).” If a Bidder wishes to make a Procurement-related Complaint, the Bidder shall submit its complaint following these procedures, In Writing (by the quickest means available, such as by email or fax), to:</p> <p><b>For the attention:</b> Chief Officer</p> <p><b>Title/position:</b> Chief Officer, Department of Agriculture, Livestock and Aquaculture Development -NAVCDP Project</p> <p><b>Employer:</b> County Government of Nyeri</p> <p><b>Email address:</b><br/> <a href="mailto:Navcdpnyeri@gmail.com/coagriculturenyeri@gmail.com">Navcdpnyeri@gmail.com/coagriculturenyeri@gmail.com</a></p> <p>In summary, a Procurement-related Complaint may challenge any of the following:</p> <ul style="list-style-type: none"> <li>(a) the terms of the Bidding Documents; and</li> <li>(b) the Employer’s decision to award the contract</li> </ul> |

### **Section III - Evaluation and Qualification Criteria**

Wherever a Bidder is required to state a monetary amount, Bidders should indicate the USD equivalent using the rate of exchange determined as follows:

- 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; or
- Value of single contract - Exchange rate prevailing on the date of the contract.

Exchange rates shall be taken from the publicly available source identified in the ITB 32.1. Any error in determining the exchange rates in the Bid may be corrected by the Employer

## **Table of Criteria**

- 1. Margin of Preference – Not Applicable**
- 2. Evaluation**

In addition to the criteria listed in ITB 35.2 (a) – (e) the following criteria shall apply:

### **2.1 Adequacy of Technical Proposal**

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section VII, Works' Requirements.

### **2.2 Multiple Contracts – Not Applicable**

### **2.3 Alternative Completion Times – Not Applicable**

### **2.4 Sustainable procurement – Not Applicable**

### **2.5 Alternative Technical Solutions for specified parts of Works – Not Applicable**

### **2.6 Specialized Subcontractors – Not Applicable**





### 3. Qualification

| No .           | Subject                                                       | Requirement                                                                                                                                                                                                                             | Single Entity         | Joint Venture (existing or intended) |                       |                     | Submission Requirements                   |
|----------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------|-----------------------|---------------------|-------------------------------------------|
|                |                                                               |                                                                                                                                                                                                                                         |                       | All members Combined                 | Each Member           | At least one Member |                                           |
| 1. Eligibility |                                                               |                                                                                                                                                                                                                                         |                       |                                      |                       |                     |                                           |
| 1.1            | Nationality                                                   | Nationality in accordance with ITB 4.4                                                                                                                                                                                                  | Must meet requirement | Must meet requirement                | Must meet requirement | Not Applicable      | Forms ELI – 1.1 and 1.2, with attachments |
| 1.2            | Conflict of Interest                                          | No conflicts of interest in accordance with ITB 4.2                                                                                                                                                                                     | Must meet requirement | Must meet requirement                | Must meet requirement | Not Applicable      | Letter of Bid                             |
| 1.3            | Bank Eligibility                                              | Not having been declared ineligible by the Bank, as described in ITB 4.5.                                                                                                                                                               | Must meet requirement | Must meet requirement                | Must meet requirement | Not Applicable      | Letter of Bid                             |
| 1.4            | State-owned enterprise or institution of the Borrower country | Meets conditions of ITB 4.6                                                                                                                                                                                                             | Must meet requirement | Must meet requirement                | Must meet requirement | N/A                 | Forms ELI – 1.1 and 1.2, with attachments |
| 1.5            | United Nations resolution or Borrower’s country law           | Not having been excluded as a result of prohibition in the Borrower’s country laws or official regulations against commercial relations with the Bidder’s country, or by an act of compliance with UN Security Council resolution, both | Must meet requirement | Must meet requirement                | Must meet requirement | N/A                 | Forms ELI – 1.1 and 1.2, with attachments |

|                                               |                                  |                                                |                                      |                        |           |                |            |
|-----------------------------------------------|----------------------------------|------------------------------------------------|--------------------------------------|------------------------|-----------|----------------|------------|
|                                               |                                  | in accordance with ITB 4.8 and Section V.      |                                      |                        |           |                |            |
| <b>2. Historical Contract Non-Performance</b> |                                  |                                                |                                      |                        |           |                |            |
| 2.1                                           | <b>History of Non-Performing</b> | Non-performance of a contract <sup>3</sup> did | Must meet requirement <sup>1</sup> & | Must meet requirements | Must meet | Not Applicable | Form CON-2 |

---

<sup>2</sup> Nonperformance, as decided by the Employer, shall include all contracts where  
(a) Nonperformance was not challenged by the contractor, including through  
referral to the dispute resolution mechanism under the respective

| No . | Subject                                                                                    | Requirement                                                                                                                                                                                            | Single Entity         | Joint Venture (existing or intended) |                          |                     | Submission Requirements |
|------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------|--------------------------|---------------------|-------------------------|
|      |                                                                                            |                                                                                                                                                                                                        |                       | All members Combined                 | Each Member              | At least one Member |                         |
|      | <b>Contracts</b>                                                                           | not occur as a result of contractor default since 1 <sup>st</sup> January 2020                                                                                                                         | 2                     |                                      | requirement <sup>4</sup> |                     |                         |
| 2.2  | <b>Suspension Based on Execution of Bid /Proposal Securing Declaration by the Employer</b> | Not under suspension based on execution of a Bid/Proposal Securing Declaration pursuant to ITB 4.7 and ITB 19.9                                                                                        | Must meet requirement | Must meet requirement                | Must meet requirement    | Not Applicable      | Letter of Bid           |
| 2.3  | <b>Pending Litigation</b>                                                                  | Bidder's financial position and prospective long- term profitability sound according to criteria established in 3.1 below and assuming that all pending litigation will be resolved against the Bidder | Must meet requirement | Not Applicable                       | Must meet requirement    | Not Applicable      | Form CON – 2            |
| 2.4  | <b>Litigation History</b>                                                                  | No consistent history of court/arbitral award decisions against the Bidder <sup>5</sup> since 1 <sup>st</sup> January 2020                                                                             | Must meet requirement | Must meet requirement                | Must meet requirement    | Not Applicable      | Form CON – 2            |

|     |                                                                                    |                                                                                                                                                      |                                                                                                            |                   |                                                                                                                 |                   |                                                 |
|-----|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------|
| 2.5 | <b>Declaration:<br/>Environmental<br/>and Social<br/>(ES) past<br/>performance</b> | Declare any<br>civil work<br>contracts that<br>have been<br>suspended or<br>terminated<br>and/or<br>performance<br>security called<br>by an employer | Must make<br>the<br>declaration<br>. Where<br>there are<br>Specialized<br>Sub-<br>contractor/<br>s,<br>the | Not<br>Applicable | Each must<br>make the<br>declaration<br>. Where<br>there are<br>Specialized<br>Sub-<br>contractor/<br>s,<br>the | Not<br>Applicable | Form CON-<br>3 ES<br>Performance<br>Declaration |
|-----|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------|

Contract, and (b) contracts that were so challenged but fully settled against the contractor. Nonperformance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism.

Nonperformance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the Dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted.

<sup>3</sup> This requirement also applies to contracts executed by the Bidder as JV member.

<sup>4</sup> The Bidder shall provide accurate information on the Letter of Bid about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last five years. A consistent history of court/arbitral awards against the Bidder or any member of a joint venture may result in disqualifying the Bidder.

| No.                                           | Subject                       | Requirement                                                                                                                                                                                                                                                                                                                                                                            | Single Entity                                                | Joint Venture (existing or intended) |                                                              |                     | Submission Requirements          |
|-----------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------|---------------------|----------------------------------|
|                                               |                               |                                                                                                                                                                                                                                                                                                                                                                                        |                                                              | All members Combined                 | Each Member                                                  | At least one Member |                                  |
|                                               |                               | for breach of environmental or social (including Sexual Exploitation and Abuse)) contractual obligations in the past five years. <sup>6</sup>                                                                                                                                                                                                                                          | Specialized Sub-contractor/s must also make the declaration. |                                      | Specialized Sub-contractor/s must also make the declaration. |                     |                                  |
| <b>3. Financial Situation and Performance</b> |                               |                                                                                                                                                                                                                                                                                                                                                                                        |                                                              |                                      |                                                              |                     |                                  |
| 3.1                                           | <b>Financial Capabilities</b> | (i) The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as Ksh. 25 (Twenty Five Million) for the subject contract(s) net of the Bidder's other commitments | Must meet requirement                                        | Must meet Requirement                | Not Applicable                                               | Not Applicable      | Form FIN – 3.1, with attachments |

|  |  |                                                                                                                                                                                                                              |                       |                       |                |                |  |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|----------------|----------------|--|
|  |  | (ii) The Bidders shall also demonstrate, to the satisfaction of the Employer, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future Contract commitments. | Must meet requirement | Must meet requirement | Not Applicable | Not Applicable |  |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|----------------|----------------|--|

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<sup>5</sup> The Employer may use this information to seek further information or clarifications in carrying out its due diligence.

| No<br>. | Subject | Requirement                                                                                                                                                                                                                                                                                                                                                     | Single<br>Entity      | Joint Venture (existing or<br>intended) |                       |                           | Submission<br>Requirement<br>s |
|---------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------------|-----------------------|---------------------------|--------------------------------|
|         |         |                                                                                                                                                                                                                                                                                                                                                                 |                       | All<br>members<br>Combine<br>d          | Each<br>Memb<br>er    | At least<br>one<br>Member |                                |
|         |         | (iii) The audited balance sheets or, if not required by the laws of the Bidder's country, other financial statements acceptable to the Employer, for the last <i>three (2023, 2024 &amp; 2025)</i> years shall be submitted and must demonstrate the current soundness of the Bidder's financial position and indicate its prospective long-term Profitability. | Must meet requirement | Not Applicable                          | Must meet requirement | Not Applicable            |                                |

|                      |                                             |                                                                                                                                                                                                                                                                       |                       |                       |                                   |                                   |                |
|----------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------------------|-----------------------------------|----------------|
| 3.2                  | <b>Average Annual Construction Turnover</b> | Minimum average annual construction turnover of Ksh. Kes. <b>100 Million</b> , calculated as total certified payments received for contracts in progress and/or completed within the last three years, divided by three years (2023,2024,2025) divided by three years | Must meet requirement | Must meet requirement | Must meet 35%, of the requirement | Must meet 70%, of the requirement | Form FIN – 3.2 |
| <b>4. Experience</b> |                                             |                                                                                                                                                                                                                                                                       |                       |                       |                                   |                                   |                |
| 4.1 (a)              | <b>General Construction Experience</b>      | Experience under construction contracts in the role of prime contractor, JV member, subcontractor, or management contractor for at least the last 3 years, starting 1 <sup>st</sup>                                                                                   | Must meet requirement | Not Applicable        | Must meet requirement             | Not Applicable                    | Form EXP – 4.1 |



| No.     | Subject                                                           | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Single Entity         | Joint Venture (existing or intended) |                |                                                                                                                                                                                                                                                                    | Submission Requirements |
|---------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
|         |                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                       | All members Combined                 | Each Member    | At least one Member                                                                                                                                                                                                                                                |                         |
|         |                                                                   | January, 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       |                                      |                |                                                                                                                                                                                                                                                                    |                         |
| 4.2 (a) | <b>Specific Construction &amp; Contract Management Experience</b> | <p>(i) A minimum number of <b>two (2)</b> similar contracts specified below that have been satisfactorily and substantially<sup>1</sup> completed as a prime contractor, joint venture member<sup>2</sup>, management contractor or sub-contractor<sup>2</sup> between <b>1st January 2021</b> and bid submission deadline:</p> <p><b>(i) Two(2)</b> contracts of similar nature each of minimum value <b>Kshs 40 million;</b></p> <p>The similarity of the contracts shall be based on the following:<br/> <i>Based on Section VII, Scope of Works</i></p> <p><b>(ii) One (1)</b> contract each of minimum value <b>Kes. 80 million.</b></p> | Must meet requirement | Must meet requirement <sup>7</sup>   | Not Applicable | <p>Must meet the following requirements for the key activities listed below:</p> <p><b>a) Construction of irrigation scheme/canal s</b></p> <p><b>b) Water works</b></p> <p><b>c) Earth Dam construction</b></p> <p><b>d) Water supply system construction</b></p> | Form EXP 4.2(a)         |

<sup>1</sup> Substantial completion shall be based on 80% or more works completed under the contract.

<sup>2</sup> For contracts under which the Bidder participated as a joint venture member or sub-contractor, only the Bidder's share, by value, shall be considered to meet this requirement.

|  |  |                                                                                                                                                                                                                                                          |  |  |  |  |  |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
|  |  | <p>The similarity of the contracts shall be based on the following:</p> <p>a) <b>Construction of irrigation scheme/canals</b></p> <p>b) <b>Water works</b></p> <p>c) <b>Earth Dam construction</b></p> <p>d) <b>Water supply system construction</b></p> |  |  |  |  |  |
|  |  |                                                                                                                                                                                                                                                          |  |  |  |  |  |

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<sup>6</sup> In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

| No .    | Subject | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Single Entity  | Joint Venture (existing or intended) |                |                     | Submission Requirements |
|---------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------|----------------|---------------------|-------------------------|
|         |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                | All members Combined                 | Each Member    | At least one Member |                         |
| 4.2 (b) |         | <p>For contracts as prime contractor, joint venture member, or Subcontractor between 1st January 2020 and Application submission deadline, experience in managing ES risks and impacts in the following aspects:</p> <p><b>(a) Gender Based Violence, Sexual Exploitation, Sexual Harassment and Abuse (SEA) prevention and response action plan</b></p> <p><b>(b) Stakeholder Engagement Plan (SEP) and Information Disclosure</b></p> <p><b>(c) Occupational Health and Safety (OHS) Management Plan</b></p> | Not Applicable | Not Applicable                       | Not Applicable | Not Applicable      | Form EXP – 4.2 (c)      |

| No. | Subject | Requirement                                                                                                                                                                                                                                                                                                                                                                        | Single Entity | Joint Venture (existing or intended) |             |                     | Submission Requirements |
|-----|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------------------|-------------|---------------------|-------------------------|
|     |         |                                                                                                                                                                                                                                                                                                                                                                                    |               | All members Combined                 | Each Member | At least one Member |                         |
|     |         | <b>Safety Plan</b><br><br><b>(f) Labor Management Plan</b><br><br><b>(g) Security Management Plan (SMP)</b><br><br><b>(h) Grievance Redress Mechanism (GRM) for the project</b><br><br><b>(i) Waste Management Plan (WMP)</b><br><br><b>(j) Soil and water Conservation Plan</b><br><br><b>(k) <i>Material sourcing plan</i></b><br><br><b>(l) Chance Finds/ Cultural Heritage</b> |               |                                      |             |                     |                         |

## 4 Key Personnel

The Bidder must demonstrate that it will have suitably qualified (and in adequate numbers) Key Personnel, as described in the Specifications.

The Bidder shall provide details of the Key Personnel and such other Key Personnel that the Bidder considers appropriate to perform the Contract, together with their academic qualifications

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and work experience. The Bidder shall complete the relevant Forms in Section IV, Bidding Forms.

## 5 Equipment

The Bidder must demonstrate that it will have access to the key Contractor's equipment listed here after: (*Contractor to provide*)

| No. | Equipment Type and Characteristics | Minimum Number required | Minimum capacity                                                                                           |
|-----|------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------|
| 1   | Dump truck                         | 1                       | 10 tonne and above                                                                                         |
| 2   | Poker vibrator                     | 1                       | 5.5hp and above<br>engine capacity<br>9800 vibrations per minute or above                                  |
| 3   | Concrete mixer                     | 1                       | 400Litres drum mixer or above<br>6HP engine capacity with 5-6m3/hour output or above                       |
| 4   | Water bowser                       | 1                       | 3,000 liters and above                                                                                     |
| 5   | Pick-up truck                      | 1                       | 1 tonne and above                                                                                          |
| 6   | Backhoe                            | 1                       | 75-86 HP or above<br>engine capacity<br>7500Kg operating weight or above<br>0.3m3 bucket capacity or above |
| 7   | Potable water pump                 | 1                       | 3.5hp and above<br>engine capacity                                                                         |

The Bidder shall provide further details of proposed items of equipment using the relevant Form in Section IV.

## **Section IV - Bidding Forms**

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## Letter of Bid

*INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT*

*The Bidder must prepare this Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and business address.*

*Note: All italicized text is to help Bidders in preparing this form.*

**Date of this Bid submission:**

**RFB No.:**

To:

- (a) **No reservations:** We have examined and have no reservations to the bidding document, including Addenda issued in accordance with ITB 8;
- (b) **Eligibility:** We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
- (c) **Bid-Securing Declaration:** We have not been suspended nor declared ineligible by the Employer based on execution of a Bid-Securing Declaration or Proposal-Securing Declaration in the Employer's Country in accordance with ITB 4.7;
- (d) **Conformity:** We offer to execute in conformity with the bidding document the following Works: [insert a brief description of the Works]
- (e) **Bid Price:** The total price of our Bid, excluding any discounts offered in item (f) below is: *[Insert one of the options below as appropriate]*

*[Option 1, in case of one lot:] Total price is: [insert the total price of the Bid 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];*

- (f) **Discounts:** The discounts offered and the methodology for their application are:
  - (i) The discounts offered are: *[Specify in detail each discount offered.]*





- (ii) 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]*;
- (g) **Bid Validity:** Our Bid shall be valid until *[insert day, month and year in accordance with ITB 18.1]*, and it shall remain binding upon us and may be accepted at any time on or before this date;
- (h) **Performance Security:** If our Bid is accepted, we commit to obtain a performance security *[and an Environmental and Social (ES) Performance Security, **Delete if not applicable**]* in accordance with the bidding document;
- (i) **One Bid Per Bidder:** We are not submitting any other Bid(s) as an individual Bidder or as a subcontractor, and we are not participating in any other Bid(s) as a Joint Venture member, and meet the requirements of ITB 4.3, other than alternative Bids submitted in accordance with ITB 13;
- (j) **Suspension and Debarment:** We, along with any of our subcontractors, suppliers, consultants, 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 World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer's Country laws or official regulations or pursuant to a decision of the United Nations Security Council;
- (k) **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 ITB 4.6]*;
- (l) **Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the Bidding 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.")*

- (m) **Binding Contract:** We understand that this Bid, 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;

- (n) **Not Bound to Accept:** We understand that you are not bound to accept the lowest evaluated cost Bid, the Most Advantageous Bid or any other Bid that you may receive; and
- (o) **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; and
- (p) **Adjudicator:** We accept the appointment of *[insert name proposed in Bid Data Sheet]* as the Adjudicator.

**[Or]**

We do not accept the appointment of *[insert name proposed in Bid Data Sheet]* as the Adjudicator, and propose instead that *[insert name]* be appointed as Adjudicator, whose daily fees and biographical data are attached.

**Name of the Bidder:** *\*[insert complete name of person signing the Bid]*

**Name of the person duly authorized to sign the Bid on behalf of the Bidder:** *\*\*[insert complete name of person duly authorized to sign the Bid]*

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

**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]*

\*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

\*\*: Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid

**NB: (all prices Inclusive of all taxes and 0.03% PPRA LEVY)**

## **Schedules**

### **1. BILL OF QUANTITIES**

**Refer volume 1.1**

**Amount of Tender in Words: - Kenya Shillings**

.....  
.....  
.....  
.....

**Tenderer's Signature and Stamp.....**

**Address.....**

**Date.....**

**Witness Name and Signature.....**

**Description.....**

**Address.....**

**Date.....**

## 2. Schedule of Payment

Currencies For      insert name of Section of the Works

Separate tables may be required if the various sections of the Works (or of the Bill of Quantities) will have substantially different foreign and local currency requirements. The Employer should insert the names of each section of the Works.

|                                                         | A                        | B                                              | C                                                | D                                                                       |
|---------------------------------------------------------|--------------------------|------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------|
| Name of Payment<br>Currency                             | Amount<br>of<br>Currency | Rate of<br>Exchange<br>to<br>Local<br>Currency | Local Currency<br>Equivalent<br>$C = A \times B$ | Percentage of<br>Total Bid Price<br>(TBP)<br>$\frac{100 \times C}{TBP}$ |
| Local currency<br>_____                                 |                          | 1.00                                           |                                                  |                                                                         |
| Foreign Currency<br>#1 _____                            |                          |                                                |                                                  |                                                                         |
| Foreign Currency<br>#2 _____                            |                          |                                                |                                                  |                                                                         |
| Foreign Currency<br>#3 _____                            |                          |                                                |                                                  |                                                                         |
| Total Bid Price                                         |                          |                                                |                                                  | 100.00                                                                  |
| Provisional Sums<br>Expressed in Local<br>Currency      |                          | 1.00                                           |                                                  |                                                                         |
| TOTAL BID<br>PRICE<br>(Including<br>provisional<br>sum) |                          |                                                |                                                  |                                                                         |

### 3. Schedule(s) of Adjustment Data (NOT APPLICABLE)

**Table A - Local Currency**

| Index Code | Index Description | Source of Index | Base Value and Date | Bidder's Local Currency Amount | Bidder's Proposed Weighting                                                                                                     |
|------------|-------------------|-----------------|---------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|            | Nonadjustable     | —               | —                   | —                              | A: $\frac{A}{B}$ B: $\frac{B}{C}$<br>* $\frac{C}{D}$ C: $\frac{D}{E}$<br>* $\frac{E}{F}$ D: $\frac{F}{G}$ E: $\frac{G}{H}$<br>* |
|            |                   |                 | <b>Total</b>        |                                | <b>1.00</b>                                                                                                                     |

[\* To be entered by the Employer. Whereas “A” should a fixed percentage, B, C, D and E should specify a range of values and the Bidder will be required to specify a value within the range such that the total weighting = 1.00]

**Table B - Foreign Currency**

Name of Currency: \_\_\_\_\_

If the Bidder wishes to quote in more than one foreign currency, this table should be repeated for each foreign currency.

| Index Code | Index Description | Source of Index | Base Value and Date | Bidder's Currency in Type/Amount | Equivalent in FC1 | Bidder's Proposed Weighting                                                                                                     |
|------------|-------------------|-----------------|---------------------|----------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------|
|            | Nonadjustable     | —               | —                   | —                                |                   | A: $\frac{A}{B}$ B: $\frac{B}{C}$<br>* $\frac{C}{D}$ C: $\frac{D}{E}$<br>* $\frac{E}{F}$ D: $\frac{F}{G}$ E: $\frac{G}{H}$<br>* |
|            |                   |                 |                     | <b>Total</b>                     |                   | <b>1.00</b>                                                                                                                     |

[\* To be entered by the Employer. Whereas “A” should a fixed percentage, B, C, D and E should specify a range of values and the Bidder will be required to specify a value within the range such that the total weighting = 1.00]

# Forms of Bid Security

## Form of Bid Security - Bank Guarantee

*[Guarantor letterhead or SWIFT identifier code]*

**Beneficiary:**

*[Insert name and address of the Employer]*

**Request For Bids No:** *\_[Insert reference number for the Request For Bids]*

**Date:** *[Insert date of issue]*

**BID GUARANTEE No.:** *[Insert guarantee reference number]*

**Guarantor:** *\_[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[insert name of the Bidder, which in the case of a joint venture shall be the name of the joint venture (whether legally constituted or prospective) or the names of all members thereof]* (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Bid (hereinafter called "the Bid") for the execution of *[insert description of contract]* under Request For BidsNo. *[insert number]* ("the RFB").

Furthermore, we understand that, according to the Beneficiary's conditions, Bids must be supported by a Bid guarantee.

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 *[insert amount in letters]* (*insert amount in numbers*) upon receipt by us of the Beneficiary's complying supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating either that the Applicant:

- (a) has withdrawn its Bid prior to the Bid validity expiry date specified by the Applicant in the Letter of Bid, or any extended date provided by the Applicant; or
- (b) having been notified of the acceptance of its Bid by the Beneficiary prior to the expiry date of the Bid validity or any extension thereto provided by the Applicant, (i) fails to execute the contract agreement or (ii) fails to furnish the performance security and, if required, the Environmental and Social (ES) Performance Security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document.

This guarantee will expire: (a) if the Applicant is the successful Bidder, upon our receipt of copies of the contract agreement signed by the Applicant and the performance security and, if required, the Environmental and Social (ES) Performance Security, issued to the Beneficiary in relation to such contract agreement; and (b) if the Applicant is not the successful Bidder, upon the earlier of

(i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Bidding process; or (ii) twenty-eight days after the expiry date of the Bid validity.

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

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.

---

*[Signature]*

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



## **Technical Proposal**

### **Technical Proposal Forms**

- **Key Personnel Schedule**
- **Equipment**
- **Site Organization**
- **Method Statement**
- **Mobilization Schedule**
- **Construction Schedule**
- **ES Management Strategies and Implementation Plans**
- **Code of Conduct (ES)**
- **Others**

## FORM PER -1 Key Personnel Schedule

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

### Key Personnel

|    |                                                        |                                                                                                   |
|----|--------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 1. | Title of position: <i>[Contractors Representative]</i> |                                                                                                   |
|    | 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: <i>[Site Agent]</i>                 |                                                                                                   |
|    | 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: <i>[Environmental Specialist]</i>   |                                                                                                   |
|    | 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. | <b>Title of position:</b> <i>[Social Specialist]</i>                                                                                                                                                                  |                                                                                                   |
|    | <i>[Where a Project SEA risks are assessed to be substantial or high, Key Personnel shall include an expert with relevant experience in addressing sexual exploitation, sexual abuse and sexual harassment cases]</i> |                                                                                                   |
|    | <b>Name of candidate:</b>                                                                                                                                                                                             |                                                                                                   |
|    | <b>Duration of appointment:</b>                                                                                                                                                                                       | <i>[insert the whole period (start and end dates) for which this position will be engaged]</i>    |
|    | <b>Time commitment for this position:</b>                                                                                                                                                                             | <i>[insert the number of days/week/months/ that has been scheduled for this position]</i>         |
| 5. | <b>Expected time schedule for this position:</b>                                                                                                                                                                      | <i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i> |
|    | <b>Title of position:</b> <i>[Engineering Surveyor]</i>                                                                                                                                                               |                                                                                                   |
|    | <b>Name of candidate:</b>                                                                                                                                                                                             |                                                                                                   |
|    | <b>Duration of appointment:</b>                                                                                                                                                                                       | <i>[insert the whole period (start and end dates) for which this position will be engaged]</i>    |
|    | <b>Time commitment for this position:</b>                                                                                                                                                                             | <i>[insert the number of days/week/months/ that has been scheduled for this position]</i>         |
| 6. | <b>Expected time schedule for this position:</b>                                                                                                                                                                      | <i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i> |
|    | <b>Title of position:</b> <i>[Foreman]</i>                                                                                                                                                                            |                                                                                                   |
|    | <b>Name of candidate:</b>                                                                                                                                                                                             |                                                                                                   |
|    | <b>Duration of appointment:</b>                                                                                                                                                                                       | <i>[insert the whole period (start and end dates) for which this position will be engaged]</i>    |
|    | <b>Time commitment for this position:</b>                                                                                                                                                                             | <i>[insert the number of days/week/months/ that has been scheduled for this position]</i>         |
| 7. | <b>Expected time schedule for this position:</b>                                                                                                                                                                      | <i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i> |
|    | <b>Title of position:</b> <i>[Health and Safety specialist]</i>                                                                                                                                                       |                                                                                                   |
|    | <b>Name of candidate:</b>                                                                                                                                                                                             |                                                                                                   |
|    | <b>Duration of appointment:</b>                                                                                                                                                                                       | <i>[insert the whole period (start and end dates) for which this position will be engaged]</i>    |
|    | <b>Time commitment for this position:</b>                                                                                                                                                                             | <i>[insert the number of days/week/months/ that has been scheduled for this position]</i>         |

**Expected time  
schedule for  
this position:**

*[insert the expected time schedule for this position (e.g. attach  
high level Gantt chart)]*

## Form PER 2: Resume and Declaration

Name of Bidder

### Key Personnel

Position [#1]: *[title of position from Form PER-1]*

|                       |                                                                                            |                                        |
|-----------------------|--------------------------------------------------------------------------------------------|----------------------------------------|
| 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 employer:                                                                       |                                        |
|                       | Telephone:                                                                                 | Contact (manager / personnel officer): |
|                       | Fax:                                                                                       |                                        |
|                       | Job title:                                                                                 | Years with present employer:           |
|                       |                                                                                            |                                        |

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 Key Personnel, 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 Bid:

| <b>Commitment</b>                          | <b>Details</b>                                                                                                  |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Commitment to duration of contract:</b> | <i>[insert period (start and end dates) for which this Key Personnel is available to work on this contract]</i> |
| <b>Time commitment:</b>                    | <i>[insert the number of days/week/months/ that this Key Personnel will be engaged]</i>                         |

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

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

**Name of Key Personnel:** *[insert name]*

Signature: \_\_\_\_\_

Date: (day month year): \_\_\_\_\_

**Countersignature of authorized representative of the Bidder:**

Signature: \_\_\_\_\_

Date: (day month year): \_\_\_\_\_

## EQUIPMENT

The Bidder 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 Bidder. The Bidder shall provide all the information requested below, to the extent possible. Fields with asterisk (\*) shall be used for evaluation.

|                              |                                                                                                                                                                               |                               |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Type of Equipment*</b>    |                                                                                                                                                                               |                               |
| <b>Equipment Information</b> | <b>Name of manufacturer,</b>                                                                                                                                                  | <b>Model and power rating</b> |
|                              | <b>Capacity*</b>                                                                                                                                                              | <b>Year of manufacture*</b>   |
| <b>Current Status</b>        | <b>Current location</b>                                                                                                                                                       |                               |
|                              | <b>Details of current commitments</b>                                                                                                                                         |                               |
| <b>Source</b>                | <b>Indicate source of the equipment</b><br><input type="radio"/> Owned <input type="radio"/> Rented <input type="radio"/> Leased <input type="radio"/> Specially manufactured |                               |

The following information shall be provided only for equipment not owned by the Bidder.

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



## **Site Organization**

*[Insert Site Organization information]*

## **Method Statement**

*[Insert Method Statement]*

## **Mobilization Schedule**

*[Insert Mobilization Schedule]*

## **Construction Schedule**

*[Insert Construction Schedule]*

## **ES Management Strategies and Implementation Plans**

### **(ES-MSIP)**

The Bidder shall submit comprehensive and concise Environmental and Social Management Strategies and Implementation Plans (ES-MSIP) as required by ITB 11.1 (i) of the Bid Data Sheet. These strategies and plans shall describe in detail the actions, materials, equipment, management processes etc. that will be implemented by the Contractor, and its subcontractors.

In developing these strategies and plans, the Bidder shall have regard to the ES provisions of the contract including those as may be more fully described in the Works Requirements in Section VII.

## Code of Conduct for Contractor's Personnel (ES) Form

### Note to the Bidder:

**The minimum content of the Code of Conduct form as set out by the Employer shall not be substantially modified.** However, the Bidder may add requirements as appropriate, including to take into account Contract-specific issues/risks.

The Bidder shall initial and submit the Code of Conduct form as part of its bid.

### CODE OF CONDUCT FOR CONTRACTOR'S PERSONNEL

We are the Contractor, [*enter name of Contractor*]. We have signed a contract with [*enter name of Employer*] for [*enter description of the Works*]. These Works will be carried out at [*enter the Site and other locations where the Works will be carried out*]. Our contract requires us to implement measures to address environmental and social risks related to the Works, including the risks of sexual exploitation, sexual abuse and sexual harassment.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Works. It applies to all our staff, laborers and other employees at the Works Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Works. All such persons are referred to as “**Contractor's Personnel**” and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior that we require from all Contractor's Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

## **REQUIRED CONDUCT**

Contractor's Personnel shall;

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
3. maintain a safe working environment including by:
  - a. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
  - b. wearing required personal protective equipment;
  - c. using appropriate measures relating to chemical, physical and biological substances and agents; and
  - d. Following applicable emergency operating procedures.
4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
6. not engage in Sexual Harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;
7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;
8. not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
10. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, and Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH);
11. report violations of this Code of Conduct; and
12. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the grievance mechanism for Contractor's Personnel or the project's Grievance Redress Mechanism.

## RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [*enter name of the Contractor's Social Expert with relevant experience in handling gender-based violence, or if such person is not required under the Contract, another individual designated by the Contractor to handle these matters*] in writing at this address [ ] or by telephone at [ ] or in person at [ ]; or
2. Call [ ] to reach the Contractor's hotline (*if any*) and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take all reports of possible misconduct seriously and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.



## CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR CONTRACTOR'S PERSONNEL:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of Contractor's contact person with relevant experience*] requesting an explanation.

Name of Contractor's Personnel: [insert name]

Signature: \_\_\_\_\_

Date: (day month year): \_\_\_\_\_

Countersignature of authorized representative of the Contractor:

Signature: \_\_\_\_\_ Date: (day month  
year): \_\_\_\_\_

**ATTACHMENT 1: Behaviors constituting Sexual Exploitation and Abuse (SEA) and behaviors constituting Sexual Harassment (SH)**

**ATTACHMENT 1 TO THE CODE OF CONDUCT FORM**  
**BEHAVIORS CONSTITUTING SEXUAL EXPLOITATION AND ABUSE**  
**(SEA) AND BEHAVIORS CONSTITUTING SEXUAL HARASSMENT (SH)**

The following non-exhaustive list is intended to illustrate types of prohibited behaviors:

**(1) Examples of sexual exploitation and abuse include, but are not limited to:**

- A Contractor's Personnel tells a member of the community that he/she can get them jobs related to the work site (e.g. cooking and cleaning) in exchange for sex.
- A Contractor's Personnel that is connecting electricity input to households says that he can connect women headed households to the grid in exchange for sex.
- A Contractor's Personnel rapes, or otherwise sexually assaults a member of the community.
- A Contractor's Personnel denies a person access to the Site unless he/she performs a sexual favor.
- A Contractor's Personnel tells a person applying for employment under the Contract that he/she will only hire him/her if he/she has sex with him/her.

**(2) Examples of sexual harassment in a work context**

- Contractor's Personnel comment on the appearance of another Contractor's Personnel (either positive or negative) and sexual desirability.
- When a Contractor's Personnel complains about comments made by another Contractor's Personnel on his/her appearance, the other Contractor's Personnel comment that he/she is "asking for it" because of how he/she dresses.
- Unwelcome touching of a Contractor's or Employer's Personnel by another Contractor's Personnel.
- A Contractor's Personnel tells another Contractor's Personnel that he/she will get him/her a salary raise, or promotion if he/she sends him/her naked photographs of himself/herself.

**Others**

## **Bidder's Qualification**

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

## Form ELI -1.1: Bidder Information Form

Date: \_\_

RFB No. and title: \_\_\_\_\_

Page \_\_ of \_\_\_\_ pages

Bidder's name

In case of Joint Venture (JV), name of each member:

Bidder's actual or intended country of registration:

*[indicate country of Constitution]*

Bidder's actual or intended year of incorporation:

Bidder's legal address [in country of registration]:

Bidder's authorized representative information

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone/Fax numbers: \_\_\_\_\_

E-mail address: \_\_\_\_\_

1. Attached are copies of original documents of

- ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.4.
- ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1.
- ☐ In case of state-owned enterprise or institution, in accordance with ITB 4.6 documents establishing:
  - Legal and financial autonomy
  - Operation under commercial law
  - Establishing that the Bidder is not under the supervision of the Employer

2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. *[If required under BDS ITB 47.1, the successful Bidder shall provide additional information on beneficial ownership, using the Beneficial Ownership Disclosure Form.]*

## Form ELI -1.2: Information Form for JV Bidders

(to be completed for each member of Joint Venture)

Date: \_\_ RFB No. and title: \_\_\_\_

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bidder's Joint Venture 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<br>information Name: _____<br>Address: _____<br>Telephone/Fax numbers: _____<br>E-mail address: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. Attached are copies of original documents of<br><br><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 ITB 4.4.<br><br><input type="checkbox"/> In case of a state-owned enterprise or institution, documents establishing legal and financial<br>Autonomy, operation in accordance with commercial law, and is not under the supervision of the Employer, in accordance with ITB 4.6.<br><br>2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. <i>[If required under BDS ITB 47.1, the successful Bidder shall provide Additional information on beneficial ownership for each JV member using the Beneficial Ownership Disclosure Form.]</i> |

## Form CON – 2: Historical Contract Non-Performance, Pending Litigation and Litigation History

Bidder's Name: \_\_\_\_\_

Date: \_\_\_\_\_

Joint Venture Member's Name \_\_\_\_\_

RFB No. and title: \_\_\_\_\_

Page \_\_\_ of \_\_\_ pages

| Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria                                                                                                                                                                                                                                                                                                     |                                       |                                                                                                                                                                                                                                                                                      |                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <input type="checkbox"/> Contract non-performance did not occur since 1 <sup>st</sup> January <i>[insert year]</i> specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1.<br><br><input type="checkbox"/> Contract(s) not performed since 1 <sup>st</sup> 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 US\$ equivalent) |
| <i>[insert year]</i>                                                                                                                                                                                                                                                                                                                                                                              | <i>[insert amount and percentage]</i> | Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i><br>Name of Employer: <i>[insert full name]</i><br>Address of Employer: <i>[insert street/city/country]</i><br>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.<br><br><input type="checkbox"/> Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.                                                                                                |                                       |                                                                                                                                                                                                                                                                                      |                                                                                    |

| <b>Year of dispute</b>                                                                                                                                                                                                                                                                         | <b>Amount in dispute (currency)</b>       | <b>Contract Identification</b>                                                                                                                                                            | <b>Total Contract Amount (currency), USD Equivalent (exchange rate)</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                |                                           | Contract Identification: _____<br>Name of Employer: _____<br>Address of Employer: _____<br>Matter in dispute: _____<br>Party who initiated the dispute: _____<br>Status of dispute: _____ |                                                                         |
|                                                                                                                                                                                                                                                                                                |                                           | Contract Identification:<br>Name of Employer:<br>Address of Employer:<br>Matter in dispute:<br>Party who initiated the dispute:<br>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.<br><input type="checkbox"/> Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below. |                                           |                                                                                                                                                                                           |                                                                         |
| <b>Year of award</b>                                                                                                                                                                                                                                                                           | <b>Outcome as percentage of Net Worth</b> | <b>Contract Identification</b>                                                                                                                                                            | <b>Total Contract Amount (currency), USD Equivalent (exchange rate)</b> |



---

|                          |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |
|--------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <i>[insert<br/>year]</i> | <i>[insert<br/>percentage]</i> | Contract Identification: [indicate<br>complete contract name, number, and<br>any other identification]<br>Name of Employer: <i>[insert full name]</i><br>Address of Employer: <i>[insert<br/>street/city/country]</i><br>Matter in dispute: <i>[indicate main issues<br/>in dispute]</i><br>Party who initiated the dispute: <i>[indicate<br/>“Employer” or “Contractor”]</i><br>Reason(s) for Litigation and award<br>decision <i>[indicate main reason(s)]</i> | <i>[insert<br/>amount]</i> |
|--------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|

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## Form CON – 3: Environmental and Social Performance Declaration

*[The following table shall be filled in for the Bidder, each member of a Joint Venture  
and each Specialized Subcontractor]*

Bidder's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member's or Specialized Subcontractor's Name: *[insert full name]*

RFB No. and title: *[insert RFB number and title]*

Page *[insert page number]* of *[insert total number]* pages

| Environmental and Social Performance Declaration<br>in accordance with Section III, Qualification Criteria, and Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                             |                                                                                                                                                                                                                                                                                                                                                                              |                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <p><input type="checkbox"/> <b>No suspension or termination of contract:</b> An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental, or Social (ES) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.5.</p> <p><input type="checkbox"/> <b>Declaration of suspension or termination of contract:</b> The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental, or Social (ES) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.5. Details are described below:</p> |                                             |                                                                                                                                                                                                                                                                                                                                                                              |                                                                                       |
| Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Suspended or terminated portion of contract | Contract Identification                                                                                                                                                                                                                                                                                                                                                      | Total Contract Amount<br>(current value, currency, exchange rate and US\$ equivalent) |
| <i>[insert year]</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <i>[insert amount and percentage]</i>       | Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i><br>Name of Employer: <i>[insert full name]</i><br>Address of Employer: <i>[insert street/city/country]</i><br>Reason(s) for suspension or termination: <i>[indicate main reason(s) e.g. for gender-based violence; sexual exploitation or sexual abuse breaches]</i> | <i>[insert amount]</i>                                                                |

|                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                 |                                                                                    |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <i>[insert year]</i>                                                                       | <i>[insert amount and percentage]</i>                                                                                                                                                                                                                                                                                                                                               | Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i><br>Name of Employer: <i>[insert full name]</i><br>Address of Employer: <i>[insert street/city/country]</i><br>Reason(s) for suspension or termination: <i>[indicate main reason(s)]</i> | <i>[insert amount]</i>                                                             |
| ...                                                                                        | ...                                                                                                                                                                                                                                                                                                                                                                                 | <i>[list all applicable contracts]</i>                                                                                                                                                                                                                                                          | ...                                                                                |
| <b>Performance Security called by an employer(s) for reasons related to ES performance</b> |                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                 |                                                                                    |
| Year                                                                                       | Contract Identification                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                 | Total Contract Amount (current value, currency, exchange rate and US\$ equivalent) |
| <i>[insert year]</i>                                                                       | Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i><br>Name of Employer: <i>[insert full name]</i><br>Address of Employer: <i>[insert street/city/country]</i><br>Reason(s) for calling of performance security: <i>[indicate main reason(s) e.g. for gender-based violence; sexual exploitation, or sexual abuse breaches]</i> |                                                                                                                                                                                                                                                                                                 | <i>[insert amount]</i>                                                             |
|                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                 |                                                                                    |

## Form CCC: Current Contract Commitments / Works in Progress

Bidders and each member of 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.

| Name of contract | Employer,<br>contact<br>address/tel/fax | Value of<br>outstanding<br>work (current<br>US\$ equivalent) | Estimated<br>completion date | Average<br>monthly<br>invoicing over<br>last six months<br>(US\$/month) |
|------------------|-----------------------------------------|--------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------|
| 1.               |                                         |                                                              |                              |                                                                         |
| 2.               |                                         |                                                              |                              |                                                                         |
| 3.               |                                         |                                                              |                              |                                                                         |
| 4.               |                                         |                                                              |                              |                                                                         |
| 5.               |                                         |                                                              |                              |                                                                         |
| etc.             |                                         |                                                              |                              |                                                                         |

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## Form FIN – 3.1: Financial Situation and Performance

Bidder's Name: \_\_\_\_

Date: \_\_\_\_

Joint Venture Member's Name: \_\_\_\_

RFB No. and title: \_\_\_\_

Page \_\_\_\_ of \_\_\_\_ pages

### 1. Financial data

| Type of Financial information in (currency)                      | Historic information for previous _____ years,<br>(amount in currency, currency, exchange rate, USD equivalent) |        |        |        |        |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|
|                                                                  | Year 1                                                                                                          | Year 2 | Year 3 | Year 4 | Year 5 |
| Statement of Financial Position (Information from Balance Sheet) |                                                                                                                 |        |        |        |        |
| Total Assets (TA)                                                |                                                                                                                 |        |        |        |        |
| Total Liabilities (TL)                                           |                                                                                                                 |        |        |        |        |
| Total Equity/Net Worth (NW)                                      |                                                                                                                 |        |        |        |        |
| Current Assets (CA)                                              |                                                                                                                 |        |        |        |        |
| Current Liabilities (CL)                                         |                                                                                                                 |        |        |        |        |
| Working Capital (WC)                                             |                                                                                                                 |        |        |        |        |
| Information from Income Statement                                |                                                                                                                 |        |        |        |        |
| Total Revenue (TR)                                               |                                                                                                                 |        |        |        |        |
| Profits Before Taxes (PBT)                                       |                                                                                                                 |        |        |        |        |
| Cash Flow Information                                            |                                                                                                                 |        |        |        |        |

|                                     |  |  |  |  |  |
|-------------------------------------|--|--|--|--|--|
| Cash Flow from Operating Activities |  |  |  |  |  |
|-------------------------------------|--|--|--|--|--|

## 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 (US\$ equivalent) |
|-----|-------------------|--------------------------|
| 1   |                   |                          |
| 2   |                   |                          |
| 3   |                   |                          |
| 4   |                   |                          |

## 3. Financial documents

The Bidder and its parties shall provide copies of financial statements for \_\_\_\_\_ years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.2. The Financial statements shall:

- (a) Reflect the financial situation of the Bidder or in case of JV member, and not an affiliated entity (such as parent company or group member).
- (b) Be independently audited or certified in accordance with local legislation.
- (c) Be complete, including all notes to the financial statements.
- (d) Correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements<sup>8</sup> for the \_\_\_\_\_ years required above; and complying with the requirements

\_\_\_\_\_

<sup>7</sup> If the most recent set of financial statements is for a period earlier than 12 months from the date of bid, the reason for this should be justified.

## Form FIN - 3.2: Average Annual Construction Turnover

Bidder's Name: \_\_\_\_

Date: \_\_\_\_\_

Joint Venture Member's Name \_\_\_\_\_

RFB No. and title: \_

Page \_\_\_\_ of \_\_\_\_ pages

|                                                 |                                                  | Annual turnover data (construction only) |                |
|-------------------------------------------------|--------------------------------------------------|------------------------------------------|----------------|
| Year                                            | Amount<br>Currency                               | Exchange rate                            | USD equivalent |
| <i>[indicate<br/>year]</i>                      | <i>[insert amount and indicate<br/>currency]</i> |                                          |                |
|                                                 |                                                  |                                          |                |
|                                                 |                                                  |                                          |                |
|                                                 |                                                  |                                          |                |
|                                                 |                                                  |                                          |                |
| Average<br>Annual<br>Construction<br>Turnover * |                                                  |                                          |                |

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





## 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.

| Source of financing | Amount (US\$ equivalent) |
|---------------------|--------------------------|
| 1.                  |                          |
| 2.                  |                          |
| 3.                  |                          |
| 4.                  |                          |

## Form EXP - 4.1: General Construction Experience

Bidder's Name: \_\_\_\_\_

Date: \_\_\_\_\_

Joint Venture Member's Name \_\_\_\_\_

RFB No. and title: \_\_\_\_\_

Page \_\_ of \_\_\_\_ pages

| Starting<br>Year | Ending<br>Year | Contract Identification                                                                                                                                         | Role of<br>Bidder |
|------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
|                  |                | Contract name: _____<br>Brief Description of the Works performed by the Bidder: _____<br>Amount of contract: _____<br>Name of Employer: _____<br>Address: _____ |                   |
|                  |                | Contract name: _____<br>Brief Description of the Works performed by the Bidder: _____<br>Amount of contract: _____<br>Name of Employer: _____<br>Address: _____ |                   |
|                  |                | Contract name: _____<br>Brief Description of the Works performed by the Bidder: _____<br>Amount of contract: _____<br>Name of Employer: _____<br>Address: _____ |                   |

## Form EXP - 4.2(a): Specific Construction and Contract Management Experience

Bidder's Name: \_\_\_\_\_

Date: \_\_\_\_\_

Joint Venture Member's Name \_\_\_\_\_

RFB No. and title: \_\_\_\_\_

Page \_\_ of \_\_\_\_ pages

| Similar Contract No.                                                               | 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"/> | Sub-contractor <input type="checkbox"/> |
| Total Contract Amount                                                              |                                           |                                       | US\$ *                                         |                                         |
| If member in a JV or subcontractor, specify participation in total Contract amount |                                           |                                       | *                                              |                                         |
| Employer's Name:                                                                   |                                           |                                       |                                                |                                         |
| Address:                                                                           |                                           |                                       |                                                |                                         |
| Telephone/fax number                                                               |                                           |                                       |                                                |                                         |
| E-mail:                                                                            |                                           |                                       |                                                |                                         |

## 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                                                           |             |

## Form EXP - 4.2(b): Construction Experience in Key Activities

Bidder's Name: \_\_\_\_\_

Date: \_\_\_\_\_

Joint Venture Member's Name: \_\_\_\_\_

Subcontractor's Name<sup>9</sup> (as per ITB 34.2 and 34.3): \_\_\_\_\_

RFB No. and title: \_\_\_\_\_ Page \_\_ of \_\_\_\_ pages

Subcontractor's Name (as per ITB 34.2 and 34.3): \_\_\_\_\_

All subcontractors for key activities must complete the information in this form as per ITB 34.2 and 34.3 and Section III, Qualification Criteria and Requirements, Sub-Factor 4.2.

1. Key Activity No One: \_\_\_\_\_

|                                                                                                                          | Information                                  |                                          |                                                   |                                            |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------|---------------------------------------------------|--------------------------------------------|
| Contract Identification                                                                                                  |                                              |                                          |                                                   |                                            |
| Award date                                                                                                               |                                              |                                          |                                                   |                                            |
| Completion date                                                                                                          |                                              |                                          |                                                   |                                            |
| Role in Contract                                                                                                         | Prime Contractor<br><input type="checkbox"/> | Member in JV<br><input type="checkbox"/> | Management Contractor<br><input type="checkbox"/> | Sub-contractor<br><input type="checkbox"/> |
| Total Contract Amount                                                                                                    |                                              |                                          | US\$                                              |                                            |
| 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<br>(i)        | Percentage participation<br>(ii)         |                                                   | Actual Quantity Performed<br>(i) x (ii)    |
| Year 1                                                                                                                   |                                              |                                          |                                                   |                                            |
| Year 2                                                                                                                   |                                              |                                          |                                                   |                                            |
| Year 3                                                                                                                   |                                              |                                          |                                                   |                                            |
| Year 4                                                                                                                   |                                              |                                          |                                                   |                                            |

\_\_\_\_\_

<sup>8</sup> If applicable.

|                      |  |
|----------------------|--|
| Employer's Name:     |  |
| Address:             |  |
| Telephone/fax number |  |
| E-mail:              |  |

|                                                                                        |                    |
|----------------------------------------------------------------------------------------|--------------------|
|                                                                                        | <b>Information</b> |
| Employer's Name:                                                                       |                    |
| Address:                                                                               |                    |
| Telephone/fax number                                                                   |                    |
| E-mail:                                                                                |                    |
|                                                                                        | <b>Information</b> |
| Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III: |                    |
|                                                                                        |                    |
|                                                                                        |                    |

2. Activity No. Two

3. ....

## Form EXP - 4.2(c): Specific Experience in Managing ES aspects s

*[The following table shall be filled in for contracts performed by the Bidder, and each member of a Joint Venture]*

Bidder's Name: \_\_\_\_ Date: \_\_

Bidder's JV Member Name: \_\_\_\_\_

RFB No. and title: \_

Page \_\_\_\_\_ of \_\_\_\_\_ pages

1. Key Requirement no 1 in accordance with 4.2 (c): \_\_\_\_\_

|                                |                                              |                                          |                                                   |                                           |
|--------------------------------|----------------------------------------------|------------------------------------------|---------------------------------------------------|-------------------------------------------|
| Contract Identification        |                                              |                                          |                                                   |                                           |
| Award date                     |                                              |                                          |                                                   |                                           |
| Completion date                |                                              |                                          |                                                   |                                           |
| Role in Contract               | Prime Contractor<br><input type="checkbox"/> | Member in JV<br><input type="checkbox"/> | Management Contractor<br><input type="checkbox"/> | Subcontractor<br><input type="checkbox"/> |
| Total Contract Amount          |                                              |                                          | US\$                                              |                                           |
| Details of relevant experience |                                              |                                          |                                                   |                                           |

2. Key Requirement no 2 in accordance with 4.2 (c): \_\_\_\_\_

3. Key Requirement no 3 in accordance with 4.2 (c): \_\_\_\_\_

## **Section V - Eligible Countries**

### **Eligibility for the Provision of Goods, Works and Services in Bank-Financed *Procurement***

*In reference to ITB 4.8, and 5.1, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this Bidding process:*

*Under ITB 4.8 (a) and 5.1 **None***

*Under ITB 4.8 (b) and 5.1 **None***



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## **Section VI - Fraud and Corruption (Section VI shall not be modified)**

### **1. Purpose**

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

### **2. Requirements**

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (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, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

- a. Defines, for the purposes of this provision, 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:
    - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
    - (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

- b. Rejects a proposal for award if the Bank 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;
- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring mis procurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti- Corruption Guidelines and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;<sup>10</sup> (ii) to be a nominated<sup>11</sup> sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank- financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect<sup>12</sup> 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 Bank.

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<sup>10</sup> For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre- qualification, expressing interest in a consultancy, and bidding, 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.

<sup>11</sup> A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or

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Nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

- <sup>12</sup> Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank 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.

## **PART 2 – Works' Requirements**

## **Section VII - Works' Requirements**

### **Table of Contents**

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# **Specifications**

## **GENERAL AND TECHNICAL SPECIFICATIONS**

**Refer volume 1.2**

## Environmental and Social Requirements

### SUGGESTED CONTENT FOR AN ENVIRONMENTAL AND SOCIAL POLICY (STATEMENT)

*The Works' policy goal, as a minimum, should be stated to integrate environmental protection, occupational and community health and safety, gender, equality, child protection, vulnerable people (including those with disabilities), sexual harassment, gender-based violence, Sexual Exploitation and Abuse (SEA), HIV/AIDS awareness and prevention and wide stakeholder engagement in the planning processes, programs, and activities of the parties involved in the execution of the Works. The Employer is advised to consult with the World Bank to agree the issues to be included which may also address: climate adaptation, land acquisition and resettlement, indigenous people, etc. The policy should set the frame for monitoring, continuously improving processes and activities and for reporting on the compliance with the policy.*

*The policy shall include a statement that, for the purpose of the policy and/or code of conduct, the term "child" / "children" means any person(s) under the age of 18 years.*

*The policy should, as far as possible, be brief but specific and explicit, and measurable, to enable reporting of compliance with the policy in accordance with Sub-Clause 30.3 of the General Conditions of Contract.*

*As a minimum, the policy is set out to the commitments to:*

- 1. Apply good international industry practice to protect and conserve the natural environment and to minimize unavoidable impacts;*
- 2. Provide and maintain a healthy and safe work environment and safe systems of work;*
- 3. Protect the health and safety of local communities and users, with particular concern for those who are disabled, elderly, or otherwise vulnerable;*
- 4. Be intolerant of, and enforce disciplinary measures for illegal activities. To be intolerant of, and enforce disciplinary measures for gender-based violence, inhumane treatment, sexual exploitation, rape, sexual abuse, sexual activity with children, and sexual harassment;*
- 5. Incorporate a gender perspective and provide an enabling environment where women and men have equal opportunity to participate in, and benefit from, planning and development of the Works;*
- 6. Work co-operatively, including with end users of the Works, relevant authorities, contractors and local communities;*

7. *Engage with and listen to affected persons and organizations and be responsive to their concerns, with special regard for vulnerable, disabled, and elderly people;*
8. *Provide an environment that fosters the exchange of information, views, and ideas that is free of any fear of retaliation, and protects whistleblowers;*
9. *Minimize the risk of communicable diseases and to mitigate the effects of communicable diseases associated with the execution of the Works;*

*The policy should be signed by the senior manager of the Employer. This is to signal the intent that it will be applied rigorously.*

#### **Minimum Content of ES requirements**

*In preparing detailed specifications for ES requirements, the specialists should refer to and consider:*

- *project reports e.g. C-ESMP*
- *consent/permit conditions*
- *required standards including World Bank Group EHS Guidelines*
- *relevant international conventions or treaties etc., national legal and/or regulatory requirements and standards (where these represent higher standards than the WBG EHS Guidelines)*
- *relevant international standards e.g. WHO Guidelines for Safe Use of Pesticides*
- *relevant sector standards e.g. EU Council Directive 91/271/EEC Concerning Urban Waste Water Treatment*
- *Grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g. of those reporting allegations of SEA.*
- *SEA prevention and management.*

*The detail specification for ES should, to the extent possible, describe the intended outcome rather than the method of working.*

*The ES requirements should be prepared in manner that does not conflict with the relevant General Conditions of Contract and Particular Conditions of Contract.*

#### **Payment for ES Requirements**

*The Employer's ES and procurement specialists should consider how the Contractor will cost the delivery of the ES requirements. In the majority of cases, the payment for the delivery of ES requirements shall be a subsidiary obligation of the Contractor covered under the prices quoted for other Bill of Quantity items or activities. For example, normally the cost of implementing work place safe systems of work, including the measures necessary for ensuring traffic safety, shall be covered by the Bidder's rates for the relevant works. Alternatively, provisional sums could be set aside for discrete activities for example for HIV counselling service, and, and, GBV/SEA awareness and sensitization awareness and sensitization or to encourage the contractor to deliver additional ES outcomes beyond the requirement of the Contract.*



# **ENVIRONMENTAL AND SOCIAL POLICY STATEMENT**

## **Introduction**

Nyeri County Government- NAVCDP is committed to integrating environmental protection, occupational and community health and safety, gender equality, child protection, and the welfare of vulnerable populations into all aspects of our projects and activities. We recognize that sustainable development requires responsible management of environmental and social risks and opportunities, and we are dedicated to conducting our work in a manner that respects human rights, promotes gender equality, and safeguards the well-being of all stakeholders.

## **Policy Goals**

### **Our policy aims to:**

- i. Protect and conserve the natural environment by applying good international industry practices and minimizing adverse impacts.
- ii. Provide a healthy and safe work environment, ensuring safe systems of work for all employees, contractors, and visitors.
- iii. Safeguard the health and safety of local communities and users, with particular attention to vulnerable groups such as the disabled, elderly, women, and children.
- iv. Foster an inclusive and equitable workplace and project environment that promotes gender equality and empowers women and men equally.
- v. Prevent and respond effectively to gender-based violence, sexual exploitation and abuse (SEA), sexual harassment, inhumane treatment, and other forms of misconduct.
- vi. Engage with and listen to affected persons, communities and stakeholders, incorporating their feedback into project planning and implementation.
- vii. Promote transparency and protect people who raise concerns about non-compliance or unethical conduct.

- viii. Minimize the risk of communicable diseases and implement measures to mitigate their spread during project execution.
- ix. Address broader issues such as climate adaptation, land acquisition and resettlement, indigenous peoples, and other relevant social and environmental considerations in consultation with the World Bank and other stakeholders.
- x. Ensure sustainable management of all kinds of waste generated by the activities undertaken

### **Scope and Definitions**

For the purposes of this policy, the term “child” or “children” refers to any person Under the age of 18 years.

This policy applies to all personnel, contractors, partners, and stakeholders involved in the Works.

### **Commitments**

#### **1. Environmental Stewardship**

Apply best practices to protect natural ecosystems and reduce environmental impacts, including waste management, pollution prevention, and resource efficiency.

#### **2. Occupational and Community Health & Safety**

Maintain safe working conditions, conduct risk assessments, and implement health and safety protocols.

#### **3. Protection of Vulnerable Groups**

Prioritize the safety and well-being of vulnerable populations, including persons with disabilities, the elderly, and children.

#### **4. Zero Tolerance for Illegal Activities**

Enforce strict disciplinary measures against illegal activities, including corruption, illegal land acquisition, and environmental violations.

#### **5. Gender Equality**

Ensure equal opportunities for women and men in project planning, decision-making, and benefits.

**6. Stakeholder Engagement**

Actively consult with and incorporate feedback from affected communities, and all stakeholders throughout project lifecycle.

**7. Information and Whistleblower Protections**

Foster an environment of open communication where concerns can be raised without fear of retaliation.

**8. Disease Prevention and Control**

Implement measures to reduce the risk and impact of communicable diseases during project activities.

**9. Continuous Improvement and Monitoring**

Establish mechanisms to monitor compliance with this policy, evaluate performance, and implement improvements.

**10. Labour and Working Conditions**

To ensure fair treatment, nondiscrimination and equal opportunity of project workers.

To prevent the use of all forms of forced labor and child labor. To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law

**11. Review and Reporting**

The effectiveness of this policy will be monitored through regular audits, reports, and stakeholder feedback. Non-compliance will be addressed promptly, with corrective actions taken to ensure continuous improvement.

**Signed by**

**Name: Anne Karoki**

**Date: 28<sup>th</sup> May 2026**

## **Specifications for Environmental and Social (E&S) Requirements**

### **Environmental and Social Assessment**

*The Contractor shall be responsible for assessing, managing, and monitoring all environmental and social risks and impacts associated with each stage of the project.*

### **Labor and Working Conditions**

*The Contractor shall:*

- i. *Promote safety and health in the workplace.*
- ii. *Ensure fair treatment, non-discrimination, and equal opportunity for all project workers.*
- iii. *Protect all project workers, including vulnerable groups such as women, persons with disabilities, migrant workers, contracted workers, community workers, primary supply workers, and any other at-risk groups, as applicable.*
- iv. *Prevent the use of forced labour and child labour.*
- v. *Support the principles of freedom of association in accordance with national law.*
- vi. *Provide accessible and confidential channels for workers to raise workplace concerns.*
- vii. *Ensure all workers sign a Code of Conduct as part of their employment contracts, covering sanctions for non-compliance, wage rates, and working hour.*

### **Resource Efficiency and Pollution Prevention and Management**

*The Contractor shall:*

- i. *Promote efficient use of resources, including water, energy, and raw materials.*
- ii. *Prepare and implement a comprehensive Waste Management Plan for all waste generated.*
- iii. *Prevent pollution of air, water, and land, and control noise levels in accordance with national and international standards.*
- iv. *Limit noisy activities to 8:00 -17:00hrs.*
- v. *Provide appropriate PPEs*
- vi. *Regular inspection and maintenance of machinery*

### **Occupational Health and Safety (OHS) Management Plan**

*The Contractor shall implement the following OHS measures:*

- i. *Regular OHS training for all workers. Task-specific risk assessments.*
- ii. *Provision and enforcement of appropriate Personal Protective Equipment (PPE). l*  
*Maintenance of clean and safe work areas.*
- iii. *Regular updates and implementation of Emergency Response Protocols, including*  
*pipeline failures (bursts, washouts).*
- iv. *Conduct workplace inspections and audits Maintain an incident and Accident register*
- v. *Provide adequate sanitary facilities.*

### **Gender-Based Violence (GBV), Sexual Exploitation and Abuse, and Sexual Harassment (SEA/SH) Prevention and Response Plan**

*The Contractor shall:*

- i. *Conduct community awareness campaigns on GBV/SEA/SH prevention and reporting.*
- ii. *Establish a confidential, survivor-centred grievance redress mechanism.*
- iii. *Provide psychosocial support and referral services for survivors.*
- iv. *Deliver gender-sensitive training on crop production and financial management (where*  
*applicable).*
- v. *Monitor and report on women's engagement and decision-making in project activities.*
- vi. *Awareness campaigns and workshops on HIV/AIDS and STI prevention.*

### **Community Health and Safety**

*The Contractor shall implement measures to ensure community health and safety, including:*

- i. *Installing warning signage and securing work sites with barricades or fencing.*
- ii. *Communicating clearly with communities about work schedules and restricted areas.*
- iii. *Enforcing vehicle and traffic safety measures (speed limits, flagmen, and reflective*  
*markings).*
- iv. *Providing contact information for reporting incidents or concerns.*

**Training**

- i. *The Employer shall provide training to the Contractor on implementing the Environmental and Social Management Plans (ESMP) before commencement of works.*
- ii. *The training will be coordinated by the Environment and Social Safeguard Officers.*

**Chance Finds / Cultural Heritage**

*The Contractor shall:*

- a. *Develop and implement Chance Finds Procedures in accordance with ESS8 and national laws.*
- b. *Stop work immediately and notify relevant authorities if cultural artifacts or heritage materials are discovered.*
- c. *Train workers to recognize possible cultural materials.*

**Security Management**

*The Contractor shall implement appropriate measures to manage security risks associated with the project.*

- i. *Where security personnel are engaged, their hiring, conduct, training, equipping, and supervision shall comply with the World Bank's ESS4 requirements, national law, Good International Industry Practice (GIIP), and principles of proportionality.*
- ii. *Measures shall ensure protection of project workers, assets, sites, and activities without infringing on community rights.*

# Key Personnel

## Contractor's Representative and Key Personnel

| Item No. | Position/specialization   | Relevant academic qualifications                                                                                                                                                                                                                   | Minimum years of relevant work experience |
|----------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| 1        | Project Manager           | BSc. Civil Engineering, BSc. Civil/Water/Irrigation Engineering, BSc. Surveying or equivalent<br><br>Registered with the Engineers Board of Kenya (EBK) or equivalent.                                                                             | 3                                         |
| 2        | Environmental Specialist/ | Degree in Environmental Science, BSc Environmental Health and Safety or related field.<br><br>Registered with the Environmental Institute of Kenya and a registered NEMA expert or registered with the Directorate of Occupation Health and safety | 3                                         |
| 3        | Foreman                   | Diploma in Civil Engineering/Building and Construction or equivalent.                                                                                                                                                                              | 3                                         |
| 4        | Sociologist               | Degree in Sociology/Community Development or equivalent.                                                                                                                                                                                           | 3                                         |

# Drawings

Refer Volume 1.3



**Supplementary Information None**



## **PART 3 – Conditions of Contract and Contract Forms**

## **Section VIII - General Conditions of Contract (Not Applicable)**

These General Conditions of Contract (GCC), read in conjunction with the Particular Conditions of Contract (PCC) 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.

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**General Conditions of Contract**  
**A. General**

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## 1. Definitions

Boldface 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 Employer and the Contractor to resolve disputes in the first instance, as provided for in GCC Clause 23.
- (d) “**Bank**” means the financing institution **named in the PCC**.
- (e) “**Bill of Quantities**” means the priced and completed Bill of Quantities forming part of the Bid.
- (f) “**Compensation Events**” are those defined in GCC Clause 42 hereunder.
- (g) The “**Completion Date**” is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 55.1.
- (h) The “**Contract**” is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.
- (i) The “**Contractor**” is the party whose Bid to carry out the Works has been accepted by the Employer.
- (j) The “**Contractor’s Bid**” is the completed bidding document submitted by the Contractor to the Employer.
- (k) The “**Contract Price**” is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.
- (l) “**Days**” are calendar days; months are calendar months.
- (m) “**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.

- (n) A “**Defect**” is any part of the Works not completed in accordance with the Contract.
- (o) The “**Defects Liability Certificate**” is the certificate issued by Project Manager upon correction of defects by the Contractor.
- (p) The “**Defects Liability Period**” is the period **named in the PCC** pursuant to GCC Sub-Clause 36.1 and calculated from the Completion Date.
- (q) “**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 Employer in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.
- (r) The “**Employer**” is the party who employs the Contractor to carry out the Works, **as specified in the PCC**.
- (s) “**Equipment**” is the Contractor’s machinery and vehicles brought temporarily to the Site to construct the Works.
- (t) “**In writing**” or “**written**” means hand-written, type-written, printed or electronically made, and resulting in a permanent record;
- (u) The “**Initial Contract Price**” is the Contract Price listed in the Employer’s Letter of Acceptance.
- (v) 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 PCC**. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.
- (w) “**Materials**” are all supplies, including consumables, used by the Contractor for incorporation in the Works.
- (x) “**Plant**” is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.
- (y) The “**Project Manager**” is the person **named in the PCC** (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract.





- (z) **“PCC”** means Particular Conditions of Contract.
- (aa) The **“Site”** is the area **defined as such in the PCC**.
- (bb) **“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.
- (cc) **“Specifications”** means the Specifications of the Works included in the Contract and any modification or addition made or approved by the Project Manager.
- (dd) The **“Start Date”** is **given in the PCC**. 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.
- (ee) 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.
- (ff) **“Temporary Works”** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.
- (gg) A **“Variation”** is an instruction given by the Project Manager which varies the Works.
- (hh) The **“Works”** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, **as defined in the PCC**.
- (ii) **“Contractor’s Personnel”** refers to all personnel whom the Contractor utilizes on the Site or other places where the Works are carried out, including the staff, labor and other employees of each Subcontractor.
- (jj) **“Key Personnel”** means the positions (if any) of the Contractor’s personnel that are stated in the Specifications.
- (kk) **“ES”** means Environmental and Social (including Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH);
- (ll) **“Sexual Exploitation and Abuse” “(SEA)”** means the following:
  - “Sexual Exploitation”** is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not

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limited to, profiting monetarily, socially or politically from the sexual exploitation of another;

**“Sexual Abuse”** is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;

(mm) **“Sexual Harassment” “(SH)”** is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature by the Contractor’s Personnel with other Contractor’s or Employer’s Personnel; and

(nn) **“Employer’s Personnel”** refers to the Project Manager and all other staff, labor and other employees (if any) of the Project Manager and of the Employer engaged in fulfilling the Employer’s obligations under the Contract; and any other personnel identified as Employer’s Personnel, by a notice from the Employer or the Project Manager to the Contractor.

## 2. Interpretation

2.1 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.

2.2 If sectional completion is **specified in the PCC**, 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).

2.3 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) Particular Conditions of Contract,
- (e) General Conditions of Contract, including Appendices,
- (f) Specifications,
- (g) Drawings,

- (h) Bill of Quantities,<sup>13</sup> and
  - (i) any other document **listed in the PCC** as forming part of the Contract.
- 3. Language and Law**
  - 3.1 The language of the Contract and the law governing the Contract are **stated in the PCC**.
  - 3.2 Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Employer's country when
    - (a) as a matter of law or official regulations, the Borrower's country 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, the Borrower's Country 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 Employer and the Contractor in the role representing the Employer.
- 5. Delegation**
  - 5.1 Otherwise **specified in the PCC**, 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 Employer in writing. Subcontracting shall not alter the Contractor's obligations. The Contractor shall require that its Subcontractors execute the Works in accordance with the Contract, including complying with the relevant ES requirements and the obligations set out in Sub-Clause 26.1 of the General Conditions of Contract.
- 8. Other Contractors**
  - 8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as **referred to in the PCC**. The Contractor shall also provide

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<sup>13</sup> In lump-sum contracts, delete "Bill of Quantities" and replace with "Activity Schedule."

Facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification. The Contractor Shall cascade C-ESMP and all other training materials to other sub tractors in the site.

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**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 The Project Manager may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Key Personnel (if any), who:
- (a) persists in any misconduct or lack of care;
  - (b) carries out duties incompetently or negligently;
  - (c) fails to comply with any provision of the Contract;
  - (d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment;
  - (e) based on reasonable evidence, is determined to have engaged in Fraud and Corruption during the execution of the Works;
  - (f) has been recruited from the Employer's Personnel;
  - (g) Undertakes behavior which breaches the Code of Conduct for Contractor's Personnel (ES).

If appropriate, the Contractor shall then promptly appoint (or cause to be appointed) a suitable replacement with equivalent skills and experience.

Notwithstanding any requirement from the Project Manager to remove or cause to remove any person, the Contractor shall take immediate action as appropriate in response to any violation of (a) Through (g) above. Such immediate action shall include removing (or causing to be removed) from the Site or other places where the Works are being carried out, any Contractor's Personnel who engages in (a), (b), (c), (d), (e) or (g) above or has been recruited as stated in (f) above."

**9.3 Labor**

- 9.3.1 *Engagement of Staff and Labor.* The Contractor shall provide and employ on the Site for the execution of the Works such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within the Country.

Unless otherwise provided in the Contract, the Contractor shall be responsible for the recruitment, transportation, accommodation and welfare facilities in accordance with GCC Sub-Clause 9.3.6, of the Contractor's Personnel, and for all payments in connection therewith.

- 9.3.2 *Conditions of Labor.* The Contractor shall pay rates of wages, and observe conditions of labor, which comply with all applicable laws. The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of the Country for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.

Working hours and wages: Contractor to ensure terms of engagement is clearly communicated to workers in a language they understand.

- 9.3.3 The Contractor may bring in to the Country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required residence visas and work permits. The Employer will, if requested by the Contractor, use its best endeavors in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national, or government permission required for bringing in the Contractor's personnel.
- 9.3.4 The Contractor shall at its own expense provide the means of repatriation to and the Contractor's Personnel employed on the Contract at the Site to their various home countries. It shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Contractor defaults in providing such means of transportation and temporary maintenance, the Employer may provide the same to such personnel and recover the cost of doing so from the Contractor.
- 9.3.5 *Disorderly conduct.* The Contractor shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous or disorderly conduct or behavior by or amongst the Contractor's Personnel.
- 9.3.6 *Facilities for Staff and Labor.* Except as otherwise stated in the Specifications, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel. The Contractor shall also provide facilities for the Employer's Personnel as stated in the Specification.

- 9.3.7 The Contractor shall, in all dealings with the Contractor's Personnel, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labor. The Contractor shall provide the Contractor's Personnel annual holiday and sick, maternity and family leave, as required by applicable laws or as stated in the Specification.
- 9.3.8 *Supply of Foodstuffs.* The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.
- 9.3.9 *Supply of Water.* The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.
- 9.3.10 *Measures against Insect and Pest Nuisance.* The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.
- 9.3.11 *Alcoholic Liquor or Drugs.* The Contractor shall not, otherwise than in accordance with the laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereto by Contractor's Personnel.
- 9.3.12 *Arms and Ammunition.* The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.
- 9.3.13 *Funeral Arrangements.* The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of its local employees who may die while engaged upon the Works.
- 9.3.14 *Forced Labor.* The Contractor, including its Subcontractors, shall not employ or engage forced labor. Forced labor consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements.

No persons shall be employed or engaged who have been subject to trafficking. Trafficking in persons is defined as the recruitment, transportation, transfer, harboring or receipt of persons by means of the threat or use of force or other forms of coercion, abduction, fraud, deception, abuse of power, or of a

Position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purposes of exploitation.

9.3.15 *Child Labor.* The Contractor, including its Subcontractors, shall not employ or engage a child under the age of 18 unless the national law specifies a higher age (the minimum age).

The Contractor, including its Subcontractors, shall not employ or engage a child between the minimum age and the age of 18 in a manner that is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

The Contractor including its Subcontractors, shall only employ or engage persons of the right age of 18 after an appropriate risk assessment has been conducted by the Contractor with the Project Manager's approval. The Contractor shall be subject to regular monitoring by the Project Manager that includes monitoring of health, working conditions and hours of work.

Work considered hazardous for children is work that, by its nature or the circumstances in which it is carried out, is likely to jeopardize the health, safety, or morals of children. Such work activities prohibited for children include work:

- (a) with exposure to physical, psychological or sexual abuse;
- (b) underground, underwater, working at heights or in confined spaces;
- (c) with dangerous machinery, equipment or tools, or involving handling or
- (d) transport of heavy loads;
- (e) in unhealthy environments exposing children to hazardous substances, agents, or processes, or to temperatures, noise or vibration damaging to health; or
- (f) Under difficult conditions such as work for long hours, during the night or in confinement on the premises of the employer.

9.3.16 *Employment Records of Workers.* The Contractor shall keep complete and accurate records of the employment of labor at the Site. The records shall include the names, ages, genders, hours worked, and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the project Manager.



9.3.17 *Workers' Organizations.* The contractor shall allow for workers' rights to form and to join workers' organizations of their choosing and to bargain collectively without interference, the Contractor shall comply with such laws. In such circumstances, the role of legally established workers' organizations and legitimate workers' representatives will be respected, and they will be provided with information needed for meaningful negotiation in a timely manner. Where the relevant labor laws substantially restrict workers' organizations, the Contractor shall enable alternative means for the Contractor's Personnel to express their grievances and protect their rights regarding working conditions and terms of employment. The Contractor shall not seek to influence or control these alternative means. The Contractor shall not discriminate or retaliate against the Contractor's Personnel who participate, or seek to participate, in such organizations and collective bargaining or alternative mechanisms. Workers' organizations are expected to fairly represent the workers in the workforce.

9.3.18 *Non-Discrimination and Equal Opportunity.* The Contractor shall not make decisions relating to the employment or treatment of Contractor's Personnel on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment of Contractor's Personnel on the principle of equal opportunity and fair treatment (. ***(at least 70% of casual workers)*** and ***strictly adhere to 1/3 gender rules***, and shall not discriminate with respect to any aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices.

Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination. The Contractor shall provide protection and assistance as necessary to ensure non-discrimination and equal opportunity, including for specific groups such as women, people with disabilities, migrant workers and children (of working age in accordance with GCC Sub-Clause 9.3.15).

9.3.19 *Contractor's Personnel Grievance Mechanism.* The Contractor shall have a grievance mechanism for Contractor's Personnel, and where relevant the workers' organizations stated in GCC Sub-Clause 9.3.17, to raise workplace concerns. The grievance mechanism shall be proportionate to the nature, scale, risks and impacts of the Contract. The mechanism shall address concerns

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Promptly, using an understandable and transparent process that provides timely feedback to those concerned in a language they understand, without any retribution, and shall operate in an independent and objective manner.

The Contractor's Personnel shall be informed of the grievance mechanism at the time of engagement for the Contract, and the measures put in place to protect them against any reprisal for its use. Measures will be put in place to make the grievance mechanism easily accessible to all Contractor's Personnel.

The grievance mechanism shall not impede access to other judicial or administrative remedies that might be available, or substitute for grievance mechanisms provided through collective agreements.

The grievance mechanism may utilize existing grievance mechanisms, providing that they are properly designed and implemented, address concerns promptly, and are readily accessible to Contractor's Personnel. Existing grievance mechanisms may be supplemented as needed with Contract-specific arrangements.

Contractor to ensure incidents are reported within the stipulated time and corrective measures put in place

- 9.3.20 *Training of Contractor's Personnel.* The Contractor shall provide appropriate training to relevant Contractor's Personnel on ES aspects of the Contract, including appropriate sensitization on prohibition of SEA and SH, and health and safety training.

As stated in the Specification or as instructed by the Project Manager, the Contractor shall also allow appropriate opportunities for the relevant Contractor's Personnel to be trained on ES aspects of the Contract by the Employer's Personnel.

The Contractor shall provide training on SEA, including its prevention, to any of its personnel who has a role to supervise other Contractor's Personnel.

Contractor will also conduct sensitization on HIV/AIDS and provide IEC materials in selected areas.

**10. Employer's  
and  
Contractor's  
Risks**

- 10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

**11. Employer's  
Risks**

11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Employer's risks:

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

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- (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or
  - (ii) Negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.
- (b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer'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 an Employer's risk except loss or damage due to

- (a) a Defect which existed on the Completion Date,
- (b) an event occurring before the Completion Date, which was not itself an Employer's risk, or
- (c) 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 Employer's risks are Contractor's risks.

## **13. Insurance**

13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles **stated in the PCC** for the following events which are due to the Contractor's risks:

- (a) loss of or damage to the Works, Plant, and Materials;
- (b) loss of or damage to Equipment;
- (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
- (d) Personal injury or death.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide

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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 Employer may affect the insurance which the Contractor should have provided and recover the premiums the Employer 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 PCC**, 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.

16.2 The Contractor shall not carry out mobilization to the Site unless the Project Manager gives approval, an approval that shall not be unreasonably delayed, to the measures the Contractor proposes to address environmental and social risks and impacts, which at a minimum shall include applying the Management Strategies and Implementation Plans (MSIPs) and Code of Conduct for Contractor's Personnel submitted as part of the Bid and agreed as part of the Contract.

The Contractor shall submit, to the Project Manager for its approval any additional MSIPs as are necessary to manage the ES risks and impacts of ongoing Works. These MSIPs collectively comprise the Contractor's Environmental and Social Management Plan (C-ESMP). The Contractor shall review the C-ESMP, periodically (but not less than every six (6) months), and update it as required to ensure that it contains measures appropriate to the Works. The updated C-ESMP shall be submitted to the Project Manager for its approval.

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**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. Health, Safety and Protection of the Environment**

- 18.1 The Contractor shall be responsible for the safety of all activities on the Site.
- 18.2 The Contractor shall:
- (a) comply with all applicable health and safety regulations and Laws;
  - (b) comply with all applicable health and safety obligations specified in the Contract;
  - (c) take care for the health and safety of all persons entitled to be on the Site and other places, if any, where the Works are being executed;
  - (d) keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons;
  - (e) provide fencing, lighting, safe access, guarding and watching of:
    - (i) the Works until the Works are taken over by the Employer; and
    - (ii) any part of the Works where the Contractor is executing outstanding works or remedying any defects during the Defects Liability Period; and
  - (f) Provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.
- 18.3 Protection of the environment
- The Contractor shall take all necessary measures to:
- (a) protect the environment (both on and off the Site); and

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- (b) Limit damage and nuisance to people and property resulting from pollution, noise and other results of the Contractor's operations and/ or activities.

The Contractor shall ensure that emissions, surface discharges, effluent and any other pollutants from the Contractor's activities shall exceed neither the values indicated in the Specification, nor those prescribed by applicable laws.

In the event of damage to the environment, property and/or nuisance to people, on or off Site as a result of the Contractor's operations, the Contractor shall agree with the Project Manager the appropriate actions and time scale to remedy, as practicable, the damaged environment to its former condition. The Contractor shall implement such remedies at its cost to the satisfaction of the Project Manager

**19. Archaeological and Geological Findings**

19.1 All fossils, coins, articles of value or antiquity, structures, groups of structures, and other remains or items of geological, archaeological, paleontological, historical, architectural or religious interest found on the Site shall be placed under the care and custody of the Employer. The Contractor shall:

- (a) take all reasonable precautions, including fencing-off the area or site of the finding, to avoid further disturbance and prevent Contractor's Personnel or other persons from removing or damaging any of these findings;
- (b) train relevant Contractor's Personnel on appropriate actions to be taken in the event of such findings; and
- (c) Implement any other action consistent with the requirements of the Specification and relevant laws.
- (d) Contractor will adhere to provisions of chance finds and liaise with the museums of Kenya on any find.

The Contractor shall, as soon as practicable after discovery of any such finding, 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 Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date **stated in the PCC**, the Employer 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.

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**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 Inspections & Audit by the Bank**

Pursuant to paragraph 2.2 e. of Appendix A to the GCC- Fraud and Corruption, the Contractor shall permit and shall cause its agents (where declared or not), subcontractors, sub consultants, service providers, suppliers, and personnel, to permit, the Bank and/or persons appointed by the Bank to inspect the site and/or the accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have such accounts, records and other documents audited by auditors appointed by the Bank. The Contractor's and its Subcontractors' and sub consultants' attention is drawn to GCC Sub-Clause 25.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures).

**23. Appointment  
of the  
Adjudicator**

23.1 The Adjudicator shall be appointed jointly by the Employer and the Contractor, at the time of the Employer's issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Employer does not agree on the appointment of the Adjudicator, the Employer will request the Appointing Authority **designated in the PCC**, to appoint the Adjudicator within 14 days of receipt of such request.

23.2 Should the Adjudicator resign or die, or should the Employer 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 Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority **designated in the PCC** at the request of either party, within 14 days of receipt of such request.



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#### 24. Procedure for Disputes

- 24.1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within 14 days of the notification of the Project Manager's decision.
- 24.2 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.
- 24.3 The Adjudicator shall be paid by the hour at the **rate specified in the PCC**, together with reimbursable expenses of the types **specified in the PCC**, and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision shall be final and binding.
- 24.4 The arbitration shall be conducted in accordance with the arbitration procedures published by the institution named and, in the place, **specified in the PCC**.

#### 25. Fraud and Corruption

- 25.1 The Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in Appendix A to the GCC.
- 25.2 The Employer 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.

#### 26. Code of Conduct

- 26.1 The Contractor shall have a Code of Conduct for the Contractor's Personnel.
- The Contractor shall take all necessary measures to ensure that each Contractor's Personnel is made aware of the Code of Conduct including specific behaviors that are prohibited, and understands the consequences of engaging in such prohibited behaviors.
- These measures include providing instructions and documentation that can be understood by the Contractor's Personnel and seeking to obtain that person's signature

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Acknowledging receipt of such instructions and/or documentation, as appropriate.

The Contractor shall also ensure that the Code of Conduct is visibly displayed in multiple locations on the Site and any other place where the Works will be carried out, as well as in areas outside the Site accessible to the local community and project affected people. The posted Code of Conduct shall be provided in languages comprehensible to Contractor's Personnel, Employer's Personnel and the local community.

The Contractor's Management Strategy and Implementation Plans shall include appropriate processes for the Contractor to verify compliance with these obligations.

**27. Security of the Site**

27.1 The Contractor shall be responsible for the security of the Site, and:

- (a) for keeping unauthorized persons off the Site;
- (b) Authorized persons shall be limited to the Contractor's Personnel, the Employer's personnel, and to any other personnel identified as authorized personnel (including the Employer's other contractors on the Site), by a notice from the Employer or the Project Manager to the Contractor.

The Contractor shall (i) conduct appropriate background checks on any personnel retained to provide security; (ii) train the security personnel adequately (or determine that they are properly trained) in the use of force (and where applicable, firearms), and appropriate conduct towards Contractor's Personnel, Employer's Personnel and affected communities; and (iii) require the security personnel to act within the applicable Laws and any requirements set out in the Specification.

The Contractor shall not permit any use of force by security personnel in providing security except when used for preventive and defensive purposes in proportion to the nature and extent of the threat.

In making security arrangements, the Contractor shall also comply with any additional requirements stated in the Specification."

**B. Time Control**

**28. Program**

28.1 Within the time **stated in the PCC**, 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

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Program shall be consistent with those in the Activity Schedule. 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.

- 28.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.
- 28.3 The Contractor shall monitor progress of the Works and submit to the Project manager progress report and any updated Program showing the actual progress achieved and the effect of the progress achieved on the timing of the remaining Works, including any changes to the sequence of the activities, at intervals no longer than the period **stated in the PCC**. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount **stated in the PCC** 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 lump-sum Contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.
- 28.4 Unless otherwise stated in the Specification, each progress report shall include the Environmental and Social (ES) metrics set out in Appendix B
- 28.5 In addition to the progress report, the Contractor shall inform the Project Manager immediately of any allegation, incident or accident in the Site, which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Employer's Personnel, or Contractor's Personnel. This includes, but is not limited to, any incident or accident causing fatality or serious injury; significant adverse effects or damage to private property; or any allegation of SEA and/or SH. In case of SEA and/or SH, while maintaining confidentiality as appropriate, the type of allegation (sexual exploitation, sexual abuse or sexual harassment), gender and age of the person who experienced the alleged incident should be included in the information.

The Contractor, upon becoming aware of the allegation, incident or accident, shall also immediately inform the Project Manager of any such incident or accident on the Subcontractors' or suppliers' premises relating to the Works which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Employer's Personnel, or Contractor's,

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its Subcontractors' and suppliers' personnel. The notification shall provide sufficient detail regarding such incidents or accidents. The Contractor shall provide full details of such incidents or accidents to the Project Manager within the timeframe agreed with the Project Manager.

The Contractor shall require its Subcontractors and suppliers (other than Subcontractors) to immediately notify the Contractor of any incidents or accidents referred to in this Subclause.

**29. Extension of the Intended Completion Date**

29.1 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.

29.2 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.

**30. Acceleration**

30.1 When the Employer 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 Employer accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Employer and the Contractor.

30.2 If the Contractor's priced proposals for an acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.

**31. Delays Ordered by the Project Manager**

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

**32. Management Meetings**

32.1 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.

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

- 33. Early Warning**
- 33.1 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.
- 33.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

### **C. Quality Control**

- 34. Identifying Defects**
- 34.1 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.
- 35. Tests**
- 35.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specifications 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.
- 36. Correction of Defects**
- 36.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is **defined in the PCC**. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 36.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.

37. **Uncorrected Defects**      37.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

**D. Cost Control**

38. **Contract Price<sup>14</sup>**      38.1 The Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.
39. **Changes in the Contract Price<sup>15</sup>**      39.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change. The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Employer.
- 39.2 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.
40. **Variations**      40.1 All Variations shall be included in updated Programs<sup>16</sup> produced by the Contractor.
- 40.2 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Contractor shall also provide information of any ES risks and impacts of the Variation. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period

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<sup>14</sup> In lump-sum contracts, replace GCC Sub-Clauses 38.1 as follows:

38.1 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.

<sup>15</sup> In lump-sum contracts, replace entire GCC Clause 39 with new GCC Sub-Clause 39.1, as Follows:

39.1 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.

- 16 In lump-sum contracts, add “and Activity Schedules” after “Programs.”

stated by the Project Manager and before the Variation is ordered.

- 40.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.
- 40.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.
- 40.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.
- 40.6 If the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in GCC 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.<sup>17</sup>
- 40.7 Value Engineering: The Contractor may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following;
- (a) the proposed change(s), and a description of the difference to the existing contract requirements;
  - (b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle cost) the Employer may incur in implementing the value engineering proposal;
  - (c) a description of any effect(s) of the change on performance/functionality; and
  - (d) a description of the proposed work to be performed, a program for its execution and sufficient ES information to enable an evaluation of ES risks and impacts.

The Employer may accept the value engineering proposal if the proposal demonstrates benefits that:

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<sup>17</sup> In lump-sum contracts, delete this paragraph.



- (a) accelerates the contract completion period; or
  - (b) reduces the Contract Price or the life cycle costs to the Employer; or
  - (c) improves the quality, efficiency, safety or sustainability of the Facilities; or
  - (d) Yields any other benefits to the Employer,
- without compromising the functionality of the Works.

If the value engineering proposal is approved by the Employer 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 PCC** 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.

#### 41. Cash Flow Forecasts

41.1 When the Program,<sup>18</sup> 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.

#### 42. Payment Certificates

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

42.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

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

42.4 The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed.<sup>19</sup>

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

42.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item

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<sup>18</sup> In lump-sum contracts, add "or Activity Schedule" after "Program."

<sup>19</sup> In 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."

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Previously certified in any certificate in the light of later information.

42.7 If the Contractor was, or is, failing to perform any ES obligations or work under the Contract, the value of this work or obligation, as determined by the Project Manager, may be withheld until the work or obligation has been performed, and/or the cost of rectification or replacement, as determined by the Project Manager, may be withheld until rectification or replacement has been completed. Failure to perform includes, but is not limited to the following:

- (a) failure to comply with any ES obligations or work described in the Works' Requirements which may include: working outside site boundaries, excessive dust, failure to keep public roads in a safe usable condition, damage to offsite vegetation, pollution of water courses from oils or sedimentation, contamination of land e.g. from oils, human waste, damage to archeology or cultural heritage features, air pollution as a result of unauthorized and/or inefficient combustion;
- (b) failure to regularly review C-ESMP and/or update it in a timely manner to address emerging ES issues, or anticipated risks or impacts;
- (c) failure to implement the C-ESMP e.g. failure to provide required training or sensitization;
- (d) failing to have appropriate consents/permits prior to undertaking Works or related activities;
- (e) failure to submit ES report/s (as described in Appendix B), or failure to submit such reports in a timely manner;

Failure to implement remediation as instructed by the Project Manager within the specified timeframe (e.g. remediation addressing non-compliance/s).

## **43. Payments**

43.1 Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 28 days of the date of each certificate. If the Employer 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.

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- 43.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 43.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.
- 43.4 Items of the Works for which no rate or price has been entered in shall not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

**44. Compensation  
Events**

- 44.1 The following shall be Compensation Events:
- (a) The Employer does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.
  - (b) The Employer modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.
  - (c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.
  - (d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.
  - (e) The Project Manager unreasonably does not approve a subcontract to be let.
  - (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.
  - (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
  - (h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
  - (i) The advance payment is delayed.

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- (j) The effects on the Contractor of any of the Employer's Risks.
  - (k) The Project Manager unreasonably delays issuing a Certificate of Completion.

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

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

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

#### 45. Tax

45.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 28 days before the submission of 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 47.

#### 46. Currencies

46.1 Where payments are made in currencies other than the currency of the Employer's country **specified in the PCC**, the exchange rates used for calculating the amounts to be paid shall be the exchange rates stated in the Contractor's Bid.

#### 47. Price Adjustment

47.1 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the PCC**. 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 to each Contract currency:

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$$P_c = A_c + B_c \text{ Imc/Ioc}$$

where:

$P_c$  is the adjustment factor for the portion of the Contract Price payable in a specific currency “c.”

$A_c$  and  $B_c$  are coefficients<sup>20</sup> **specified in the PCC**, representing the nonadjustable and adjustable portions, respectively, of the Contract Price payable in that specific currency “c;” and

$Imc$  is the index prevailing at the end of the month being invoiced and  $Ioc$  is the index prevailing 28 days before Bid opening for inputs payable; both in the specific currency “c.”

47.2 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.

#### 48. Retention

48.1 The Employer shall retain from each payment due to the Contractor the proportion **stated in the PCC** until Completion of the whole of the Works.

48.2 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC Sub-Clause 55.1, 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.

#### 49. Liquidated Damages

49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day **stated in the PCC** 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 PCC**. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor’s Liabilities.

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<sup>20</sup> The sum of the two coefficients  $A_c$  and  $B_c$  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 nonadjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other nonadjustable

Components. The sum of the adjustments for each currency are added to the Contract Price.

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- 49.2 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 43.1.
- 50. Bonus**
- 50.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day **stated in the PCC** 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.
- 51. Advance Payment**
- 51.1 The Employer shall make advance payment to the Contractor of the amounts **stated in the PCC** by the date **stated in the PCC**, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. 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.
- 51.2 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.
- 51.3 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.
- 52. Securities**
- 52.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the PCC**, by a bank or surety acceptable to the Employer, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 days from the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year from the date of

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Issue of the Certificate of Completion in the case of a Performance Bond.

- 53. Day works**
- 53.1 If applicable, the Day works 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.
- 53.2 All work to be paid for as Day works 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.
- 53.3 The Contractor shall be paid for Day works subject to obtaining signed Day works forms.
- 54. Cost of Repairs**
- 54.1 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**

- 55. Completion**
- 55.1 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.
- 56. Taking Over**
- 56.1 The Employer shall take over the Site and the Works within seven days of the Project Manager's issuing a certificate of Completion.
- 57. Final Account**
- 57.1 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.



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**58. Operating and Maintenance Manuals**

- 58.1 If “as built” Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates **stated in the PCC**.
- 58.2 If the Contractor does not supply the Drawings and/or manuals by the dates **stated in the PCC** pursuant to GCC Sub-Clause 60.1, or they do not receive the Project Manager’s approval, the Project Manager shall withhold the amount **stated in the PCC** from payments due to the Contractor.

**59. Termination**

- 59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.
- 59.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:
- (a) the Contractor stops work for 28 days when no stoppage of work is shown on the current 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 28 days;
  - (c) the Employer 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 Employer 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 PCC**; or
  - (h) if the Contractor, in the judgment of the Employer 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 Employer may, after giving fourteen (14) days written

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Notice to the Contractor, terminate the Contract and expel him from the Site.

59.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

59.4 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.

59.5 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 59.2 above, the Project Manager shall decide whether the breach is fundamental or not.

**60. Payment upon Termination**

60.1 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 PCC**. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

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

**61. Property**

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

**62. Release from Performance**

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

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**63. Suspension of  
Bank Loan or  
Credit**

63.1 In the event that the Bank suspends the Loan or Credit to the Employer, from which part of the payments to the Contractor are being made:

- (a) The Employer is obligated to notify the Contractor of such suspension within 7 days of having received the Bank's suspension notice.
- (b) If the Contractor has not received sums due to it within the 28 days for payment provided for in GCC Sub-Clause 43.1, the Contractor may immediately issue a 14-day termination notice.

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## **APPENDIX A TO GENERAL CONDITIONS**

### **Fraud and Corruption** *(Text in this Appendix shall not be modified)*

#### **1. Purpose**

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

#### **2. Requirements**

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (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, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

- a. Defines, for the purposes of this provision, 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:
    - (c) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

- (d) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.
- b. Rejects a proposal for award if the Bank 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;
- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring mis procurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti- Corruption Guidelines and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;<sup>21</sup> (ii) to be a nominated<sup>22</sup> sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders(applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect<sup>23</sup> 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 Bank.

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<sup>21</sup> For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre- qualification, expressing interest in a consultancy, and bidding, 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.

<sup>22</sup> A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are Used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

<sup>23</sup> Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-

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Finding activities undertaken by the Bank or

Persons appointed by the Bank 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.

## APPENDIX B

### Environmental and Social (ES) Metrics for Progress Reports

*Metrics for regular reporting:*

- a. environmental incidents or non-compliances with contract requirements, including contamination, pollution or damage to ground or water supplies;*
- b. health and safety incidents, accidents, injuries that require treatment and all fatalities;*
- c. interactions with regulators: identify agency, dates, subjects, outcomes (report the negative if none);*
- d. status of all permits and agreements:*
  - i. work permits: number required, number received, actions taken for those not received;
  - ii. status of permits and consents:
    - list areas/facilities with permits required (quarries, asphalt & batch plants), dates of application, dates issued (actions to follow up if not issued), dates submitted to resident engineer (or equivalent), status of area (waiting for permits, working, abandoned without reclamation, decommissioning plan being implemented, etc.);
    - list areas with landowner agreements required (borrow and spoil areas, camp sites), dates of agreements, dates submitted to resident engineer (or equivalent);
    - identify major activities undertaken in each area in the reporting period and highlights of environmental and social protection (land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation);
    - for quarries: status of relocation and compensation (completed, or details of activities and current status in the reporting period).
- e. health and safety supervision:*
  - i. safety officer: number days worked, number of full inspections & partial inspections, reports to construction/project management;

- ii. number of workers, work hours, metric of PPE use (percentage of workers with full personal protection equipment (PPE), partial, etc.), worker violations observed (by type of violation, PPE or otherwise), warnings given, repeat warnings given, follow-up actions taken (if any);
- f. *worker accommodations:*
  - i. number of expats housed in accommodations, number of locals;
  - ii. date of last inspection, and highlights of inspection including status of accommodations' compliance with national and local law and good practice, including sanitation, space, etc.;
  - iii. Actions taken to recommend/require improved conditions, or to improve conditions.
- g. *Health services: provider of health services, information and/or training, location of clinic, number of non-safety disease or illness treatments and diagnoses (no names to be provided);*
- h. *gender (for expats and locals separately): number of female workers, percentage of workforce, gender issues raised and dealt with (cross-reference grievances or other sections as needed);*
- i. *training:*
  - i. number of new workers, number receiving induction training, dates of induction training;
  - ii. number and dates of toolbox talks, number of workers receiving Occupational Health and Safety (OHS), environmental and social training;
  - iii. Number and dates of communicable diseases (including STDs) sensitization and/or training, no. workers receiving training (in the reporting period and in the past); same questions for gender sensitization, flag person training.
  - iv. Number and date of SEA and SH prevention sensitization and/or training events, including number of workers receiving training on Code of Conduct for Contractor's Personnel (in the reporting period and in the past), etc.
- j. *environmental and social supervision:*
  - i. environmentalist: days worked, areas inspected and numbers of inspections of each (road section, work camp, accommodations, quarries, borrow areas, spoil areas, swamps, forest crossings, etc.), highlights of activities/findings (including violations of environmental and/or social best practices, actions taken), reports to environmental and/or social specialist/construction/site management;



- ii. sociologist: days worked, number of partial and full site inspections (by area: road section, work camp, accommodations, quarries, borrow areas, spoil areas, clinic, HIV/AIDS center, community centers, etc.), highlights of activities (including violations of environmental and/or social requirements observed, actions taken), reports to environmental and/or social specialist/construction/site management; and
  - iii. Community liaison person(s): days worked (hours community center open), number of people met, highlights of activities (issues raised, etc.), reports to environmental and/or social specialist /construction/site management.
- k. *Grievances*: list new grievances (e.g. number of allegations of SEA and SH) received in the reporting period and number of unresolved past grievances by date received, complainant's age and sex, how received, to whom referred to for action, resolution and date (if completed), data resolution reported to complainant, any required follow-up (Cross-reference other sections as needed):
  - i. Worker grievances;
  - ii. Community grievances
- l. *Traffic, road safety and vehicles/equipment*:
  - i. traffic and road safety incidents and accidents involving project vehicles & equipment: provide date, location, damage, cause, follow-up;
  - ii. traffic and road safety incidents and accidents involving non-project vehicles or property (also reported under immediate metrics): provide date, location, damage, cause, follow-up;
  - iii. Overall condition of vehicles/equipment (subjective judgment by environmentalist); non-routine repairs and maintenance needed to improve safety and/or environmental performance (to control smoke, etc.).
- m. *Environmental mitigations and issues (what has been done)*:
  - i. dust: number of working bowsters, number of watering/day, number of complaints, warnings given by environmentalist, actions taken to resolve; highlights of quarry dust control (covers, sprays, operational status); % of rock/ spoil lorries with covers, actions taken for uncovered vehicles;
  - ii. erosion control: controls implemented by location, status of water crossings, environmentalist inspections and results, actions taken to resolve issues, emergency repairs needed to control erosion/sedimentation;
  - iii. quarries, borrow areas, spoil areas, asphalt plants, batch plants: identify major activities undertaken in the reporting period at each, and highlights of environmental and social protection: land clearing, boundary marking,

Topsoil salvage, traffic management, decommissioning planning, decommissioning implementation;

- iv. blasting: number of blasts (and locations), status of implementation of blasting plan (including notices, evacuations, etc.), incidents of off-site damage or complaints (cross-reference other sections as needed);
- v. spill clean-ups, if any: material spilled, location, amount, actions taken, material disposal (report all spills that result in water or soil contamination);
- vi. waste management: types and quantities generated and managed, including amount taken offsite (and by whom) or reused/recycled/disposed on-site;
- vii. details of tree plantings and other mitigations required undertaken in the reporting period;
- viii. Details of water and swamp protection mitigations required undertaken in the reporting period.

*n. compliance:*

- i. compliance status for conditions of all relevant consents/permits, for the Work, including quarries, etc.): statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance;
- ii. compliance status of C-ESMP/ESIP requirements: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance
- iii. compliance status of SEA and SH prevention and response action plan: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance
- iv. compliance status of Health and Safety Management Plan re: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance
- v. Other unresolved issues from previous reporting periods related to environmental and social: continued violations, continued failure of equipment, continued lack of vehicle covers, spills not dealt with, continued compensation or blasting issues, etc. Cross-reference other sections as needed.

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## Section IX - Particular Conditions of Contract

| A. General          |                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GCC 1.1 (d)</b>  | The financing institution is: <b>World Bank</b>                                                                                                                                                                                                                                                                                                           |
| <b>GCC 1.1 (r)</b>  | <p>The Employer is</p> <p><b>DEPARTMENT OF AGRICULTURE, LIVESTOCK &amp; AQUACULTURE DEVELOPMENT (NATIONAL AGRICULTURAL VALUE CHAIN DEVELOPMENT PROJECT (NAVCDP))</b></p> <p><b>COUNTY GOVERNMENT OF NYERI</b></p> <p><b>P.O. Box 1112 - 10100 Nyeri</b></p> <p>E-mail: <a href="mailto:coagriculturenyeri@gmail.com">coagriculturenyeri@gmail.com</a></p> |
| <b>GCC 1.1 (v)</b>  | The Intended Completion Date for the whole of the Works shall be <b>180 days from the date of signing the contract.</b>                                                                                                                                                                                                                                   |
| <b>GCC 1.1 (y)</b>  | <p>The Project Manager is</p> <p><b>Eng. Simon .G. Gicuki</b></p> <p>Email: <a href="mailto:gicukisg@gmail.com">gicukisg@gmail.com</a></p> <p><b>EBK Registration Number: A2307</b></p> <p><b>P.O. Box 9019- 00300</b></p> <p><b>Nairobi</b></p>                                                                                                          |
| <b>GCC 1.1 (aa)</b> | The Site is located at <b>Nyeri County Governor's office parking lot located in Nyeri Town Hall along Kenyatta way.</b>                                                                                                                                                                                                                                   |
| <b>GCC 1.1 (dd)</b> | The Start Date shall be shall be advised by the employer.                                                                                                                                                                                                                                                                                                 |
| <b>GCC 1.1 (hh)</b> | The Works consist of <b>CONSTRUCTION OF A SEDIMENTATION BASIN, EXCAVATION AND LAYING OF MAINLINE,SUBMAIN AND LATERALS OF 15.8KM FOR KIHUYO IRRIGATION WATER PROJECT AND CONSTRUCTION OF THE SEDIMENTATION BASIN, INTAKE WING WALLS, MAINLINE (4.3KM) AND LATERAL LINES OF 0.3 KM FOR MARAGIMA/TAGWA IRRIGATION WATER PROJECT IN NYERI COUNTY</b>          |
| <b>GCC 2.2</b>      | Sectional Completions are:                                                                                                                                                                                                                                                                                                                                |
| <b>GCC 2.3(i)</b>   | The following documents also form part of the Contract: <b>Priced bill of quantities and measurements.</b>                                                                                                                                                                                                                                                |

|                |                                                |
|----------------|------------------------------------------------|
| <b>GCC 3.1</b> | The language of the contract is <b>English</b> |
|----------------|------------------------------------------------|

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | The law that applies to the Contract is the law <b>Republic of Kenya</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>GCC 5.1</b>                 | The Project manager <i>may</i> delegate any of his duties and responsibilities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>GCC 8.1</b>                 | Schedule of other contractors: <b><i>Not Applicable</i></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>GCC 13.1</b>                | <p>The minimum insurance amounts and deductibles shall be: <i>(As per laws of Kenya)</i></p> <p>(a) for loss or damage to the Works, Plant and Materials: <i>[insert amounts]</i>.<br/> <b>Minimum Amount: Contract Amount</b><br/> <b>Deductibles: 10% of Claimed Amount</b></p> <p>(b) For loss or damage to Equipment: <i>[insert amounts]</i>.<br/> <b>Minimum Amount: As per the Laws of Kenya</b><br/> <b>Deductibles: 10% of Claimed Amount</b></p> <p>(c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract <i>[insert amounts]</i>.<br/> <b>Minimum Amount: As per the Laws of Kenya</b><br/> <b>Deductibles: 10% of Claimed Amount</b></p> <p>(d) for personal injury or death:<br/> (i) of the Contractor's employees: <i>[amount]</i>.<br/> (ii) of other people: <i>[amount]</i>.<br/> <b>Minimum Amount: As per the Laws of Kenya</b><br/> (i) <b>Deductibles: 10% of Claimed Amount</b></p> |
| <b>GCC 14.1</b>                | Site Data are: <b>Nyeri County Governor's office parking lot located in Nyeri Town Hall along Kenyatta way.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>GCC 20.1</b>                | The Site Possession Date(s) shall be: <b>Within seven days upon signing of the Contract</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>GCC 23.1 &amp; GCC 23.2</b> | <p>Appointing Authority for the Adjudicator: <b>Chartered Institute of Arbitrators (Kenya Branch)</b></p> <p>The Adjudicator proposed by the Employer: The Adjudicator proposed by the Employer is:<br/> <b>Evans Lagat, FCI Arb</b><br/> <b>P.O. Box 12661-00100 Nairobi</b><br/> <b>Tel: 020 2020080/ 0721 539630</b><br/> <b>Email address: <a href="mailto:Evans@seslaw.co.ke">Evans@seslaw.co.ke</a></b></p> <p><b><u>Professional Qualifications</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|                        |                                                                                                                                                                                                                                                                                                                                                           |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <p><b>Advocate of the high court of Kenya, over 16 years' experience</b></p> <p><b>Qualified Arbitrator and a fellow of the Chartered Institute of Arbitrators (CIArb)</b></p> <p><b>Certified Public Secretary</b></p> <p><b>Certified Public Accountant</b></p> <p><b>Bachelors of Law Degree (LL.B)</b></p> <p><b>Master of Laws Degree (LL.M)</b></p> |
| <b>GCC 24.3</b>        | <p>Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: <b>Arbitrators fee per hour: Kes 25,000 (Kenyan shillings twenty five thousand).</b></p> <p><b>Arbitrators Administrative cost: 1.5% of the rate charges for arbitrator's fee</b></p>                                                                                    |
| <b>GCC 24.4</b>        | <p>Institution whose arbitration procedures shall be used: <b>Chartered Institute of Arbitration Board of Kenya (CIArB KENYA)</b></p> <p>The place of arbitration shall be: <b><i>Nairobi, Kenya.</i></b></p>                                                                                                                                             |
| <b>B. Time Control</b> |                                                                                                                                                                                                                                                                                                                                                           |
| <b>GCC 28.1</b>        | <p>The Contractor shall submit for approval a Program for the Works within <b>14 days (Fourteen)</b> from the date of the Letter of Acceptance.</p>                                                                                                                                                                                                       |
| <b>GCC 28.3</b>        | <p>The period between Program updates is <b>28 days.</b></p> <p>The amount to be withheld for late submission of an updated Program is <b>Ksh. 50,000/-</b></p> <p>The period for submission of progress reports is <b>28 days.</b></p>                                                                                                                   |

| <b>C. Quality Control</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GCC 36.1</b>           | The Defects Liability Period is: <b>91days from the date of completion</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>D. Cost Control</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>GCC 42.7</b>           | If the value engineering proposal is approved by the Employer the amount to be paid to the Contractor shall be <b>Not Applicable</b> of the reduction in the Contract Price.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>GCC 48.1</b>           | The currency of the Employer's Country is: <b>Kenya Shillings</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>GCC 49.1</b>           | <p>The Contract <b>is not</b> subject to price adjustment in accordance with GCC Clause 45, and the following information regarding coefficients <b>does not</b> apply.</p> <p>The coefficients for adjustment of prices are:</p> <p style="padding-left: 40px;">(a) For currency <b>Not Applicable</b> (i) <b>Not Applicable</b> percent non adjustable element (coefficient A).</p> <p style="padding-left: 40px;">(ii) <b>Not Applicable</b> percent adjustable element (coefficient B).</p> <p style="padding-left: 40px;">(b) For currency <b>Not Applicable</b></p> <p style="padding-left: 40px;">(i) <b>Not Applicable</b> percent non adjustable element (coefficient A).</p> <p style="padding-left: 40px;">(ii) <b>Not Applicable</b> percent adjustable element (coefficient B).</p> <p>The Index I for local currency shall be <b>Not Applicable</b></p> <p>The Index I for the specified international currency shall be <i>[insert index]</i>.</p> <p>The Index I for currencies other than the local currency and the specified international currency shall be <b>Not Applicable</b></p> |
| <b>GCC 50.1</b>           | The proportion of payments retained is: <b>ten percent (10%)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>GCC 51.1</b>           | The liquidated damages for the whole of the Works are <b>0.166 percent</b> per day. The maximum amount of liquidated damages for the whole of the Works is <b>ten percent (10%)</b> of the final Contract Price.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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|                                  |                                                                                                                                                                                                                                                                                                             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GCC 52.1</b>                  | The Bonus for the whole of the Works is <b>Not applicable</b> per day. The maximum amount of Bonus for the whole of the Works is <b>00% percent</b> of the final Contract Price.                                                                                                                            |
| <b>GCC 54.1</b>                  | The Performance Security will be in the form of a <b>demand guarantee</b> in the amount(s) of <b>10 % percent</b> of the Accepted Contract Amount and in the same currency (ies) of the Accepted Contract Amount.                                                                                           |
| <b>E. Finishing the Contract</b> |                                                                                                                                                                                                                                                                                                             |
| <b>GCC 60.1</b>                  | <p>The date by which operating and maintenance manuals are required is <b>within 7 days of the Project Manager's issuing a Certificate of Completion</b></p> <p>The date by which "as built" drawings are required is <b>within 7 days of the Project Manager's issuing a Certificate of Completion</b></p> |
| <b>GCC 60.2</b>                  | The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required in GCC Sub-Clause 60.1 is <b>5% of the contract amount</b> .                                                                                                             |
| <b>GCC 60.2 (g)</b>              | The maximum number of days is: <b>60 DAYS</b>                                                                                                                                                                                                                                                               |
| <b>GCC 62.1</b>                  | The percentage to apply to the value of the work not completed, representing the Employer's additional cost for completing the Works, is <b>115% of the value of the work not completed</b> .                                                                                                               |





## **Section X - Contract Forms**

### **Table of Forms**

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## ***Notification of Intention to Award***

**/This Notification of Intention to Award shall be sent to each Bidder that submitted a Bid./**

***[Send this Notification to the Bidder's Authorized Representative named in the Bidder Information Form]***

For the attention of Bidder's Authorized Representative

Name: *[insert Authorized Representative's name]*

Address: *[insert Authorized Representative's Address]*

Telephone/Fax numbers: *[insert Authorized Representative's telephone/fax numbers]*

Email Address: *[insert Authorized Representative's email address]*

***[IMPORTANT: insert the date that this Notification is transmitted to Bidders. The Notification must be sent to all Bidders simultaneously. This means on the same date and as close to the same time as possible.]***

**DATE OF TRANSMISSION:** This Notification is sent by: *[email/fax]* on *[date]* (local time)

### **Notification of Intention to Award**

**Employer:** *[insert the name of the Employer]*

**Project:** *[insert name of project]*

**Contract title:** *[insert the name of the contract]*

**Country:** *[insert country where RFB is issued]*

**Loan No. /Credit No. / Grant No.:** *[insert reference number for loan/credit/grant]*

**RFB No:** *[insert RFB 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:

1. request a debriefing in relation to the evaluation of your Bid, and/or
2. submit a Procurement-related Complaint in relation to the decision to award the contract.

### **1. The successful Bidder**

|                        |                                                      |
|------------------------|------------------------------------------------------|
| <b>Name:</b>           | <i>[insert name of successful Bidder]</i>            |
| <b>Address:</b>        | <i>[insert address of the successful Bidder]</i>     |
| <b>Contract price:</b> | <i>[insert contract price of the successful Bid]</i> |

2. **Other Bidders** [INSTRUCTIONS: insert names of all Bidders that submitted a Bid. If the Bid's price was evaluated include the evaluated price as well as the Bid price as read out.]

| Name of Bidder | Bid price          | Evaluated Bid price<br>(if applicable) |
|----------------|--------------------|----------------------------------------|
| [insert name]  | [insert Bid price] | [insert evaluated price]               |
| [insert name]  | [insert Bid price] | [insert evaluated price]               |
| [insert name]  | [insert Bid price] | [insert evaluated price]               |
| [insert name]  | [insert Bid price] | [insert evaluated price]               |
| [insert name]  | [insert Bid price] | [insert evaluated price]               |

3. **Reason/s why your Bid was unsuccessful**

**[INSTRUCTIONS: State the reason/s why this Bidder's Bid was unsuccessful. Do NOT include: (a) a point by point comparison with another Bidder's Bid or (b) information that is marked confidential by the Bidder in its Bid.]**

4. **How to request a debriefing**

**DEADLINE:** The deadline to request a debriefing expires at midnight on [insert date] (local time).

You may request a debriefing in relation to the results of the evaluation of your Bid. If you decide to request a debriefing your written request must be made within three (3) Business Days of receipt of this Notification of Intention to Award.

Provide the contract name, reference number, name of the Bidder, contact details; and address the request for debriefing as follows:

**Attention:** [insert full name of person, if applicable]

**Title/position:** [insert title/position]

**Agency:** [insert name of Employer]

**Email address:** [insert email address]

**Fax number:** [insert fax number] *delete if not used*

If your request for a debriefing is received within the 3 Business Days deadline, we will provide the debriefing within five (5) 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 (5) Business 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.

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.

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) Business Days from the date of publication of the Contract Award Notice.

## 5. How to make a complaint

**Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, *[insert date]* (local time).**

Provide the contract name, reference number, name of the Bidder, contact details; and address the Procurement-related Complaint as follows:

**Attention:** *[insert full name of person, if applicable]*

**Title/position:** *[insert title/position]*

**Agency:** *[insert name of Employer]*

**Email address:** *[insert email address]*

**Fax number:** *[insert fax number]* ***delete if not used***

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.

### Further information:

For more information see the [Procurement Regulations for IPF Borrowers \(Procurement Regulations\)\[https://policies.worldbank.org/sites/ppf3/PPFDocuments/Forms/DispPage.aspx?docid=4005\]](https://policies.worldbank.org/sites/ppf3/PPFDocuments/Forms/DispPage.aspx?docid=4005) (Annex III). You should read these provisions before preparing and submitting your complaint. In addition, the World Bank's Guidance "[How to make a Procurement-related Complaint](http://www.worldbank.org/en/projects-operations/products-and-services/brief/procurement-new-framework#framework)" [<http://www.worldbank.org/en/projects-operations/products-and-services/brief/procurement-new-framework#framework>] provides a useful explanation of the process, as well as a sample letter of complaint.

In summary, there are four essential requirements:

1. You must be an 'interested party'. In this case, that means a Bidder who submitted a Bid in this bidding process, and is the recipient of a Notification of Intention to Award.
2. The complaint can only challenge the decision to award the contract.
3. You must submit the complaint within the period stated above.
4. You must include, in your complaint, all of the information required by the Procurement Regulations (as described in Annex III).

## 6. Standstill Period

**DEADLINE:** The Standstill Period is due to end at midnight on *[insert date]* (local time).

The Standstill Period lasts ten (10) Business Days after the date of transmission of this Notification of Intention to Award.

The Standstill Period may be extended as stated in Section 4 above.

If you have any questions regarding this Notification, please do not hesitate to contact us.

On behalf of the Employer:

**Signature:** \_\_\_\_\_ **Name:** \_\_\_\_\_

**Title/position:** \_\_\_\_\_ **Telephone:** \_\_\_\_\_

\_\_\_\_\_ **Email:** \_\_\_\_\_

## Beneficial Ownership Disclosure Form

**INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM**

*This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful Bidder. In case of joint venture, the Bidder 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 Bidder is any natural person who ultimately owns or controls the Bidder by meeting one or more of the following conditions:*

*directly or indirectly holding 25% or more of the shares  
directly or indirectly holding 25% or more of the voting rights  
directly or indirectly having the right to appoint a majority of the  
board of directors or equivalent governing body of the Bidder*

**RFB No.:** *[insert number of RFB process]*

**Request For Bids No.:** *[insert identification]*

**To:** *[insert complete name of Employer]*

In response to your request in the Letter of Acceptance dated *[insert date of letter of Acceptance]* to furnish additional information on beneficial ownership: *[select one option as applicable and delete the options that are not applicable]*

(i) We hereby provide the following beneficial ownership information.

### Details of beneficial ownership

| Identity of Beneficial Owner                     | Directly or indirectly holding 25% or more of the shares<br>(Yes / No) | Directly or indirectly holding 25 % or more of the Voting Rights<br>(Yes / No) | Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Bidder<br>(Yes / No) |
|--------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>[include full name (last, middle, first),</i> |                                                                        |                                                                                |                                                                                                                                                         |

|                                           |  |  |  |
|-------------------------------------------|--|--|--|
| <i>nationality, country of residence]</i> |  |  |  |
|-------------------------------------------|--|--|--|

**OR**

(ii) *We declare that there is no Beneficial Owner meeting one or more of the following conditions:*

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder

**OR**

(iii) *We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Bidder shall provide explanation on why it is unable to identify any Beneficial Owner]*

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder]”

**Name of the Bidder:** *\*[insert complete name of the Bidder]*\_\_\_\_\_

**Name of the person duly authorized to sign the Bid on behalf of the Bidder:**

**\*\****[insert complete name of person duly authorized to sign the Bid]*\_\_\_\_\_

**Title of the person signing the Bid:** *[insert complete title of the person signing the Bid]*\_\_\_\_\_

**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]*\_\_\_\_\_

\* In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder. In the event that the Bidder is a joint venture, each reference to “Bidder” in the Beneficial Ownership Disclosure Form (including this Introduction thereto) shall be read to refer to the joint venture member.

\*\* Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.



***Letter of Acceptance***

***[On letterhead paper of the Employer]***

..... ***[Date]*** .....

To. .... ***[Name and address of the Contractor]*** .....

Subject:..... ***[Notification of Award Contract No]***.....

This is to notify you that your Bid dated .... ***[Insert date]*** .... for execution of the .....  
 . ***[Insert name of the contract and identification number, as given in the PCC]*** ***for the Accepted***  
Contract Amount of ..... ***[Insert amount in numbers and words and name of***  
***currency]***, as corrected and modified in accordance with the Instructions to Bidders is hereby  
accepted by our Agency.

You are requested to furnish (i) the Performance Security and an Environmental and Social  
(ES) Performance Security ***[Delete ES Performance Security if it is not required under the***  
***contract]*** within 28 days in accordance with the Conditions of Contract, using for that purpose  
the of the Performance Security Form and the ES Performance Security Form, ***[Delete***  
***reference to the ES Performance Security Form if it is not required under the contract]*** and  
(ii) The additional information on beneficial ownership in accordance with BDS ITB 47.1,  
within eight (8) Business days using the Beneficial Ownership Disclosure Form, included in  
Section X - Contract Forms, of the bidding document.

**[Choose one of the following statements:]**

We accept that \_\_\_\_\_ ***[insert the name of Adjudicator proposed***  
***by the Bidder]*** be appointed as the Adjudicator.

**[Or]**

We do not accept that \_\_\_\_\_ ***[insert the name of the Adjudicator***  
***proposed by the Bidder]*** be appointed as the Adjudicator, and by sending a copy of this Letter  
of Acceptance to \_\_\_\_\_ ***[insert name of the Appointing***  
***Authority]***, the Appointing Authority, we are hereby requesting such Authority to appoint the  
Adjudicator in accordance with ITB 48.1 and GCC Sub-Clause 23.1.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

**Attachment: Contract Agreement**



## ***Contract Agreement***

THIS AGREEMENT made the . . . . . Day of . . . . ., . . . . ., between . . . . .  
***[Name of the Employer]***. . . . . (Hereinafter “the Employer”), of the one part, and ***..[name of the Contractor]***...(hereinafter “the Contractor”), of the other part:

WHEREAS the Employer desires that the Works known as . . . . . ***[name of the Contract]***. . . .  
should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer 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 Bid

(c) the addenda Nos \_\_\_\_\_(if any)

(d) the Particular Conditions

(e) the General Conditions of Contract, including appendix;

(f) the Specification

(g) the Drawings

(h) Bill of Quantities;<sup>24</sup> and

(i) any other document listed in the PCC as forming part of the Contract, but not limited to;

i. the ES Management Strategies and Implementation Plans; and

ii. Code of Conduct for Contractor’s Personnel (ES).

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

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<sup>24</sup> In lump sum contracts, delete “Bill of Quantities” and replace with “Activity Schedule.”

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

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of . . . . *[name of the borrowing country]* on the day, month and year specified above.

Signed by: .....  
for and on behalf of the Employer

Signed by: .....  
for and on behalf of the Contractor

In the Presence of: .....

in the Presence of: .....

Witness, Name, Signature, Address, Date

Witness, Name, Signature, Address, Date

***Performance Security***  
**Demand Guarantee**

*[Guarantor letterhead or SWIFT identifier code]*

**Beneficiary:** *[insert name and Address of Employer]*

**Date:** *[Insert date of issue]*

**PERFORMANCE GUARANTEE No.:** *[Insert guarantee reference number]*

**Guarantor:** *[Insert name and address of place of issue, unless indicated in the letterhead]*

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 Applicant") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the execution of \_ *[insert name of contract and brief description of Works]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, 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]*,<sup>1</sup> 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.

This guarantee shall expire, no later than the .... Day of ....., 2...<sup>2</sup>, and any demand for payment under it must be received by us at this office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

\_\_\_\_\_  
*[signature(s)]*

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

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<sup>1</sup> The 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 (ies) of the Contract or a freely convertible currency acceptable to the Beneficiary.

<sup>2</sup> Insert the date twenty-eight days after the expected completion date as described in GCC Sub-Clause 57.1. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer 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. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "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."

# ***Advance Payment Security***

## **Demand Guarantee**

*[Guarantor letterhead or SWIFT identifier code]*

**Beneficiary:** *[Insert name and Address of Employer]*

**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]*

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 Applicant") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the execution of *[insert name of contract and brief description of Works]* (hereinafter called "the Contract"). Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum *[insert amount in figures]* () *[insert amount in words]* is to be made against an advance payment guarantee.

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 *[insert amount in figures]* (\_\_\_\_\_) *[insert amount in words]*<sup>251</sup> 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.

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 Applicant on its account number *[insert number]* at *[insert name and address of Applicant's bank]*..

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant 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 *[insert day]* day of *[insert month]*, 2 *[insert year]*,<sup>262</sup> whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

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<sup>251</sup> *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Employer.*

<sup>262</sup> *Insert the expected completion date as described in GC Clause 55.1. The Employer should note that in the event*

*of an extension of the expected completion date, the Employer 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. In preparing this guarantee, the Employer might consider adding the following*

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

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*[Signature(s)]*

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





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*text to the form, at the end of the penultimate paragraph: “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.”*



## **COUNTY GOVERNMENT OF NYERI**

### **DEPARTMENT OF AGRICULTURE, LIVESTOCK & AQUACULTURE DEVELOPMENT**

#### **NATIONAL AGRICULTURAL VALUE CHAIN DEVELOPMENT PROJECT (NAVCDP)**

**CONSTRUCTION OF KIHUYO IRRIGATION WATER PROJECT  
DISTRIBUTION PIPELINE AT KIHUYO AREA, KIGANJO/MATHARI  
WARD, NYERI CENTRAL SUB-COUNTY AND MARAGIMA/TAGWA  
IRRIGATION WATER PROJECT MAINLINE WITHCATCHMENTT  
CONSERVATION AT MARAGIMA AREA THEGU RIVER WARD, KIENI  
EAST SUB-COUNTY NYERI COUNTY**

**BILL OF QUANTITIES**

## PREAMBLE

1. The bill of Quantities shall be read in conjunction with the instructions to bidders general and particular conditions, technical specifications, and drawings.
2. The quantities Given in the Bill of quantities are estimated and provisional and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the contractor and verified by the engineer and valued at the rates and prices bid in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the engineer may fix within the terms of the contract.
3. The rates and prices bid in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the contract, include all constructional plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, ESMP implementation cost and obligations set out or implied in the contract.
4. A rate or price shall be entered against each item in the priced Bill of Quantities whether Quantities are stated or not. The cost of Items against which the contractor has filed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
5. The whole cost of complying with the provisions of the contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of work.
6. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
7. Provisional sums included and so designated in the Bill of Quantities Shall be Expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clauses 13.4 and 13.5 of the general conditions except with respect to DAAB fees and Expenses for which no instruction will be required from the Engineer.

8. The method of measurement of completed work for the payment shall be admeasurement in accordance with ICE conditions of contract measurement clauses.

| <b>GRAND SUMMARY FOR KIHUYO AND MARAGIMA TAGWA WATER PROJECT</b> |                                   |  |                     |
|------------------------------------------------------------------|-----------------------------------|--|---------------------|
| <b>Bill No.</b>                                                  | <b>Description</b>                |  | <b>Amount (KSh)</b> |
| 1                                                                | Preliminaries and General         |  |                     |
|                                                                  |                                   |  |                     |
| 2                                                                | Kihuyo Mainline                   |  |                     |
|                                                                  |                                   |  |                     |
| 3                                                                | Kamichugu Branch                  |  |                     |
|                                                                  |                                   |  |                     |
| 4                                                                | Kamichugu Lateral Line            |  |                     |
|                                                                  |                                   |  |                     |
| 5                                                                | Kiahiti Branch                    |  |                     |
|                                                                  |                                   |  |                     |
| 6                                                                | Karia Branch                      |  |                     |
|                                                                  |                                   |  |                     |
| 7                                                                | Mainganiro Branch                 |  |                     |
|                                                                  |                                   |  |                     |
| 8                                                                | Gichagi Branch                    |  |                     |
|                                                                  |                                   |  |                     |
| 9                                                                | Thare-ini Branch                  |  |                     |
|                                                                  |                                   |  |                     |
| 10                                                               | Kihuyo Sedimentation Basin        |  |                     |
|                                                                  |                                   |  |                     |
| 11                                                               | Maragima Sedimentation Basin      |  |                     |
|                                                                  |                                   |  |                     |
| 12                                                               | Intake Wingwalls                  |  |                     |
|                                                                  |                                   |  |                     |
| 13                                                               | Pipe Work/ laying                 |  |                     |
|                                                                  |                                   |  |                     |
| 14                                                               | Consevation of the cathment area. |  |                     |
|                                                                  |                                   |  |                     |
|                                                                  | SUB TOTAL                         |  |                     |
|                                                                  |                                   |  |                     |
|                                                                  | Add 16^ VAT                       |  | -                   |
|                                                                  | GRAND TOTAL                       |  | -                   |

|             |                                                                                                                                     |             |                 |                     |                       |                        |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|---------------------|-----------------------|------------------------|
|             | <b>Bill No .1- PRELIMINARY AND GENERALS</b>                                                                                         |             |                 |                     |                       |                        |
| <b>ITEM</b> | <b>DESCRIPTION</b>                                                                                                                  | <b>UNIT</b> | <b>QUANTITY</b> | <b>RATE (KShs.)</b> | <b>AMOUNT (KShs.)</b> | <b>Technical Specs</b> |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
| <b>1</b>    | <b>Signboards</b>                                                                                                                   |             |                 |                     |                       | Spec.1.14              |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
| 1..0<br>.1  | Provision, erection and maintenance of project signboards in accordance with the Specifications. See Clause 1.31 of Specifications. | No.         | 4               |                     |                       |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
| <b>1.2</b>  | <b>Contractors Camp</b>                                                                                                             |             |                 |                     |                       |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
| 1.2.<br>1   | Mobilization and Demobilization of Machinery, Equipments and staff                                                                  | LS          | 2               |                     | 780,000               |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
| 1.2.<br>2   | Provisional of setting up site camp to include such facilities as temporary Offices, storage space and health and sanitation        | LS          | 2               |                     | 1,020,000             |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
| <b>1.3</b>  | <b>Testing</b>                                                                                                                      |             |                 |                     |                       | Spec.<br>6.5.7         |
| 1.3.<br>1   | Testing of the systems upon completion of works                                                                                     | No.         | 8               |                     |                       |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
| <b>1.4</b>  | <b>Adjudication</b>                                                                                                                 |             |                 |                     |                       |                        |
| 1.4.<br>1   | Allow Provisional sum for Arbitration/adjudicator service fee                                                                       | LS          | 1               | 300,000             | 300,000               |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
|             | <b>TOTAL CARRIED OVER TO GRAND SUMMARY</b>                                                                                          |             |                 |                     |                       |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
|             | <b>Bill No.2 - KIHUYO MAINLINE</b>                                                                                                  |             |                 |                     |                       |                        |
| <b>ITEM</b> | <b>DESCRIPTION</b>                                                                                                                  | <b>UNIT</b> | <b>QUANTITY</b> |                     |                       | <b>SPECS</b>           |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
|             |                                                                                                                                     |             |                 |                     |                       |                        |
| <b>2</b>    | <b>Excavation and Backfilling</b>                                                                                                   |             |                 |                     |                       | Spec. 2.3              |

|            |                                                                                                                                                                                                 |                |       |  |  |           |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------|--|--|-----------|
|            | <b>HDPE Pipework</b>                                                                                                                                                                            |                |       |  |  |           |
| 2.1        | Rates for excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround materials from the excavations with the specifications. |                |       |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
| 2.1.1      | Excavation and backfilling in trench normal material for Dia 200 mm pipe for depth not exceeding 1.5 m                                                                                          | m <sup>3</sup> | 950   |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
| 2.1.2      | Ditto 160                                                                                                                                                                                       | m <sup>3</sup> | 650.0 |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
| 2.1.3      | Ditto 110                                                                                                                                                                                       | m <sup>3</sup> | 190.0 |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
| 2.1.4      | Ditto 50                                                                                                                                                                                        | m <sup>3</sup> | 290.0 |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
| 2.1.5      | Ditto 32                                                                                                                                                                                        | m <sup>3</sup> | 290.0 |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
| 2.1.6      | Ditto 25                                                                                                                                                                                        | m <sup>3</sup> | 180.0 |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
| 2.1.7      | E.O for excavation in soft rock (provisional)                                                                                                                                                   | m <sup>3</sup> | 20    |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
| 2.1.8      | E.O for excavation in hard rock (provisional)                                                                                                                                                   | m <sup>3</sup> | 10    |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
| <b>2.2</b> | <b>HDPE Pipework</b>                                                                                                                                                                            |                |       |  |  |           |
|            |                                                                                                                                                                                                 |                |       |  |  |           |
|            | Provide, lay, joint and test the following flexible spigot and socket pipe and fittings with rubber ring joints. Rates to include for all jointly materials, cutting wastage.                   |                |       |  |  | Spec. 6.3 |
|            |                                                                                                                                                                                                 |                |       |  |  |           |

|           |                                                                                                                                                                     |   |      |  |  |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------|--|--|
|           | Note: The following have been used on the drawings to specify pipe diameters/types/classes. Pipe dimensions/working pressures shall conform to PE pipes KS-ISO-4427 |   |      |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
|           | Class Working Pressure (m)                                                                                                                                          |   |      |  |  |
|           | PN8<br>60                                                                                                                                                           | m |      |  |  |
|           | PN10<br>100                                                                                                                                                         | m |      |  |  |
|           | PN12.5<br>125                                                                                                                                                       | m |      |  |  |
|           | PN16<br>160                                                                                                                                                         | m |      |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
|           | <b>HDPE Straights</b>                                                                                                                                               |   |      |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
|           | <b>PN 8</b>                                                                                                                                                         |   |      |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
| 2.2.<br>1 | 200 mm dia                                                                                                                                                          | m | 1255 |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
|           | <b>PN 8</b>                                                                                                                                                         |   |      |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
| 2.2.<br>2 | 160 mm dia                                                                                                                                                          | m | 480  |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
|           | <b>PN 10</b>                                                                                                                                                        |   |      |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
| 2.2.<br>3 | 160 mm dia                                                                                                                                                          | m | 330  |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
|           | <b>PN 10</b>                                                                                                                                                        |   |      |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
| 2.2.<br>4 | 110 mm dia                                                                                                                                                          | m | 155  |  |  |
|           |                                                                                                                                                                     |   |      |  |  |
|           | <b>PN 12.5</b>                                                                                                                                                      |   |      |  |  |
|           |                                                                                                                                                                     |   |      |  |  |

|            |                                                                                                                                                                                                 |     |     |  |  |           |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--|--|-----------|
| 2.2.<br>5  | 110 mm dia                                                                                                                                                                                      | m   | 55  |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
|            | <b>PN 12.5</b>                                                                                                                                                                                  |     |     |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
| 2.2.<br>6  | 50 mm dia                                                                                                                                                                                       | m   | 55  |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
|            | <b>PN 10</b>                                                                                                                                                                                    |     |     |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
| 2.2.<br>7  | 50 mm dia                                                                                                                                                                                       | m   | 325 |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
|            | <b>PN 10</b>                                                                                                                                                                                    |     |     |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
| 2.2.<br>8  | 32 mm dia                                                                                                                                                                                       | m   | 175 |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
|            | <b>PN 12.5</b>                                                                                                                                                                                  |     |     |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
| 2.2.<br>9  | 32 mm dia                                                                                                                                                                                       | m   | 200 |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
|            | <b>PN 12.5</b>                                                                                                                                                                                  |     |     |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
| 2.2.<br>10 | 25 mm dia                                                                                                                                                                                       | m   | 165 |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
|            | <b>PN 16</b>                                                                                                                                                                                    |     |     |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
| 2.2.<br>11 | 25 mm dia                                                                                                                                                                                       | m   | 95  |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
| <b>2.3</b> | <b>AIR VALVES</b>                                                                                                                                                                               |     |     |  |  |           |
|            |                                                                                                                                                                                                 |     |     |  |  |           |
| 2.3.<br>1  | Excavate for, provide all materials and construct complete w/o chambers of internal dimensions 1200 x 1200 x 1200 mm. Rates to including thrust blocks, pipe supports as shown in the drawings. | No. | 2   |  |  | Spec. 6.5 |



|        |                                                                                                                                                                                                      |     |   |  |  |             |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|--|--|-------------|
|        |                                                                                                                                                                                                      |     |   |  |  |             |
|        | Provide, handle, install and test the following steel and uPVC pipes and fittings, valves and specials. Special rates shall include for completing all pipe joints as specified in the specification |     |   |  |  |             |
|        |                                                                                                                                                                                                      |     |   |  |  |             |
|        | <b>2No. Double Air Valves (DAVs) PN10</b>                                                                                                                                                            |     |   |  |  | Spec. 6.5.3 |
|        |                                                                                                                                                                                                      |     |   |  |  |             |
| 2.3. 2 | 200x 50mm dia Saddle clamp flanged on one side                                                                                                                                                       | No. | 2 |  |  |             |
|        |                                                                                                                                                                                                      |     |   |  |  |             |
| 2.3. 3 | 50mm dia x 0.4 m long double flanged GI pipe                                                                                                                                                         | No. | 2 |  |  |             |
|        |                                                                                                                                                                                                      |     |   |  |  |             |
| 2.3. 4 | 50mm dia sluice valve                                                                                                                                                                                | No. | 2 |  |  |             |
|        |                                                                                                                                                                                                      |     |   |  |  |             |
|        |                                                                                                                                                                                                      |     |   |  |  |             |
| 2.4    | <b>WASHOUTS (W/O) PN 10</b>                                                                                                                                                                          |     |   |  |  |             |
|        |                                                                                                                                                                                                      |     |   |  |  |             |
| 2.4. 1 | Excavate for, provide all materials and construct complete w/o chambers of internal dimensions 1200 x 1200 x 1200 mm. Rates to including thrust blocks, pipe supports as shown in the drawings.      | No. | 2 |  |  |             |
|        |                                                                                                                                                                                                      |     |   |  |  |             |
|        | Provide, handle, install and test the following steel and uPVC pipes and fittings, valves and specials. Special rates shall include for completing all pipe joints as specified in the specification |     |   |  |  |             |
|        |                                                                                                                                                                                                      |     |   |  |  |             |
|        | <b>For 2 NO. Wash Outs</b>                                                                                                                                                                           |     |   |  |  |             |
|        |                                                                                                                                                                                                      |     |   |  |  |             |

|            |                                                                                      |     |    |  |  |  |
|------------|--------------------------------------------------------------------------------------|-----|----|--|--|--|
| 2.4.<br>2  | 200mm x 110mm Saddle clamp flanged                                                   | No. | 2  |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| 2.4.<br>3  | 75 mm dia sluice valve                                                               | No. | 2  |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| 2.4.<br>4  | 75 mm dia x 500 mm long single flanged GI pipe                                       | No. | 2  |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| 2.4.<br>5  | 200 / 75 mm dia Hdpe / GI adaptor                                                    | No. | 2  |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| 2.4.<br>6  | 75 mm HDPE pipe PN8                                                                  | m   | 12 |  |  |  |
|            |                                                                                      |     |    |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| <b>2.5</b> | <b>FITTINGS</b>                                                                      |     |    |  |  |  |
|            |                                                                                      |     |    |  |  |  |
|            | <b>HDPE REDUCERS PN 10</b>                                                           |     |    |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| 2.5.<br>1  | 200mm x 160mm                                                                        | No. | 1  |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| 2.5.<br>2  | 160mm x 110mm                                                                        | No. | 1  |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| 2.5.<br>3  | 110mm x 50mm                                                                         | No. | 1  |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| 2.5.<br>4  | 50mm x 32mm                                                                          | No. | 1  |  |  |  |
|            |                                                                                      |     |    |  |  |  |
| 2.5.<br>5  | 32mm x 25mm                                                                          | No. | 1  |  |  |  |
|            |                                                                                      |     |    |  |  |  |
|            |                                                                                      |     |    |  |  |  |
|            | Rates shall include for completing all pipe joints as specified in the specification |     |    |  |  |  |
|            |                                                                                      |     |    |  |  |  |
|            | <b>GF(GEORGE FISCHER) SADDLE CLAMPS</b>                                              |     |    |  |  |  |
|            |                                                                                      |     |    |  |  |  |

|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|--|--|-------------|
| <b>2.6</b> | <b>HDPE CLAMPS C/W BOLTS AND NUTS</b>                                                                                                                                                                                              |     |   |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 2.6.<br>1  | 200mm x 63mm dia                                                                                                                                                                                                                   | No. | 1 |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 2.6.<br>2  | 200mm x 63mm dia                                                                                                                                                                                                                   | No. | 1 |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 2.6.<br>3  | 160mm x 110mm dia                                                                                                                                                                                                                  | No. | 1 |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 2.6.<br>4  | 110mm x 90mm dia                                                                                                                                                                                                                   | No. | 1 |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 2.6.<br>5  | 110mm x 75mm dia                                                                                                                                                                                                                   | No. | 1 |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| <b>2.7</b> | <b>SECTION VALVE CHAMBERS</b>                                                                                                                                                                                                      |     |   |  |  | Spec. 5.4.3 |
| 2.7.<br>1  | Excavate for, provide all materials and construct complete inspection valve chambers of internal dimensions 1200 x 1200 x 1200 mm at the pipe junctions. Rates to including thrust blocks, pipe supports as shown in the drawings. | No. | 1 |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
|            | <b>BLOCK CHAMBERS</b>                                                                                                                                                                                                              |     |   |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
|            | <b>1 Block Chamber at Start of Mainline at the tank</b>                                                                                                                                                                            |     |   |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 2.7.<br>2  | 200 mm dia Sluice valve                                                                                                                                                                                                            | No  | 1 |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 2.7.<br>3  | 200 mm GI nipple                                                                                                                                                                                                                   | No  | 1 |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 2.7.<br>4  | 200 mm GI union                                                                                                                                                                                                                    | No  | 1 |  |  |             |
|            |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 2.7.<br>5  | 200 mm dia GI pipe ( threaded on both sides 0.5 m long)                                                                                                                                                                            | No  | 2 |  |  |             |

|             |                                                                                                           |     |   |  |  |           |
|-------------|-----------------------------------------------------------------------------------------------------------|-----|---|--|--|-----------|
|             |                                                                                                           |     |   |  |  |           |
| 2.7.6       | 200/200 mm dia GI / uPVC adaptor                                                                          | No  | 3 |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
| 2.7.7       | 110 mm dia uPVC pipe                                                                                      | m   | 1 |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
| <b>2.8</b>  | <b>BENDS</b>                                                                                              |     |   |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
|             | <b>HDPE fittings (Horizontal Bends)</b>                                                                   |     |   |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
|             | <b>160mm dia</b>                                                                                          |     |   |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
| 2.8.1       | 45 deg                                                                                                    | No. | 2 |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
|             | <b>110mm dia</b>                                                                                          |     |   |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
| 2.8.2       | 22.5deg                                                                                                   | No. | 2 |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
| 2.9         | <b>INLET PIPE</b>                                                                                         |     |   |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
| 2.9.1       | 200mmX250mm dia G.I reduced spigot 1 meter long flanged                                                   | No. | 1 |  |  | Spec 6.4  |
|             |                                                                                                           |     |   |  |  |           |
| 2.9.2       | Install 250mm dia master meter                                                                            | No. | 1 |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
| 2.9.3       | 250mm dia G.I spigot 1 meter long flanged                                                                 | No. | 1 |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
| 2.9.4       | 250/280mm flanged adaptor                                                                                 | No. | 2 |  |  |           |
|             |                                                                                                           |     |   |  |  |           |
| <b>2.10</b> | <b>Marker post</b>                                                                                        |     |   |  |  | Spec. 1.5 |
|             |                                                                                                           |     |   |  |  |           |
| 2.10.1      | Provide marker posts as specified and as shown in the drawings prior to handing over including all costs. | No. | 8 |  |  |           |

|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--|--|--------------|
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       | <b>TOTAL CARRIED OVER TO<br/>GRAND SUMMARY</b>                                                                                                                                                  |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       | <b>Bill No.3 - KAMUCHUGU BRANCH</b>                                                                                                                                                             |                  |                      |  |  |              |
| <b>IT<br/>E<br/>M</b> | <b>DESCRIPTION</b>                                                                                                                                                                              | <b>UN<br/>IT</b> | <b>QUAN<br/>TITY</b> |  |  | <b>SPECS</b> |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| <b>3</b>              | <b>Excavation and Backfilling</b>                                                                                                                                                               |                  |                      |  |  |              |
|                       | <b>HDPE Pipework</b>                                                                                                                                                                            |                  |                      |  |  |              |
|                       | Rates for excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround materials from the excavations with the specifications. |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 3.1.<br>1             | Excavation and backfilling in normal material for Dia 75 mm pipe for depth n.e 1.0 m                                                                                                            | m <sup>3</sup>   | 290.0                |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 3.1.<br>2             | Ditto 50                                                                                                                                                                                        | m <sup>3</sup>   | 140.0                |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 3.1.<br>3             | Ditto 32                                                                                                                                                                                        | m <sup>3</sup>   | 70.0                 |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 3.1.<br>4             | Ditto 25                                                                                                                                                                                        | m <sup>3</sup>   | 60.0                 |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 3.1.<br>5             | Ditto 20                                                                                                                                                                                        | m <sup>3</sup>   | 40.0                 |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 3.1.<br>6             | E.O for excavation in soft rock (provisional)                                                                                                                                                   | m <sup>3</sup>   | 20                   |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 3.1.<br>7             | E.O for excavation in hard rock (provisional)                                                                                                                                                   | m <sup>3</sup>   | 10                   |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |

|            |                                                                                                                                                                               |   |      |  |  |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------|--|--|
| <b>3.2</b> | <b>HDPE Pipework</b>                                                                                                                                                          |   |      |  |  |
|            |                                                                                                                                                                               |   |      |  |  |
|            | Provide, lay, joint and test the following flexible spigot and socket pipe and fittings with rubber ring joints. Rates to include for all jointly materials, cutting wastage. |   |      |  |  |
|            |                                                                                                                                                                               |   |      |  |  |
|            | Note: The following have been used on the drawings to specify pipe diameters/types/classes. Pipe dimensions/working pressures shall conform to PE pipes KS-ISO-4427           |   |      |  |  |
|            |                                                                                                                                                                               |   |      |  |  |
|            | Class Working Pressure (m)                                                                                                                                                    |   |      |  |  |
|            | PN6 8 60                                                                                                                                                                      | m |      |  |  |
|            | PN10 100                                                                                                                                                                      | m |      |  |  |
|            | PN12.5 125                                                                                                                                                                    | m |      |  |  |
|            | PN16 160                                                                                                                                                                      | m |      |  |  |
|            | <b>SUB-TOTAL CARRIED FORWARD TO NEXT PAGE</b>                                                                                                                                 |   |      |  |  |
|            | <b>SUB-TOTAL CARRIED FORWARD FROM PREVIOUS PAGE</b>                                                                                                                           |   |      |  |  |
|            |                                                                                                                                                                               |   |      |  |  |
|            | <b>HDPE Straights</b>                                                                                                                                                         |   |      |  |  |
|            |                                                                                                                                                                               |   |      |  |  |
|            | <b>PN 8</b>                                                                                                                                                                   |   |      |  |  |
|            |                                                                                                                                                                               |   |      |  |  |
| 3.2. 1     | 75 mm dia                                                                                                                                                                     | m | 1705 |  |  |
|            |                                                                                                                                                                               |   |      |  |  |
| 3.2. 2     | 50 mm dia                                                                                                                                                                     | m | 195  |  |  |
|            |                                                                                                                                                                               |   |      |  |  |
| 3.2. 3     | 32 mm dia                                                                                                                                                                     | m | 235  |  |  |

spec. 6.3

|            |                                                                                                                                                                                                      |     |     |  |  |           |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--|--|-----------|
|            |                                                                                                                                                                                                      |     |     |  |  |           |
| 3.2.<br>4  | 25 mm dia                                                                                                                                                                                            | m   | 115 |  |  |           |
|            |                                                                                                                                                                                                      |     |     |  |  |           |
| 3.2.<br>5  | 20 mm dia                                                                                                                                                                                            | m   | 135 |  |  |           |
|            |                                                                                                                                                                                                      |     |     |  |  |           |
| <b>3.3</b> | <b>AIR VALVES</b>                                                                                                                                                                                    |     |     |  |  |           |
|            |                                                                                                                                                                                                      |     |     |  |  |           |
| 3.3.<br>1  | Excavate for, provide all materials and construct complete w/o chambers of internal dimensions 1200 x 1200 x 1200 mm. Rates to including thrust blocks, pipe supports as shown in the drawings.      | No. | 1   |  |  | Spec. 6.5 |
|            |                                                                                                                                                                                                      |     |     |  |  |           |
|            | Provide, handle, install and test the following steel and uPVC pipes and fittings, valves and specials. Special rates shall include for completing all pipe joints as specified in the specification |     |     |  |  |           |
|            |                                                                                                                                                                                                      |     |     |  |  |           |
|            | <b>2No. Double Air Valves (DAVs)<br/>PN 10 750m,1600m</b>                                                                                                                                            |     |     |  |  |           |
|            |                                                                                                                                                                                                      |     |     |  |  |           |
| 3.3.<br>2  | 75x 50mm dia Saddle clamp flanged on one side                                                                                                                                                        | No. | 2   |  |  |           |
|            |                                                                                                                                                                                                      |     |     |  |  |           |
| 3.3.<br>3  | 50mm dia x 0.4 m long double flanged GI pipe                                                                                                                                                         | No. | 2   |  |  |           |
|            |                                                                                                                                                                                                      |     |     |  |  |           |
| 3.3.<br>4  | 75mm dia sluice valve                                                                                                                                                                                | No. | 2   |  |  |           |
|            |                                                                                                                                                                                                      |     |     |  |  |           |
| 3.3.<br>5  | 75mm double orifice air valve                                                                                                                                                                        | No. | 2   |  |  |           |
|            | <b>SUB-TOTAL CARRIED FORWARD TO NEXT PAGE</b>                                                                                                                                                        |     |     |  |  |           |

|            |                                                                                                                                                                                                      |     |    |  |  |  |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|--|--|--|
|            | <b>SUB-TOTAL CARRIED FORWARD FROM PREVIOUS PAGE</b>                                                                                                                                                  |     |    |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
| <b>3.4</b> | <b>2 NO.WASHOUTS (W/O),600M,1400M</b>                                                                                                                                                                |     |    |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
| 3.4.1      | Excavate for, provide all materials and construct complete w/o chambers of internal dimensions 1200 x 1200 x 1200 mm. Rates to including thrust blocks, pipe supports as shown in the drawings.      | No. | 3  |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
|            | Provide, handle, install and test the following steel and uPVC pipes and fittings, valves and specials. Special rates shall include for completing all pipe joints as specified in the specification |     |    |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
|            | <b>For 2 NO. Wash Outs PN 10</b>                                                                                                                                                                     |     |    |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
| 3.4.2      | 75mm x 75mm Saddle clamp flanged                                                                                                                                                                     | No. | 3  |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
| 3.4.3      | 75 mm dia sluice valve                                                                                                                                                                               | No. | 3  |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
| 3.4.4      | 75 mm dia x 500 mm long single flanged GI pipe                                                                                                                                                       | No. | 3  |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
| 3.4.5      | 75 / 90 mm dia uPVC / GI adaptor                                                                                                                                                                     | No. | 3  |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
| 3.4.6      | 50 mm HDPE pipe PN 8                                                                                                                                                                                 | m   | 12 |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
| 3.4.7      | 75mm GI threaded pipe 500 mm long with a flap valve                                                                                                                                                  | No. | 3  |  |  |  |
|            |                                                                                                                                                                                                      |     |    |  |  |  |
| <b>3.5</b> | <b>FITTINGS</b>                                                                                                                                                                                      |     |    |  |  |  |



|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|--|--|-------------|
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|           | <b>HDPE REDUCERS PN 10</b>                                                                                                                                                                                                         |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 3.5.<br>1 | 75mm x 50mm                                                                                                                                                                                                                        | No. | 1 |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 3.5.<br>2 | 50mm x 32mm                                                                                                                                                                                                                        | No. | 1 |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 3.5.<br>3 | 32mm x 25mm                                                                                                                                                                                                                        | No. | 1 |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 3.5.<br>4 | 25mm x 20mm                                                                                                                                                                                                                        | No. | 1 |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|           | Rates shall include for completing all pipe joints as specified in the specification                                                                                                                                               |     |   |  |  |             |
|           | <b>SUB-TOTAL CARRIED FORWARD TO NEXT PAGE</b>                                                                                                                                                                                      |     |   |  |  |             |
|           | <b>SUB-TOTAL CARRIED FORWARD FROM PREVIOUS PAGE</b>                                                                                                                                                                                |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|           | <b>GF(GEORGE FISCHER) SADDLE CLAMPS</b>                                                                                                                                                                                            |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 3.7       | <b>HDPE CLAMPS C/W BOLTS AND NUTS</b>                                                                                                                                                                                              |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 3.7.<br>1 | 75mm x 32mm dia                                                                                                                                                                                                                    | No. | 1 |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 3.8       | <b>SECTION VALVE CHAMBERS</b>                                                                                                                                                                                                      |     |   |  |  |             |
| 3.8.<br>1 | Excavate for, provide all materials and construct complete inspection valve chambers of internal dimensions 1200 x 1200 x 1200 mm at the pipe junctions. Rates to including thrust blocks, pipe supports as shown in the drawings. | No. | 1 |  |  | Spec. 5.4.3 |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |

|             |                                                        |     |     |  |  |           |
|-------------|--------------------------------------------------------|-----|-----|--|--|-----------|
|             | <b>BLOCK CHAMBERS</b>                                  |     |     |  |  |           |
|             |                                                        |     |     |  |  |           |
|             | <b>1 Block Chamber at Start of the branch</b>          |     |     |  |  |           |
| 3.8.2       | 75 mm dia Sluice valve                                 | No  | 1   |  |  | Spec. 6.4 |
| 3.8.3       | 75 mm GI nipple                                        | No  | 1   |  |  |           |
| 3.8.4       | 75 mm GI union                                         | No  | 1   |  |  |           |
| 3.8.5       | 75 mm dia GI pipe ( threaded on both sides 0.5 m long) | No  | 1   |  |  |           |
| 3.8.6       | 75/75 mm dia GI / uPVC adaptor                         | No  | 2   |  |  |           |
| 3.8.7       | 75 mm dia uPVC pipe                                    | m   | 1   |  |  |           |
| 3.9         | <b>GI pipes at road crossings to Kamuchugu Branch</b>  |     |     |  |  | Spec. 6.4 |
| 3.9.1       | 75 mm dia                                              | m3  | 6.0 |  |  |           |
| 3.9.2       | <b>GI/HDPE Adaptors</b>                                |     |     |  |  |           |
| 3.9.3       | 75mm x 75 mm dia                                       | No. | 2   |  |  |           |
|             |                                                        |     |     |  |  |           |
| <b>3.10</b> | <b>BENDS</b>                                           |     |     |  |  |           |
|             | <b>HDPE fittings (Vertical Bends)</b>                  |     |     |  |  |           |
|             | <b>75mm dia</b>                                        |     |     |  |  |           |

|            |                                                                                                           |     |   |  |  |           |
|------------|-----------------------------------------------------------------------------------------------------------|-----|---|--|--|-----------|
| 3.1<br>0.1 | 45 deg                                                                                                    | No. | 2 |  |  |           |
|            |                                                                                                           |     |   |  |  |           |
| 3.1<br>0.2 | 20 mm end cap                                                                                             | No  | 1 |  |  |           |
| 3.1<br>1   | <b>Marker post</b>                                                                                        |     |   |  |  | Spec. 1.5 |
|            |                                                                                                           |     |   |  |  |           |
| 3.1<br>1.1 | Provide marker posts as specified and as shown in the drawings prior to handing over including all costs. | No. | 6 |  |  |           |
|            | <b>TOTAL CARRIED OVER TO GRAND SUMMARY</b>                                                                |     |   |  |  |           |

**BILL No 4 :KAMUCHUGU LATERAL LINE**

|           | DESCRIPTION                                                                                                                                                                                                                                                        | UN<br>IT       | QUAN<br>TITY |  |  | SPECIFIC<br>ATIONS |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------|--|--|--------------------|
|           |                                                                                                                                                                                                                                                                    |                |              |  |  |                    |
| <b>4</b>  | <b>Excavation and Backfilling</b>                                                                                                                                                                                                                                  |                |              |  |  | Spec. 2.3          |
|           | <b>HDPE Pipework</b>                                                                                                                                                                                                                                               |                |              |  |  |                    |
|           | Rates for excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround materials from the excavations with the specifications. Depth of excavation not exceeding 1.0 m unless otherwise specified |                |              |  |  |                    |
|           |                                                                                                                                                                                                                                                                    |                |              |  |  |                    |
| 4.1.<br>1 | Excavation and backfilling in normal material for Dia 32 mm pipe for depth n.e 1.0 m                                                                                                                                                                               | m <sup>3</sup> | 590.0        |  |  |                    |
|           |                                                                                                                                                                                                                                                                    |                |              |  |  |                    |
| 4.1.<br>2 | Ditto 25                                                                                                                                                                                                                                                           | m <sup>3</sup> | 120.0        |  |  |                    |
|           |                                                                                                                                                                                                                                                                    |                |              |  |  |                    |
| 4.1.<br>3 | Ditto 20                                                                                                                                                                                                                                                           | m <sup>3</sup> | 120.0        |  |  |                    |

|            |                                                                                                                                                                               |                |      |  |  |  |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|--|--|--|
|            |                                                                                                                                                                               |                |      |  |  |  |
| 4.1.<br>4  | E.O for excavation in soft rock (provisional)                                                                                                                                 | m <sup>3</sup> | 20.0 |  |  |  |
|            |                                                                                                                                                                               |                |      |  |  |  |
| 4.1.<br>5  | E.O for excavation in hard rock (provisional)                                                                                                                                 | m <sup>3</sup> | 10.0 |  |  |  |
|            |                                                                                                                                                                               |                |      |  |  |  |
| <b>4.2</b> | <b>HDPE Pipe Work</b>                                                                                                                                                         |                |      |  |  |  |
|            |                                                                                                                                                                               |                |      |  |  |  |
|            | Provide, lay, joint and test the following flexible spigot and socket pipe and fittings with rubber ring joints. Rates to include for all jointly materials, cutting wastage. |                |      |  |  |  |
|            |                                                                                                                                                                               |                |      |  |  |  |
|            | Note: The following have been used on the drawings to specify pipe diameters/types/classes. Pipe dimensions/working pressures shall conform to PE pipes KS-ISO-4427           |                |      |  |  |  |
|            |                                                                                                                                                                               |                |      |  |  |  |
|            | Class Working Pressure (m)                                                                                                                                                    |                |      |  |  |  |
|            | PN 8 60                                                                                                                                                                       |                |      |  |  |  |
|            | PN10 100                                                                                                                                                                      |                |      |  |  |  |
|            | PN12.5 125                                                                                                                                                                    |                |      |  |  |  |
|            | PN16 160                                                                                                                                                                      |                |      |  |  |  |
|            | <b>SUB-TOTAL CARRIED FORWARD TO NEXT PAGE</b>                                                                                                                                 |                |      |  |  |  |
|            | <b>SUB-TOTAL CARRIED FORWARD FROM PREVIOUS PAGE</b>                                                                                                                           |                |      |  |  |  |
|            | <b>HDPE Straights</b>                                                                                                                                                         |                |      |  |  |  |
|            |                                                                                                                                                                               |                |      |  |  |  |
|            | <b>PN 8</b>                                                                                                                                                                   |                |      |  |  |  |
|            |                                                                                                                                                                               |                |      |  |  |  |
| 4.2.<br>1  | 32 mm dia                                                                                                                                                                     | m              | 350  |  |  |  |

spec. 6.3

|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--|--|------------|
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.2.<br>2  | 25 mm dia                                                                                                                                                                                                                         | m   | 155 |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.2.<br>3  | 20 mm dia                                                                                                                                                                                                                         | m   | 160 |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| <b>4.3</b> | <b>HDPE Fittings</b>                                                                                                                                                                                                              |     |     |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
|            | <b>Reducers</b>                                                                                                                                                                                                                   |     |     |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.3.<br>1  | 32mm x 25 mm                                                                                                                                                                                                                      | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.3.<br>2  | 25mm x 20mm                                                                                                                                                                                                                       | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.4        | <b>BLOCK VALVE CHAMBER</b>                                                                                                                                                                                                        |     |     |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.4.<br>1  | Excavate for, provide all materials and construct complete inspection valve chambers of internal dimensions 1200 x 1200 x 1200 mm at the pipe junctions. Rates to including thrust blocks, pipe supports as shown in the drawings | No. | 1   |  |  | spec.5.4.3 |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.4.<br>2  | 1 Block Chamber at Start of the branch                                                                                                                                                                                            |     |     |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.4.<br>3  | 32mmx 25mm dia saddle clamp                                                                                                                                                                                                       | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.4.<br>4  | 32mm diagate valve -pelger or equivalent                                                                                                                                                                                          | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.4.<br>5  | 32mm dia valve socket                                                                                                                                                                                                             | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 4.5.<br>2  | 20 mm end cap                                                                                                                                                                                                                     | No  | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |

|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------|--|--|---------------|
| 4.6   | Marker post                                                                                                                                                                                                                                                        |                |                 |  |  | Spec. 1.5     |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
| 4.6.1 | Provide marker posts as specified and as shown in the drawings prior to handing over including all costs.                                                                                                                                                          | No.            | 6               |  |  |               |
|       | <b>TOTAL CARRIED OVER TO COLLECTION SHEET</b>                                                                                                                                                                                                                      |                |                 |  |  |               |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
|       | <b>BILL No5. KIAHITI BRANCH</b>                                                                                                                                                                                                                                    |                |                 |  |  |               |
|       | <b>DESCRIPTION</b>                                                                                                                                                                                                                                                 | <b>UNIT</b>    | <b>QUANTITY</b> |  |  | <b>Specs.</b> |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
| 5.1   | <b>Excavation and Backfilling</b>                                                                                                                                                                                                                                  |                |                 |  |  | Spec.2.3      |
|       | <b>HDPE Pipework</b>                                                                                                                                                                                                                                               |                |                 |  |  |               |
|       | Rates for excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround materials from the excavations with the specifications. Depth of excavation not exceeding 1.0 m unless otherwise specified |                |                 |  |  |               |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
| 5.1.1 | Excavation and backfilling in normal material for Dia 63 mm pipe for depth n.e 1.0 m                                                                                                                                                                               | m <sup>3</sup> | 650.0           |  |  |               |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
| 5.1.2 | Ditto 50                                                                                                                                                                                                                                                           | m <sup>3</sup> | 100.0           |  |  |               |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
| 5.1.3 | Ditto 32                                                                                                                                                                                                                                                           | m <sup>3</sup> | 50.0            |  |  |               |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
| 5.1.4 | Ditto 25                                                                                                                                                                                                                                                           | m <sup>3</sup> | 70.0            |  |  |               |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
| 5.1.5 | E.O for excavation in soft rock (provisional)                                                                                                                                                                                                                      | m <sup>3</sup> | 25.0            |  |  |               |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
| 5.1.5 | E.O for excavation in hard rock (provisional)                                                                                                                                                                                                                      | m <sup>3</sup> | 20.0            |  |  |               |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |
| 5.2   | <b>HDPE Pipework</b>                                                                                                                                                                                                                                               |                |                 |  |  | Spec. 6.3     |
|       |                                                                                                                                                                                                                                                                    |                |                 |  |  |               |

|           |                                                                                                                                                                               |   |      |  |  |  |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------|--|--|--|
|           | Provide, lay, joint and test the following flexible spigot and socket pipe and fittings with rubber ring joints. Rates to include for all jointly materials, cutting wastage. |   |      |  |  |  |
|           |                                                                                                                                                                               |   |      |  |  |  |
|           | Note: The following have been used on the drawings to specify pipe diameters/types/classes. Pipe dimensions/working pressures shall conform to PE pipes KS-ISO-4427           |   |      |  |  |  |
|           |                                                                                                                                                                               |   |      |  |  |  |
|           | Class Working Pressure (m)                                                                                                                                                    |   |      |  |  |  |
|           | PN6<br>60                                                                                                                                                                     |   |      |  |  |  |
|           | PN10<br>100                                                                                                                                                                   |   |      |  |  |  |
|           | PN12.5<br>125                                                                                                                                                                 |   |      |  |  |  |
|           | PN16<br>160                                                                                                                                                                   |   |      |  |  |  |
|           |                                                                                                                                                                               |   |      |  |  |  |
|           | <b>HDPE Straights</b>                                                                                                                                                         |   |      |  |  |  |
|           |                                                                                                                                                                               |   |      |  |  |  |
|           | <b>PN8</b>                                                                                                                                                                    |   |      |  |  |  |
|           |                                                                                                                                                                               |   |      |  |  |  |
| 5.2.<br>1 | 63 mm dia                                                                                                                                                                     | m | 1025 |  |  |  |
|           |                                                                                                                                                                               |   |      |  |  |  |
| 5.2.<br>2 | 50 mm dia                                                                                                                                                                     | m | 165  |  |  |  |
|           |                                                                                                                                                                               |   |      |  |  |  |
| 5.2.<br>3 | 32 mm dia                                                                                                                                                                     | m | 85   |  |  |  |
|           |                                                                                                                                                                               |   |      |  |  |  |
| 5.2.<br>4 | 25 mm dia                                                                                                                                                                     | m | 100  |  |  |  |
|           | <b>SUB-TOTAL CARRIED FORWARD TO NEXT PAGE</b>                                                                                                                                 |   |      |  |  |  |
|           | <b>SUB-TOTAL CARRIED FORWARD FROM PREVIOUS PAGE</b>                                                                                                                           |   |      |  |  |  |

|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--|--|------------|
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| <b>5.3</b> | <b>HDPE Fittings</b>                                                                                                                                                                                                              |     |     |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
|            | <b>Reducers PN 10</b>                                                                                                                                                                                                             |     |     |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.3.<br>1  | 63 x 50 mm                                                                                                                                                                                                                        | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.3.<br>2  | 50 x 32 mm                                                                                                                                                                                                                        | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.3.<br>3  | 32 x 25 mm                                                                                                                                                                                                                        | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.4        | <b>BLOCK VALVE CHAMBER</b>                                                                                                                                                                                                        |     |     |  |  | Spec.5.4.3 |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.4.<br>1  | Excavate for, provide all materials and construct complete inspection valve chambers of internal dimensions 1200 x 1200 x 1200 mm at the pipe junctions. Rates to including thrust blocks, pipe supports as shown in the drawings | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.4.<br>2  | <b>1 Block Chamber at Start of the branch</b>                                                                                                                                                                                     |     |     |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.4.<br>3  | 63mmx 63mm dia saddle clamp                                                                                                                                                                                                       | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.4.<br>4  | 63mm diagate valve -pelger or equivalent                                                                                                                                                                                          | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.4.<br>5  | 63mm dia valve socket                                                                                                                                                                                                             | No. | 1   |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| <b>5.5</b> | <b>GI pipes at road crossings to Kiahiti Branch</b>                                                                                                                                                                               |     |     |  |  | Spec 6.4   |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |
| 5.5.<br>1  | 63 mm dia                                                                                                                                                                                                                         | m3  | 6.0 |  |  |            |
|            |                                                                                                                                                                                                                                   |     |     |  |  |            |



|                  |                                                                                                                                                                                                                                                                    |                  |                      |  |  |               |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--|--|---------------|
| 5.5.<br>2        | GI/HDPE Adaptors                                                                                                                                                                                                                                                   |                  |                      |  |  |               |
|                  |                                                                                                                                                                                                                                                                    |                  |                      |  |  |               |
|                  | 63mm x63mm                                                                                                                                                                                                                                                         | No               | 2.0                  |  |  |               |
|                  |                                                                                                                                                                                                                                                                    |                  |                      |  |  |               |
| 5.6.<br>2        | 20 mm end cap                                                                                                                                                                                                                                                      | No               | 1                    |  |  |               |
| 5.7<br>5.7.<br>1 | Marker post                                                                                                                                                                                                                                                        |                  |                      |  |  |               |
|                  | Provide marker posts as specified and as shown in the drawings prior to handing over including all costs.                                                                                                                                                          | No.              | 6                    |  |  | Spec. 1.5     |
|                  | <b>TOTAL CARRIED OVER TO COLLECTION SHEET</b>                                                                                                                                                                                                                      |                  |                      |  |  |               |
|                  |                                                                                                                                                                                                                                                                    |                  |                      |  |  |               |
|                  | <b>BILL No 6. KARIA BRANCH</b>                                                                                                                                                                                                                                     |                  |                      |  |  |               |
|                  | <b>DESCRIPTION</b>                                                                                                                                                                                                                                                 | <b>UNI<br/>T</b> | <b>QUANTI<br/>TY</b> |  |  | <b>Specs.</b> |
|                  |                                                                                                                                                                                                                                                                    |                  |                      |  |  |               |
| 6.1              | <b>Excavation and Backfilling</b>                                                                                                                                                                                                                                  |                  |                      |  |  |               |
|                  | <b>HDPE Pipework</b>                                                                                                                                                                                                                                               |                  |                      |  |  |               |
|                  | Rates for excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround materials from the excavations with the specifications. Depth of excavation not exceeding 1.0 m unless otherwise specified |                  |                      |  |  |               |
|                  |                                                                                                                                                                                                                                                                    |                  |                      |  |  | Spec 2.3      |
| 6.1.<br>1        | Excavation and backfilling in normal material for Dia 63 mm pipe for depth n.e 1.0 m                                                                                                                                                                               | m <sup>3</sup>   | 410.0                |  |  |               |
|                  |                                                                                                                                                                                                                                                                    |                  |                      |  |  |               |
| 6.1.<br>2        | Ditto 50                                                                                                                                                                                                                                                           | m <sup>3</sup>   | 150.0                |  |  |               |
|                  |                                                                                                                                                                                                                                                                    |                  |                      |  |  |               |
| 6.1.<br>3        | Ditto 32                                                                                                                                                                                                                                                           | m <sup>3</sup>   | 50.0                 |  |  |               |
|                  |                                                                                                                                                                                                                                                                    |                  |                      |  |  |               |

|            |                                                                                                                                                                               |                |      |  |  |  |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|--|--|--|
| 6.1.4      | E.O for excavation in soft rock (provisional)                                                                                                                                 | m <sup>3</sup> | 20.0 |  |  |  |
| 6.1.5      | E.O for excavation in hard rock (provisional)                                                                                                                                 | m <sup>3</sup> | 10.0 |  |  |  |
| <b>6.2</b> | <b>HDPE Pipework</b>                                                                                                                                                          |                |      |  |  |  |
|            | Provide, lay, joint and test the following flexible spigot and socket pipe and fittings with rubber ring joints. Rates to include for all jointly materials, cutting wastage. |                |      |  |  |  |
|            | Note: The following have been used on the drawings to specify pipe diameters/types/classes. Pipe dimensions/working pressures shall conform to PE pipes KS-ISO-4427           |                |      |  |  |  |
|            | Class Working Pressure (m)                                                                                                                                                    |                |      |  |  |  |
|            | PN6 60                                                                                                                                                                        |                |      |  |  |  |
|            | PN10 100                                                                                                                                                                      |                |      |  |  |  |
|            | PN12.5 125                                                                                                                                                                    |                |      |  |  |  |
|            | PN16 160                                                                                                                                                                      |                |      |  |  |  |
|            | <b>HDPE Straights</b>                                                                                                                                                         |                |      |  |  |  |
|            | <b>PN8</b>                                                                                                                                                                    |                |      |  |  |  |
| 6.2.1      | 63 mm dia                                                                                                                                                                     | m              | 655  |  |  |  |
| 6.2.2      | 50 mm dia                                                                                                                                                                     | m              | 225  |  |  |  |
| 6.2.3      | 32 mm dia                                                                                                                                                                     | m              | 100  |  |  |  |

Spec. 6.3

|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|--|--|------------|
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
|       | <b>SUB-TOTAL CARRIED FORWARD TO NEXT PAGE</b>                                                                                                                                                                                     |     |   |  |  |            |
|       | <b>SUB-TOTAL CARRIED FORWARD FROM PREVIOUS PAGE</b>                                                                                                                                                                               |     |   |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.3   | <b>HDPE Fittings</b>                                                                                                                                                                                                              |     |   |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
|       | <b>Reducers PN 10</b>                                                                                                                                                                                                             |     |   |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.3.1 | 63 x 50 mm                                                                                                                                                                                                                        | No. | 1 |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.3.2 | 50 x 32 mm                                                                                                                                                                                                                        | No. | 1 |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.4   | <b>BLOCK VALVE CHAMBER</b>                                                                                                                                                                                                        |     |   |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.4.1 | Excavate for, provide all materials and construct complete inspection valve chambers of internal dimensions 1200 x 1200 x 1200 mm at the pipe junctions. Rates to including thrust blocks, pipe supports as shown in the drawings | No. | 1 |  |  | Spec.5.4.3 |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.4.2 | <b>1 Block Chamber at Start of the branch</b>                                                                                                                                                                                     |     |   |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.4.3 | 63mmx 63mm dia saddle clamp                                                                                                                                                                                                       | No. | 1 |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.4.4 | 63mm diagate valve -pelger or equivalent                                                                                                                                                                                          | No. | 1 |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.4.5 | 63mm dia valve socket                                                                                                                                                                                                             | No. | 1 |  |  |            |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |
| 6.5   | <b>GI pipes at road crossings to Kiahiti Branch</b>                                                                                                                                                                               |     |   |  |  | Spec. 6.4  |
|       |                                                                                                                                                                                                                                   |     |   |  |  |            |

|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--|--|--------------|
| 6.5.<br>1             | 63 mm dia                                                                                                                                                                                       | m3               | 6.0                  |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       | <b>GI/HDPE Adaptors</b>                                                                                                                                                                         |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 6.5.<br>2             | 63mm x63mm                                                                                                                                                                                      | No               | 2.0                  |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 6.6.<br>2             | 20 mm end cap                                                                                                                                                                                   | No               | 1                    |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 6.7                   | <b>Marker post</b>                                                                                                                                                                              |                  |                      |  |  |              |
| 6.7.<br>1             |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       | Provide marker posts as specified and as shown in the drawings prior to handing over including all costs.                                                                                       | No.              | 6                    |  |  | Spec. 1.5    |
|                       | <b>TOTAL CARRIED OVER TO COLLECTION SHEET</b>                                                                                                                                                   |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       | <b>Bill No.7 - MAINGANIRO BRANCH</b>                                                                                                                                                            |                  |                      |  |  |              |
| <b>IT<br/>E<br/>M</b> | <b>DESCRIPTION</b>                                                                                                                                                                              | <b>UN<br/>IT</b> | <b>QUAN<br/>TITY</b> |  |  | <b>SPECS</b> |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 7.0                   | <b>Excavation and Backfilling</b>                                                                                                                                                               |                  |                      |  |  |              |
|                       | <b>HDPE Pipework</b>                                                                                                                                                                            |                  |                      |  |  |              |
|                       | Rates for excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround materials from the excavations with the specifications. |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 7.1.<br>1             | Excavation and backfilling in normal material for Dia 110 mm pipe for depth n.e 1.0 m                                                                                                           | m <sup>3</sup>   | 1035.0               |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 7.1.<br>2             | Ditto 75                                                                                                                                                                                        | m <sup>3</sup>   | 570.0                |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |

|            |                                                                                                                                                                               |                |       |  |  |  |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------|--|--|--|
| 7.1.<br>3  | Ditto 50                                                                                                                                                                      | m <sup>3</sup> | 320.0 |  |  |  |
| 7.1.<br>4  | Ditto 32                                                                                                                                                                      | m <sup>3</sup> | 120.0 |  |  |  |
| 7.1.<br>5  | Ditto 25                                                                                                                                                                      | m <sup>3</sup> | 45.0  |  |  |  |
| 7.1.<br>6  | Ditto 20                                                                                                                                                                      | m <sup>3</sup> | 70.0  |  |  |  |
| 7.1.<br>7  | E.O for excavation in soft rock (provisional)                                                                                                                                 | m <sup>3</sup> | 30    |  |  |  |
| 7.1.<br>8  | E.O for excavation in hard rock (provisional)                                                                                                                                 | m <sup>3</sup> | 20    |  |  |  |
| <b>7.2</b> | <b>HDPE Pipework</b>                                                                                                                                                          |                |       |  |  |  |
|            | Provide, lay, joint and test the following flexible spigot and socket pipe and fittings with rubber ring joints. Rates to include for all jointly materials, cutting wastage. |                |       |  |  |  |
|            | Note: The following have been used on the drawings to specify pipe diameters/types/classes. Pipe dimensions/working pressures shall conform to PE pipes KS-ISO-4427           |                |       |  |  |  |
|            | Class Working Pressure (m)                                                                                                                                                    |                |       |  |  |  |
|            | PN6 8 60                                                                                                                                                                      | m              |       |  |  |  |
|            | PN10 100                                                                                                                                                                      | m              |       |  |  |  |
|            | PN12.5 125                                                                                                                                                                    | m              |       |  |  |  |
|            | PN16 160                                                                                                                                                                      | m              |       |  |  |  |

Spec. 6.3

|           |                                                             |   |     |  |  |
|-----------|-------------------------------------------------------------|---|-----|--|--|
|           | <b>SUB-TOTAL CARRIED<br/>FORWARD TO NEXT PAGE</b>           |   |     |  |  |
|           | <b>SUB-TOTAL CARRIED<br/>FORWARD FROM<br/>PREVIOUS PAGE</b> |   |     |  |  |
|           |                                                             |   |     |  |  |
|           | <b>HDPE Straights</b>                                       |   |     |  |  |
|           |                                                             |   |     |  |  |
|           | <b>PN 8</b>                                                 |   |     |  |  |
|           |                                                             |   |     |  |  |
| 7.2.<br>1 | 110 mm dia                                                  | m | 625 |  |  |
|           |                                                             |   |     |  |  |
|           | <b>PN 10</b>                                                |   |     |  |  |
|           |                                                             |   |     |  |  |
| 7.2.<br>2 | 110 mm dia                                                  | m | 225 |  |  |
|           |                                                             |   |     |  |  |
|           | <b>PN 12.5</b>                                              |   |     |  |  |
|           |                                                             |   |     |  |  |
| 7.2.<br>3 | 110 mm dia                                                  | m | 265 |  |  |
|           |                                                             |   |     |  |  |
|           | <b>PN 16</b>                                                |   |     |  |  |
|           |                                                             |   |     |  |  |
| 7.2.<br>4 | 110 mm dia                                                  | m | 305 |  |  |
|           |                                                             |   |     |  |  |
|           | <b>PN 16</b>                                                |   |     |  |  |
|           |                                                             |   |     |  |  |
| 7.2.<br>5 | 75 mm dia                                                   | m | 635 |  |  |
|           |                                                             |   |     |  |  |
|           | <b>PN 12.5</b>                                              |   |     |  |  |
|           |                                                             |   |     |  |  |
| 7.2.<br>6 | 75 mm dia                                                   | m | 130 |  |  |
|           |                                                             |   |     |  |  |
|           | <b>PN 12.5</b>                                              |   |     |  |  |
|           |                                                             |   |     |  |  |
| 7.2.<br>7 | 50 mm dia                                                   | m | 225 |  |  |

|            |                                                             |     |     |  |  |  |
|------------|-------------------------------------------------------------|-----|-----|--|--|--|
|            |                                                             |     |     |  |  |  |
|            | <b>PN 16</b>                                                |     |     |  |  |  |
|            |                                                             |     |     |  |  |  |
| 7.2.<br>8  | 50 mm dia                                                   | m   | 205 |  |  |  |
|            |                                                             |     |     |  |  |  |
|            | <b>PN 16</b>                                                |     |     |  |  |  |
|            |                                                             |     |     |  |  |  |
| 7.2.<br>9  | 32 mm dia                                                   | m   | 155 |  |  |  |
|            |                                                             |     |     |  |  |  |
|            | <b>PN 16</b>                                                |     |     |  |  |  |
|            |                                                             |     |     |  |  |  |
| 7.2.<br>10 | 25 mm dia                                                   | m   | 90  |  |  |  |
|            |                                                             |     |     |  |  |  |
|            | <b>PN 16</b>                                                |     |     |  |  |  |
|            |                                                             |     |     |  |  |  |
| 7.2.<br>11 | 20 mm dia                                                   | m   | 85  |  |  |  |
|            |                                                             |     |     |  |  |  |
|            | <b>SUB-TOTAL CARRIED<br/>FORWARD TO NEXT PAGE</b>           |     |     |  |  |  |
|            | <b>SUB-TOTAL CARRIED<br/>FORWARD FROM<br/>PREVIOUS PAGE</b> |     |     |  |  |  |
|            |                                                             |     |     |  |  |  |
| <b>7.3</b> | <b>FITTINGS</b>                                             |     |     |  |  |  |
|            |                                                             |     |     |  |  |  |
|            | <b>HDPE REDUCERS PN 12.5</b>                                |     |     |  |  |  |
|            |                                                             |     |     |  |  |  |
| 7.3.<br>1  | 110mm x 50mm                                                | No. | 1   |  |  |  |
|            |                                                             |     |     |  |  |  |
| 7.3.<br>2  | 75mm x 50mm                                                 | No. | 1   |  |  |  |
|            |                                                             |     |     |  |  |  |
| 7.3.<br>3  | 50mm x 32mm                                                 | No. | 1   |  |  |  |
|            |                                                             |     |     |  |  |  |
| 7.3.<br>4  | 32mm x 25mm                                                 | No. | 1   |  |  |  |

|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|--|--|------------|
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
| 7.3.<br>5 | 25mm x 20mm                                                                                                                                                                                                                        | No. | 1 |  |  |            |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
|           | <b>SUB-TOTAL CARRIED<br/>FORWARD TO NEXT PAGE</b>                                                                                                                                                                                  |     |   |  |  |            |
|           | <b>SUB-TOTAL CARRIED<br/>FORWARD FROM<br/>PREVIOUS PAGE</b>                                                                                                                                                                        |     |   |  |  |            |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
|           | <b>GF(GEORGE FISCHER) SADDLE<br/>CLAMPS</b>                                                                                                                                                                                        |     |   |  |  |            |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
| 7.5       | <b>HDPE CLAMPS C/W BOLTS AND<br/>NUTS</b>                                                                                                                                                                                          |     |   |  |  |            |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
| 7.5.<br>1 | 75mm x 32mm dia                                                                                                                                                                                                                    | No. | 1 |  |  |            |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
| 7.6       | <b>SECTION VALVE CHAMBERS</b>                                                                                                                                                                                                      |     |   |  |  |            |
| 7.6.<br>1 | Excavate for, provide all materials and construct complete inspection valve chambers of internal dimensions 1200 x 1200 x 1200 mm at the pipe junctions. Rates to including thrust blocks, pipe supports as shown in the drawings. | No. | 1 |  |  | Spec 5.4.3 |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
|           | <b>BLOCK CHAMBERS</b>                                                                                                                                                                                                              |     |   |  |  |            |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
|           | <b>1 Block Chamber at Start of the<br/>branch</b>                                                                                                                                                                                  |     |   |  |  |            |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
| 7.6.<br>2 | 110 mm dia Sluice valve                                                                                                                                                                                                            | No  | 1 |  |  |            |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
| 7.6.<br>3 | 110 mm GI nipple                                                                                                                                                                                                                   | No  | 1 |  |  | Sppec. 6.5 |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |
| 7.6.<br>4 | 110 mm GI union                                                                                                                                                                                                                    | No  | 1 |  |  |            |
|           |                                                                                                                                                                                                                                    |     |   |  |  |            |



|            |                                                                                                           |     |     |  |  |  |
|------------|-----------------------------------------------------------------------------------------------------------|-----|-----|--|--|--|
| 7.6.<br>5  | 110 mm dia GI pipe ( threaded on both sides 0.5 m long)                                                   | No  | 1   |  |  |  |
| 7.6.<br>6  | 110/110 mm dia GI / uPVC adaptor                                                                          | No  | 2   |  |  |  |
| 7.6.<br>5  | 110 mm dia uPVC pipe                                                                                      | m   | 1   |  |  |  |
| 7.7        | <b>GI pipes at road crossings to Mainganiro Branch</b>                                                    |     |     |  |  |  |
| 7.7.<br>1  | 110 mm dia                                                                                                | m3  | 6.0 |  |  |  |
|            | <b>GI/HDPE Adaptors</b>                                                                                   |     |     |  |  |  |
| 7.7.<br>2  | 110mm x 110 mm dia                                                                                        | No. | 2   |  |  |  |
|            |                                                                                                           |     |     |  |  |  |
| 7.8        | <b>BENDS</b>                                                                                              |     |     |  |  |  |
|            | <b>HDPE fittings (Vertical Bends)</b>                                                                     |     |     |  |  |  |
|            | <b>75mm dia</b>                                                                                           |     |     |  |  |  |
| 7.8.<br>1  | 45 deg                                                                                                    | No. | 2   |  |  |  |
| 7.9.<br>2  | 20 mm end cap                                                                                             | No  | 1   |  |  |  |
| 7.1<br>0   | <b>Marker post</b>                                                                                        |     |     |  |  |  |
| 7.1<br>0.1 | Provide marker posts as specified and as shown in the drawings prior to handing over including all costs. | No. | 9   |  |  |  |
|            | <b>TOTAL CARRIED OVER TO GRAND SUMMARY</b>                                                                |     |     |  |  |  |

Spec. 6.4

Spec. 1.5

|                       | <b>Bill No.8 - GICHAGI BRANCH</b>                                                                                                                                                               |                  |                      |  |  |              |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--|--|--------------|
| <b>IT<br/>E<br/>M</b> | <b>DESCRIPTION</b>                                                                                                                                                                              | <b>UN<br/>IT</b> | <b>QUAN<br/>TITY</b> |  |  | <b>Specs</b> |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| <b>8.0</b>            | <b>Excavation and Backfilling</b>                                                                                                                                                               |                  |                      |  |  | Specs. 2.3   |
|                       | <b>HDPE Pipework</b>                                                                                                                                                                            |                  |                      |  |  |              |
|                       | Rates for excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround materials from the excavations with the specifications. |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 8.1.<br>1             | Excavation and backfilling in normal material for Dia 75 mm pipe for depth n.e 1.0 m                                                                                                            | m <sup>3</sup>   | 750.0                |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 8.1.<br>2             | Ditto 50                                                                                                                                                                                        | m <sup>3</sup>   | 329.0                |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 8.1.<br>3             | Ditto 25                                                                                                                                                                                        | m <sup>3</sup>   | 100.0                |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 8.1.<br>4             | E.O for excavation in soft rock (provisional)                                                                                                                                                   | m <sup>3</sup>   | 30                   |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| 8.1.<br>5             | E.O for excavation in hard rock (provisional)                                                                                                                                                   | m <sup>3</sup>   | 20                   |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
| <b>8.2</b>            | <b>HDPE Pipework</b>                                                                                                                                                                            |                  |                      |  |  | Specs. 6.3   |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |
|                       | Provide, lay, joint and test the following flexible spigot and socket pipe and fittings with rubber ring joints. Rates to include for all jointly materials, cutting wastage.                   |                  |                      |  |  |              |
|                       |                                                                                                                                                                                                 |                  |                      |  |  |              |

|       |                                                                                                                                                                     |   |     |  |  |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----|--|--|
|       | Note: The following have been used on the drawings to specify pipe diameters/types/classes. Pipe dimensions/working pressures shall conform to PE pipes KS-ISO-4427 |   |     |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
|       | Class Working Pressure (m)                                                                                                                                          |   |     |  |  |
|       | PN6 8 60                                                                                                                                                            | m |     |  |  |
|       | PN10 100                                                                                                                                                            | m |     |  |  |
|       | PN12.5 125                                                                                                                                                          | m |     |  |  |
|       | PN16 160                                                                                                                                                            | m |     |  |  |
|       | <b>SUB-TOTAL CARRIED FORWARD TO NEXT PAGE</b>                                                                                                                       |   |     |  |  |
|       | <b>SUB-TOTAL CARRIED FORWARD FROM PREVIOUS PAGE</b>                                                                                                                 |   |     |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
|       | <b>HDPE Straights</b>                                                                                                                                               |   |     |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
|       | <b>PN 10</b>                                                                                                                                                        |   |     |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
| 8.2.1 | 75 mm dia                                                                                                                                                           | m | 250 |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
|       | <b>PN 12.5</b>                                                                                                                                                      |   |     |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
| 8.2.2 | 75 mm dia                                                                                                                                                           | m | 575 |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
|       | <b>PN 16</b>                                                                                                                                                        |   |     |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
| 8.2.3 | 75 mm dia                                                                                                                                                           | m | 185 |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
|       | <b>PN 16</b>                                                                                                                                                        |   |     |  |  |
|       |                                                                                                                                                                     |   |     |  |  |
| 8.2.4 | 50 mm dia                                                                                                                                                           | m | 425 |  |  |

|            |                                                                                                                                                                                                      |     |    |  |  |                |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|--|--|----------------|
|            |                                                                                                                                                                                                      |     |    |  |  |                |
|            | <b>PN 16</b>                                                                                                                                                                                         |     |    |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
| 8.2.<br>5  | 25 mm dia                                                                                                                                                                                            | m   | 35 |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
|            | <b>PN 12.5</b>                                                                                                                                                                                       |     |    |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
| 8.2.<br>6  | 25 mm dia                                                                                                                                                                                            | m   | 85 |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
| <b>8.3</b> | <b>AIR VALVES</b>                                                                                                                                                                                    |     |    |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
| 8.3.<br>1  | Excavate for, provide all materials and construct complete w/o chambers of internal dimensions 1200 x 1200 x 1200 mm. Rates to including thrust blocks, pipe supports as shown in the drawings.      | No. | 1  |  |  | Spec.<br>5.4.3 |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
|            | Provide, handle, install and test the following steel and uPVC pipes and fittings, valves and specials. Special rates shall include for completing all pipe joints as specified in the specification |     |    |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
|            | <b>1No. Double Air Valves (DAVs)<br/>PN 12.5 ,600m</b>                                                                                                                                               |     |    |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
| 8.3.<br>2  | 75x 50mm dia Saddle clamp flanged on one side                                                                                                                                                        | No. | 1  |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
| 8.3.<br>3  | 50mm dia x 0.4 m long double flanged GI pipe                                                                                                                                                         | No. | 1  |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
| 8.3.<br>4  | 75mm dia sluice valve                                                                                                                                                                                | No. | 1  |  |  |                |
|            |                                                                                                                                                                                                      |     |    |  |  |                |
| 8.3.<br>5  | 75mm double orifice air valve                                                                                                                                                                        | No. | 1  |  |  |                |

|            |                                                                                                                                                                                                      |     |   |  |  |  |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|--|--|--|
|            | <b>SUB-TOTAL CARRIED<br/>FORWARD TO NEXT PAGE</b>                                                                                                                                                    |     |   |  |  |  |
|            | <b>SUB-TOTAL CARRIED<br/>FORWARD FROM<br/>PREVIOUS PAGE</b>                                                                                                                                          |     |   |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
| <b>8.4</b> | <b>1 NO.WASHOUTS (W/O) PN<br/>10 ,1200M</b>                                                                                                                                                          |     |   |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
| 8.4.<br>1  | Excavate for, provide all materials and construct complete w/o chambers of internal dimensions 1200 x 1200 x 1200 mm. Rates to including thrust blocks, pipe supports as shown in the drawings.      | No. | 1 |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
|            | Provide, handle, install and test the following steel and uPVC pipes and fittings, valves and specials. Special rates shall include for completing all pipe joints as specified in the specification |     |   |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
| 8.4.<br>2  | 75mm x 75mm Saddle clamp flanged                                                                                                                                                                     | No. | 1 |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
| 8.4.<br>3  | 75 mm dia sluice valve                                                                                                                                                                               | No. | 1 |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
| 8.4.<br>4  | 75 mm dia x 500 mm long single flanged GI pipe                                                                                                                                                       | No. | 1 |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
| 8.4.<br>5  | 75 / 90 mm dia uPVC / GI adaptor                                                                                                                                                                     | No. | 1 |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
| 8.4.<br>6  | 50 mm HDPE pipe PN 8                                                                                                                                                                                 | m   | 6 |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
| 8.4.<br>7  | 75mm GI threaded pipe 500 mm long with a flap valve                                                                                                                                                  | No. | 1 |  |  |  |
|            |                                                                                                                                                                                                      |     |   |  |  |  |
| <b>8.5</b> | <b>FITTINGS</b>                                                                                                                                                                                      |     |   |  |  |  |

|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|--|--|-------------|
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|           | <b>HDPE REDUCERS PN10</b>                                                                                                                                                                                                          |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 8.5.<br>1 | 75mm x 50mm                                                                                                                                                                                                                        | No. | 1 |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 8.5.<br>2 | 50mm x 32mm                                                                                                                                                                                                                        | No. | 1 |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 8.5.<br>3 | 32mm x 25mm                                                                                                                                                                                                                        | No. | 1 |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|           | Rates shall include for completing all pipe joints as specified in the specification                                                                                                                                               |     |   |  |  |             |
|           | <b>SUB-TOTAL CARRIED FORWARD TO NEXT PAGE</b>                                                                                                                                                                                      |     |   |  |  |             |
|           | <b>SUB-TOTAL CARRIED FORWARD FROM PREVIOUS PAGE</b>                                                                                                                                                                                |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|           | <b>GF(GEORGE FISCHER) SADDLE CLAMPS</b>                                                                                                                                                                                            |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 8.6       | <b>HDPE CLAMPS C/W BOLTS AND NUTS</b>                                                                                                                                                                                              |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 8.6.<br>1 | 75mm x 32mm dia                                                                                                                                                                                                                    | No. | 1 |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
| 8.7       | <b>SECTION VALVE CHAMBERS</b>                                                                                                                                                                                                      |     |   |  |  |             |
| 8.7.<br>1 | Excavate for, provide all materials and construct complete inspection valve chambers of internal dimensions 1200 x 1200 x 1200 mm at the pipe junctions. Rates to including thrust blocks, pipe supports as shown in the drawings. | No. | 1 |  |  | Spec. 5.4.3 |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |
|           | <b>BLOCK CHAMBERS</b>                                                                                                                                                                                                              |     |   |  |  |             |
|           |                                                                                                                                                                                                                                    |     |   |  |  |             |

|            |                                                        |     |     |  |  |           |
|------------|--------------------------------------------------------|-----|-----|--|--|-----------|
|            | <b>1 Block Chamber at Start of the branch</b>          |     |     |  |  |           |
| 8.7.2      | 75 mm dia Sluice valve                                 | No  | 1   |  |  |           |
| 8.7.3      | 75 mm GI nipple                                        | No  | 1   |  |  |           |
| 8.7.4      | 75 mm GI union                                         | No  | 1   |  |  |           |
| 8.7.5      | 75 mm dia GI pipe ( threaded on both sides 0.5 m long) | No  | 1   |  |  | Spec. 6.4 |
| 8.7.6      | 75/75 mm dia GI / uPVC adaptor                         | No  | 2   |  |  |           |
| 8.7.8      | 75 mm dia uPVC pipe                                    | m   | 1   |  |  |           |
| <b>8.8</b> | <b>GI pipes at road crossings to Gichagi Branch</b>    |     |     |  |  |           |
| 8.8.1      | 75 mm dia                                              | m3  | 6.0 |  |  | Spec. 6.4 |
|            | <b>GI/HDPE Adaptors</b>                                |     |     |  |  |           |
| 8.8.2      | 75mm x 75 mm dia                                       | No. | 2   |  |  |           |
| <b>8.9</b> | <b>BENDS</b>                                           |     |     |  |  |           |
|            | <b>HDPE fittings (Vertical Bends)</b>                  |     |     |  |  |           |
|            | <b>75mm dia</b>                                        |     |     |  |  |           |
| 8.9.1      | 45 deg                                                 | No. | 2   |  |  |           |

|            |                                                                                                           |     |   |  |  |           |
|------------|-----------------------------------------------------------------------------------------------------------|-----|---|--|--|-----------|
| 8.9.<br>2  | 20 mm end cap                                                                                             | No  | 1 |  |  |           |
| 8.1<br>0   | <b>Marker post</b>                                                                                        |     |   |  |  | Spec. 1.5 |
| 8.1<br>0.1 | Provide marker posts as specified and as shown in the drawings prior to handing over including all costs. | No. | 8 |  |  |           |
|            | <b>TOTAL CARRIED OVER TO GRAND SUMMARY</b>                                                                |     |   |  |  |           |

|           |                                                                                                                                                                                                                                                                    |                  |                      |  |  |                            |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--|--|----------------------------|
|           | <b>BILL No 9. KARIA BRANCH</b>                                                                                                                                                                                                                                     |                  |                      |  |  |                            |
|           | <b>DESCRIPTION</b>                                                                                                                                                                                                                                                 | <b>UNI<br/>T</b> | <b>QUANTI<br/>TY</b> |  |  | <b>Technical<br/>Specs</b> |
| 9.0       | <b>Excavation and Backfilling</b>                                                                                                                                                                                                                                  |                  |                      |  |  | Spec.2.3                   |
|           | <b>HDPE Pipework</b>                                                                                                                                                                                                                                               |                  |                      |  |  |                            |
|           | Rates for excavation and backfilling in trench shall include for trimming trench bottom and for providing selected bedding and surround materials from the excavations with the specifications. Depth of excavation not exceeding 1.0 m unless otherwise specified |                  |                      |  |  |                            |
| 9.1.<br>1 | Excavation and backfilling in normal material for Dia 90 mm pipe for depth n.e 1.0 m                                                                                                                                                                               | m <sup>3</sup>   | 780.0                |  |  |                            |
| 9.1.<br>2 | Ditto 63                                                                                                                                                                                                                                                           | m <sup>3</sup>   | 395.0                |  |  |                            |
| 9.1.<br>3 | Ditto 50                                                                                                                                                                                                                                                           | m <sup>3</sup>   | 150.0                |  |  |                            |
| 9.1.<br>4 | Ditto 32                                                                                                                                                                                                                                                           | m <sup>3</sup>   | 80.0                 |  |  |                            |
| 9.1.<br>5 | Ditto 25                                                                                                                                                                                                                                                           | m <sup>3</sup>   | 50.0                 |  |  |                            |
|           |                                                                                                                                                                                                                                                                    |                  |                      |  |  |                            |
|           |                                                                                                                                                                                                                                                                    |                  |                      |  |  |                            |
|           |                                                                                                                                                                                                                                                                    |                  |                      |  |  |                            |
|           |                                                                                                                                                                                                                                                                    |                  |                      |  |  |                            |



|            |                                                                                                                                                                               |                |      |  |  |  |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|--|--|--|
| 9.1.<br>6  | E.O for excavation in soft rock (provisional)                                                                                                                                 | m <sup>3</sup> | 20.0 |  |  |  |
| 9.1.<br>7  | E.O for excavation in hard rock (provisional)                                                                                                                                 | m <sup>3</sup> | 20.0 |  |  |  |
| <b>9.2</b> | <b>HDPE Pipework</b>                                                                                                                                                          |                |      |  |  |  |
|            | Provide, lay, joint and test the following flexible spigot and socket pipe and fittings with rubber ring joints. Rates to include for all jointly materials, cutting wastage. |                |      |  |  |  |
|            | Note: The following have been used on the drawings to specify pipe diameters/types/classes. Pipe dimensions/working pressures shall conform to PE pipes KS-ISO-4427           |                |      |  |  |  |
|            | Class Working Pressure (m)                                                                                                                                                    |                |      |  |  |  |
|            | PN6<br>60                                                                                                                                                                     |                |      |  |  |  |
|            | PN10<br>100                                                                                                                                                                   |                |      |  |  |  |
|            | PN12.5<br>125                                                                                                                                                                 |                |      |  |  |  |
|            | PN16<br>160                                                                                                                                                                   |                |      |  |  |  |
|            | <b>HDPE Straights</b>                                                                                                                                                         |                |      |  |  |  |
|            | <b>PN 16</b>                                                                                                                                                                  |                |      |  |  |  |
| 9.2.<br>1  | 90 mm dia                                                                                                                                                                     | m              | 1225 |  |  |  |
|            | <b>PN 16</b>                                                                                                                                                                  |                |      |  |  |  |
| 9.2.<br>2  | 63 mm dia                                                                                                                                                                     | m              | 625  |  |  |  |
|            |                                                                                                                                                                               |                |      |  |  |  |

Spec.6.3

|           |                                                                                                                                                                                                 |     |     |  |  |            |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--|--|------------|
|           | <b>PN 16</b>                                                                                                                                                                                    |     |     |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
|           | <b>PN 16</b>                                                                                                                                                                                    |     |     |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
| 9.2.<br>3 | 50 mm dia                                                                                                                                                                                       | m   | 205 |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
|           | <b>PN 16</b>                                                                                                                                                                                    |     |     |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
| 9.2.<br>4 | 32 mm dia                                                                                                                                                                                       | m   | 105 |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
|           | <b>PN 16</b>                                                                                                                                                                                    |     |     |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
| 9.2.<br>5 | 25 mm dia                                                                                                                                                                                       | m   | 85  |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
|           | <b>SUB-TOTAL CARRIED<br/>FORWARD TO NEXT PAGE</b>                                                                                                                                               |     |     |  |  |            |
|           | <b>SUB-TOTAL CARRIED<br/>FORWARD FROM<br/>PREVIOUS PAGE</b>                                                                                                                                     |     |     |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
| 9.3       | <b>HDPE Fittings</b>                                                                                                                                                                            |     |     |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
|           | <b>Reducers PN 10</b>                                                                                                                                                                           |     |     |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
| 9.3.<br>1 | 90mm x 63 mm                                                                                                                                                                                    | No. | 1   |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
| 9.3.<br>2 | 63 x 50 mm                                                                                                                                                                                      | No. | 1   |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
| 9.3.<br>3 | 50 x 32 mm                                                                                                                                                                                      | No. | 1   |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
| 9.4       | <b>BLOCK VALVE CHAMBER</b>                                                                                                                                                                      |     |     |  |  |            |
|           |                                                                                                                                                                                                 |     |     |  |  |            |
| 9.4.<br>1 | Excavate for, provide all materials and construct complete inspection valve chambers of internal dimensions 1200 x 1200 x 1200 mm at the pipe junctions. Rates to including thrust blocks, pipe | No. | 1   |  |  | Spec.5.4.3 |

|              |                                                                                                           |     |            |  |  |              |
|--------------|-----------------------------------------------------------------------------------------------------------|-----|------------|--|--|--------------|
|              | supports as shown in the drawings                                                                         |     |            |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
| <b>9.4.2</b> | <b>1 Block Chamber at Start of the branch</b>                                                             |     |            |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
| <b>9.4.3</b> | 90mmx 90mm dia saddle clamp                                                                               | No. | 1          |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
| <b>9.4.4</b> | 90mm diagate valve -pelger or equivalent                                                                  | No. | 1          |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
| <b>9.4.5</b> | 90mm dia valve socket                                                                                     | No. | 1          |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
| <b>9.5</b>   | <b>GI pipes at road crossings to Kiahiti Branch</b>                                                       |     |            |  |  | Spec. 6.4    |
|              |                                                                                                           |     |            |  |  |              |
| <b>9.5.1</b> | 90 mm dia                                                                                                 | m3  | 6.0        |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
|              | <b>GI/HDPE Adaptors</b>                                                                                   |     |            |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
| <b>9.5.2</b> | <b>90mm x90mm</b>                                                                                         | No  | 2.0        |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
| <b>9.6.2</b> | 25 mm end cap                                                                                             | No  | 1          |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
|              | <b>Marker post</b>                                                                                        |     |            |  |  | Spec. 1.5    |
|              |                                                                                                           |     |            |  |  |              |
|              | Provide marker posts as specified and as shown in the drawings prior to handing over including all costs. | No. | 6          |  |  |              |
|              | <b>TOTAL CARRIED OVER TO COLLECTION SHEET</b>                                                             |     |            |  |  |              |
|              |                                                                                                           |     |            |  |  |              |
|              | <b>DESCRIPTION</b>                                                                                        |     | <b>Qty</b> |  |  | <b>Specs</b> |

| ITEM No                    |                                                                                                                                                                                                               | Unit |     |  |  |           |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|--|--|-----------|
| <b>SEDIMENTATION BASIN</b> |                                                                                                                                                                                                               |      |     |  |  |           |
| <b>10.1</b>                | <b>EXCAVATION</b>                                                                                                                                                                                             |      |     |  |  |           |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |
|                            | To include for all trimming to levels, backfilling with approved selected spoil, compacting, disposal of surplus material and reinstatement for sedimentation basin, drainage chambers and washout structure. |      |     |  |  |           |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |
| 3.1.1                      | Strip topsoil average 200 mm and dispose                                                                                                                                                                      | m3   | 80  |  |  | Spec. 2.3 |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |
| 3.1.2                      | In normal soil (material) to a depth not exceeding 3.0                                                                                                                                                        | m3   | 160 |  |  |           |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |
| 3.1.3                      | E.O. for excavation in rock (provisional).                                                                                                                                                                    | m3   | 30  |  |  |           |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |
| 3.1.4                      | Backfilling and disposal of soil material                                                                                                                                                                     | m3   | 160 |  |  |           |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |
| <b>10.2</b>                | <b>CONCRETE WORKS</b>                                                                                                                                                                                         |      |     |  |  |           |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |
| 3.2.1                      | Provide, place and treat the following concrete mix including all form work.                                                                                                                                  |      |     |  |  | Spec. 3.0 |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |
| 3.2.2                      | Blinding concrete grade 15/40 - 75 mm thick                                                                                                                                                                   | m3   | 30  |  |  |           |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |
| 3.2.3                      | Reinforced concrete grade 25/20 as shown on drawings                                                                                                                                                          | m3   | 55  |  |  |           |
|                            |                                                                                                                                                                                                               |      |     |  |  |           |

|                  |                                                                                                                                          |     |      |  |  |                |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----|------|--|--|----------------|
| 3.2.<br>4        | Form work for structures and blinding concrete                                                                                           | m2  | 265  |  |  |                |
|                  |                                                                                                                                          |     |      |  |  |                |
| <b>10.<br/>3</b> | <b>REINFORCEMENT</b>                                                                                                                     |     |      |  |  | Spec. 4.0      |
|                  |                                                                                                                                          |     |      |  |  |                |
| 3.3.<br>1        | Provide, support and fix the following high tensile ribbed reinforcement, including all cutting, bending and supports.                   |     |      |  |  |                |
|                  |                                                                                                                                          |     |      |  |  |                |
| 3.3.<br>2        | High yield bars TMT 12                                                                                                                   | kg  | 2405 |  |  |                |
|                  |                                                                                                                                          |     |      |  |  |                |
| 3.3.<br>3        | High yield bars TMT 10                                                                                                                   | kg  | 1605 |  |  | Spec. 4.0      |
|                  |                                                                                                                                          |     |      |  |  |                |
| 3.3.<br>4        | High yield bars TMT8                                                                                                                     | Kg  | 30   |  |  |                |
|                  |                                                                                                                                          |     |      |  |  |                |
|                  | <b>Inlet and Outlet Pipe work and Fittings</b>                                                                                           |     |      |  |  |                |
|                  | <b>The rates inserted should cover supplying of fittings including all jointing accessories, handling, fixing, jointing and testing.</b> |     |      |  |  |                |
|                  |                                                                                                                                          |     |      |  |  |                |
| <b>10.<br/>4</b> | <b>Inlet Chamber</b>                                                                                                                     |     |      |  |  | Spec.<br>5.4.3 |
|                  |                                                                                                                                          |     |      |  |  |                |
| 3.4.<br>1        | Dia 250 mm Ductile Iron/GI/Steel 45/90 deg double flanged elbow (short radius bend)                                                      | No. | 2    |  |  | Spec. 6.4      |
|                  |                                                                                                                                          |     |      |  |  |                |
| 3.4.<br>2        | Dia 250 mm double flanged spigot pipe x 0.5 m long,with puddle flange                                                                    | No. | 1    |  |  |                |
|                  |                                                                                                                                          |     |      |  |  |                |
| <b>10.<br/>5</b> | <b>Outlet Chamber</b>                                                                                                                    |     |      |  |  | Spec.<br>5.4.3 |
|                  |                                                                                                                                          |     |      |  |  |                |

|             |                                                                                                   |      |    |  |  |           |
|-------------|---------------------------------------------------------------------------------------------------|------|----|--|--|-----------|
| 3.5.1       | Dia 200 mm Ductile Iron/GI/Steel 90 deg double flanged bend (long radius bend)                    | No.  | 2  |  |  |           |
| 3.5.2       | Dia 200 x 200 mm Ms flanged bell mouth                                                            | No.  | 1  |  |  | Spec. 6.4 |
| 3.5.3       | Dia 200 mm double flanged spigot pipe x 0.5 m length                                              | No.  | 3  |  |  |           |
| 3.5.4       | Dia 200 mm Sluice valve                                                                           | No.  | 1  |  |  |           |
| 3.5.5       | Dia 200 mm dia HDPE Flange Adaptor                                                                | No.  | 2  |  |  |           |
| 3.5.6       | saddle clamp with 50mm dia HDPE pipe (2m long) air vent to outlet pipe after offtake sluice valve | No.  | 1  |  |  |           |
| <b>10.6</b> | <b>Scouring Chamber Piping</b>                                                                    |      |    |  |  |           |
| 3.6.1       | Dia 150 mm butterfly valve.                                                                       | No   | 1  |  |  |           |
| 3.6.2       | Dia 150 mm flanged adaptor                                                                        | No.  | 1  |  |  |           |
| 3.6.3       | Dia 150 mm HDPE pipe                                                                              | m    | 15 |  |  |           |
| 3.6.4       | Supply and Install Manhole covers as shown                                                        | No.  | 1  |  |  |           |
| <b>10.7</b> | <b>Sedimentation Basin Cover</b>                                                                  |      |    |  |  |           |
| 3.7.1       | Provide and install MS cover plate complete with frames/hinges/locks                              | Su m | 6  |  |  |           |

|             |                                                                                                                                                                                                                           |     |    |  |  |                |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|--|--|----------------|
|             | as shown in the drawings and directed by the Engineer                                                                                                                                                                     |     |    |  |  |                |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |
| <b>10.8</b> | <b>Offtake chamber</b>                                                                                                                                                                                                    |     |    |  |  | Spec.<br>5.4.3 |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |
| 3.8.1       | Excavate for , provide all materials and construct complete master meter chamber,1500x1500x1200mm, as specified/shown in the drawings. Rates to include for all thrust blocks, lockable covers, pipe supports, steps etc. | No. | 1  |  |  |                |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |
|             | <b>Provide, handle, install and test GI pipes and fittings, valves and specials to water meter chamber, rates to include completion of all joints as specified.</b>                                                       |     |    |  |  |                |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |
| 3.8.2       | Water Master meter to fit 200 mm dia pipe                                                                                                                                                                                 | No. | 1  |  |  |                |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |
| <b>10.9</b> | <b>Miscellaneous</b>                                                                                                                                                                                                      |     |    |  |  |                |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |
| 3.9.1       | Provision for guardrails 38mm dia GI pipe                                                                                                                                                                                 | m   | 35 |  |  |                |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |
| 3.9.2       | Provision for 16mm dia mild steel steps to SB as shown in the drg.                                                                                                                                                        | m   | 35 |  |  |                |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |
|             | <b>TOTAL CARRIED OVER TO GRAND SUMMARY</b>                                                                                                                                                                                |     |    |  |  |                |
|             |                                                                                                                                                                                                                           |     |    |  |  |                |

| IT<br>EM         | DESCRIPTION                                                                                                                                                                                                   | UNI<br>T | QUAN<br>TITY | RATE<br>(KShs.) | AMOUN<br>T (KShs.) |              |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------|-----------------|--------------------|--------------|
|                  | <b>Bill No.11 Sedimentation Basin</b>                                                                                                                                                                         |          |              |                 |                    |              |
| <b>11</b>        | <b>EXCAVATION</b>                                                                                                                                                                                             |          |              |                 |                    |              |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
|                  | To include for all trimming to levels, backfilling with approved selected spoil, compacting, disposal of surplus material and reinstatement for sedimentation basin, drainage chambers and washout structure. |          |              |                 |                    |              |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
| 11.<br>1         | Strip topsoil average 200 mm and dispose                                                                                                                                                                      | m3       | 80           |                 |                    | Spec.<br>2.3 |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
| 11.<br>2         | In normal soil (material) to a depth not exceeding 3.0                                                                                                                                                        | m3       | 160          |                 |                    |              |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
| 11.<br>3         | E.O. for excavation in rock (provisional).                                                                                                                                                                    | m3       | 30           |                 |                    |              |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
| 11.<br>4         | Backfilling and disposal of soil material                                                                                                                                                                     | m3       | 160          |                 |                    |              |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
| <b>11.<br/>1</b> | <b>CONCRETE WORKS</b>                                                                                                                                                                                         |          |              |                 |                    |              |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
| 11.<br>1.1       | Provide, place and treat the following concrete mix including all form work.                                                                                                                                  |          |              |                 |                    | Spec.<br>3.0 |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
| 11.<br>1.2       | Blinding concrete grade 15/40 - 75 mm thick                                                                                                                                                                   | m3       | 30           |                 |                    |              |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
| 11.<br>1.3       | Reinforced concrete grade 25/20 as shown on drawings                                                                                                                                                          | m3       | 55           |                 |                    |              |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |
| 11.<br>1.4       | Form work for structures and blinding concrete                                                                                                                                                                | m2       | 265          |                 |                    |              |
|                  |                                                                                                                                                                                                               |          |              |                 |                    |              |



|            |                                                                                                                                          |     |      |  |  |                |
|------------|------------------------------------------------------------------------------------------------------------------------------------------|-----|------|--|--|----------------|
| 11.<br>2   | <b>REINFORCEMENT</b>                                                                                                                     |     |      |  |  |                |
|            |                                                                                                                                          |     |      |  |  |                |
| 11.<br>2.1 | Provide, support and fix the following high tensile ribbed reinforcement, including all cutting, bending and supports.                   |     |      |  |  |                |
|            |                                                                                                                                          |     |      |  |  |                |
| 11.<br>2.2 | High yield bars TMT 12                                                                                                                   | kg  | 2405 |  |  | Spec.<br>4.0   |
|            |                                                                                                                                          |     |      |  |  |                |
| 11.<br>2.3 | High yield bars TMT 10                                                                                                                   | kg  | 1605 |  |  |                |
|            |                                                                                                                                          |     |      |  |  |                |
| 11.<br>2.4 | High yield bars TMT8                                                                                                                     | Kg  | 30   |  |  |                |
|            |                                                                                                                                          |     |      |  |  |                |
|            | <b>Inlet and Outlet Pipe work and Fittings</b>                                                                                           |     |      |  |  |                |
|            | <b>The rates inserted should cover supplying of fittings including all jointing accessories, handling, fixing, jointing and testing.</b> |     |      |  |  |                |
|            |                                                                                                                                          |     |      |  |  |                |
| 11.<br>3   | <b>Inlet Chamber</b>                                                                                                                     |     |      |  |  | Spec.<br>5.4.3 |
|            |                                                                                                                                          |     |      |  |  |                |
| 11.<br>3.1 | Dia 250 mm Ductile Iron/GI/Steel 45/90 deg double flanged elbow (short radius bend)                                                      | No. | 2    |  |  |                |
|            |                                                                                                                                          |     |      |  |  | Spec.<br>6.4   |
| 11.<br>3.2 | Dia 250 mm double flanged spigot pipe x 0.5 m long, with puddle flange                                                                   | No. | 1    |  |  |                |
|            |                                                                                                                                          |     |      |  |  |                |
| 11.<br>4   | <b>Outlet Chamber</b>                                                                                                                    |     |      |  |  | Spec.<br>5.4.3 |
|            |                                                                                                                                          |     |      |  |  |                |
| 11.<br>4.1 | Dia 200 mm Ductile Iron/GI/Steel 90 deg double flanged bend (long radius bend)                                                           | No. | 2    |  |  | Spec.<br>6.4   |
|            |                                                                                                                                          |     |      |  |  |                |

|             |                                                                                                                            |     |    |  |  |  |
|-------------|----------------------------------------------------------------------------------------------------------------------------|-----|----|--|--|--|
| 11.4.2      | Dia 200 x 200 mm Ms flanged bell mouth                                                                                     | No. | 1  |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| 11.4.3      | Dia 200 mm double flanged spigot pipe x 0.5 m length                                                                       | No. | 3  |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| 11.4.4      | Dia 200 mm Sluice valve                                                                                                    | No. | 1  |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| 11.4.5      | Dia 200 mm dia HDPE Flange Adaptor                                                                                         | No. | 2  |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| 11.4.6      | saddle clamp with 50mm dia HDPE pipe (2m long) air vent to outlet pipe after offtake sluice valve                          | No. | 1  |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| <b>11.5</b> | <b>Scouring Chamber Piping</b>                                                                                             |     |    |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| 11.5.1      | Dia 150 mm butterfly valve.                                                                                                | No  | 1  |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| 11.5.2      | Dia 150 mm flanged adaptor                                                                                                 | No. | 1  |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| 11.5.3      | Dia 150 mm HDPE pipe                                                                                                       | m   | 15 |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| 11.5.4      | Supply and Install Manhole covers as shown                                                                                 | No. | 1  |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| <b>11.6</b> | <b>Sedimentation Basin Cover</b>                                                                                           |     |    |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| 11.6.1      | Provide and install MS cover plate complete with frames/hinges/locks as shown in the drawings and directed by the Engineer | Sum | 6  |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |
| <b>11.7</b> | <b>Offtake chamber</b>                                                                                                     |     |    |  |  |  |
|             |                                                                                                                            |     |    |  |  |  |

Spec.  
5.4.3

|        |                                                                                                                                                                                                                           |                |    |  |  |  |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----|--|--|--|
| 11.7.1 | Excavate for , provide all materials and construct complete master meter chamber,1500x1500x1200mm, as specified/shown in the drawings. Rates to include for all thrust blocks, lockable covers, pipe supports, steps etc. | No.            | 1  |  |  |  |
|        |                                                                                                                                                                                                                           |                |    |  |  |  |
|        | <b>Provide, handle, install and test GI pipes and fittings, valves and specials to water meter chamber, rates to include completion of all joints as specified.</b>                                                       |                |    |  |  |  |
|        |                                                                                                                                                                                                                           |                |    |  |  |  |
| 11.7.2 | Water Master meter to fit 200 mm dia pipe                                                                                                                                                                                 | No.            | 1  |  |  |  |
|        |                                                                                                                                                                                                                           |                |    |  |  |  |
| 11.8   | <b>Miscellaneous</b>                                                                                                                                                                                                      |                |    |  |  |  |
|        |                                                                                                                                                                                                                           |                |    |  |  |  |
| 11.8.1 | Provision for guardrails 38mm dia GI pipe                                                                                                                                                                                 | m              | 35 |  |  |  |
|        |                                                                                                                                                                                                                           |                |    |  |  |  |
| 11.8.2 | Provision for 16mm dia mild steel steps to SB as shown in the drg.                                                                                                                                                        | m              | 35 |  |  |  |
|        |                                                                                                                                                                                                                           |                |    |  |  |  |
|        | <b>TOTAL CARRIED OVER TO GRAND SUMMARY</b>                                                                                                                                                                                |                |    |  |  |  |
|        |                                                                                                                                                                                                                           |                |    |  |  |  |
| 12     | <b>Bill No.12 Intake Wingwalls</b>                                                                                                                                                                                        |                |    |  |  |  |
|        | <b>EXCAVATION / EARTHWORKS</b>                                                                                                                                                                                            |                |    |  |  |  |
| 12.1   | Excavation to include all trimming to levels, backfilling with approved selected spoil, compacting, disposal of surplus material and reinstatement.                                                                       |                |    |  |  |  |
| 12.2   | In normal soil to take wing-walls and to depth n.e 1.0 m and form sections as specified.                                                                                                                                  | m <sup>3</sup> | 12 |  |  |  |
| 12.3   | In rock to take wing-walls and to depth n.e 3.0 m and form sections as specified.                                                                                                                                         | m <sup>3</sup> | 4  |  |  |  |
| 12.4   |                                                                                                                                                                                                                           |                |    |  |  |  |
| 12.5   | Place compacted hardcore or boulders to stabilize the Wing walls foundations (provisional). Boulders available on site.                                                                                                   | m <sup>3</sup> | 12 |  |  |  |

Spec.  
2.3

|       |                                                                                                                                                                 |                |            |  |  |           |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------|--|--|-----------|
|       | <b>Materials for the concrete mixes including all labour. Use of mixers and vibrators are recommended</b>                                                       |                |            |  |  |           |
| 12.6  | RC concrete grade 20/25. (Reinforcement bars are given in item 3.5 separately)                                                                                  |                |            |  |  | Spec. 3.0 |
| 12.7  | Ditto in weir retaining and wing walls (including base)                                                                                                         | m <sup>3</sup> | 34.0       |  |  |           |
|       |                                                                                                                                                                 |                |            |  |  |           |
| 12.8  | RC for the upper and lower aprons, concrete grade C15/20                                                                                                        | m <sup>3</sup> | 20.0       |  |  |           |
|       | <b>Reinforcement</b>                                                                                                                                            |                |            |  |  |           |
| 12.9  | Provision for fixing the following reinforcement, including all cutting, bending and supports for weir body, floors, walls, slabs, etc as shown in the drawings |                |            |  |  | Spec. 4.0 |
|       | <b>Twisted/Deformed bars</b>                                                                                                                                    |                |            |  |  |           |
|       | D 12 mm Ø bars                                                                                                                                                  | No             | 15         |  |  |           |
|       | D 10 mm Ø bars                                                                                                                                                  | No             | 20         |  |  |           |
|       | D 8 mm Ø bars for both links and reinforcement                                                                                                                  | No             | 30         |  |  |           |
|       | Binding wire                                                                                                                                                    | Roll           | 1          |  |  |           |
|       |                                                                                                                                                                 |                |            |  |  |           |
| 12.1  | <b>Formwork</b>                                                                                                                                                 |                |            |  |  | Spec. 5.0 |
|       | 160mm x 25mm sawn timber (cypress)                                                                                                                              | LM             | 195        |  |  |           |
|       | 75mm x 50mm timber props                                                                                                                                        | LM             | 215        |  |  |           |
|       | Round wire nails 2'', 3" and 4''                                                                                                                                | Kg             | 20         |  |  |           |
|       |                                                                                                                                                                 |                |            |  |  |           |
| 12.11 | <b>PROTECTION WORKS</b>                                                                                                                                         |                |            |  |  |           |
|       |                                                                                                                                                                 |                |            |  |  |           |
|       | Materials and labour for placing grouted rip rap (mortared stone pitching) 300- 350 mm on sloping sides as shown in the intake drawing.                         | m <sup>3</sup> | 10.0       |  |  |           |
|       | Steel Trowel finish to top surface of Apron                                                                                                                     | m <sup>2</sup> | 26         |  |  |           |
|       | <b>Sub Total carried to summary page.</b>                                                                                                                       |                |            |  |  |           |
|       |                                                                                                                                                                 |                |            |  |  |           |
|       | <b>BILL NO 13. PIPEWORK / LAYING.</b>                                                                                                                           |                |            |  |  |           |
|       | <b>ITEM DESCRIPTION</b>                                                                                                                                         | <b>UNIT</b>    | <b>QTY</b> |  |  |           |
| 13.1  | <b>Excavation and Backfilling</b>                                                                                                                               |                |            |  |  | Spec. 2.3 |

|         |                                                                                                                                                             |     |      |  |  |           |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|--|--|-----------|
| 13.1.1  | Clear all Bushes and Shrubs along the Ø 125mm Gravity Pipeline Route                                                                                        | M   | 1000 |  |  |           |
| 13.1.2  | Excavation and Backfilling in trench normal materials for Gravity Main Ø 125mm & Ø 110mm HDPE (PN8, 10 and 12.5) for depth not exceeding 1.5 M and width 1M | M³  | 3949 |  |  |           |
| 13.1.3  | Excavate for soft rock                                                                                                                                      | M³  | 20   |  |  |           |
| 13.1.4  | Excavate for hard rock                                                                                                                                      | M³  | 10   |  |  |           |
|         |                                                                                                                                                             |     |      |  |  |           |
| 13.2.0  | <b>HDPE and G.I pipes and fittings</b>                                                                                                                      |     |      |  |  |           |
|         |                                                                                                                                                             |     |      |  |  |           |
| 13.2.1  | Supply, fix and test a Ø 125mm PN 8 HDPE                                                                                                                    | M   | 1750 |  |  |           |
| 13.2.2  | Supply, fix and test a Ø 125mm PN 10 HDPE                                                                                                                   | M   | 1275 |  |  | Spec. 6.3 |
| 13.2.3  | Supply, fix and test a Ø 110mm PN 10 HDPE                                                                                                                   | M   | 1675 |  |  |           |
| 13.2.4  | Supply, fix and test a Ø 110mm PN 12.5 HDPE                                                                                                                 | M   | 185  |  |  |           |
| 13.2.5  | supply and install 150mm diameter G.I Pipes                                                                                                                 | No. | 12   |  |  |           |
| 13.3.0  | <b>Fittings and Valves</b>                                                                                                                                  |     |      |  |  |           |
| 13.3.1  | 90° DN 125 mm G.I Elbow                                                                                                                                     | No. | 1    |  |  |           |
| 13.3.2  | 125mm HDPE Male Adapter                                                                                                                                     | No. | 2    |  |  |           |
| 13.3.3  | 110mm HDPE Male Adapter                                                                                                                                     | No. | 1    |  |  |           |
| 13.3.4  | 90mm HDPE Male Adapter                                                                                                                                      | No. | 2    |  |  | Spec. 6.3 |
| 13.3.5  | 125mm Flanged Steel                                                                                                                                         | No. | 5    |  |  |           |
| 13.3.6  | 110mm Flanged Steel                                                                                                                                         | No. | 1    |  |  |           |
| 13.3.7  | 110mm Threaded G.I                                                                                                                                          | M   | 2    |  |  |           |
| 13.3.8  | 90mm Threaded G.I                                                                                                                                           | M   | 2    |  |  |           |
| 13.3.9  | 110mm G.I Socket                                                                                                                                            | No. | 1    |  |  |           |
| 13.3.10 | 90mm G.I Socket                                                                                                                                             | No. | 1    |  |  | Spec. 6.4 |

|          |                                                                                                                                                                                                                    |     |     |  |  |             |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--|--|-------------|
| 13.3.1.1 | 110mm sluice Valve                                                                                                                                                                                                 | No. | 2   |  |  |             |
| 13.3.1.2 | 90mm Gate Valve                                                                                                                                                                                                    | No. | 1   |  |  |             |
| 13.3.1.3 | Bolts and Nuts 5/8 * 90mm                                                                                                                                                                                          | No. | 56  |  |  |             |
| 13.3.1.4 | Single Orifice Air valve (ARI D-40 series) pn16 complete with all fittings and installations                                                                                                                       | No. | 2   |  |  | Spec. 6.5   |
| 13.4.0   | <b>Distribution lines from end of main line to the existing system of 650m in length.</b>                                                                                                                          |     |     |  |  |             |
| 13.4.1   | Excavation and Backfilling in trench normal materials for Sub Line Main Ø 110mm HDPE ( PN 10) for depth not exceeding 1.2 M                                                                                        | M³  | 395 |  |  |             |
| 13.4.2   | DN 90 mm HDPE PN 10                                                                                                                                                                                                | M   | 100 |  |  |             |
| 13.4.3   | DN 110 mm HDPE PN 10                                                                                                                                                                                               | M   | 550 |  |  |             |
| 13.4.4   | DN 125 mm * 110mm Saddle Connector                                                                                                                                                                                 | No. | 5   |  |  |             |
| 13.4.5   | DN 110 mm * 90mm Saddle Connector                                                                                                                                                                                  | No. | 2   |  |  | Spec. 6.3   |
|          | <b>Chambers And Pipe Work Ancillaries</b>                                                                                                                                                                          |     |     |  |  |             |
| 13.4.6   | Provide all materials, labour, excavation and construction of masonry valve chambers internal dimensions 1200mm x 1200mm x 1200mm. Include for supply and fixing of lockable precast concrete cover and step irons | No. | 5   |  |  | Spec. 5.4.3 |
|          | <b>PRVS</b>                                                                                                                                                                                                        |     |     |  |  | Spec6 .5;.6 |
| 13.4.7   | Excavate for, provide all materials and construct complete PRV chambers of internal dimensions 1200 x 1200 x 1200 mm. Rates to including thrust blocks, pipe supports as shown in the drawings.                    | No. | 1   |  |  |             |
| 13.4.8   | Provide, handle, install and test the following steel and HDPE pipes and fittings, valves and specials. Special rates shall include for completing all pipe joints as specified in the specification               |     |     |  |  |             |

|                  |                                                                                                                                                                                                              |                  |            |  |  |              |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|--|--|--------------|
| 13.<br>4.9       | 110 mm dia HDPE Flange Adaptor                                                                                                                                                                               | No               | 2          |  |  |              |
| 13.<br>4.1<br>0  | 110 mm dia flanged sluice Valve                                                                                                                                                                              | No               | 1          |  |  |              |
| 13.<br>4.1<br>1  | 110 mm dia flanged pressure reducing valve                                                                                                                                                                   | No.              | 1          |  |  |              |
| 13.<br>4.1<br>2  | 110 mm dia Flanges                                                                                                                                                                                           | No               | 2          |  |  |              |
|                  |                                                                                                                                                                                                              |                  |            |  |  |              |
| <b>13.<br/>5</b> | <b>Mark post</b>                                                                                                                                                                                             |                  |            |  |  |              |
| 13.<br>5.1       | Provide marker posts as specified and as shown in the drawings prior to handing over including all costs. (water main route, road crossings, change of direction, air valves, washouts, and valve chambers). | No.              | 20         |  |  | Spec.<br>1.5 |
| 13.<br>5.2       | Provide Anchoring and Thrust for the Pipes on Roads, Valleys & Rivers Crossings as directed by the Supervisor                                                                                                | No.              | 5          |  |  |              |
|                  |                                                                                                                                                                                                              |                  |            |  |  |              |
|                  | <b>SUB-TOTAL carried to Summary page</b>                                                                                                                                                                     |                  |            |  |  |              |
|                  |                                                                                                                                                                                                              |                  |            |  |  |              |
|                  | <b>BILL NO. 14 -CONSERVATION OF THE CATCHMENT AREA</b>                                                                                                                                                       |                  |            |  |  |              |
|                  | <b>ITEM DESCRIPTION</b>                                                                                                                                                                                      | <b>UNI<br/>T</b> | <b>QTY</b> |  |  |              |
| <b>14.<br/>1</b> | Bamboo planting upstream both sides along the stream 1km and 0.5km downstream both sides from the intake.                                                                                                    | Seed<br>lings    | 1000       |  |  | Spec7<br>.0  |
| <b>14.<br/>2</b> | Clear Intake Reservoir of Accumulated Silts by Scooping/Flushing                                                                                                                                             | M <sup>3</sup>   | 64         |  |  |              |
| <b>14.<br/>3</b> | Construction of gabions 2M x 1M x 1M and hardcore stone fillings                                                                                                                                             | No.              | 35         |  |  | Spec.<br>5.6 |
|                  | <b>SUB-TOTAL carried to summary page.</b>                                                                                                                                                                    |                  |            |  |  |              |
|                  |                                                                                                                                                                                                              |                  |            |  |  |              |



# **COUNTY GOVERNMENT OF NYERI**

**DEPARTMENT OF AGRICULTURE, LIVESTOCK & AQUACULTURE  
DEVELOPMENT**

**NATIONAL AGRICULTURAL VALUE CHAIN DEVELOPMENT  
PROJECT (NAVCDP)**

**TECHNICAL SPECIFICATIONS FOR THE CONSTRUCTION OF  
MARAGIMA/TAGWA IRRIGATION WATER PROJECT MAINLINE IN MARAGIMA  
AREA THEGU RIVER WARD, KIENI EAST SUB-COUNTY AND KIHUYO  
IRRIGATION WATER PROJECT DISTRIBUTION PIPELINE AT KIHUYO AREA,  
KIGANJO/MATHARI WARD, NYERI CENTRAL SUB-COUNTY, NYERI COUNTY**



## GENERAL AND TECHNICAL SPECIFICATIONS

### Units and Abbreviations

The units of measurement used in these Contract Documents are metric.

The following abbreviations have been used for units and for other words or phrases as indicated.

Abbreviations in the Contract Documents shall have the following meanings:

| Abbreviation        | Definition   |
|---------------------|--------------|
| mm                  | millimeter   |
| m                   | meter        |
| km                  | kilometer    |
| sq.m,m <sup>2</sup> | square meter |
| ha                  | hectare      |
| cu m,m <sup>3</sup> | cubic meter  |
| sec,s               | second       |
| hr                  | hour         |
| min                 | minute       |
| wk                  | week         |
| l                   | litre        |
| gm                  | gram         |
| kg                  | kilogram     |
| t                   | tonne        |
| No                  | Number       |

|      |                                 |
|------|---------------------------------|
| nr   | Number (in bill of quantities)  |
| dia  | diameter                        |
| max  | maximum                         |
| min  | minimum                         |
| AD   | above datum (levels in metres)  |
| ch   | chainage (distance in metres)   |
| eo   | extra over                      |
| e    | exceeding                       |
| ne   | not exceeding                   |
| PQ   | Provisional Quantity            |
| PS   | Provincial Sum                  |
| Do   | Ditto                           |
| fob  | free on board                   |
| cif  | cost, insurance, freight        |
| wt   | weight                          |
| %    | percent                         |
| mh   | manhole                         |
| ic   | inspection chamber              |
| HYS  | high yield steel                |
| PCC  | precast concrete                |
| uPVC | unplasticized polyvinylchloride |

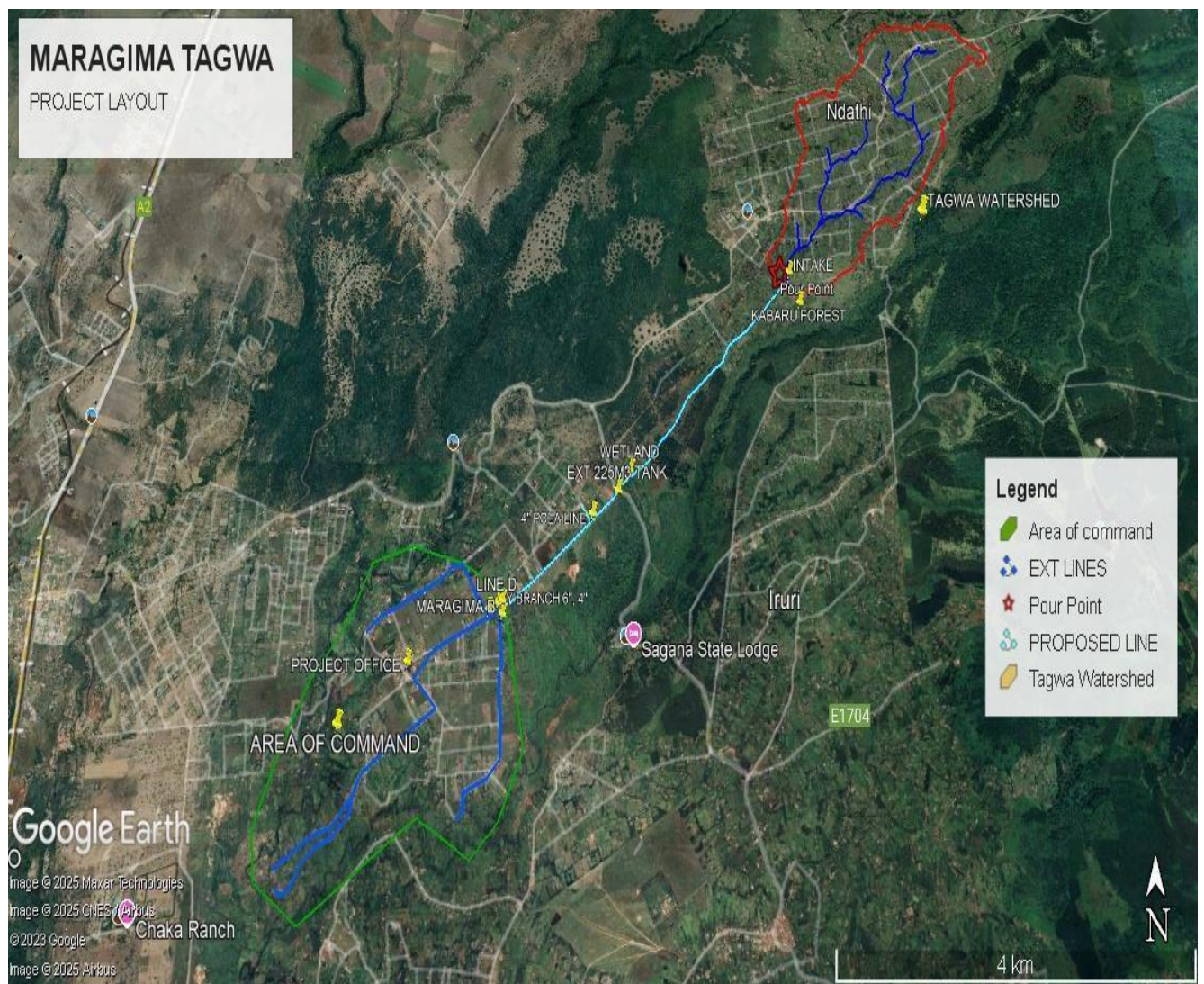
|       |                                      |
|-------|--------------------------------------|
| GMS   | galvanized mild steel                |
| DI    | ductile iron                         |
| G.I   | galvanized Iron                      |
| SV    | sluice valve                         |
| ISO   | International Standards Organization |
| KS    | Kenyan Standard                      |
| BS    | British Standard                     |
| KShs. | Kenya Shillings                      |
| HDPE  | High density polyethylene            |
| deg   | Degree                               |
| GF    | George fisher                        |

## 1.0 Project area description

### 1.0.1 Location

#### **A) Maragima Tagwa irrigation**

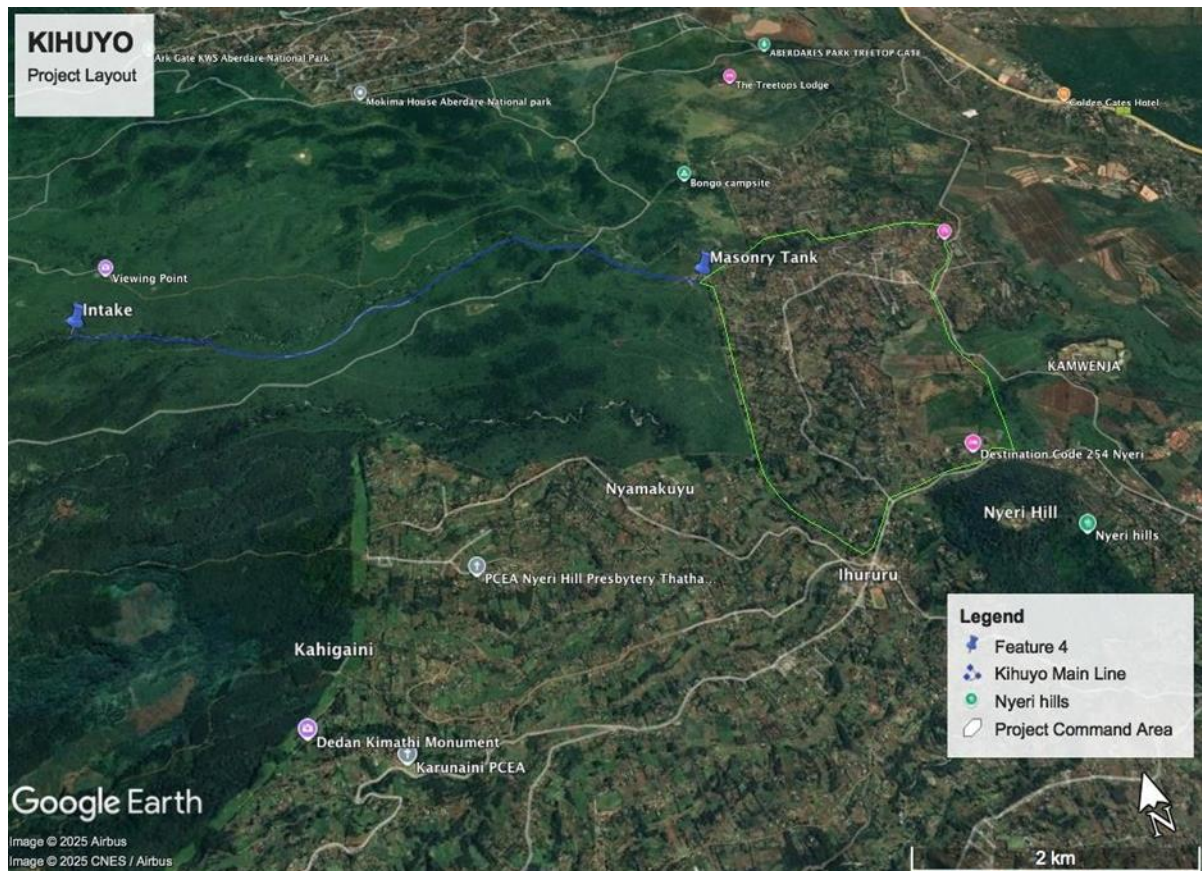
The project is located in Maragima Sub-Location, Thegu River Ward, Kieni- East Sub-County in Nyeri County. Maragima/ Tagwa Rukurwa Stream intake is 14km from Chaka Market and is adjacent to Kabarua Forest fence at Mbogoini South of Mbiriri shopping center. The project area is accessed from Chaka-State Lodge tarmac road at Tagwa approximately 6km from Chaka. The roads connecting the project area are graveled and all weather. Below is a google earth layout for the new pipeline to be installed. A more elaborate layout is in the book of drawings.



## B) Kihuyo irrigation project

The project is located in Nyeri County, Nyeri Central Sub-County, Kiganjo Mathari Ward, approximately 5 km north of Nyeri Town, borders of Kieni East Sub-County and Kieni West Sub-County.





*Kihuyo Water Project Location*

## 1.0.2 Climate

### A) Maragima Tagwa irrigation project

The project area experiences two rainfall seasons, long rains and short rains. The long rains season spreads from March through May and the short rains season which occur on October and November. The two rainfall seasons are separated by a severe dry spell hence the need for irrigation water. Efforts are being put into place to educate the population within the project area on rain water harvesting as an additional water source especially for domestic use.

The driest period is Jan-Feb when temperatures range between 25-28°C. While the coolest month is July with temperatures as low as 10 °C and sometimes accompanied by frost.

## **B) Kihuyo Irrigation project**

The project area experiences equatorial rainfall due to its location within the highland zone of Kenya. The long rains occur from March to May while the short rains are experienced in October to December, but occasionally this pattern is disrupted by abrupt and adverse changes in climatic conditions.

The annual rainfall ranges between 1,200mm-1,600mm during the long rains and 500mm- 1,500mm during the short rains. In terms of altitude, the county lies between 3,076 meters and 5,199 meters above sea level and records monthly mean temperature ranging from 12.8°C to 20.8°C.

This rainfall is highly variable and spatially distributed with time. Agricultural and livestock productivity is worsened by limited, unreliable and poorly distributed

## **1. General Description of the Works**

### **1.1 Works to be undertaken by the Contractor**

The main works to be undertaken under this contract comprise the following:

- a) Construction and commissioning of 60m long steel pipes river and gulley crossings at various chainages as specified and shown on the drawings.
- b) Supply, installation, testing and commissioning of a 3025m long HDPE and 1856m long HDPE (125mm and 110mm diameters respectively) conveyance pipeline and fittings as specified and shown on the drawings.
- c) Construction and commissioning of one reinforced concrete sedimentation basin at the intake. The overall basin dimensions are 11.2m long and 4.6m wide and 2.8 m height with Reinforced concrete grade 25/20 as shown on drawings as specified and shown on the drawings.
- d) Supply, installation, testing and commissioning of Sub main pipelines and fittings of a 550m long and 100m long HDPE (110mm and 90mm diameters respectively) as specified and shown on the drawings.
- e) Installation of a pressure reducing valve and fittings as specified and shown on the drawings

: Summary of Pipe lengths

| Line             | Pipe Diameter (mm) | Total Pipe length (m) | Pipe type    | Class of pipe |
|------------------|--------------------|-----------------------|--------------|---------------|
| <b>Main</b>      |                    | 1750                  | HDPE         | PN 8          |
|                  | 125                | 1275                  | HDPE         | PN 10         |
|                  | 110                | 1675                  | HDPE         | PN 10         |
|                  | 110                | 181                   | HDPE         | PN 12.5       |
|                  | 150                | 60                    | G.I          | Medium gauge  |
| <b>Sub-mains</b> | 110                | 550                   | HDPE         | PN 10         |
|                  | 90                 | 100                   | HDPE         | PN 10         |
|                  | <b>TOTAL</b>       |                       | <b>5,591</b> |               |

**Note** – The different class of pipes has been derived from the Hydraulic analysis as shown on the attached spread sheets and profiles.

Kenya standards (KS) for pipes will be as follows KS ISO 4427 for HDPE, KS ISO 1452 for Pvc pipes and fittings and Ks 06-118/KBS PE standards.

## 1.2; Standard Specifications

For convenience and in order to establish the necessary standards of quality, reference has been made to specifications issued by national or other widely recognized bodies. Such specifications shall be referred to as ‘Standard Specifications’ and shall be the latest editions of such Standard Specifications issued prior to the issue of these Tender documents together with such additions or amendments as may have been issued prior to the same date.

Subject to the written approval of the Engineer, any other internationally accepted Standard Specification which requires an equal quality of work may be used.

If the Contractor proposes to use a Standard Specification other than that specified, three copies of the proposed Standard Specification in English, shall be submitted to the Engineer not less than 28 days before approval of Standard Specification is required.

In referring to Standard Specifications, the following abbreviations are used:

|      |                                                |
|------|------------------------------------------------|
| BS   | British Standard                               |
| ISO  | International Organization for Standardization |
| ASTM | American Society for Testing and Materials     |
| ASA  | American Standards Association                 |
| KBS  | Kenya Bureau of Standards                      |
| KS   | Kenya standard                                 |

#### Works Designed by the Employer

All drawings, calculations, plans, reports, instruction manuals, data and all other documents required to be submitted to the Contractor under the Contract shall be clear and readable.

### 1.3; Site Meetings

The Contractor shall be obliged to attend all meetings at the appointed time. The discussions of such meetings shall include but not be limited to the progress of work and problems having direct bearing on the immediate and long-term activities (construction, ESS implementation procurement, transport, labour etc).

The Engineer shall invite the Employer for such meetings.

### 1.4; Progress Photographs

The Contractor shall furnish the Engineer with colored photographs (not less 8cm x 12cm size) of the work in progress throughout the Contract period. The photographs shall be taken at the start, during and at the completion of each major task of the work as directed by the Engineer. A brief description and date of each photograph shall be included.

### 1.5; Marker Posts

Precast concrete marker posts shall be set in concrete and fixed near valves, washouts, changes in direction of the mains and were directed by the Engineer. The posts shall be detailed as directed by the Engineer and as per the drawings.



## 1.6; As Built Drawings

Within forty-five (45) days after the receipt of the Substantial Completion Certificate, the Contractor shall submit to the Engineer all the approved drawings and documents (including operation and maintenance manuals), clearly revised and brought up to date by the Contractor to show the permanent construction actually made. The submission shall be made in the following manner and quantity:

- The submission shall contain the drawing index.
- No separate payments will be made for the provision of the drawings as the cost thereof shall be deemed to be included in the unit rates and the Contract Sum.

## 1.7; Level Datum

The survey control points and benchmarks shown on the drawings shall be handed over to the Contractor as basis for surveying and setting out of Works. The Contractor shall be responsible for carrying out the field surveys for the performance of the Works.

Before using the control points and bench marks for setting out of the Works, the Contractor shall carry out a check survey thereon and satisfy himself as to their accuracy. The Employer shall bear no responsibility for the accuracy of any control point or benchmark.

## 1.8; Supervision and Labour

The Contractor will be required to maintain a competent supervising Site Agent and staff on site throughout the construction period until completion of the Works, and thereafter as may be required during the defect's liability period. The Engineer shall give prior approval to the appointment of this supervising Site Agent and key staff and shall have authority to withdraw the approval at any time in accordance with the Conditions of Contract.

## 1.9; Contractor's Site Offices, Workshops, Storage and Working Areas

The Employer shall not provide areas of land where the Contractor shall establish the office, housing, workshop, stores, accommodation and camp for himself and his employees. In which case, the Contractor shall provide erect, service and maintain all necessary buildings as offices, housing or workshop/stores for himself, his staff and his employees. However, occupational health and safety standards must follow.

## 1.10; Definition and Use of the Site

### 1.10.1; Definition of the Site

The Site shall include all those areas of land which, being public or private:

- Are being provided by the Employer for the purpose of constructing the permanent works.
- Are acquired, leased, or operated by the Contractor as borrow pits or spoil tips for the Permanent Works, including all access roads.

### 1.10.2; Possession of the Site

The Contractor shall restrict his activities to those areas of the Site adjacent to the works being executed and shall avoid any encroachment upon lands outside the areas for which possession has been given. Any trespass or damage or any claim arising from such encroachment shall be the Contractor's sole responsibility and he shall hold the Employer indemnified against all claims arising from such trespass or damage.

## 1.11; Material for the Works

All material shall comply with appropriate Standard Specifications unless otherwise required hereinafter. All materials shall be delivered to the Site a sufficient period of time before they are required for use in the Works, to enable the Engineer to take such samples as he may wish for approval.

The Contractor shall have no claim against the Employer in respect of any financial loss which he may suffer as a result of the rejection of any such materials, and he shall also bear the cost of removing them from the Site.

## 1.12; Rejected Materials and Defective Work

Materials or work which, in the opinion of the Engineer, do not comply with the Specification, shall be classified as rejected materials or defective work, and shall be cut out and removed from the Works and replaced as directed by the Engineer.

## 1.13; Setting Out

The Contractor shall appoint and employ the necessary qualified and experienced staff to set out the Works accurately. The Contractor shall establish and locate all lines and levels and be

responsible for the correct location of all Works. Where directed by the Engineer, the Contractor shall take such levels and dimensions as may be required for the purposes of measurements prior to disturbance of the ground

### 1.3.1; Survey Instruments and Chainmen for the Engineer

The Contractor shall provide and maintain in first class working order, for the sole use of the Engineer and his staff for the duration of the Contract, the following minimum survey instruments complete with all accessories, tapes, poles, staves, stagings, moulds, templates, profiles, and requisites necessary for checking and setting out, and measurement of the Works. The equipment shall revert to the Contractor at the end of the Contract period. The survey equipment shall include the following or similar approved as a minimum:

Survey Equipment's

| Description                                               | Quantity |
|-----------------------------------------------------------|----------|
| Automatic level machine/ GTS 225 Topcon Total station/RTK | 1        |
| Tripod stand                                              | 1        |
| Levelling staff                                           | 2        |
| Single Prism and target                                   | 3        |
| Plumbing Pole tripod with bubble                          | 3        |
| 50m/30m measuring tape                                    | 1        |

### 1.14; Sign Boards

Before the erection of any sign boards or posters by the Contractor, the Contractor shall obtain the approval of the Employer and the Engineer to the size, location and wording of such sign boards or posters.

Unless otherwise agreed, the signboard shall be in seven sections.

| Description                                                                                                                                                                                                                                                                                                                | Measure in Millimeters |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Total Width of board                                                                                                                                                                                                                                                                                                       | 1800                   |
| Total height including footing                                                                                                                                                                                                                                                                                             | 3379                   |
| Hole depth                                                                                                                                                                                                                                                                                                                 | 600                    |
| Footing                                                                                                                                                                                                                                                                                                                    | 500                    |
| Boards thickness                                                                                                                                                                                                                                                                                                           | 25                     |
| Stands -Treated timber posts.                                                                                                                                                                                                                                                                                              | 100 X50                |
| <p><b>Notes</b> - The wording of the project signboard and the location to be installed to be directed by the Engineer.</p> <ul style="list-style-type: none"> <li>- Wording boards to be nailed to the posts using nails.</li> <li>- Project board posts and struts to be embedded in concrete ratio of 1:1½:3</li> </ul> |                        |

## 2.0; EARTHWORKS

### 2.1; Site Clearance and Stripping

General clearance is defined as the clearing, grubbing, removal and disposal of all vegetation, grass, debris, bushes, dense bush, trees, hedges, undergrowth, stumps, roots, shrubs, plants and backfilling of holes left by the removal of stumps and roots.

If the Contractor clears the Site in advance of the main Works such that the grass and other vegetation re-grows prior to the main Works commencing at any particular location then any additional, or repeating of, site clearance required shall be at the Contractor's expense.

Site clearance shall be measured in metre , calculated as the plan area instructed by the Engineer to be cleared, but not exceeding 2.5 meters width for pipeline and wayleaves and 6 meters for the sedimentation basin. All clearing works shall be restricted to the identified areas.

The rate for the site clearance shall include for the cost of complying with the requirements as per the BOQ quote.

Stripping work shall basically consist of removal of top soil, grasses, vegetative material to a depth of 200 mm below ground level and its disposal to a stockpile. Stripping shall include for removal, stockpiling and for reinstatement or spreading as directed by the Engineer.

Measurement and payment of this shall be in square metres, calculated as the plan area instructed by the Engineer.

## 2.2; Definition of Earthwork Materials

The following definitions of earthworks materials shall apply to this and other Clauses of the Specification in which reference is made to the defined materials:

- “top soil” shall mean the top layer of soil that can support vegetation;
- “Suitable material” shall comprise all material which arises from excavations within the Site and which is approved by the Engineer as acceptable for use in the works;
- “Unsuitable material” shall mean material other than suitable material and shall comprise:
  - material from swamps, marshes and bogs,
  - logs, stumps and perishable materials,
  - material susceptible to spontaneous combustion,
  - clay of liquid limit exceeding ninety (90) and/or plasticity index exceeding sixty-five (65).
- “Rock” or “hard material” shall be material which cannot be ripped to an average depth of greater than 300 mm by a track type crawler tractor complying with the following:
  - in good order complete with all equipment and accessories as supplied;
  - rated 300 BHP flywheel power or over;

- with an operating weight of not less than 37.2 tonnes;
- equipped with a hydraulically operated single tine ripper compatible with the tractor used; and
- operated by a qualified operator in accordance with the manufacturer's recommendations and to the satisfaction of the Engineer.

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Where it is impractical to prove hard material by the above method then the quantity of hard material, if any, shall be determined by the Engineer.

Where excavation contains individual boulders of hard material greater than 0.3m<sup>3</sup> each in volume then such boulders shall be classified as hard material.

- “soft material” material shall mean all material other than that defined as “rock” or “hard material”.

### 2.3; Excavation General and Trench Excavation

Excavation shall be carried out with the allowances for working space given in the Method of Measurement to the Bill of Quantities, unless otherwise shown as lines, levels and profiles on the Drawings or to such other lines, levels and profiles as the Engineer may direct or approve in writing. Particular care shall be taken to maintain stability when excavating in close proximity to existing works.

Trenches for pipes shall be excavated to a sufficient depth as illustrated in the design profiles to enable the pipe and the specified joint, bedding, haunching and surround to be accommodated. Unless otherwise stated, the width of the trench shall be equal to the nominal diameter of the pipe plus 600mm but not exceeding 1000 mm . When excavations have been taken out accurately to the profiles or dimensions required for the work the Contractor shall inform the Engineer who shall carry out an inspection of the excavation.

The Contractor shall be responsible for keeping all excavations free from water from whatever cause arising and shall provide such pumping capacity and other measures as may be necessary for this purpose. The Contractor shall make good any damage that may result from his failure to

keep the excavations free from water. Trenches will be backfilled to the satisfactory of the Engineer.

## 3.0; CONCRETE

### 3.1; Concrete General

Concrete shall consist of cement, graded aggregate and water carefully proportioned, thoroughly mixed, placed and compacted as specified.

The Contractor shall obtain formal approval from the Engineer before pouring any concrete for the permanent works. The Engineer shall allow concreting after ascertaining the required lines and levels, suitability of formwork, availability of required equipment and labour, proper fabrication and spacing of the steel bars and quality and quantity of cement and aggregates.

### 3.2; Cement

Cement for use in the permanent works shall be Ordinary Portland Cement from an approved manufacturer and shall be type CEM I 32,5N complying with BS EN 197-1. Where sulphate-resisting cement is specified, it shall comply with BS 4027.

### 3.3; Aggregate for Concrete

Aggregates for concrete shall comply with KS 1238 for testing and KS 95 for specifications, and shall be obtained from a source or sources approved by the Engineer and shall be transported and stored in such a manner as will prevent:

- Contamination of the aggregates from the ground, rubbish, vegetation, dust or any other foreign material.
- Segregation.
- Intermixing of aggregates of differing characteristics.

Aggregates shall be stored on a clean, free draining surface. The various types and sizes of aggregates shall be kept separate from each other and each stockpile shall be kept as large as possible to maintain a reasonably uniform content in the aggregate.

### 3.4; Fine Aggregates

Fine aggregates shall be clean and durable and shall be natural sand, crushed gravel sand or crushed rock sand complying KBS equivalent to BS EN 12620. All the material shall pass through a 5 mm BS sieve. In order to achieve an acceptable grading, it may be necessary to blend materials from more than one source.

As an alternative, fine aggregate for mortar only shall comply with KBS equivalent to BS 1199 and 1200.

### 3.5; Coarse Aggregates

Coarse aggregates shall be clean, hard and durable crushed rock, crushed gravel or natural gravel complying with the requirements of KBS equivalent to BS EN 12620. The material shall be frost resistant and shall not contain any iron pyrites, iron oxides, flaky or laminated material, hollow shells, coals or other soft or porous material, or organic matter. The pieces shall be predominantly angular, rounded or irregular as defined in KBS equivalent to BS 812.

Coarse aggregate shall be supplied in the nominal sizes called for in the Contract and shall be graded in accordance with BS EN 12620 for each nominal size.

The content of hollow and flat shells shall not be such as will adversely affect the concrete quality when tested as set out in BS 1881. The total shell content shall not be more than the following:

- 40mm nominal size and above      2 per cent of dry weight
- 20mm nominal size                      5 per cent of dry weight
- 10mm nominal size                      15 per cent of dry weight

### 3.6; Admixtures

Admixtures for improving workability, accelerating or retarding setting of concrete, or for any other purpose, shall comply with KS 2769-10 or BS EN 934 and only be used with the Engineer's

written approval. Calcium chloride or admixture containing chlorides will, however, not be approved.



If an admixture is approved for use it shall be obtained from an approved supplier and the Contractor's arrangement for measuring, mixing and adding the admixture to the concrete batch shall be strictly in accordance with the manufacturer's instructions or recommendations and subject to the approval of the Engineer.

The proportions of the concrete mixes and water/cement ratio shall be adjusted to the satisfaction of the Engineer so that the strength of the concrete with admixture is at least equal to the strength of the equivalent concrete without admixture.

### 3.7; Water for Concrete

Clean fresh water complying with KS 2769-10 is to be used for the mixing of all concrete and mortar, and is to be from a source approved by the Engineer.

### 3.8; Concrete Mixes

Concrete mixes shall be designed mixes in for use in water retaining structures shall comply with BS 8007, for all classes of concrete to be used, showing that at the intended workability the proposed mix proportions and production methods will produce concrete of the required quality.

No change in the approved mix design will be permitted, unless the Contractor carries out trials on the proposed mix design to show that compliance with this Specification can be maintained.

Mix design shall in all cases be subject to the approval of the Engineer, but such approval shall in no way relieve the Contractor of his responsibility for the production of concrete in compliance with this Specification.

#### Classes of Concrete

| <b>Class</b> | <b>Characteristic<br/>Compressive<br/>Strength<br/>N/mm<sup>2</sup></b> | <b>Maximum<br/>Free<br/>Water/cement<br/>Ratio</b> | <b>Minimum<br/>Cement<br/>Content kg/m<sup>3</sup></b> | <b>Maximum<br/>Cement<br/>Content<br/>kg/m<sup>3</sup></b> | <b>Maximum<br/>Aggregate<br/>Size mm</b> |
|--------------|-------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------|------------------------------------------|
| C25/10/A     | 25                                                                      | 0.55                                               | 360                                                    | 400                                                        | 10                                       |

|          |    |      |     |     |    |
|----------|----|------|-----|-----|----|
| C25/20/A | 25 | 0.55 | 360 | 400 | 20 |
| C25/20/B | 25 | 0.55 | 290 | 400 | 20 |
| C25/20/C | 25 | -    | 240 | 540 | 20 |
|          |    |      |     |     |    |
| C20/20/B | 20 | 0.55 | 290 | 400 | 20 |
| C20/40/B | 20 | 0.55 | 260 | 400 | 40 |
| C20/40/C | 20 | -    | 220 | 540 | 40 |
|          |    |      |     |     |    |
| C15/40/C | 15 | -    | 180 | 540 | 40 |
| C15/20/C | 15 | -    | 180 | 540 | 20 |
| C10/40/C | 10 | -    | 150 | 540 | 40 |

### 3.9; Water/Cement Ratio

The water/cement ratio shall be determined as required by the Engineer and shall not exceed the specified maximum value by more than 5 per cent of that value.

## 4.0; Steel Reinforcement

### 4.1; Materials

Unless otherwise directed or otherwise shown on the Drawings, hot rolled high yield reinforcement shall be used throughout the works.

Where required, mild steel reinforcement, medium tensile steel reinforcement and high tensile steel reinforcement shall comply with KSEAS 412-1,2,&3 or BS 4449. Cold twisted steel wire for the reinforcement of concrete shall comply with KSEAS 412-1,2,&3 or BS 4482.

Tying wire shall be 1.6mm diameter soft annealed iron wire.

Before any steel reinforcement is embedded in the concrete any loose mill scale, loose rust and any oil, grease or other deleterious matter shall be removed. Partially set concrete which may adhere to the exposed bars during concreting operations shall likewise be removed.

### 4.2; Fabricating Reinforcement

Bar reinforcements shall be bent to the shapes shown on the Drawings and bending schedules. All bars shall be bent cold, unless otherwise permitted by the Engineer. All hooks, bends, and the like, unless otherwise shown on the Drawings, shall be to BS 4666. The Contractor shall satisfy himself as to the accuracy of any bar bending schedules supplied and shall provide all reinforcement in accordance with the Drawing. Bar reinforcement shall be bundled and each bundle of steel shall be tagged with identifying tags, showing the size and mark of the bar. The bundles shall be stacked clear of the ground in easily accessible positions that do not in any way hinder the progress of work and shall be kept clean.

### 4.3; Cover to Reinforcement

The concrete cover to reinforcement shall be 50mm unless otherwise shown on the Drawings.

The Contractor shall provide any necessary concrete pads for ensuring the cover is attained and in no case shall timber packing be used.

## 5.0; Formwork

### Definitions

Forms, formwork or shuttering shall mean all temporary molds forming the concrete to the required shape together with any special lining that may be required to produce the concrete finish specified.

Falsework or centering shall mean the furnishing, placing and removal of all temporary construction such as framing, props and struts required for the support of forms.

### 5.1; Materials

The formwork may be of seasoned, planed, tongued and grooved timber, plywood, blockboard, tempered hardboard, steel or as specified on the Drawings.

All timber used for formwork shall be sound wood, well-seasoned and free from loose knots, shakes, large checks, warping and other defects. Before use on the work, it shall be properly stacked and protected from injury from any source. Any timber which becomes badly warped or cracked, prior to the placing of concrete shall be rejected. All formwork for outside surfaces before final ground level shall be either tongued and grooved or provided with a suitable lining to produce a smooth surface finish.

### 5.2; Removal of Formwork

Formwork shall be carefully removed without shock or disturbance to the concrete. No formwork shall be removed until the concrete has gained sufficient strength to withstand safely any stresses to which it may thereby be subjected.

The minimum periods which shall elapse between completion of placing concrete and removal of forms are given in the following Table 3.2, and apply to ambient temperatures higher than 10oC. At lower temperatures or if cements other than ordinary Portland are involved, the Engineer may instruct longer periods.

Compliance with these requirements shall not relieve the Contractor of his obligation to delay removal of formwork until such removal can be completed without damage to the concrete.

Formwork Striking Time

| Position of formwork                    | Striking Time |
|-----------------------------------------|---------------|
| Beam sides, walls and columns           | 1 to 2 day    |
| Slab soffits - props remain undisturbed | 4 days        |
| Beam soffits - props remain undisturbed | 7 days        |
| Removal of slab props                   | 14 days       |
| Removal of beam props                   | 21 days       |

## 5.3; Surface Finishes

### 5.3.1; General

After removal of the formwork no treatment of any kind other than that required for curing the concrete shall be applied to the concrete faces until after inspection by the Engineer. All honeycombed areas, deformed surfaces or other defective surfaces shall then be repaired at the direction of the Engineer. Immediately following the Engineer's inspection of surface finish, all tie bolt cavities shall be filled with sand cement mortar and the surface left smooth, sound, even and uniform in colour.

Should the finishes surface either as-stuck or after repair exhibit a non-uniform colour or texture, the Engineer shall have the right to order that the surface be given a skim coat and then painted.

### 5.3.2; Formed Surfaces

All joints between panels shall be vertical and horizontal unless otherwise directed. Suitable joints shall be provided between sheets to maintain accurate alignment in the plane of the sheets.

For warped surfaces, facings shall be built up of laminated splines cut to make a tight surface which shall then be dressed and sanded to the required curvature.

Type F1: This finish is for surfaces against which backfill or further concrete will be placed. Formwork shall consist of sawn boards, sheet metal or any other suitable material which will prevent the loss of grout when the concrete is being placed.

Type F2: This finish is for surfaces which are permanently exposed to view but where the highest standard of finish is not required. Forms to provide a Type F2 finish shall be faced with wrought thicknesses tongued and grooved boards with square edges arranged in a uniform pattern and close jointed or with suitable sheet material. The thickness of boards or sheets shall be such that there shall be no visible deflection under the pressure exerted by the concrete placed against them. Joints between boards or panels shall be horizontal and vertical unless otherwise directed. This finish shall be such as to require no general filling of surface pitting, but fins, surface discoloration and other minor defects shall be remedied by methods agreed by the Engineer.

Type F3: This finish is for surfaces which will be in contact with water flowing at high velocity and for surfaces permanently exposed to view where good appearance and alignment are of importance. To achieve this finish, which shall be free of boardmarks, the formwork shall be faced with plywood complying with BS 1088 or equivalent material in large sheets. The sheets shall be arranged in an approved, uniform pattern. Wherever possible, joints between sheets shall be arranged to coincide with architectural features or changes in direction of the surface. Suitable joints shall be provided between sheets to maintain accurate alignment in the place of the sheets. Unfaced wrought boarding or standard steel panels will not be permitted for Type F3 finish. The Contractor shall ensure that the surface is protected from rust marks, spillages and stains of all kinds.

Type F4: This finish is similar to that required for type F3 but is used in places where a first class alignment and a dense surface free from airholes and other defects is required, suitable for the application of decorative finishes, in very high velocity water channels and in other similar circumstances.

### **Unformed Surfaces**

Type U1: This is screed finish for surfaces of roads of foundations, beds, slabs, and structural members to be covered by backfill, subsequent stages of construction, bonded concrete topping or cement mortar beds to receive pavings, and on exposed surfaces of paving where a superior finish is not required. It is also the first stage of Type U2 and U3 finishes. The finishing operations shall consist of levelling and screeding the concrete to produce a uniform,

plane or ridged surface, surplus concrete being struck off by a straight edge immediately after compaction.

Type U2: This is a floated finish for exposed surfaces where a hard smooth steel trowelled surface is not required. Floating shall be done only after the concrete has hardened sufficiently, and may be by hand or machine. Care should be taken that the concrete is worked no more than is necessary to produce a uniform surface free from float marks.

Type U3: This is a hard smooth steel trowelled finish for surfaces exposed to water flowing at high velocity. Trowelling shall not commence until the moisture film has disappeared and the concrete has hardened sufficiently to prevent excess laitance from being worked to the surface. The surface shall be trowelled under firm pressure and left free from trowel marks.

Type U4: This finish is similar to Type U3 finish but the permissible tolerances are smaller.

### 5.3.3; Surface Tolerances

Where precast units have been set to a specified tolerance, further adjustments shall be made as necessary to provide a satisfactory straight or curved line. When the Engineer has approved the alignment, the Contractor shall fix the units so that there is no possibility of further movement.

#### Surface Tolerance for Formed Surfaces

| Type of Finish | Tolerance in mm (See Note 1) |    |            |
|----------------|------------------------------|----|------------|
|                | A                            | B  | C          |
| F1             | 10                           | 10 | +25 to -10 |
| F2             | 5                            | 10 | +15 to -15 |
| F3             | 2                            | 5  | +10 to -10 |
| F4             | See Note 2                   | 2  | +5 to -5   |

#### Note 1:

The tolerances, A, B and C given in the table are defined as follows:

**A** is an abrupt irregularity in the surface due to misaligned formwork or defects in the face of the formwork.

**B** is a gradual deviation from a plane surface as indicated by a straight edge 3 metres long. In the case of curved surfaces, the straight edge shall be replaced by a correctly shaped template.

**C** is the amount by which the whole or part of a concrete face is displaced from the correct position shown on the Drawings.

**Note 2:**

Abrupt irregularities are not permitted in a Type F4 finish. Any residual irregularities which remain after removal of formwork shall be removed by grinding to achieve a transition of 1 in 50 between the surfaces adjacent to the irregularity.

Surface Tolerances for Unformed Surfaces

| Type of Finish | Tolerance in mm (See Note 1) |    |               |
|----------------|------------------------------|----|---------------|
|                | D                            | E  | F             |
| U1             | -                            | 10 | +20 to -10    |
| U2             | Nil                          | 10 | +20 to -10    |
| U3             | Nil                          | 5  | +12.5 to -7.5 |
| U4             | Nil                          | 2  | +6 to -4      |

**Notes:**

**D** is the maximum allowable value of any sudden change of level in the surface.

**E** is the maximum allowable value of any gradual irregularity of the surface, as indicated by the gap between the surface and a 3m long straight edge or correctly shaped template placed on the surface.



**F** is the maximum allowable value of the difference in level or position between a straight edge or correctly shaped template placed on the surface and the specified level or position of that surface.

## 5.4; Rendering Work

### 5.4.1; Material

Cement, water and fine aggregate shall conform to the requirements specified in the concrete works. Mesh reinforcement shall be plain diamond expanded steel lathing to BS 1369 where specified. Lime shall be to BS 980 and shall be mixed with water and allowed to stand prior to use according to the manufacturer's recommendations.

The mix proportion of the cement mortar by volume shall be as follows:

- For rendering coat, Cement: Sand = 1:5
- For finishing coat, Cement: Sand = 1:3

Lime putty may be mixed in mortar for finishing coat at 10% of sand by volume.

### 5.4.2; Waterproof Cement Mortar

Waterproof mortar shall be made by mixing a waterproof agent into ordinary cement mortar. The Contractor shall be responsible for selection and quality of the waterproof agent and this shall be approved by the Engineer before use. The mixing and application shall be in accordance with the manufacturer's instructions.

### 5.4.3; In Situ Concrete Chambers

In situ concrete chambers shall be constructed generally in accordance Specification. Chambers shall be constructed after pipes have been laid, except the bases may be constructed earlier to avoid deterioration of the formation.

Backfilling around complete chambers shall be with suitable materials materials deposited equally all round and compacted with the specifications.

#### 5.4.4; Chamber Covers and Slabs

Covers and slabs shall be the type, size and weight shown in the drawings. Care shall be taken to see that slabs are even so that the cover can seat without rocking.

Covers and frames shall be provided as shown on the drawings. The tops of the covers shall be flush at all points with the surrounding surface of paved areas or as directed in unpaved areas. Any slight adjustment of the slab level which may be necessary to accomplish this shall be effected by topping the side walls with concrete. Stonework.

#### 5.5; Stones

Stone for all purposes shall be the best of its kind, sound and durable, free from flaws and from soft, weathered or decomposed parts. The stone and the quarry from which it is obtained shall be subject to the approval of the Engineer, samples shall be submitted by the Contractor of the stone he proposes to use in the Works and the Engineer's approval shall be obtained before such stone is used or any order is placed. The stone used shall be clean and must be washed if deemed necessary in the opinion of the Engineer.

Exposed faces of stones for masonry shall be free from tool marks except such as are inherent in the nature of any dressing that may be specified. In rock-faced work the roughness on the surface shall not project more than 40 mm for stone less than 0.3 m<sup>2</sup> face area and not more than 60 mm for large stones.

Classification of stone pitching materials

| Class | Size of stone d (mm) | Percentage by weight smaller than stone sized (%) |
|-------|----------------------|---------------------------------------------------|
| A     | 300                  | 100                                               |
|       | 125                  | 40-50                                             |
|       | 45                   | 0                                                 |
| B     | 150                  | 100                                               |

|   |      |       |
|---|------|-------|
|   | 63   | 40-50 |
|   | 31.5 | 0     |
| C | 63   | 100   |
|   | 22   | 60-85 |
|   | 8    | 20-40 |
|   | 4    | 0     |
| D | 31.5 | 100   |
|   | 16   | 50-80 |
|   | 8    | 20-50 |
|   | 4    | 0     |
| E | 350  | 100   |
|   | 200  | 0     |
| F | 225  | 100   |
|   | 90   | 35-55 |
|   | 45   | 0     |
| G | 850  | 100   |
|   | 500  | 30-60 |
|   | 300  | 0     |

Tipped rock/stone pitching shall be placed in an approved manner in order to produce a uniform well-knit unsegregated layer in which all sizes are held in position.

## 5.6; Gabions

Gabions cages shall be constructed from mild steel wire complying with BS 1052, “Specification for mild steel wire for general engineering purposes”, galvanised in accordance with BS 443, “The wire shall be 3mm diameter formed into a fabric having a mesh of 75mm x 100mm for baskets and 60 mm x 80 mm for mattresses.

Stone filling for gabions shall consist of hard durable rock, free from weathered or decomposed parts. The minimum dimensions of each stone shall not be less than half its maximum dimension. For mattresses the stone shall be 200mm to 150mm for baskets the stone shall be 300mm to 200mm. The stone shall be obtained from a source approved by the Engineer. No stone shall be smaller than the size of the gabion mesh. In carrying out the filling, selected pieces of stone of elongated shape shall be placed with their flatter and elongated faces in contact with the mesh wherever possible.

The empty gabions shall be placed to line and level or as directed by the Engineer and then stretched so that the gabions regain their shape on being filled. Diaphragms shall be provided at not more than 1m intervals for baskets and not more than 0.6m intervals for mattresses. A gabion shall not be completely filled until the adjacent basket or mattress has been half filled, unless otherwise directed, in order not to cause displacements from bulging during filling.

For baskets at least two horizontal connection wires shall be tied between front and back of the gabion in each 1m compartment, at a height of 300mm and 600mm from the bottom as the stone fill reaches these levels. Additional tie wires shall be provided if necessary and in no case shall the gabion basket bulge by more than 40mm. Where a continuous line of gabions is required, adjacent gabions shall be securely tied together at the top and bottom of the gabions with tying wire.

### 5.6.1; Hardcore

Hardcore shall consist of broken rock, concrete or other approved hard material, clean and free from extraneous matter, having a maximum particle size of 100mm. It shall be spread and levelled, watered and compacted, and then blinded with a layer of fine material of grading 3mm to dust, watered and compacted all to the Engineer’s approval.

## 6.0; PIPEWORK

### 6.1; General

The Contractor shall construct pipelines to the lines and levels using grades, classes, or designs of pipe, bedding, haunching and surrounding as shown on the Drawings or directed by the Engineer.

The Engineer shall inspect the delivered material for compliance with the specifications. In case of non-conformity, the Contractor shall replace the material at his own cost.

The pipes and fittings shall comply in all respects with the stated Standards and jointing of pipes and fittings shall be carried out in accordance with the manufacturers' instructions and to the approval of the Engineer.

#### Pipes and Fittings

### 6.3; HDPE Pipes

Polyethylene (PE) pipes and fittings shall comply with ISO 4427:1996.

The Kenya Bureau of Standards (KEBS) standard for polyethylene (PE) piping systems for water supply is KS ISO 4427, which is based on the international ISO 4427 standard. KS ISO 8779:2010 is the Kenya Standard for "Plastics piping systems polyethylene pe pipes for irrigation — Specification

|                                  | <b>SDR 21</b> | <b>SDR 17</b> | <b>SDR 13.6</b> | <b>SDR 11</b> | <b>SDR 9</b> | <b>SDR 7,4</b> |
|----------------------------------|---------------|---------------|-----------------|---------------|--------------|----------------|
|                                  | S 10          | S 8           | S 6,3           | S 5           | S 4          | S 3,2          |
| <b>SN (kN/m2)</b>                | SN 6          | SN 16         | SN 32           | SN 64         | SN 80        | SN 128         |
| <b>PE 80 (c=1,6) MOP (bar)</b>   | PN 5          | <b>PN 6*</b>  | PN 8            | PN 10         | PN 12.5      | PN 16          |
| <b>PE 80 (c=1,25) MOP (bar)</b>  | PN 6*         | PN 8          | <b>PN 10</b>    | PN 12.5       | PN 16        | PN 20          |
| <b>PE 100 (c=1.25) MOP (bar)</b> | PN 8          | <b>PN 10</b>  | PN 12.5         | <b>PN 16</b>  | <b>PN 20</b> | PN 25          |

| Nominal outside diameter | Pipe Wall thickness |      |      |      |      |      |
|--------------------------|---------------------|------|------|------|------|------|
| m                        | mm                  | mm   | mm   | mm   | mm   | mm   |
| 16                       |                     |      |      |      | 2.0  | 2.3  |
| 20                       |                     |      |      | 2.0  | 2.3  | 3.0  |
| 25                       |                     |      | 2.0  | 2.3  | 3.0  | 3.5  |
| 32                       |                     | 2.0  | 2.4  | 3.0  | 3.6  | 4.4  |
| 40                       | 2.0                 | 2.4  | 3.0  | 3.7  | 4.5  | 5.5  |
| 50                       | 2.4                 | 3.0  | 3.7  | 4.6  | 5.6  | 6.9  |
| 63                       | 3.0                 | 3.8  | 4.7  | 5.8  | 7.1  | 8.6  |
| 75                       | 3.6                 | 4.5  | 5.6  | 6.8  | 8.4  | 10.3 |
| 90                       | 4.3                 | 5.4  | 6.7  | 8.2  | 10.1 | 12.3 |
| 110                      | 5.3                 | 6.6  | 8.1  | 10.0 | 12.3 | 15.1 |
| 125                      | 6.0                 | 7.4  | 9.2  | 11.4 | 14.0 | 17.1 |
| 140                      | 6.7                 | 8.3  | 10.3 | 12.7 | 15.7 | 19.2 |
| 160                      | 7.7                 | 9.5  | 11.8 | 14.6 | 17.9 | 21.9 |
| 180                      | 8.6                 | 10.7 | 13.3 | 16.4 | 20.1 | 24.6 |
| 200                      | 9.6                 | 11.9 | 14.7 | 18.2 | 22.4 | 27.4 |
| 225                      | 10.8                | 13.4 | 16.6 | 20.5 | 25.2 | 30.8 |
| 250                      | 11.9                | 14.8 | 18.4 | 22.7 | 27.9 | 34.2 |

### 6.3.1; Joints in Pipelines

Flexible joining of HDPE pipes shall be jointed in accordance with the manufacturer's instructions either through buttfusion or coupling Solvent welded joints shall be made strictly in accordance with the manufacturer's instructions using approved solvent material for pipes where it is necessary.

### 6.4; Steel Pipes

Steel pipes and fittings shall comply with BS EN 10224:2003 non-alloy steel tubes and fittings for the conveyance of aqueous liquids including water for human consumption – technical delivery conditions.

Pipe shall be either seamless, electric welded or submerged arc welded. However, the manufacturing process shall not be beyond their allocated diameter ranges:

: Steel Pipes

| Manufacturing process | Outside diameter range, mm | Thickness range, mm |
|-----------------------|----------------------------|---------------------|
| Seamless (S)          | 26.9 – 350                 | 2.0 – 100           |
| Electric Welded (EW)  | 26.9 – 300                 | 1.4 – 16            |

Seamless (S) pipe is formed by a method of hot working steel to form a tubular product without a welded seam. If necessary, the hot worked tubular product may be subsequently cold finished to produce the desired shape, dimension and properties.

Pipes shall not include welds used for joining lengths of steel strip together prior to forming except for helical welded pipe provided that such weld is made using the same method of welding as the helical seam. Pipes shall not contain circumferential welds. Pipes shall not be manufactured on site.

Pipe shall be delivered in 6m exact lengths for DN 150 and below. The tolerances on pipe length shall be in accordance to BS EN 10224.

Steel pipes and fittings larger or equal to DN 200 shall be internally lined throughout their entire length internally with either:

- (a) Fusion bonded epoxy to AWWA C213 (400 µm dry film thickness);
- (b) Solvent free liquid epoxy to AWWA C210 (400 µm dry film thickness);
- (c) Polyurethane to AWWA C222 (500 µm dry film thickness).

#### 6.4.1; Jointing of steel pipes

These shall be caulked in thread seal for rigid joints. Flexible joints incorporating rubber O-rings shall be made in accordance with the manufacturer's instructions. Joints incorporating bolted or screwed glands or couplings shall be made in accordance with the manufacturer's instructions.

Components of flexible joints from different manufacturers shall not be used together.

### 6.5; Valves

#### 6.5.1; Gate Valves

Gate valves shall conform to BS 5153-1:2004. The valves shall be tested in accordance with BS EN 1074-2:2000.

Air valves BS EN 1074-4 :2000

Hydrants BS EN 1074-6 :2004

All gate valves shall close in a clockwise direction and the direction of opening and closing shall be cast on the handwheels or valve casing with the words 'OPEN' and 'CLOSE' respectively. All gate valves shall be capable of being operated manually with a maximum applied torque of 100 Nm for valves with a nominal diameter less than 450mm. The Contractor shall ensure that the gate valves supplied are fitted with appropriate thrust bearing guides and gearing to fulfil these requirements, ensuring that when reduction gearing is employed, the gear ratio shall not exceed 4:1.

Isolating gate valves shall permit manual closing off of the raw water supply.



### 6.5.2; Single Air Valves

Single air release valves shall be of the small orifice type and shall have bodies of cast iron. The inlet shall be 25mm diameter fitted with an isolating plug cock and shall be screwed in an 80mm diameter blank flange drilled and tapped to BS 21. Single air valves shall be of pattern and manufacture approved by the Engineer for the conditions under which they will operate, and be fitted with a pressure gauge tapping and plug. Floats are to be manufactured from high-density polyethylene.

The valves shall be tested in accordance with BS EN 1074-4:2000.

### 6.5.3; Double Air Valves

Air release and vacuum break valves shall be of a compact, single chamber design with solid cylindrical high-density polyethylene control floats housed in a tubular stainless-steel body with stainless steel ends secured by stainless steel tie rods.

The valves shall have integral surge alleviation mechanisms that shall operate automatically to limit transient pressure rise or shock induced by closure due to high velocity air discharge or the subsequent rejoining of separated water columns. The limitation of pressure rise must be achieved by deceleration of approaching water before valve closure.

The intake/discharge orifice area shall be equal to the nominal size of the valve.

The valve design shall incorporate an overpressure safety feature that will fail without an explosive effect. This feature shall consist of easily replaceable components such as gaskets, seals or the like.

The valves shall be tested in accordance with BS EN 1074-4:2000.

### 6.5.4; Flow Control Valves

Pressure and flow control valves shall be installed and be suitable for the operating conditions specified.

The basic valves shall be either of the pressure compensating globe valve design with externally arranged spring and diaphragm assembly or of the streamline two chamber concentric plunger and pilot valve regulating assembly enclosed within the valve body as required for the particular applications.

Valve bodies shall be of a suitable grade of close-grained cast iron to BS EN 1561:1997.

Valves shall be sized such that the fully open capacity is more than adequate to accept the specified maximum flow at the minimum differential pressure.

The globe valve design shall have the main seat in the stream flow and an upper cylinder for the valve element control piston type and shall have the required number of bosses drilled and tapped to receive strainer unit, relay valves and pressure gauges. The cover plate shall include an air vent and lifting eyes. The main seat shall have a renewable element and the upper portion shall be in the form of a piston and the lower portion shall have a face ring and ported guide.

The rate of response of opening and closing of the main valve shall be adjustable and means for external indication of the main valve element position shall be fitted.

The particular control system for the different duties shall be as specified below.

#### 6.5.5; Laying Pipes in Trenches and Headings

Immediately before pipes are placed in any trench, the bottom shall be cleared of all stones and other debris and shall be in a condition acceptable to the Engineer. Prior to placing in the trench, all pipes shall be inspected for damage. Damaged pipes which in the opinion of the Engineer cannot satisfactorily be made good shall not be used in the permanent works. End caps or discs placed on the pipes for protection during transit shall not be removed until immediately before the pipes are jointed.

Pipes shall be laid in straight lines unless otherwise shown on the drawings. No pipe shall deviate from the true line and level by more than 5mm. Pipes shall be firmly bedded throughout their length to the required alignment and level so that they are concentric at each joint. All pipes shall be suitably wedged, shored or otherwise restrained to prevent movement during testing and backfilling but such restraints shall not be left in place permanently unless instructed or agreed by the Engineer.

Pipes which are to receive a concrete bed and haunch or surround shall be set on suitable concrete blocks or bricks with a pad of hessian-based damp proof course two millimeters thick interposed between the pipe and the block. Setting blocks shall not be used with other forms of bedding.

### 6.5.6; Pressure Reducing Valves

There is a requirement for Pressure Reducing Valve, which will protect the installed pipelines against high pressures. The PRV will reduce the upstream pressures from PN12.5 to PN8

The Contractor shall submit to the Engineer proposals referring to the valves to be used and accompanied by a detailed report, specifications and certificates showing that the proposed valves have been successfully used in similar cases so as to prove that the proposed valves conform to the requirements of this specification in a satisfactory manner. The valves shall operate automatically, hydraulically, without electricity.

### 6.5.7; Connections to Existing Pipelines

Where a connection is to be made to an existing water pipe other than that at a chamber, a pipe saddle of the correct size shall be used for this purpose. The hole in the pipe shall be cut precisely to fit the saddle.

Saddles for uPVC pipes shall be made of the same material as the pipes and shall be fixed in accordance with the manufacturer's instructions.

### 6.5.8; Pressure Testing of Pipelines

All tests shall be at the expense of the Contractor and it shall be the responsibility of the Contractor to make all necessary records of the tests and results and submit these to the Engineer in the final form agreed.

All pipe systems shall be tested hydraulically for a period of one hour to not less than one and a half times the design working pressure. Testing shall comply with BS EN 805:2000 for standard field testing of pipelines.

If preferred, the Contractor may test the pipelines in sections. Any such section found to be satisfactory need not be the subject of a further test when the system has been completed, unless specifically requested by the Engineer.

### 6.5.9; Acceptance Tests

Included with the specifications submitted by the Contractor, shall be copies of any relevant international standards to which the items are to be constructed. The Engineer reserves the right to request independent authenticated tests at the point of manufacture and also similar tests in

situ under operating conditions. All costs shall be borne by the Contractor who will promptly replace any components which, in the judgement of the Engineer are found, either after testing or during operation and until final acceptance, as not conforming to the requirements of this Specification.

#### 6.5.10; Measurement and Payment

Measurement shall be by assessing the number of satisfactorily installed and accepted accessories.

Payment will be made for the number of accessories measured as described above and on the basis of the respective contract unit prices. Such prices and payment constitute full compensation to the Contractor for supplying, hauling, storing and installing the accessories, for paying patent rights, for furnishing the equipment, materials and labour required for installing and checking the operation of the accessories in accordance with the foregoing requirements, and for any other related expense even if not explicitly stated above but necessary for the complete and proper performance of the work and the satisfactory operation of the accessories.

### 7.0; Riverine conservation

Conservation activities will focus on establishing bamboo vegetation along the M River and in adjacent farmlands. The recommended species for planting along the riverbank is the Giant Bamboo (*Dendrocalamus asper*) due to its strong root system and effectiveness in stabilizing riverbanks.

For planting within people's farms, the preferred species is *Bambusa vulgaris*, supplied at a height of approximately 40 cm.

All bamboo seedlings must be sourced from a KEPHIS-certified tree nursery to ensure quality and compliance with the required standards. The expected mature height of the selected bamboo species is approximately 10 metres.

Planting will involve preparing planting holes measuring 5 × 8 ft, with each hole dug to 1 ft × 1 ft in depth and width.

## 8.0; Trainings

Farmers training will include the following topics;

- Group dynamics and project management
- Operation and maintenance
- Marketing and producer groups
- Water management and use which includes irrigation technologies
- Gender equality and social inclusion in farming
- Prevention of Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH)
- Child protection and Child labour
- Stakeholder engagement and grievance redress mechanism
- Integrated Pest Management Plan as per the C-ESMP
- Landscape Management Plan

Each training session should cover at least two topics and consider appropriate timing for the farmers.

## 9.0; ENVIRONMENTAL & SOCIAL (E&S) REQUIREMENTS AND SPECIFICATIONS

| Sub-Clause / Clause No. | Sub-Clause / Clause                     | Remarks / Requirements                                                                                                                                                                                                                   |
|-------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                 | Legal and Regulatory Compliance         | The Contractor shall comply with all applicable Kenyan laws and regulations including EMCA (1999), OSHA (2007), Employment Act (2007), Public Health Act, County by-laws, World Bank ESF, and NAVCDP Environmental and Social Standards. |
| General                 | Preconditions for Commencement of Works | No construction works shall commence without approved ESM&MP, approved Contractor's ESMP (C-ESMP), and signed Codes of Conduct                                                                                                           |

|               |                                       |                                                                                                                                                        |
|---------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                                       | (CoC) by all workers.                                                                                                                                  |
| General       | ESHS Staffing                         | The Contractor shall appoint and maintain a qualified Environmental, Social, Health and Safety (ESHS) Officer on site throughout the project duration. |
| Institutional | Site ESHS Officer                     | Appoint a Site ESHS Officer with demonstrable experience in infrastructure projects.                                                                   |
| Institutional | Social Safeguards Officer             | Maintain a Social Safeguards Officer responsible for GBV/SEA/SH, GRM, and community engagement.                                                        |
| Institutional | First Aid                             | Ensure availability of a trained First Aider on site at all times.                                                                                     |
| Institutional | Stakeholder Coordination              | Maintain coordination with CPCU, CESCO, CSS-GMO, CAIO, NEMA, and relevant County Departments                                                           |
| ESS2          | Labour Management Procedures          | Prepare and implement Labour Management Procedures (LMP) in line with ESS2 and Kenyan labor laws.                                                      |
| ESS2          | Prohibition of Child and Forced Labor | Child labor and forced labor are strictly prohibited. Age and identity verification shall be conducted for all workers prior to engagement.            |
| ESS2          | Employment Contracts                  | Provide written employment contracts detailing scope of work, working hours, overtime compensation, worker rights, and grievance mechanisms.           |
| ESS2          | Equal Employment Opportunities        | Ensure non-discriminatory and inclusive employment, prioritizing local community engagement where feasible.                                            |
| ESS2          | Workers' GRM                          | Establish and maintain a Workers' Grievance Redress Mechanism (WGRM).                                                                                  |
| ESS2          | PPE Provision                         | Provide appropriate PPE to all workers at no cost, including helmets, safety boots, reflective                                                         |

|       |                           |                                                                                                                                                   |
|-------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                           | jackets, gloves, dust masks, and ear protection.                                                                                                  |
| ESS2  | PPE Enforcement           | Ensure mandatory and consistent use of PPE during all construction activities.                                                                    |
| ESS2  | Emergency Preparedness    | Maintain a fully equipped First Aid Kit and implement a Site-Specific Emergency Preparedness and Response Plan.                                   |
| ESS2  | Incident Reporting        | Maintain incident and accident registers and report serious incidents to CPCU within 24 hours.                                                    |
| ESS4  | Site Safety and Signage   | Install visible warning signs, barriers, and safety signage along excavation and pipeline routes.                                                 |
| ESS4  | GBV/SEA/SH Zero Tolerance | Enforce a zero-tolerance policy on GBV, SEA, and SH.                                                                                              |
| ESS4  | Code of Conduct           | All workers shall sign a GBV-sensitive Code of Conduct prior to deployment.                                                                       |
| ESS4  | GBV Action Plan           | Prepare and implement a GBV/SEA/SH Prevention and Response Action Plan including awareness, reporting, and survivor-centered referral mechanisms. |
| ESS4  | Referral Pathways         | Establish referral linkages with health facilities, police gender desks, and legal aid providers.                                                 |
| ESS4  | Prohibited Conduct        | Sexual exploitation, harassment, and transactional sex linked to employment or project benefits are prohibited.                                   |
| ESS10 | Project GRM               | Establish a project-level GRM accessible to workers and community members.                                                                        |
| ESS10 | GRM Disclosure            | Publicize GRM procedures through community meetings, posters, and local leadership.                                                               |

|       |                           |                                                                                                                             |
|-------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| ESS10 | Grievance Records         | Maintain a grievance log/register with clear timelines for response and resolution.                                         |
| ESS10 | GBV Case Handling         | GBV/SEA/SH-related grievances shall be handled confidentially and safely.                                                   |
| ESS10 | GRM Reporting             | Submit monthly grievance reports to CPCU.                                                                                   |
| ESS4  | Noise Control             | Limit noisy activities to daytime hours (8:00 am–5:00 pm) and notify communities in advance where unavoidable.              |
| ESS4  | Community Access Control  | Restrict unauthorized access to construction sites using barriers and signage.                                              |
| ESS4  | Traffic and Public Safety | Use flag persons, signage, and barriers in high-risk areas; ensure pedestrian and livestock crossings.                      |
| ESS3  | Dust Suppression          | Implement dust suppression measures including water spraying and covering stockpiles.                                       |
| ESS6  | Vegetation Management     | Limit vegetation clearance strictly to the pipeline corridor; prohibit cutting of indigenous trees without County approval. |
| ESS6  | Site Restoration          | Restore disturbed areas through re-vegetation using native or shallow-rooted species.                                       |
| ESS3  | Soil Management           | Backfill trenches immediately after pipe installation and compact soil to prevent subsidence and erosion.                   |
| ESS3  | Air Quality               | Maintain equipment to minimize emissions and prohibit open burning of waste.                                                |
| ESS3  | ESS3 Noise and Vibration  | Provide hearing protection to workers and limit high-noise activities to approved hours.                                    |



|                   |                                                                                                                                    |                                                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| ESS3              | Waste Management Plan                                                                                                              | Prepare and implement a Solid Waste Management Plan (SWMP).                                                                    |
| ESS3              | Waste Segregation and Disposal                                                                                                     | waste and dispose of it only at approved disposal sites. Dumping in watercourses, farms, or road reserves is prohibited.       |
| ESS3              | Hazardous Waste                                                                                                                    | Ensure safe handling, storage, and disposal of hazardous waste, if generated.                                                  |
| ESS3 & ESS6       | Water Resources Protection                                                                                                         | Prevent contamination of surface and groundwater sources; prohibit disposal of waste into rivers and drainage channels.        |
| ESS3 & ESS6       | Pipeline Integrity                                                                                                                 | Protect pipeline integrity to prevent leakages and water loss.                                                                 |
| Capacity Building | Worker Induction Training                                                                                                          | Conduct induction training on E&S requirements, OHS, GBV/SEA/SH, and GRM procedures.                                           |
| Capacity Building | WUA Training<br>Conduct capacity building for WUA on operation, maintenance, inspection, and minor repairs of the pipeline system. | Conduct capacity building for WUA on operation, maintenance, inspection, and minor repairs of the pipeline system.             |
| Monitoring        | Site Inspections                                                                                                                   | Conduct daily E&S site inspections.                                                                                            |
| Monitoring        | Reporting                                                                                                                          | Submit monthly E&S monitoring reports to CPCU.                                                                                 |
| Monitoring        | External Inspections                                                                                                               | Facilitate inspections by CPCU, County Government, and NEMA                                                                    |
| Compliance        | Corrective Actions                                                                                                                 | Address identified non-compliance within agreed timelines.                                                                     |
| Enforcement       | Penalties for Non-Compliance                                                                                                       | Non-compliance may result in corrective action notices, suspension of works, withholding of payments, or contract termination. |



# KIHUYO IRRIGATION WATER PROJECT BOOK OF DRAWINGS

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# KIHUYO IRRIGATION WATER PROJECT

PROJECT INTAKE  
2112M ASL

FOREST  
ZONE

FOREST  
ZONE

FOREST  
ZONE

DISTRIBUTION TANK  
225M3-1991M ASL

EXISTING 8" HDPE MAIN LINE

FOREST  
ZONE

EXISTING 8" HDPE MAIN LINE

## NOTES

1. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
2. COORDINATES ARE BASED ON UTM.
3. LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
4. PIPES ARE TO BE LAID TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M. WHERE COVER IS LESS THAN 1.0M THE PIPES TO BE SURROUNDED WITH CONCRETE.
5. ALL BENDS HORIZONTAL AND VERTICAL ARE AS SHOWN UNLESS OTHERWISE STATED BY THE ENGINEER.

## LEGEND:

- PROPOSED PIPELINE
- EX GROUND PROFILE
- EX PIPELINE
- PIPE INVERT PROFILE
- RIVER
- CONTOUR
- ROADS
- CUT/FILL
- TRUE NORTH
- AIR VALVE
- DOUBLE AIR VALVE
- WASHOUT
- WASHOUT TYPE 1
- WASHOUT TYPE 2
- NOMINAL DIAMETER
- NOMINAL PRESSURE
- VERTICAL BEND
- HORIZONTAL BEND
- EARTH ROAD
- GRAVEL ROAD
- LINE PEGS



CIDU - NAVCDP  
COUNTY GVT OF NYERI  
DEPARTMENT OF WATER,  
ENVIRONMENT  
& CLIMATE CHANGE



## PROJECT

KIHUYO IRRIGATION WATER PROJECT  
PLAN & LAYOUT

## SURVEY WORK

SURVEYED DAVID MUNGA SIGN.  
DRAWN NELSON CHAGA SIGN.  
CHECKED DENNIS NDAMBIRI SIGN.

## DESIGN WORK

DESIGNED BRIAN MWANGI SIGN.  
DRAWN NELSON CHAGA SIGN.  
CHECKED CHARLES MARIGI SIGN.

## APPROVED

SIGN.

## DATE

FEB 2025

## SCALE

1:1550

## FIELD BOOK NO.

KIHUYO/1/2025

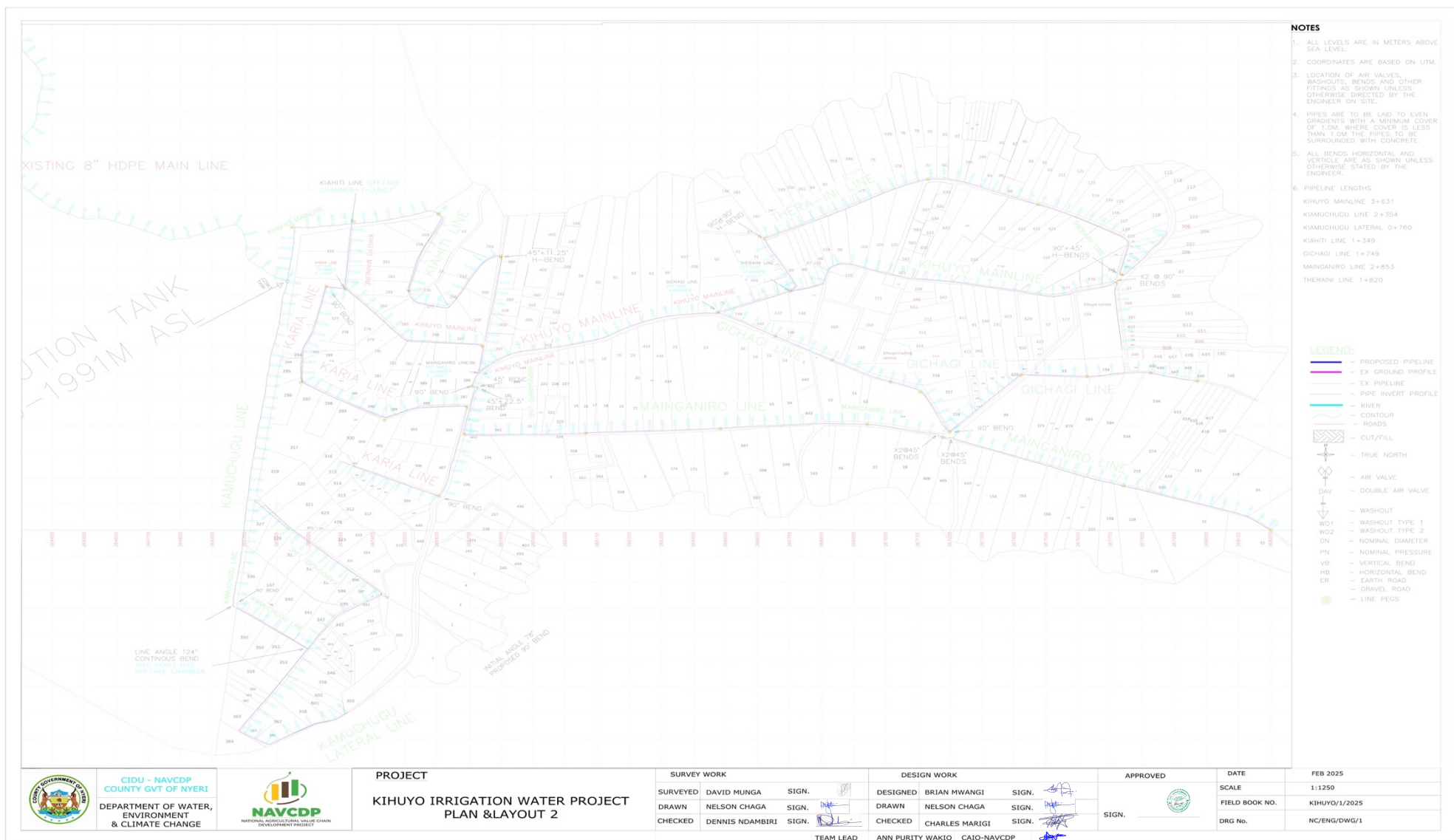
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NC/ENG/DWG/1

## TEAM LEAD

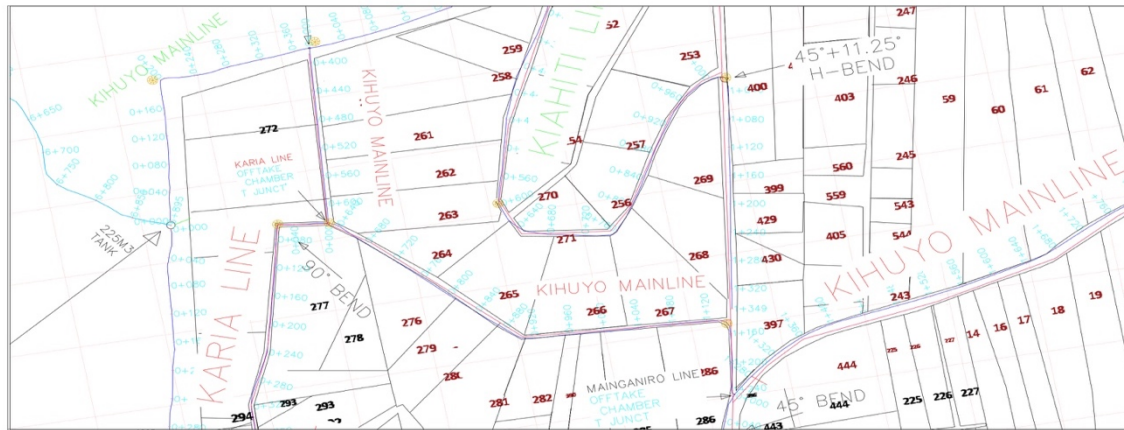
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Plan & Layout



Plan & Layout 2



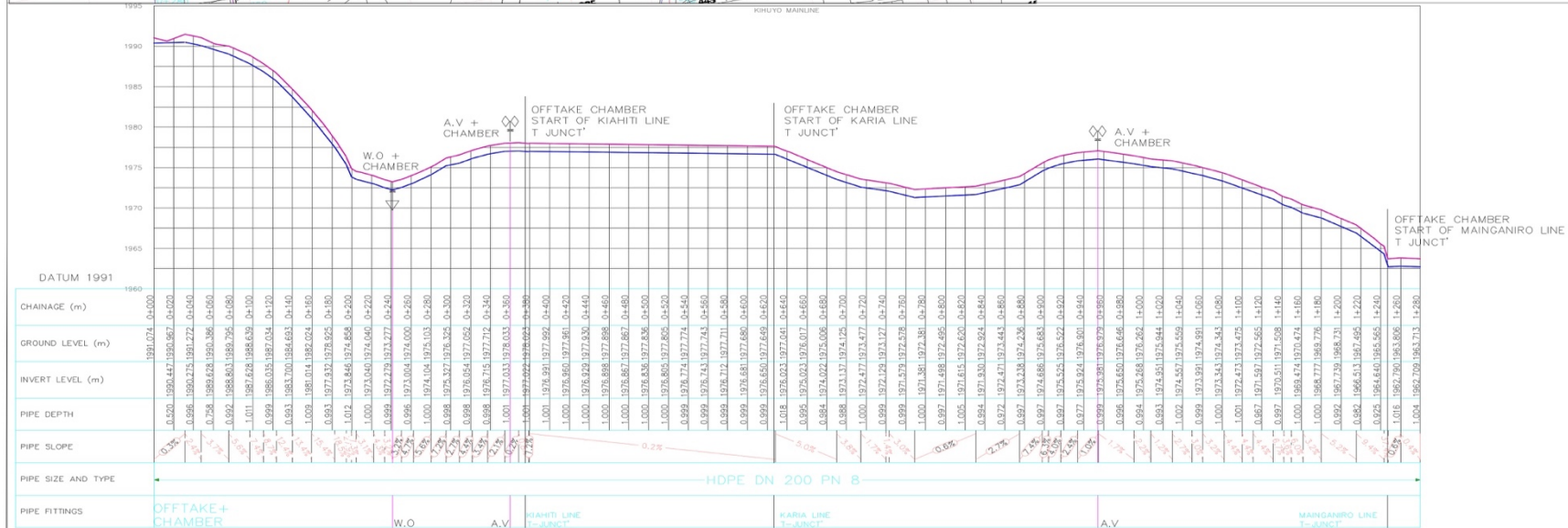


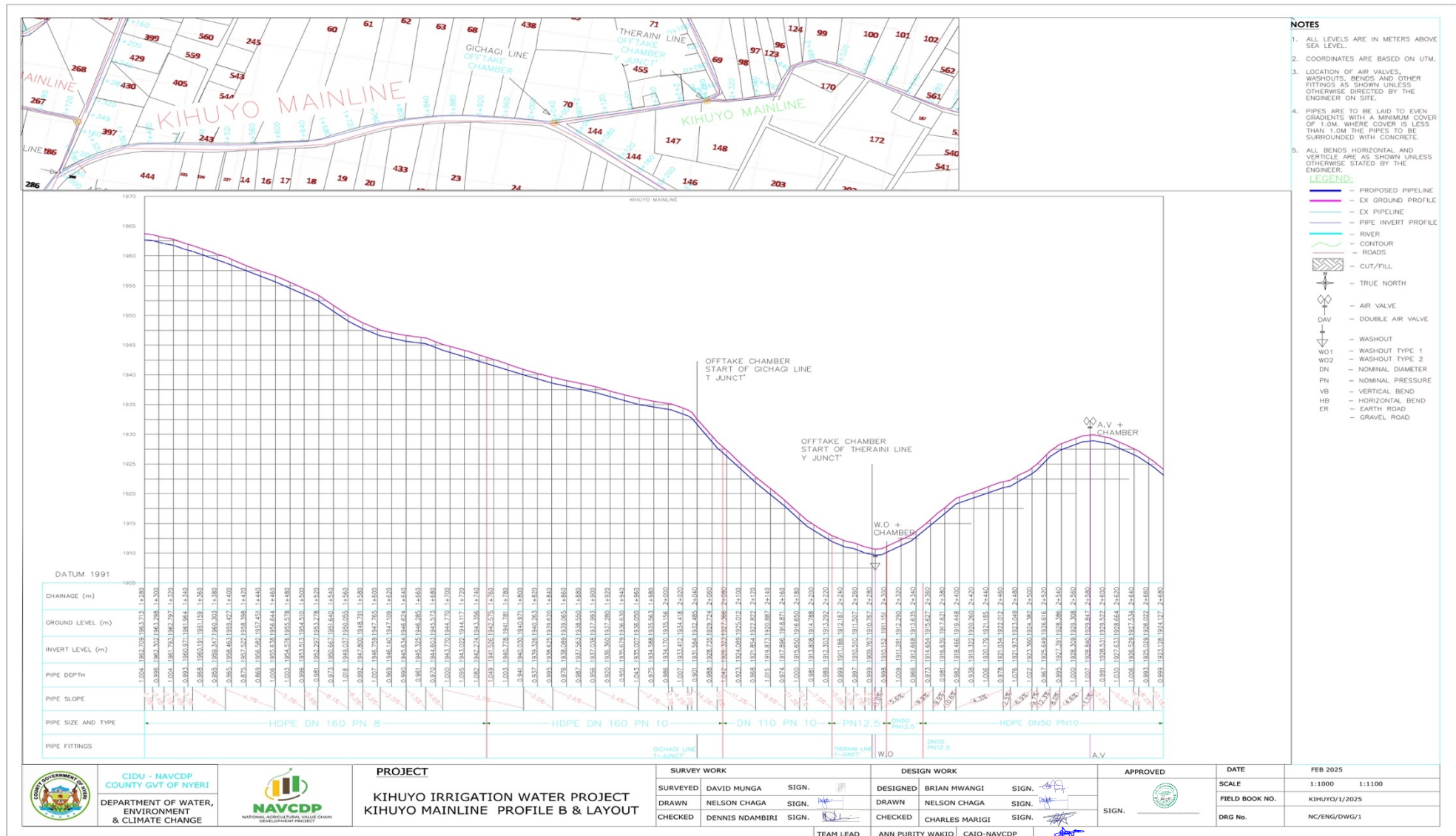
#### NOTES

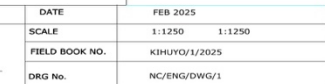
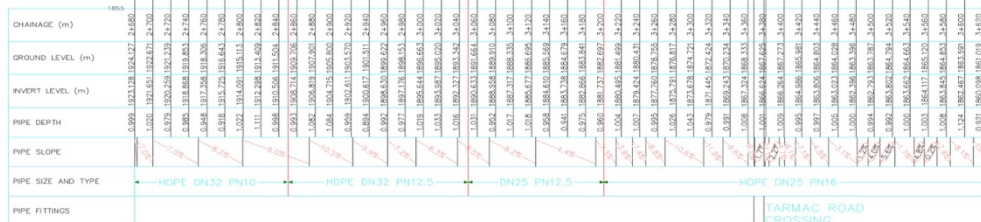
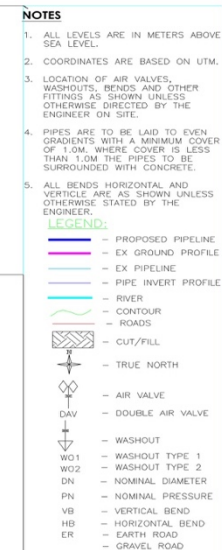
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#### LEGEND:

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- - EX PIPELINE
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- - RIVER
- - CONTOUR
- - ROADS
- / / - CUT/FILL
- ↑ - TRUE NORTH
- ⊕ - AIR VALVE
- ⊕ - DOUBLE AIR VALVE
- ↓ - WASHOUT
- WO1 - WASHOUT TYPE 1
- WO2 - WASHOUT TYPE 2
- DN - NOMINAL DIAMETER
- PN - NOMINAL PRESSURE
- VB - VERTICAL BEND
- HB - HORIZONTAL BEND
- ER - EARTH ROAD
- GR - GRAVEL ROAD

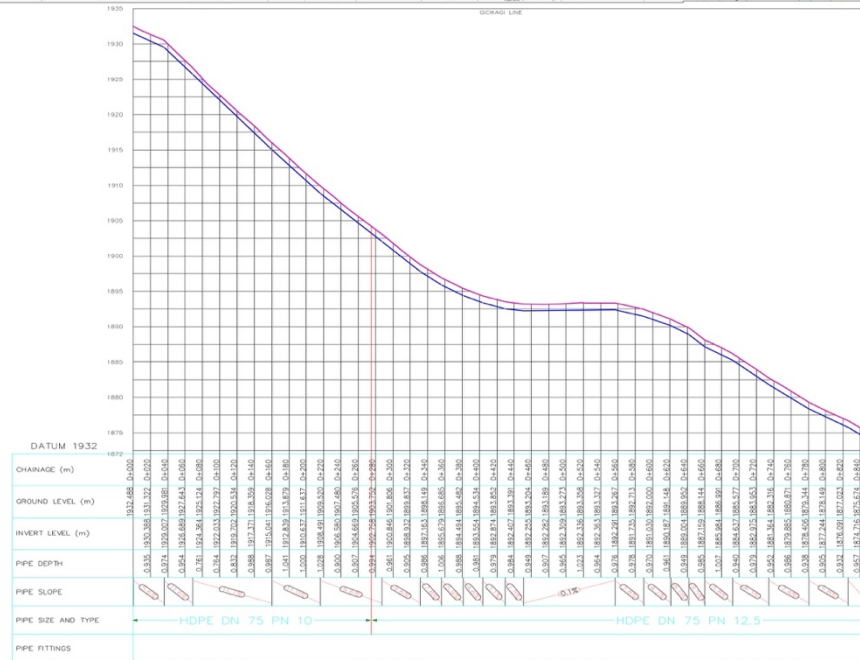






## Mainline Profile C & Layout

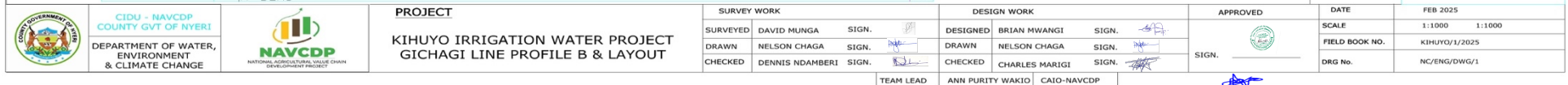
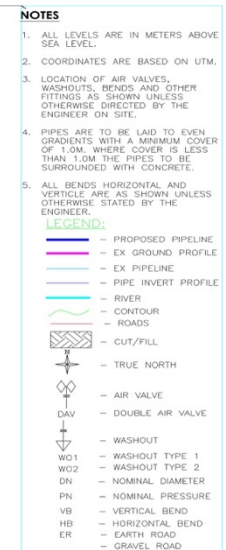




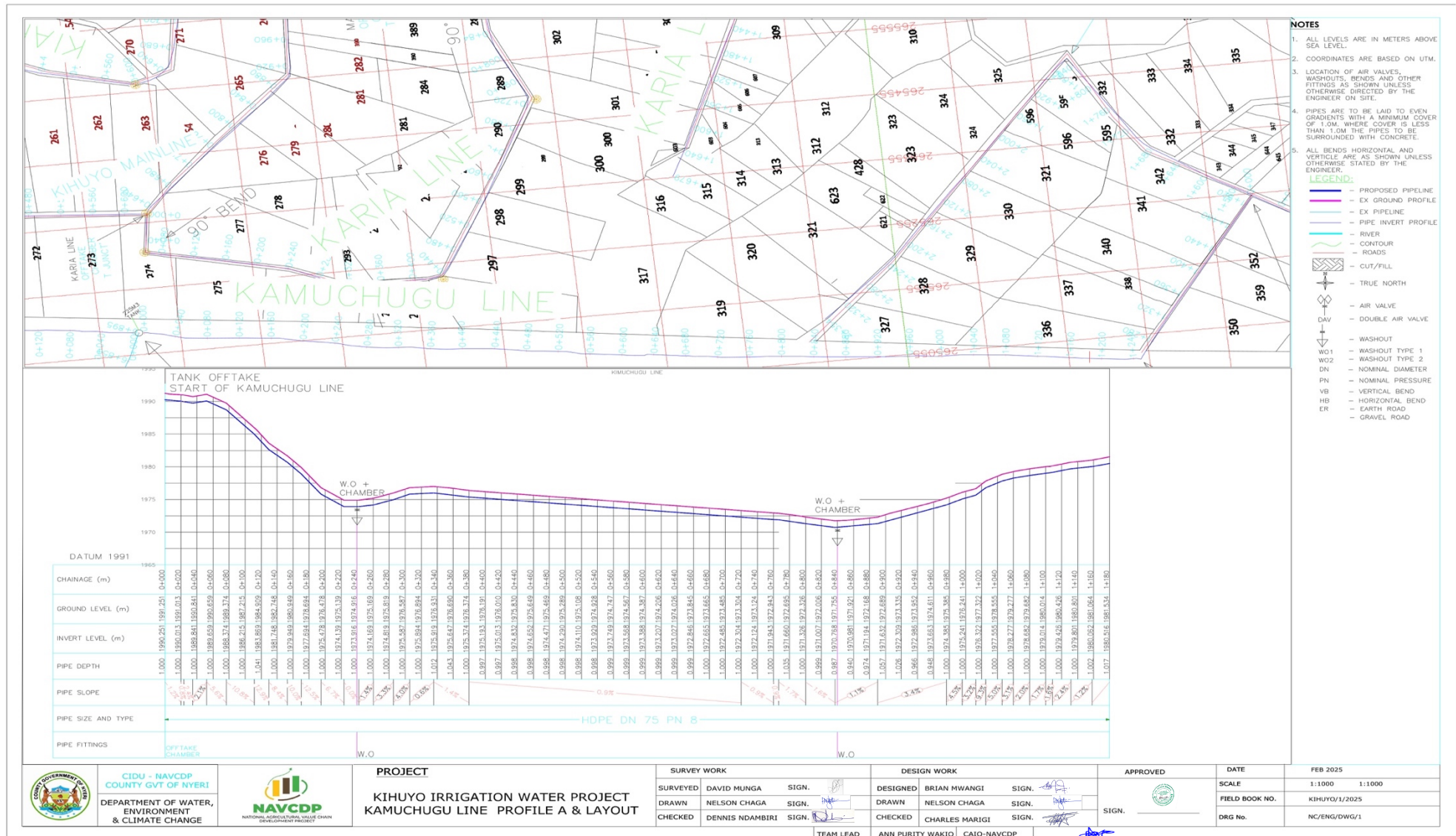
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|                                                                                     |                                       |                                                                                                                                                                  |                                                                                          |                 |       |                                                                                       |          |                |       |                                                                                       |                |                  |
|-------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------|-------|---------------------------------------------------------------------------------------|----------|----------------|-------|---------------------------------------------------------------------------------------|----------------|------------------|
|  | CIDU - NAVCDP<br>COUNTY GOVT OF NYERI | <br><b>NAVCDP</b><br>NATIONAL AGRICULTURAL VALUE CHAIN<br>DEVELOPMENT PROJECT | <b>PROJECT</b><br><br>KIHUYO IRRIGATION WATER PROJECT<br>GICHAGI LINE PROFILE A & LAYOUT | SURVEY WORK     |       | DESIGN WORK                                                                           |          | APPROVED       | DATE  | FEB 2025                                                                              |                |                  |
|                                                                                     | SURVEYED                              |                                                                                                                                                                  |                                                                                          | DAVID MUNGA     | SIGN. |  | DESIGNED | BRIAN MWANGI   | SIGN. |  | SCALE          | 1:1000    1:1000 |
|                                                                                     | DRAWN                                 |                                                                                                                                                                  |                                                                                          | NELSON CHAGA    | SIGN. |  | DRAWN    | NELSON CHAGA   | SIGN. |  | FIELD BOOK NO. | KIHUYO/1/2025    |
|                                                                                     | CHECKED                               |                                                                                                                                                                  |                                                                                          | DENNIS NDAMBERI | SIGN. |  | CHECKED  | CHARLES MARIGI | SIGN. |  | DRG No.        | NC/ENG/DWG/1     |
|                                                                                     |                                       |                                                                                                                                                                  |                                                                                          | TEAM LEAD       |       | ANN PURITY WAKIO    CAIO-NAVCDP                                                       |          |                |       |                                                                                       |                |                  |

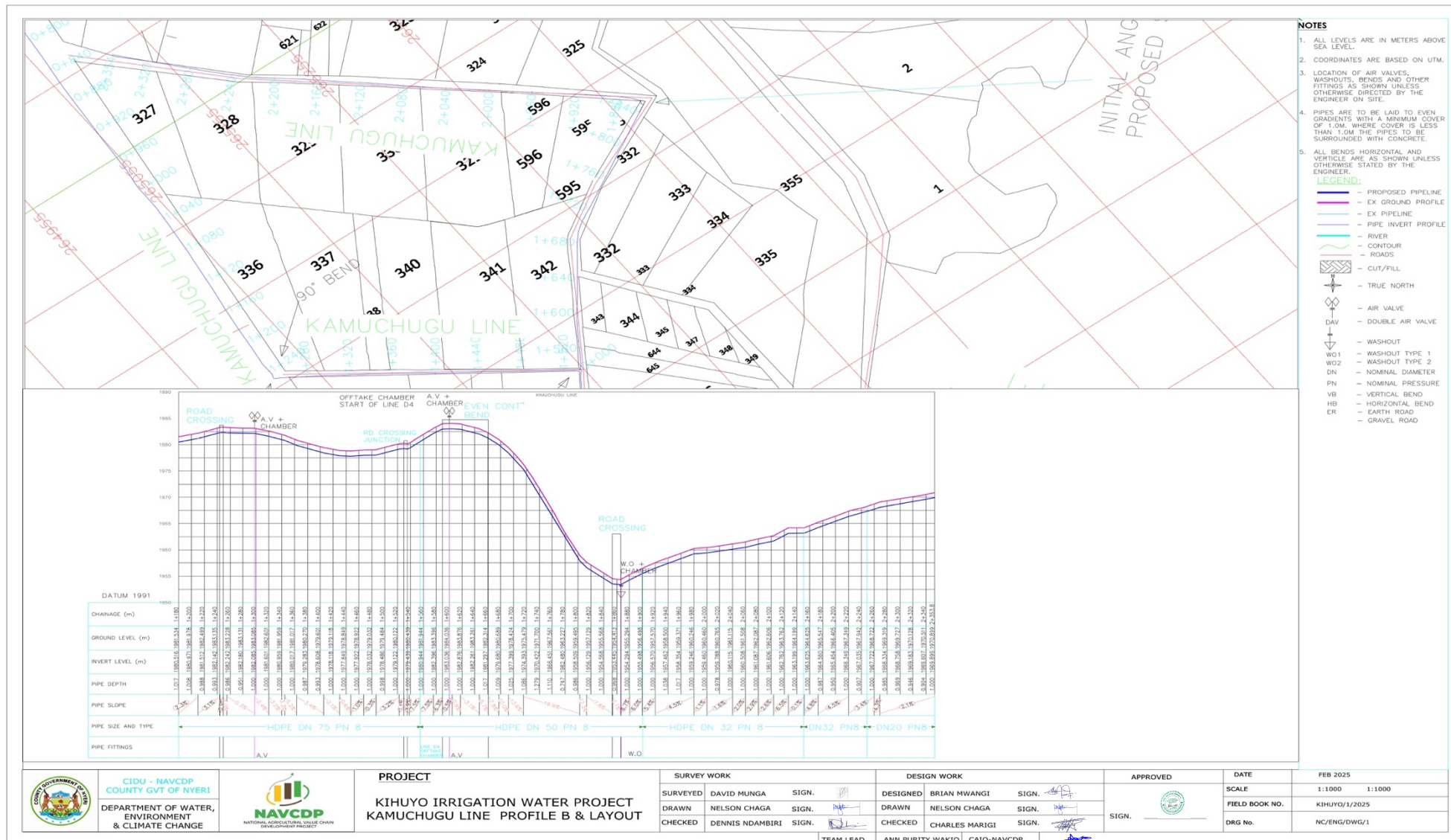
Gichagi Profile A & Layout

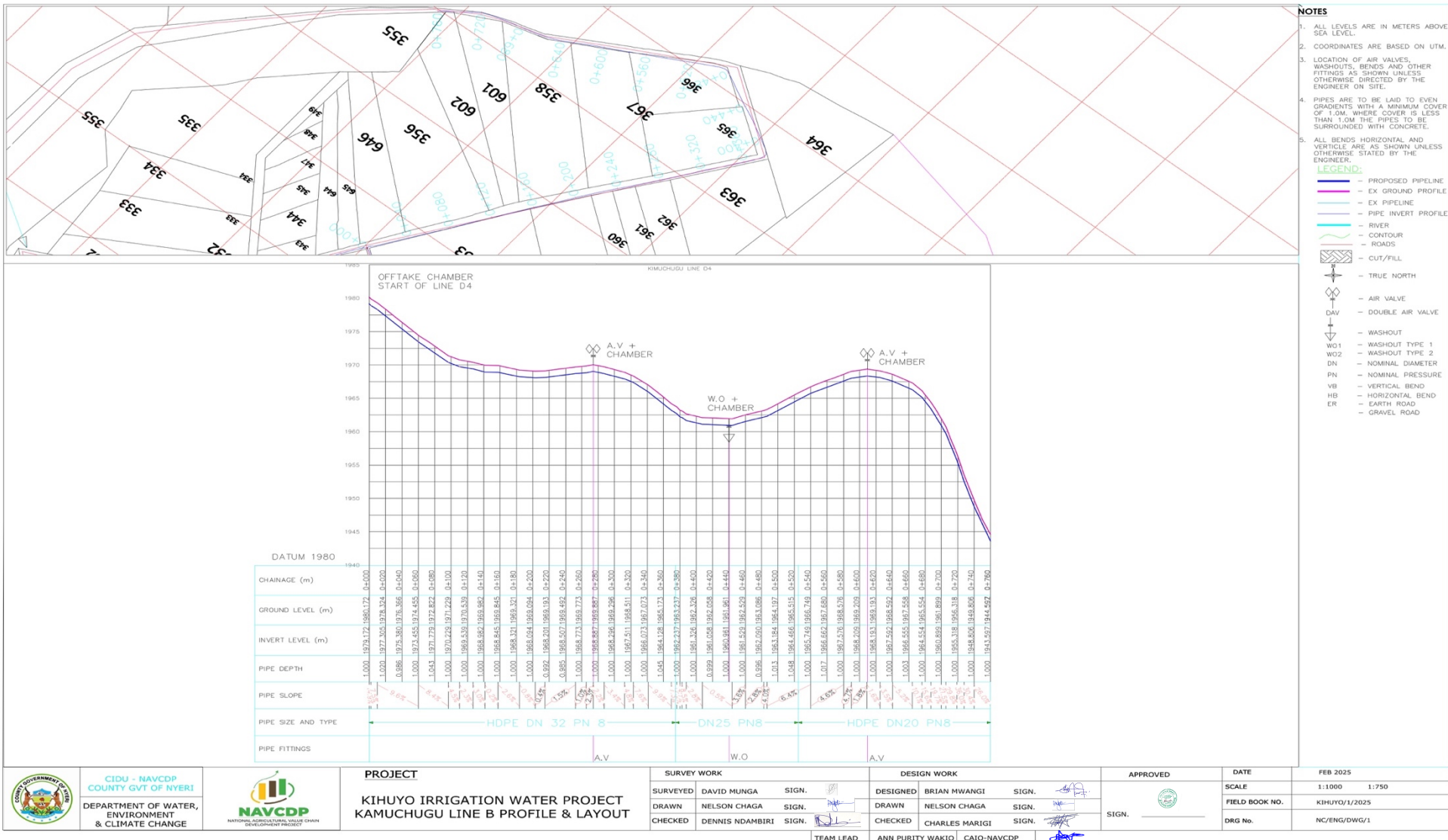


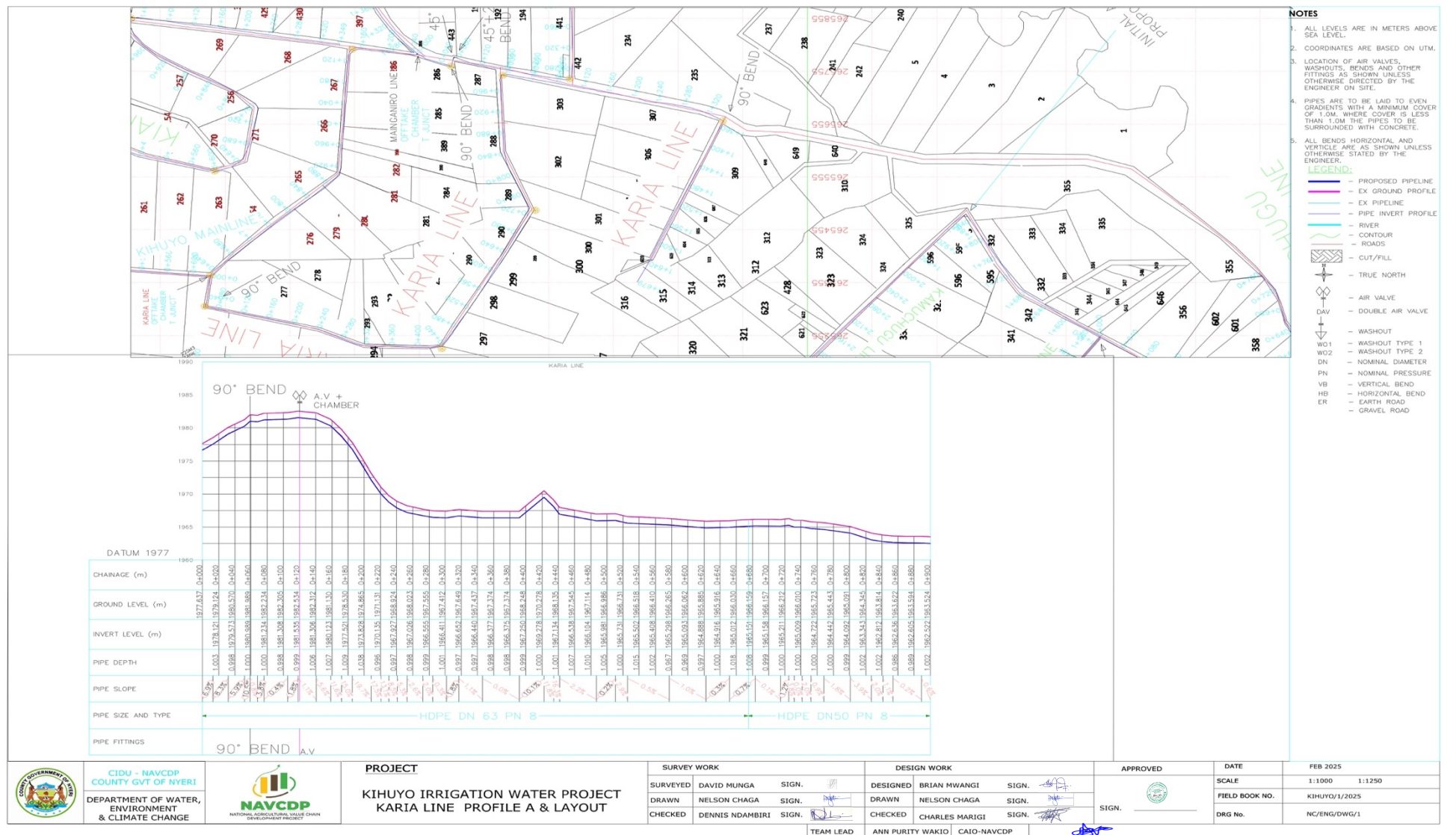
## Gichagi Line Profile B & Layout





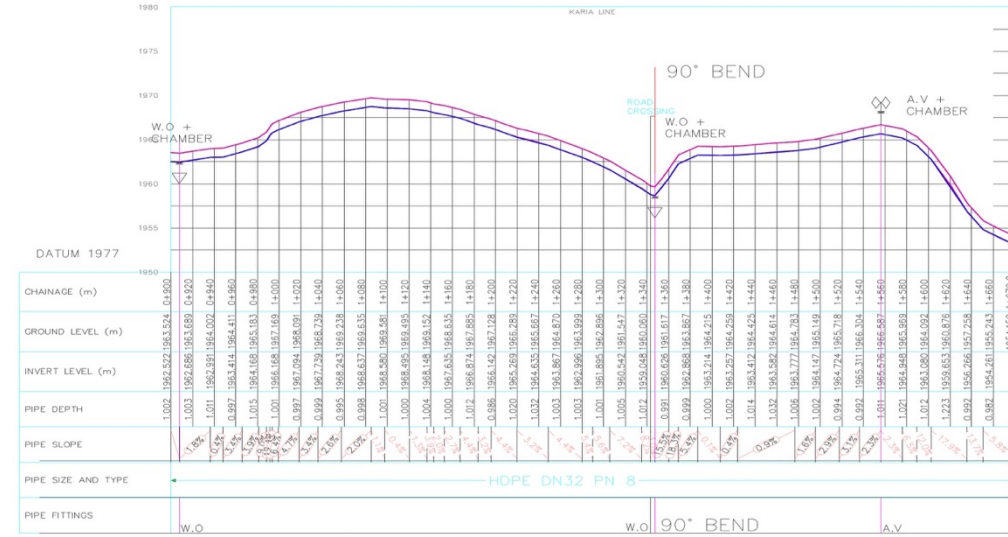
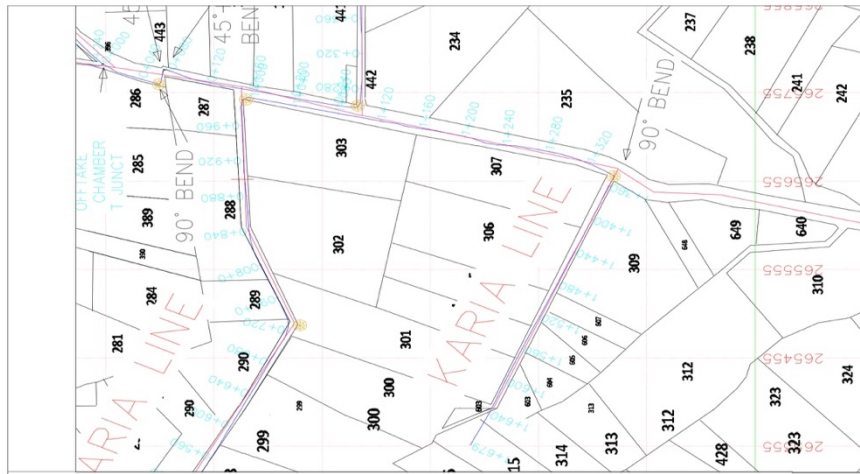






Karia Line Profile A & Layout

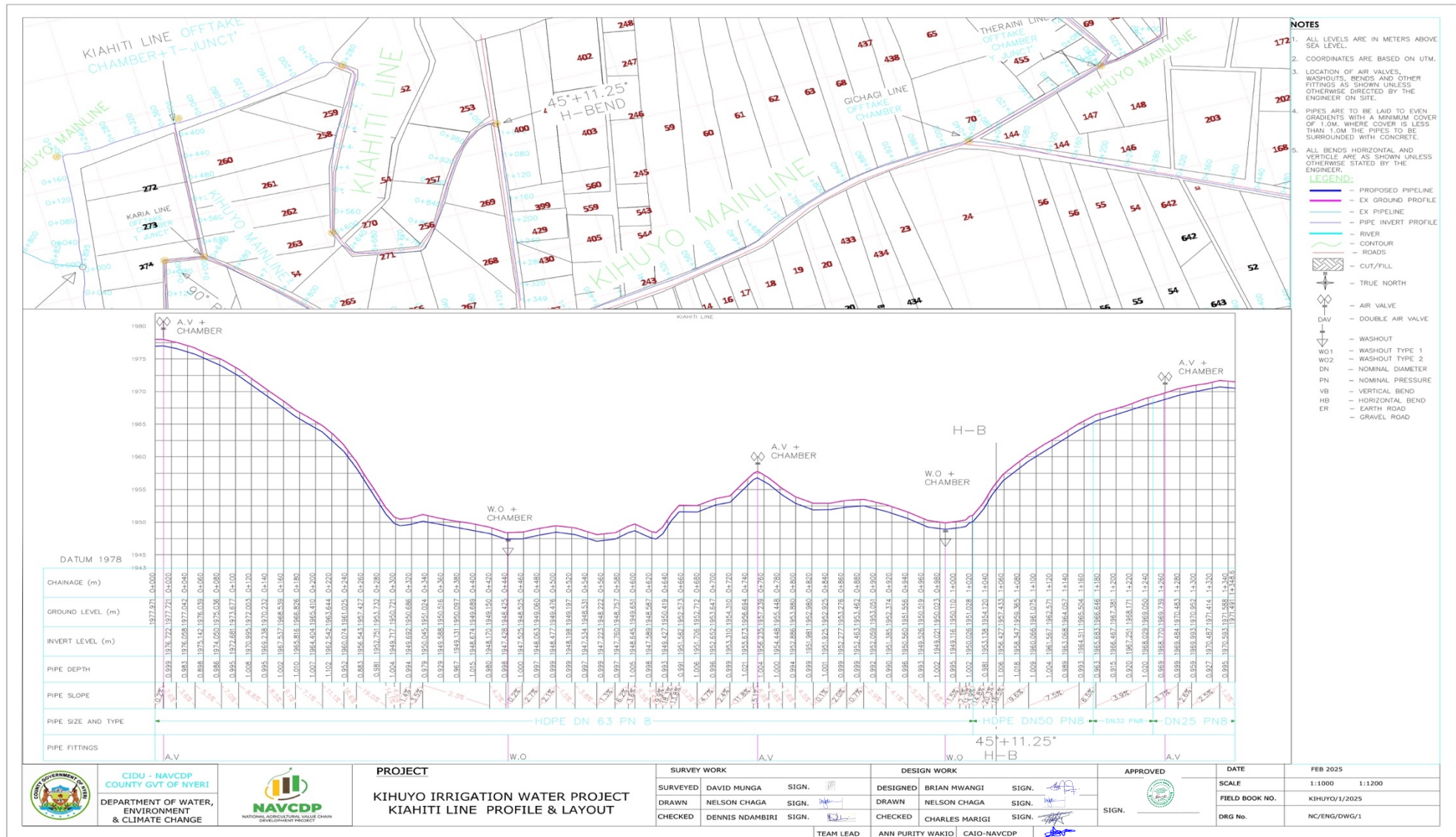




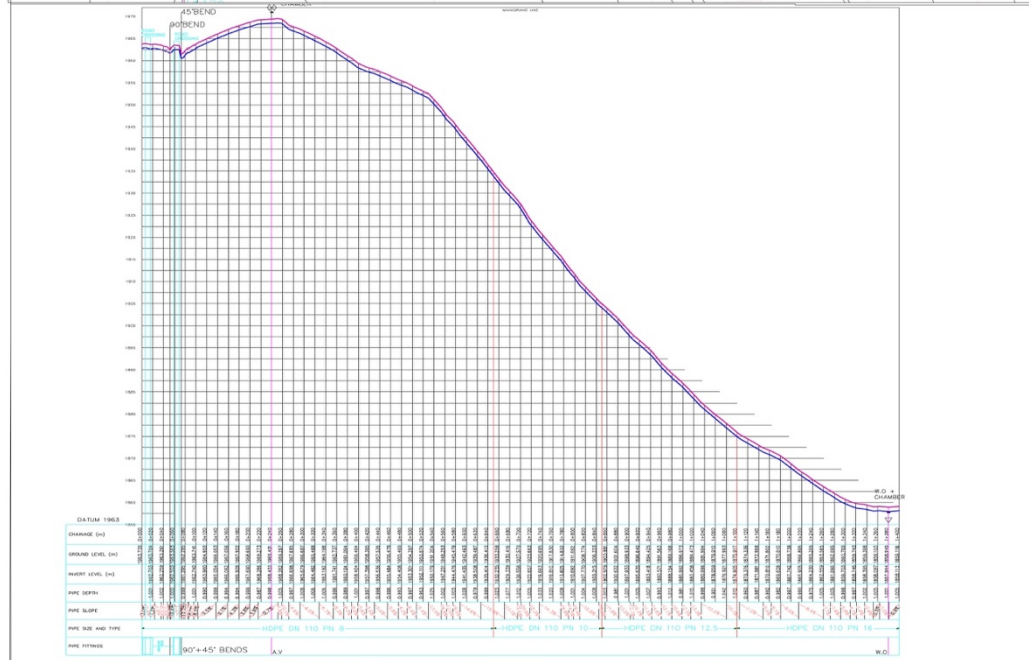
- NOTES**
- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
  - COORDINATES ARE BASED ON UTM.
  - LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  - PIPES ARE TO BE LAID TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M WHERE COVER IS LESS THAN 1.0M THE PIPES TO BE SURROUNDED WITH CONCRETE.
  - ALL BENDS HORIZONTAL AND VERTICAL ARE AS SHOWN UNLESS OTHERWISE STATED BY THE ENGINEER.
- LEGEND:**
- PROPOSED PIPELINE
  - EX GROUND PROFILE
  - EX PIPELINE
  - PIPE INVERT PROFILE
  - RIVER
  - CONTOUR
  - ROADS
  - CUT/FILL
  - TRUE NORTH
  - AIR VALVE
  - DOUBLE AIR VALVE
  - WASHOUT
  - WASHOUT TYPE 1
  - WASHOUT TYPE 2
  - NOMINAL DIAMETER
  - NOMINAL PRESSURE
  - VERTICAL BEND
  - HORIZONTAL BEND
  - EARTH ROAD
  - GRAVEL ROAD

|                                                                                     |                                                                                                      |                                                                                                                                                                  |                                                                                        |             |                 |                                                                                             |             |                                                                                       |                                                                                             |                                                                                                                |                |               |        |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------|-----------------|---------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------|---------------|--------|
|  | CIDU - NAVCDP<br>COUNTY GOVT OF NYERI<br><br>DEPARTMENT OF WATER,<br>ENVIRONMENT<br>& CLIMATE CHANGE | <br><b>NAVCDP</b><br>NATIONAL AGRICULTURAL VALUE CHAIN<br>DEVELOPMENT PROJECT | <b>PROJECT</b><br><br>KIHUYO IRRIGATION WATER PROJECT<br>KARIA LINE PROFILE B & LAYOUT | SURVEY WORK |                 |                                                                                             | DESIGN WORK |                                                                                       |                                                                                             | APPROVED<br><br><br>SIGN. | DATE           | FEB 2025      |        |
|                                                                                     |                                                                                                      |                                                                                                                                                                  |                                                                                        | SURVEYED    | DAVID MUNGA     | SIGN.  | DESIGNED    | BRIAN MWANGI                                                                          | SIGN.  |                                                                                                                | SCALE          | 1:1000        | 1:1000 |
|                                                                                     |                                                                                                      |                                                                                                                                                                  |                                                                                        | DRAWN       | NELSON CHAGA    | SIGN.  | DRAWN       | NELSON CHAGA                                                                          | SIGN.  |                                                                                                                | FIELD BOOK NO. | KIHUYO/1/2025 |        |
|                                                                                     |                                                                                                      |                                                                                                                                                                  |                                                                                        | CHECKED     | DENNIS NDAMBIRI | SIGN.  | CHECKED     | CHARLES MARIGI                                                                        | SIGN.  |                                                                                                                | DRG No.        | NC/ENG/DWG/1  |        |
|                                                                                     |                                                                                                      |                                                                                                                                                                  |                                                                                        | TEAM LEAD   |                 | ANN PURITY WAKIO                                                                            | CAIO-NAVCDP |  |                                                                                             |                                                                                                                |                |               |        |

Karia Line Profile B & Layout







- NOTES**
- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
  - COORDINATES ARE BASED ON UTM.
  - LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  - PIPES ARE TO BE LAID TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M, WHERE COVER IS LESS THAN 1.0M THE PIPES TO BE SURROUNDED WITH CONCRETE.
  - ALL BENDS HORIZONTAL AND VERTICAL ARE AS SHOWN UNLESS OTHERWISE STATED BY THE ENGINEER.
- LEGEND:**
- PROPOSED PIPELINE
  - EX GROUND PROFILE
  - EX PIPELINE
  - PIPE INVERT PROFILE
  - RIVER
  - CONTOUR
  - ROADS
  - CUT/FILL
  - TRUE NORTH
  - AIR VALVE
  - DOUBLE AIR VALVE
  - WASHOUT
  - WASHOUT TYPE 1
  - WASHOUT TYPE 2
  - NOMINAL DIAMETER
  - NOMINAL PRESSURE
  - VERTICAL BEND
  - HORIZONTAL BEND
  - EARTH ROAD
  - GRAVEL ROAD



**CIDU - NAVCDP**  
COUNTY GOVT OF NYERI  
DEPARTMENT OF WATER,  
ENVIRONMENT  
& CLIMATE CHANGE

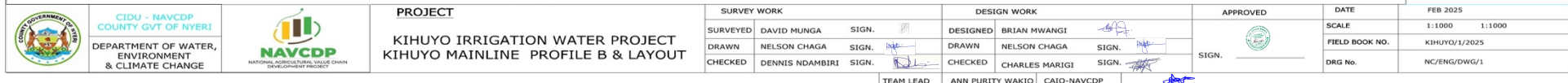
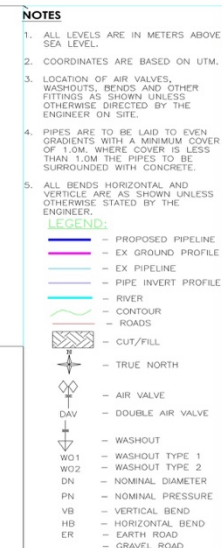


**PROJECT**  
KIHUYO IRRIGATION WATER PROJECT  
MAINGIRANO LINE PROFILE A & LAYOUT

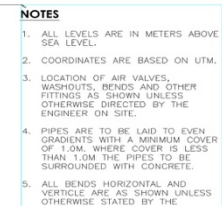
| SURVEY WORK |                 |       | DESIGN WORK                  |                |       |
|-------------|-----------------|-------|------------------------------|----------------|-------|
| SURVEYED    | DAVID MUNGA     | SIGN. | DESIGNED                     | BRIAN MWANGI   | SIGN. |
| DRAWN       | NELSON CHAGA    | SIGN. | DRAWN                        | NELSON CHAGA   | SIGN. |
| CHECKED     | DENNIS NDAMBIRI | SIGN. | CHECKED                      | CHARLES MARIGI | SIGN. |
| TEAM LEAD   |                 |       | ANN PURITY WAKIO CAIO-NAVCDP |                |       |

| APPROVED       | DATE          |
|----------------|---------------|
| SIGN.          | FEB 2025      |
| SCALE          | 1:1000 1:1100 |
| FIELD BOOK NO. | KIHUYO/1/2025 |
| DRG No.        | NC/ENG/DWG/1  |

Mainganiro Line Profile A & Layout



## Mainganiro Line Profile B & Layout



ENGINEER.  
LEGEND:

-  - PROPOSED PIPELINE  
 - EX GROUND PROFILE  
 - EX PIPELINE  
 - PIPE INVERT PROFILE  
 - RIVER  
 - CONTOUR  
 - ROADS  
 - CUT/FILL  
 - TRUE NORTH  
 - AIR VALVE  
 - DOUBLE AIR VALVE  
 - WASHOUT  
 - WASHOUT TYPE 1  
 - WASHOUT TYPE 2  
 - NOMINAL DIAMETER  
 - NOMINAL PRESSURE  
 - VERTICAL BEND  
 - HORIZONTAL BEND  
 - EARTH ROAD  
 - GRAVEL ROAD



CIDU - NAVCDP  
COUNTY GVT OF NYERI

DEPARTMENT OF WATER,  
ENVIRONMENT  
& CLIMATE CHANGE

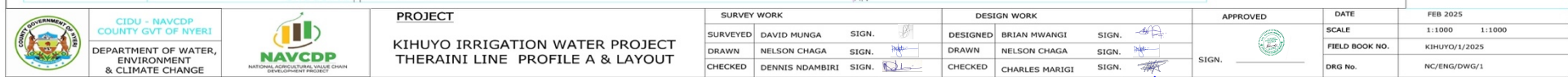
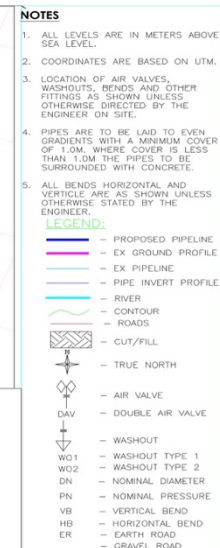


KIHUYO IRRIGATION WATER PROJECT  
MAINGANIRO LINE PROFILE C & LAYOUT

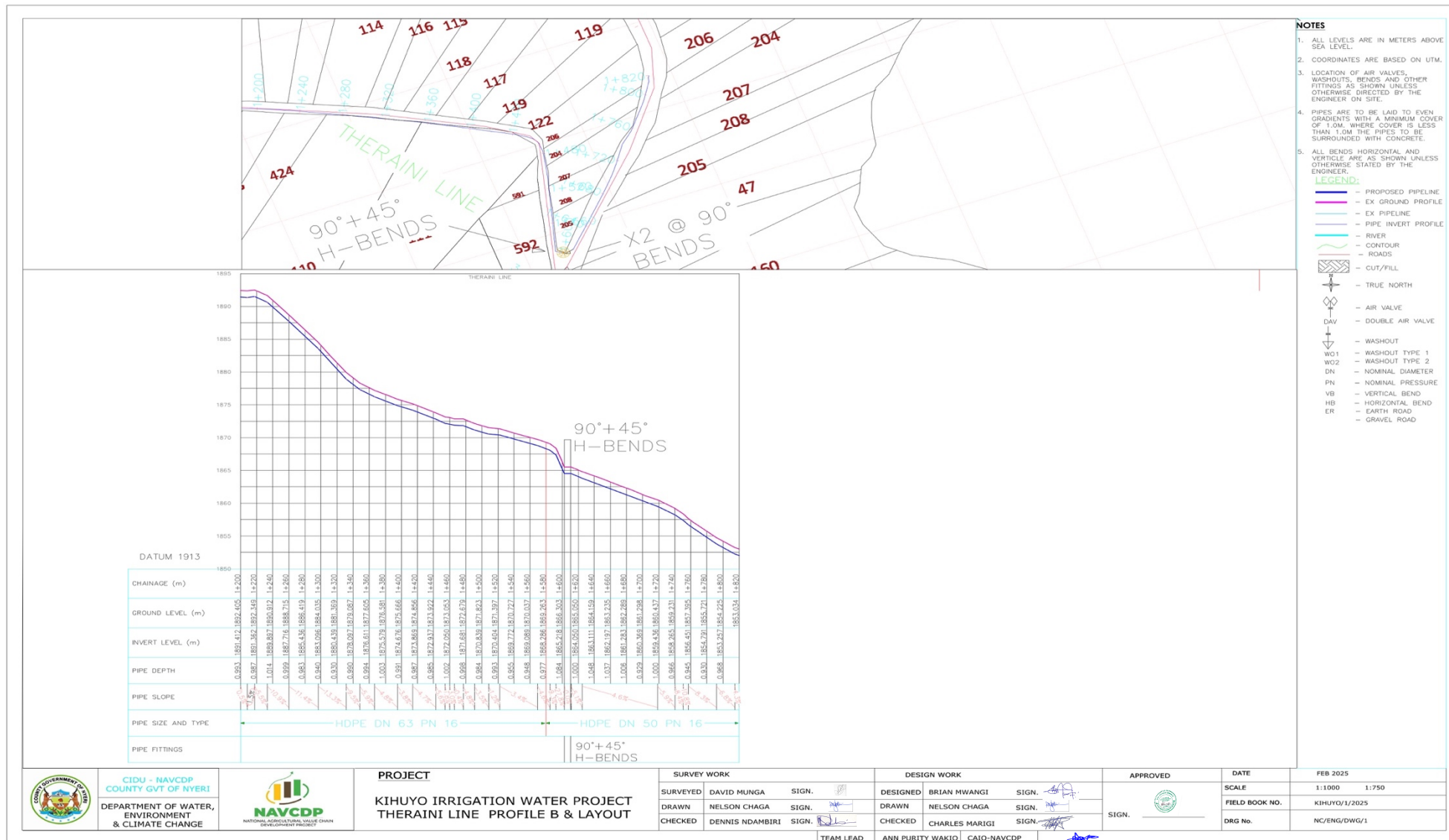
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|-------------|-----------------|---------------------------------------------------------------------------------------------|------------------|----------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------|---------------|--------|----------|--|
| SURVEY WORK |                 |                                                                                             | DESIGN WORK      |                |                                                                                             | APPROVED                                                                                             |                | DATE          |        | FEB 2025 |  |
| SURVEYED    | DAVID MUNGA     | SIGN.  | DESIGNED         | BRIAN MWANGI   | SIGN.  | <br>SIGN. _____ | SCALE          | 1:1000        | 1:1000 |          |  |
| DRAWN       | NELSON CHAGA    | SIGN.  | DRAWN            | NELSON CHAGA   | SIGN.  |                                                                                                      | FIELD BOOK NO. | KIHUYO/1/2025 |        |          |  |
| CHECKED     | DENNIS NDAMBIRI | SIGN.  | CHECKED          | CHARLES MARIGI | SIGN.  |                                                                                                      | DRG NO.        | NC/ENG/DWG/1  |        |          |  |
| TEAM LEAD   |                 |                                                                                             | ANN PURITY WAKIO | CAIO-NAVCDP    |        |                                                                                                      |                |               |        |          |  |

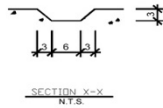
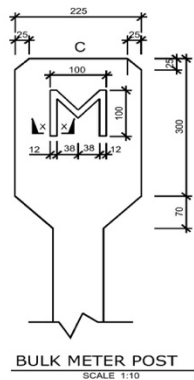
## Mainganiro Line Profile C & Layout



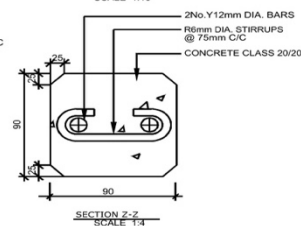
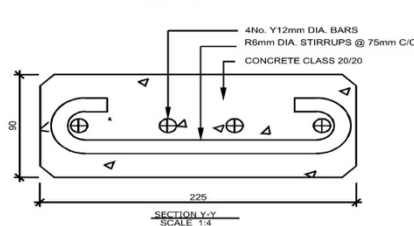
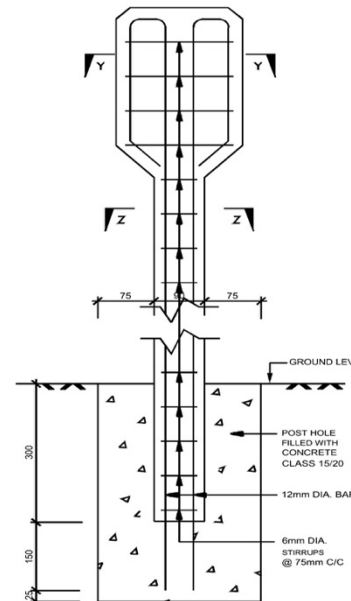
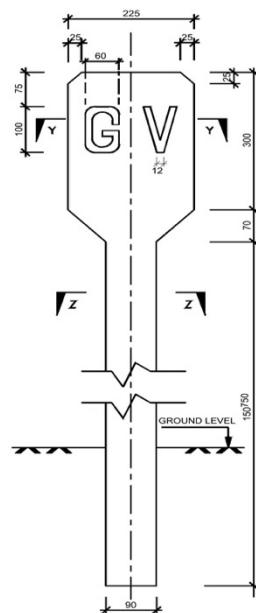


## Theraini Line Profile A & Layout





**NOTE:-**  
ALL DETAILS TO BE SAME AS GATE VALVE BUT THE SIGN TO BE CHANGED AS INDICATED



### DESIGN NOTES

- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED
  - ANCHOR BLOCKS TO BE INSTALLED FOR PIPES LAID AT SLOPES EXCEEDING 1:6 SLOPE
  - THRUST BLOCKS TO BE INSTALLED AT ALL HORIZONTAL AND VERTICAL BENDS, CAPPED ENDS, TEES, TAPERS AND GATE VALVES
  - DETAILS FOR ALL INDICATOR POSTS TO BE AS FOR GATE VALVE BUT LETTERING TO BE AS FOLLOWS:
 

| FOR          | USE |
|--------------|-----|
| GATE VALVE   | GV  |
| AIR VALVE    | AV  |
| WASHOUT      | WO  |
| WATER MAIN   | WM  |
| BULK METER   | M   |
| Y-Y JUNCTION | Y   |
  - ALL INDICATOR POSTS TO BE PAINTED WITH 2 COATS BLUE OIL BASED PAINT AND WHITE LETTERING TO ENGINEER'S APPROVAL
- mm - MILLIMETRES  
OD - OUTSIDE DIAMETER  
ND - NOMINAL DIAMETER  
Dia - DIAMETER  
c/c - CENTRE TO CENTRE  
No. - NUMBER  
uPVC - UNPLASTICISED POLYVINYL CHLORIDE  
m - METRE  
Ø - CENTRE LINE  
GV - GATE VALVE  
AV - AIR VALVE  
WO - WASH OUT  
WM - WATER MAIN  
M - BULK METER  
m<sup>3</sup> - CUBIC METER

### GENERAL NOTES

- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL
  - COORDINATES ARE BASED ON UTM.
  - LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  - PIPES ARE TO BE LAID TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M WHERE COVER IS LESS THAN 1.0M THE PIPES TO BE SURROUNDED WITH CONCRETE
  - ALL BENDS HORIZONTAL AND VERTICAL ARE AS SHOWN UNLESS OTHERWISE STATED BY THE ENGINEER.
- LEGEND:**
- PROPOSED PIPELINE
  - EX GROUND PROFILE
  - EX PIPELINE
  - PIPE INVERT PROFILE
  - RIVER
  - CONTOUR
  - ROADS
  - CUT/FILL
  - TRUE NORTH
  - AIR VALVE
  - DOUBLE AIR VALVE
  - WASHOUT
  - WASHOUT TYPE 1
  - WASHOUT TYPE 2
  - NOMINAL DIAMETER
  - NOMINAL PRESSURE
  - VERTICAL BEND
  - HORIZONTAL BEND
  - EARTH ROAD
  - GRAVEL ROAD



CIDU - NAVCDP  
COUNTY GOVT OF NYERI  
DEPARTMENT OF WATER,  
ENVIRONMENT  
& CLIMATE CHANGE

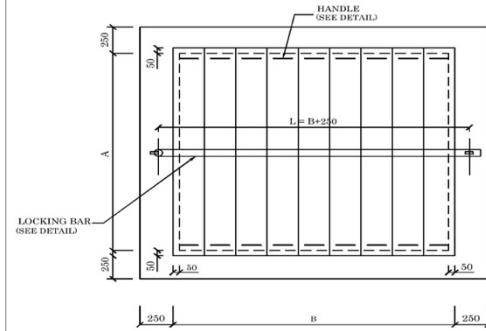


**PROJECT**  
KIHUYO IRRIGATION WATER PROJECT  
MARK POST DESIGN & LAYOUT

| SURVEY WORK |                  | DESIGN WORK |                      |
|-------------|------------------|-------------|----------------------|
| SURVEYED    | SIGN.            | DESIGNED    | DAVID HUNGA SIGN.    |
| DRAWN       | SIGN.            | DRAWN       | NELSON CHAGA SIGN.   |
| CHECKED     | SIGN.            | CHECKED     | CHARLES MARIGI SIGN. |
| TEAM LEAD   | ANN PURITY WAKIO | CAIO-NAVCDP |                      |

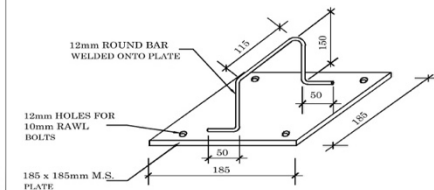
| APPROVED | DATE           | FEB 2025      |
|----------|----------------|---------------|
| SIGN.    | SCALE          | 1:400         |
|          | FIELD BOOK NO. | KIHUYO/1/2025 |
|          | DRG No.        | NC/ENG/DWG/1  |

## Mark Post Design & Layout



COVER FOR AIR VALVE CHAMBERS

SCALE A1: 1/10  
A3: 1/20

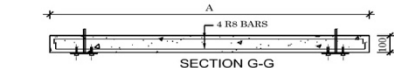


DETAIL OF HANDLE

NTS

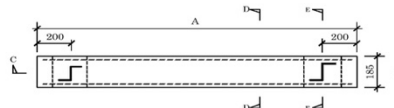
COVER SIZE SCHEDULE

| CHAMBER INTERNAL DIMENSIONS (mm) | SIZE OF COVER A (mm) x B (mm) |
|----------------------------------|-------------------------------|
| 1200 X 1200                      | 1300 X 1300                   |
| 1200 X 1200                      | 1300 X 1300                   |
| 1400 X 1200                      | 1500 X 1500                   |
| 1500 X 1200                      | 1600 X 1300                   |
| 1500 X 1200                      | 1600 X 1300                   |



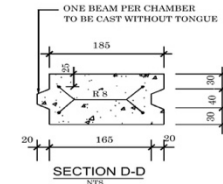
SECTION G-G

SCALE A1: 1/10  
A3: 1/20



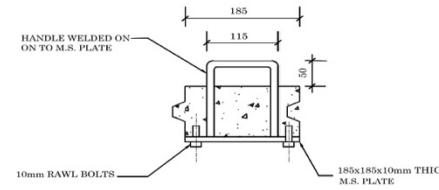
PLAN

DETAIL OF PRECAST CONCRETE COVER SLAB



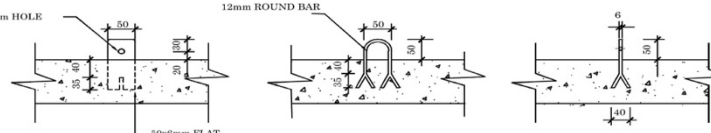
SECTION D-D

NTS

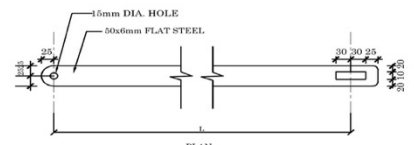


SECTION E-E

NTS



SECTIONS



DETAILS OF LOCKING BAR

NTS

## DETAILS OF PRECAST CONCRETE COVERS FOR VALVE CHAMBERS

### DESIGN NOTES

1. DIMENSIONS ARE SHOWN IN MILLIMETRES UNLESS OTHERWISE STATED

P.C.C. - PRECAST CONCRETE

mm - MILLIMETRES

O.D. - OUTSIDE DIAMETER

M.S. - MILD STEEL

Ø - DIAMETER

NO. - NUMBER

R.C. - REINFORCED CONCRETE

c/c - CENTRE TO CENTRE

### GENERAL NOTES

- ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
- COORDINATES ARE BASED ON UTM.
- LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.

- PIPES ARE TO BE LAID TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M WHERE COVER IS LESS THAN 1.0M THE PIPES TO BE SURROUNDED WITH CONCRETE.

- ALL BENDS HORIZONTAL AND VERTICAL ARE AS SHOWN UNLESS OTHERWISE STATED BY THE ENGINEER.

### LEGEND:

- PROPOSED PIPELINE
- EX GROUND PROFILE
- EX PIPELINE
- PIPE INVERT PROFILE
- RIVER
- CONTOUR
- ROADS
- CUT/FILL
- TRUE NORTH
- AIR VALVE
- DOUBLE AIR VALVE
- WASHOUT
- WASHOUT TYPE 1
- WASHOUT TYPE 2
- NOMINAL DIAMETER
- NOMINAL PRESSURE
- VERTICAL BEND
- HORIZONTAL BEND
- EARTH ROAD
- GRAVEL ROAD



CIDU - NAVCDP  
COUNTY GVT OF NYERI  
DEPARTMENT OF WATER,  
ENVIRONMENT  
& CLIMATE CHANGE



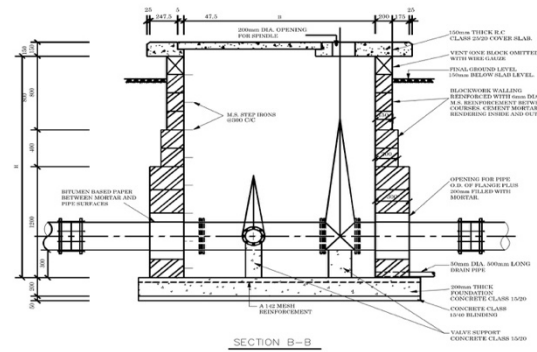
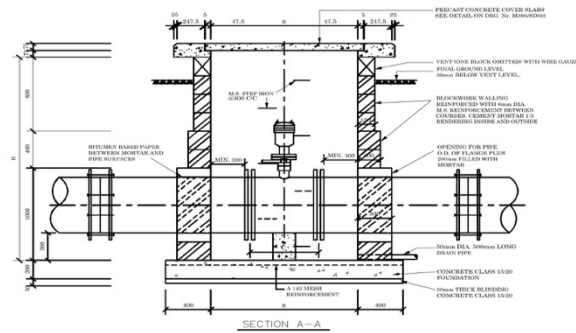
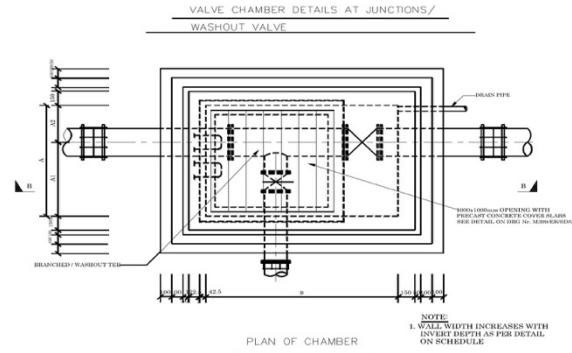
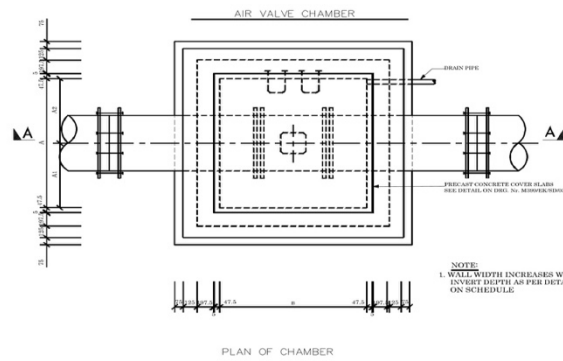
PROJECT  
KIHUYO IRRIGATION WATER PROJECT  
WASHOUT & AIRVALVE CHAMBER PLAN &  
DESIGN

| SURVEY WORK |                  | DESIGN WORK |                      |
|-------------|------------------|-------------|----------------------|
| SURVEYED    | SIGN.            | DESIGNED    | DAVID HUNGA SIGN.    |
| DRAWN       | SIGN.            | DRAWN       | NELSON CHAGA SIGN.   |
| CHECKED     | SIGN.            | CHECKED     | CHARLES MARIGI SIGN. |
| TEAM LEAD   | ANN PURITY WAKIO | CAIO-NAVCDP |                      |

| APPROVED |  | DATE           |
|----------|--|----------------|
| SIGN.    |  | FEB 2025       |
|          |  | SCALE          |
|          |  | 1:500          |
|          |  | FIELD BOOK NO. |
|          |  | KIHUYO/1/2025  |
|          |  | DRG No.        |
|          |  | NC/ENG/DWG/1   |

Washout & Air Valve Chamber





CONSTRUCTION DETAILS FOR VALVE CHAMBERS

| MAINS DIAMETER (mm) | PLAN SIZE OF CHAMBER<br>(INTERNAL DIMENSIONS) (mm) x (mm) |
|---------------------|-----------------------------------------------------------|
| 100                 | 1200 x 1200                                               |
| 150                 | 1200 x 1300                                               |
| 200                 | 1400 x 1300                                               |

CHAMBER SIZE SCHEDULE FOR VARIOUS PIPE SIZES

| INVERT DEPTHS (mm)   | HEIGHT OF WALL (mm) | WALL WIDTH (mm)                              |
|----------------------|---------------------|----------------------------------------------|
| 0 - 800              | 800                 | 150 - MASONRY WALL                           |
| 800 - 1200           | 400                 | 200 - MASONRY WALL                           |
| 1200 - 2400          | 1200                | 300 - MASONRY WALL                           |
| 2400 - 3000          | 600                 | 350 - MASONRY WALL                           |
| DEPTH MORE THAN 3000 |                     | 200mm REINFORCED CONCRETE (CLASS 25/20) WALL |

CHAMBER SIZES AND WALL THICKNESS SCHEDULE

#### DESIGN NOTES

1. DIMENSIONS ARE SHOWN IN MILLIMETRES UNLESS OTHERWISE STATED

P.C.C. - PRECAST CONCRETE

mm - MILLIMETRES

O.D. - OUTSIDE DIAMETER

M.S. - MILD STEEL

DIA. - DIAMETER

NO. - NUMBER

R.C. - REINFORCED CONCRETE

c/c - CENTRE TO CENTRE

#### GENERAL NOTES

1. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.

2. COORDINATES ARE BASED ON UTM.

3. LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.

4. PIPES ARE TO BE LAID TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M WHERE COVER IS LESS THAN 1.0M THE PIPES TO BE SURROUNDED WITH CONCRETE.

5. ALL BENDS HORIZONTAL AND VERTICAL ARE AS SHOWN UNLESS OTHERWISE STATED BY THE ENGINEER.

#### LEGEND:

- - PROPOSED PIPELINE
- - EX GROUND PROFILE
- - EX PIPELINE
- - PIPE INVERT PROFILE
- - RIVER
- - CONTOUR
- - ROADS
- CUT/FILL
- ↑ - TRUE NORTH
- ⊗ - AIR VALVE
- ⊕ - DOUBLE AIR VALVE
- ▽ - WASHOUT
- WO1 - WASHOUT TYPE 1
- WO2 - WASHOUT TYPE 2
- DN - NOMINAL DIAMETER
- PN - NOMINAL PRESSURE
- VB - VERTICAL BEND
- HB - HORIZONTAL BEND
- ER - EARTH ROAD
- - GRAVEL ROAD



CIDU - NAVCDP  
COUNTY GOVT OF NYERI  
DEPARTMENT OF WATER,  
ENVIRONMENT  
& CLIMATE CHANGE



PROJECT  
KIHUYO IRRIGATION WATER PROJECT  
WASHOUT & AIRVALVE CHAMBER PLAN &  
DESIGN

SURVEY WORK  
SURVEYED DAVID MUNGA SIGN.   
DRAWN NELSON CHAGA SIGN.   
CHECKED CHARLES MARIGI SIGN.   
TEAM LEAD ANN PURITY WAKJO CAIO-NAVCDP

DESIGN WORK  
DESIGNED DAVID MUNGA SIGN.   
DRAWN NELSON CHAGA SIGN.   
CHECKED CHARLES MARIGI SIGN.

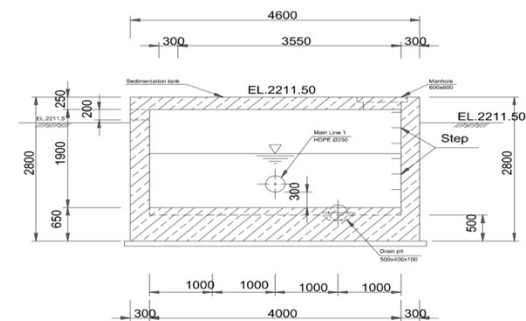
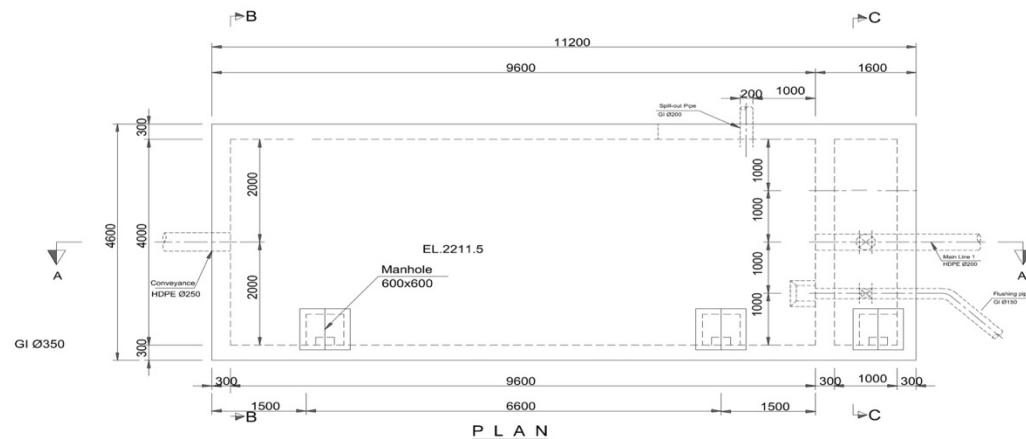
APPROVED  
SIGN.

DATE  
SCALE  
FIELD BOOK NO.  
DRG No.

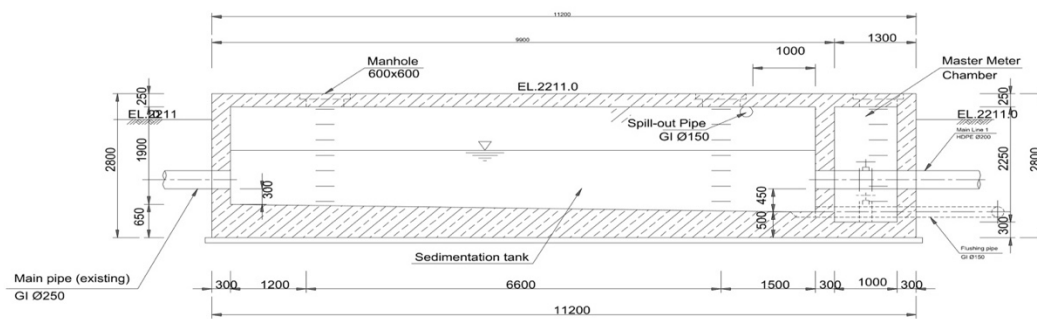
FEB 2025  
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KIHUYO/1/2025  
NC/ENG/DWG/1

## Washout & Air Valve Design

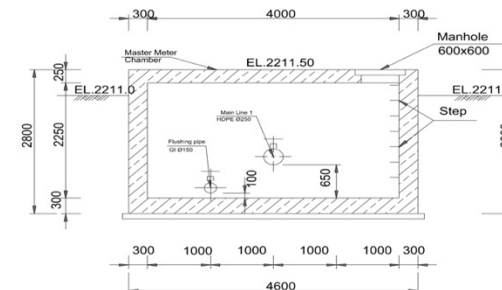




SECTION B - B



SECTION A - A



SECTION C - C

#### GENERAL NOTES

1. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
2. COORDINATES ARE BASED ON UTM.
3. LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
4. PIPES ARE TO BE LAID TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M WHERE COVER IS LESS THAN 1.0M THE PIPES TO BE SURROUNDED WITH CONCRETE.
5. ALL BENDS HORIZONTAL AND VERTICAL ARE AS SHOWN UNLESS OTHERWISE STATED BY THE ENGINEER.

#### LEGEND:

- PROPOSED PIPELINE
- EX GROUND PROFILE
- EX PIPELINE
- PIPE INVERT PROFILE
- RIVER
- CONTOUR
- ROADS
- CUT/FILL
- TRUE NORTH
- AIR VALVE
- DOUBLE AIR VALVE
- WASHOUT
- WASHOUT TYPE 1
- WASHOUT TYPE 2
- NOMINAL DIAMETER
- NOMINAL PRESSURE
- VERTICAL BEND
- HORIZONTAL BEND
- EARTH ROAD
- GRAVEL ROAD



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DEPARTMENT OF WATER,  
ENVIRONMENT  
& CLIMATE CHANGE



#### PROJECT

KIHUYO IRRIGATION WATER PROJECT  
SEDIMENTATION BASIN & DETAILS

#### SURVEY WORK

SURVEYED SIGN.  
DRAWN SIGN.  
CHECKED SIGN.

#### DESIGN WORK

DESIGNED DAVID MUNGA SIGN.  
DRAWN NELSON CHAGA SIGN.  
CHECKED CHARLES MARIGI SIGN.

#### APPROVED

SIGN.

#### DATE

FEB 2025

#### SCALE

1:150

#### FIELD BOOK NO.

KIHUYO/1/2025

#### DRG No.

NC/ENG/DWG/1

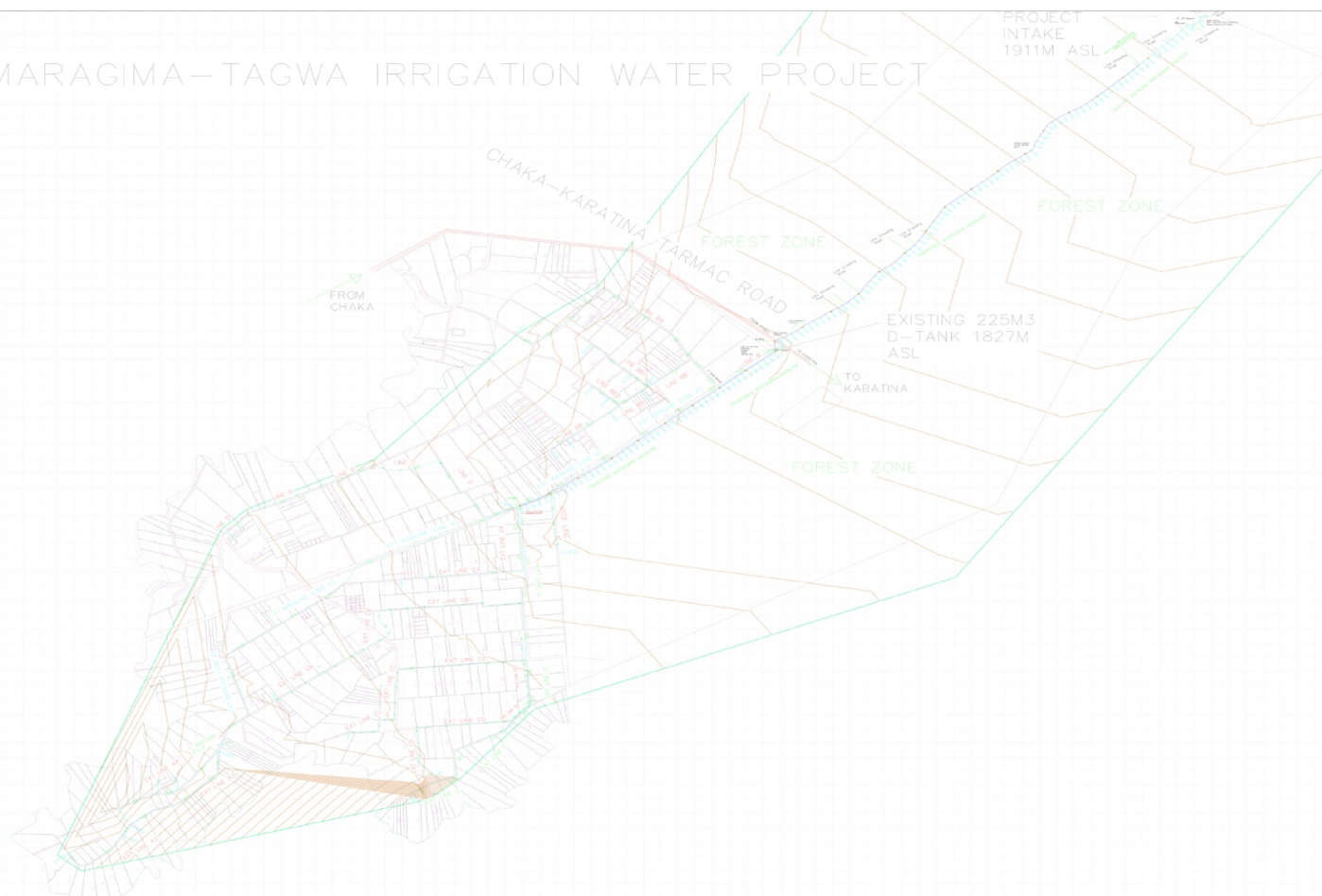
Sedimentation Basin

# MARAGIMA-TAGWA IRRIGATION WATER PROJECT BOOK OF DRAWINGS

## Table of Contents

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# MARAGIMA-TAGWA IRRIGATION WATER PROJECT



- NOTES**
1. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.
  2. COORDINATES ARE BASED ON UTM.
  3. LOCATION OF AIR VALVES, WASHOUTS, BENDS AND OTHER FITTINGS AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER ON SITE.
  4. PIPES ARE TO BE LAD TO EVEN GRADIENTS WITH A MINIMUM COVER OF 1.0M, WHERE COVER IS LESS THAN 1.0M THE PIPES TO BE SURROUNDED WITH CONCRETE.
  5. ALL BENDS HORIZONTAL AND VERTICAL ARE AS SHOWN UNLESS OTHERWISE STATED BY THE ENGINEER.
  6. THE PROPOSED MARAGIMA MAINLINE STARTS AT CH 0+515 AND HAS THE FOLLOWING DETAILS:  
 LENGTH = 4+840  
 CHAMBERS = 5(4AV +1WD)  
 90 BENDS = 2

- LEGEND:**
- PROPOSED PIPELINE
  - EX GROUND PROFILE
  - EX PIPELINE
  - PIPE INVERT PROFILE
  - RIVER
  - CONTOUR
  - ROADS
  - CUT/FILL
  - TRUE NORTH
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  - DAV — DOUBLE AIR VALVE
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  - WO1 — WASHOUT TYPE 1
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  - PN — NOMINAL PRESSURE
  - VB — VERTICAL BEND
  - HB — HORIZONTAL BEND
  - ER — EARTH ROAD
  - GRAVEL ROAD
  - LINE PEGS



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ENVIRONMENT  
& CLIMATE CHANGE



**PROJECT**  
**MARAGIMA-TAGWA IRRIGATION WATER**  
**PROJECT PLAN & LAYOUT**

**SURVEY WORK**

|          |              |       |
|----------|--------------|-------|
| SURVEYED | DAVID MUNGA  | SIGN. |
| DRAWN    | NELSON CHAGA | SIGN. |
| CHECKED  | BRIAN MWANGI | SIGN. |

**DESIGN WORK**

|          |                 |       |
|----------|-----------------|-------|
| DESIGNED | DENNIS NDAMBIRI | SIGN. |
| DRAWN    | NELSON CHAGA    | SIGN. |
| CHECKED  | CHARLES MARIGI  | SIGN. |

**APPROVED**

SIGN.

**DATE**  
SCALE  
FIELD BOOK NO.  
DRG No.

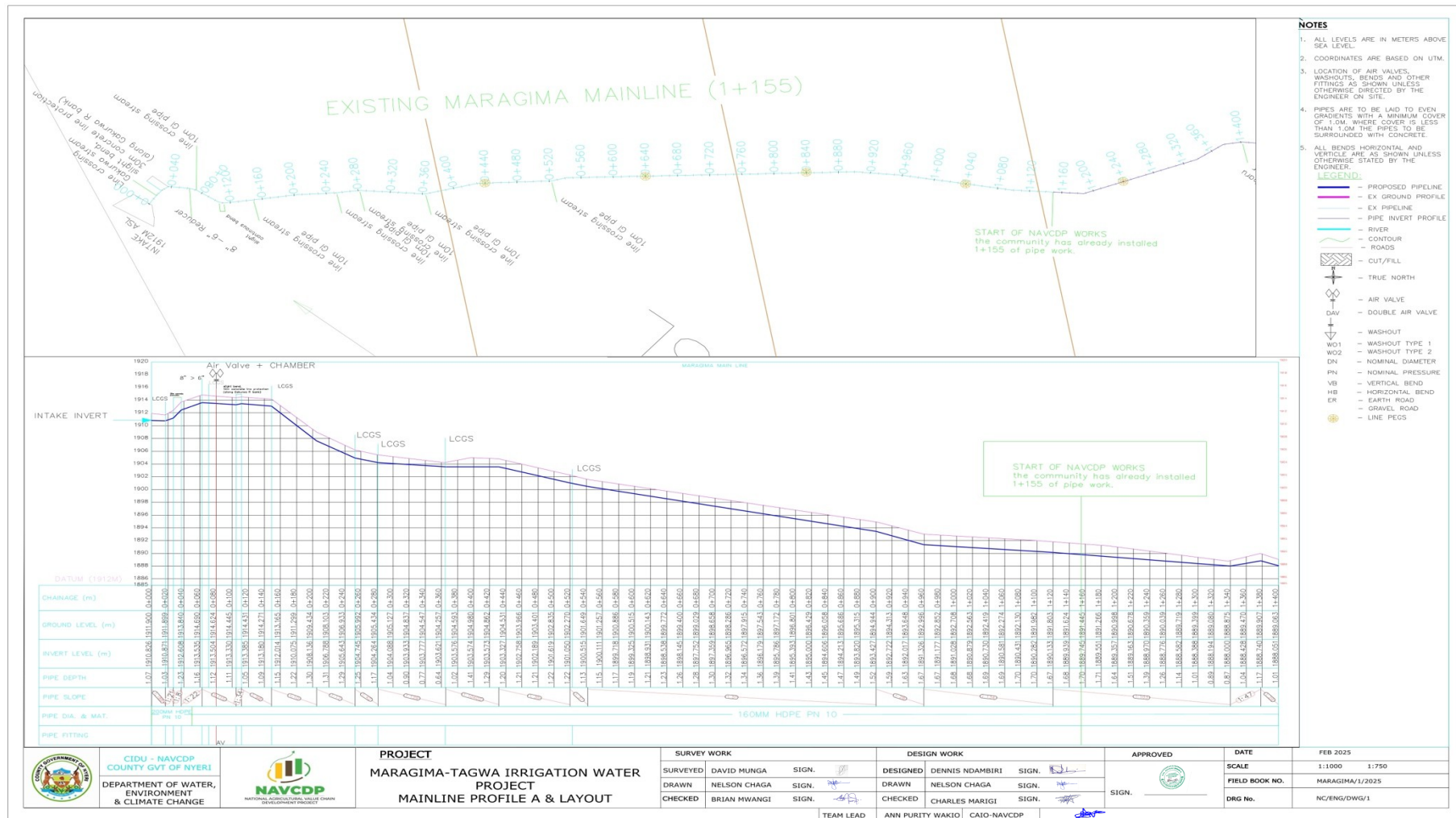
FEB 2025  
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MARAGIMA/1/2025  
NC/ENG/DWG/1

TEAM LEAD ANN PURITY WAKIO CAIO-NAVCDP

Project Plan and Layout



Project Plan and Layout B

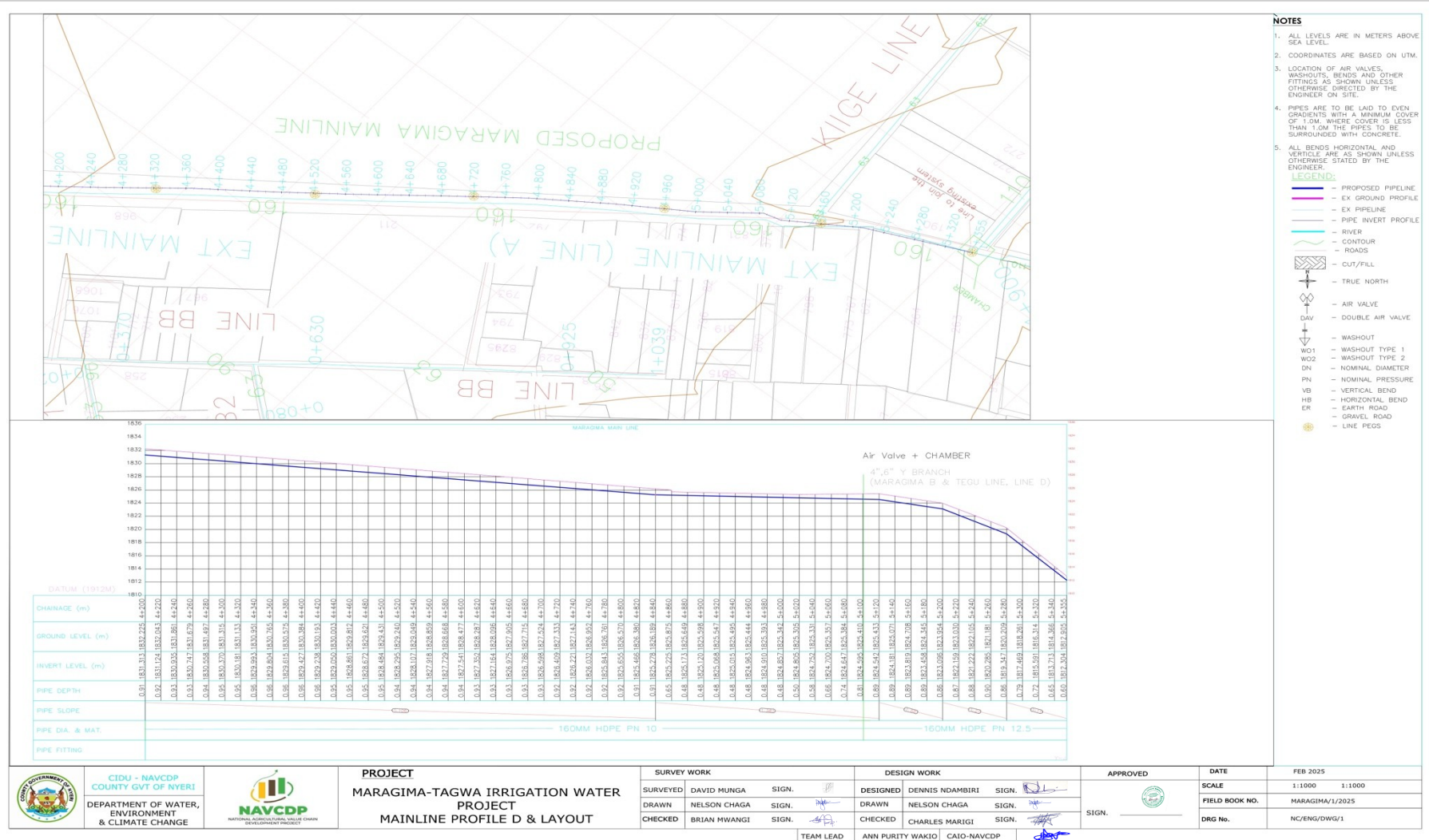


Mainline Profile A & Layout



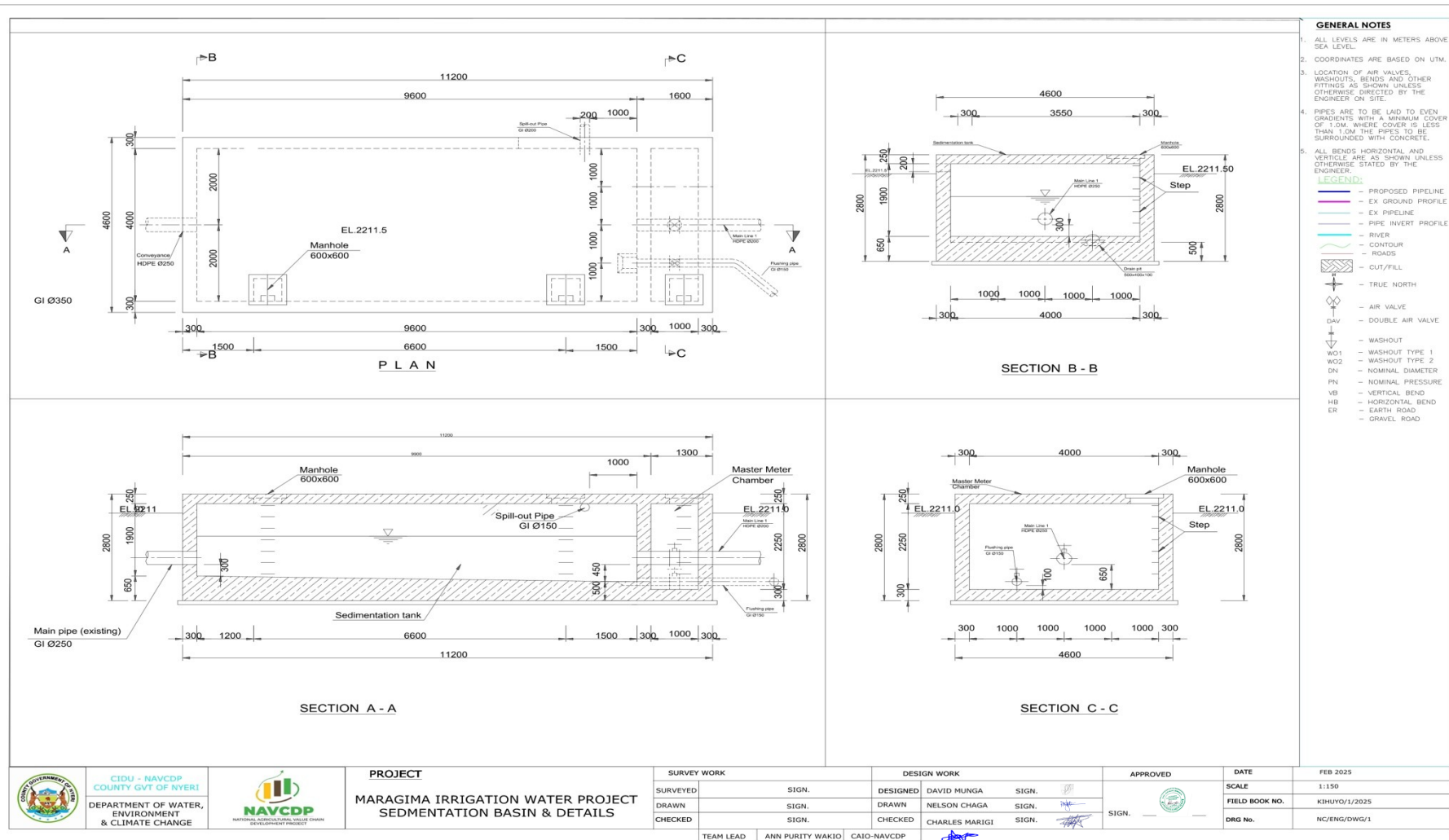




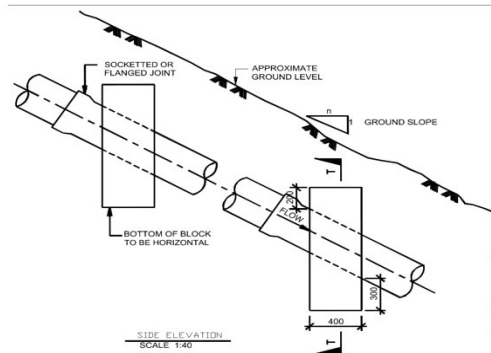


Mainline Profile D & Layout



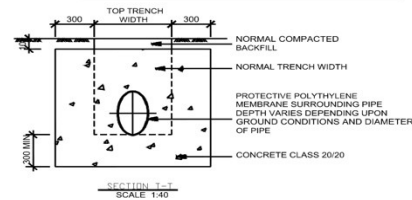


## Sedimentation Basin

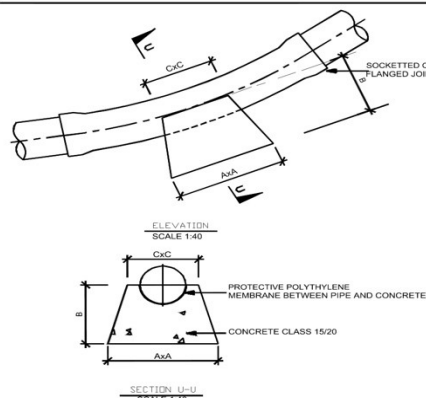


- NOTES**
1. SAME ARRANGEMENT CAN BE USED AS SUPPORTS FOR PIPES LAID IN VERY SOFT GROUND BUT BLOCKS TO BE CAST ON SOUND ROCK OR HARD STRATUM
  2. SOCKETTED JOINT TO BE LAID WITH SOCKET FACING UPSTREAM OF GRADE
  3. ANCHOR BLOCK TO BE CONSTRUCTED ON LOWER SIDE OF JOINT

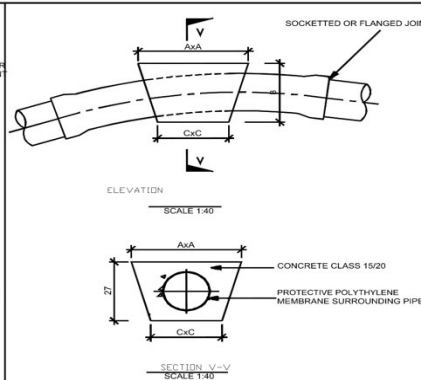
| RANGE OF GROUND SLOPE (1:n) | MAXIMUM DISTANCE BETWEEN ANCHOR BLOCKS (m)                    |
|-----------------------------|---------------------------------------------------------------|
| 1:6 - 1:5                   | 24                                                            |
| 1:5 - 1:4                   | 18                                                            |
| 1:4 - 1:2                   | 12                                                            |
| >1:2                        | EVERY PIPE LENGTH TO BE ANCHORED (BASED ON PIPE LENGTH OF 6m) |



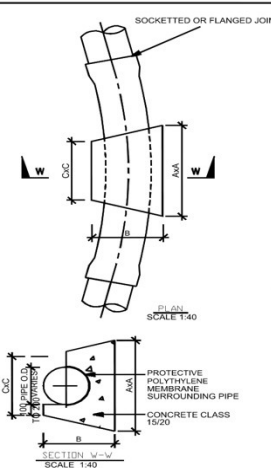
ANCHOR BLOCKS FOR STEEP GRADIENTS (SLOPE >1:6)



THRUST BLOCKS ON VERTICAL BENDS  
(DOWN-THRUST)



THRUST BLOCKS ON VERTICAL BENDS  
(UP-THRUST)



## NOTES

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED

2. ANCHOR BLOCKS TO BE INSTALLED FOR PIPES LAID AT SLOPES EXCEEDING 1:6 SLOPE

3. THRUST BLOCKS TO BE INSTALLED AT ALL HORIZONTAL AND VERTICAL BENDS, CAPPED ENDS, TEES, TAPERS AND GATE VALVES

4. DETAILS FOR ALL INDICATOR POSTS TO BE AS FOR GATE VALVE BUT LETTERING TO BE AS FOLLOWS:

| FOR          | USE |
|--------------|-----|
| GATE VALVE   | GV  |
| AIR VALVE    | AV  |
| WASHOUT      | WO  |
| WATER MAIN   | WM  |
| BULK METER   | M   |
| "Y" JUNCTION | Y   |

5. ALL INDICATOR POSTS TO BE PAINTED WITH 2 COATS BLUE OIL BASED PAINT AND WHITE LETTERING TO ENGINEER'S APPROVAL

## ABBREVIATIONS

m - MILLIMETRES  
OD - OUTSIDE DIAMETER  
ND - NOMINAL DIAMETER  
Dia - DIAMETER  
c/c - CENTRE TO CENTRE  
No. - NUMBER  
uPVC - UNPLASTICISED POLYVINYL CHLORIDE  
m - METRE  
G - CENTRE LINE  
GV - GATE VALVE  
AV - AIR VALVE  
WO - WASH OUT  
WM - WATER MAIN  
M - BULK METER  
m<sup>3</sup> - CUBIC METER

## GENERAL NOTES

1. ALL LEVELS ARE IN METERS ABOVE SEA LEVEL
2. COORDINATES ARE BASED ON UTM.
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ENVIRONMENT  
& CLIMATE CHANGE

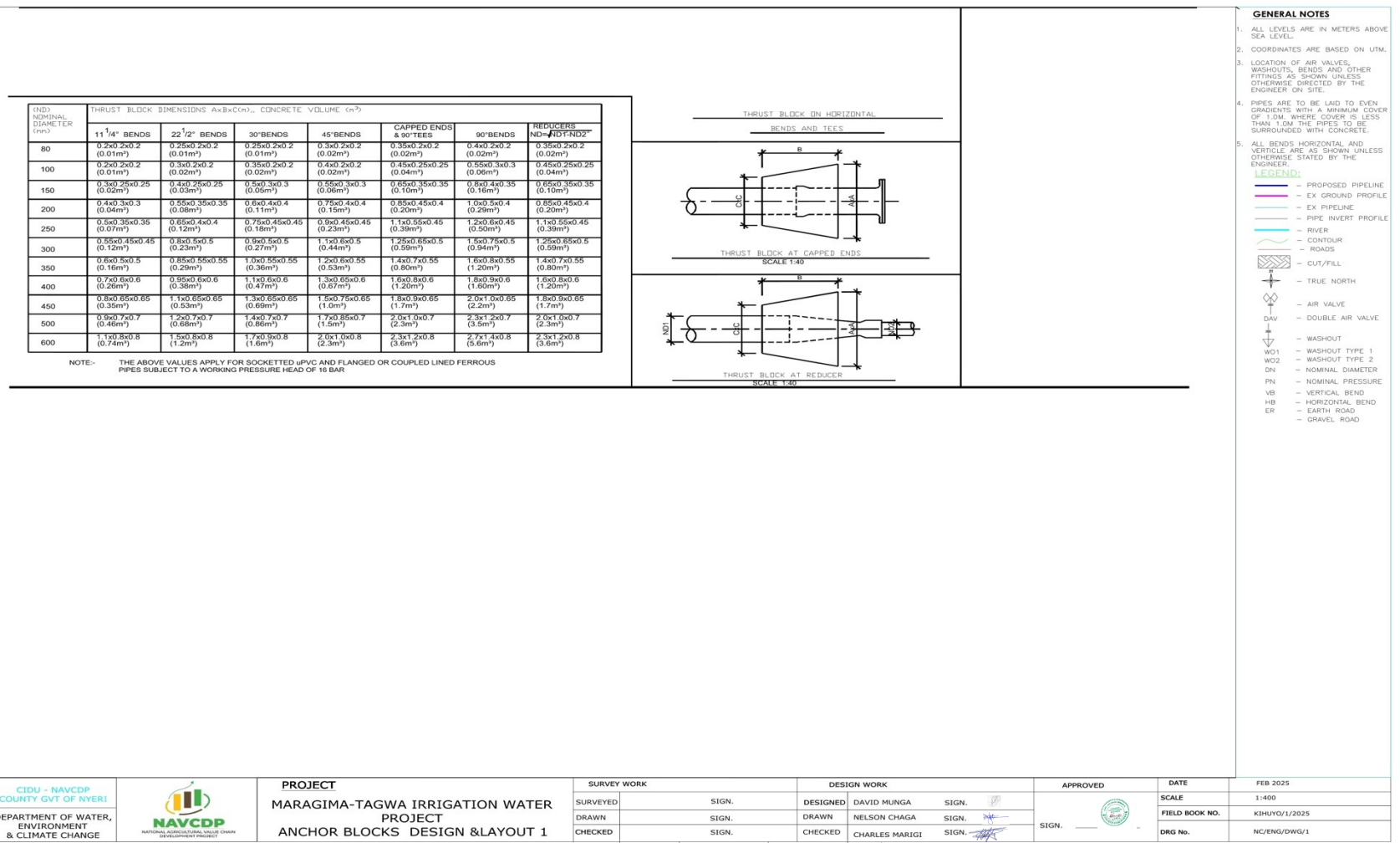


PROJECT  
MARAGIMA-TAGWA IRRIGATION WATER  
PROJECT  
ANCHOR BLOCKS DESIGN & LAYOUT 1

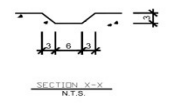
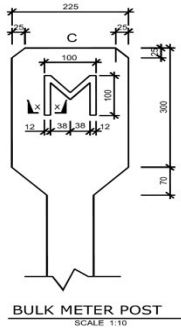
| SURVEY WORK |       | DESIGN WORK                  |                      |
|-------------|-------|------------------------------|----------------------|
| SURVEYED    | SIGN. | DESIGNED                     | DAVID MUNGA SIGN.    |
| DRAWN       | SIGN. | DRAWN                        | NELSON CHAGA SIGN.   |
| CHECKED     | SIGN. | CHECKED                      | CHARLES MARIGI SIGN. |
| TEAM LEAD   |       | ANN PURITY WAKIO CAIO-NAVCDP |                      |

| APPROVED |  | DATE           | FEB 2025      |
|----------|--|----------------|---------------|
| SIGN.    |  | SCALE          | 1:400         |
|          |  | FIELD BOOK NO. | KIHUYO/1/2025 |
|          |  | DRG No.        | NC/ENG/DWG/1  |

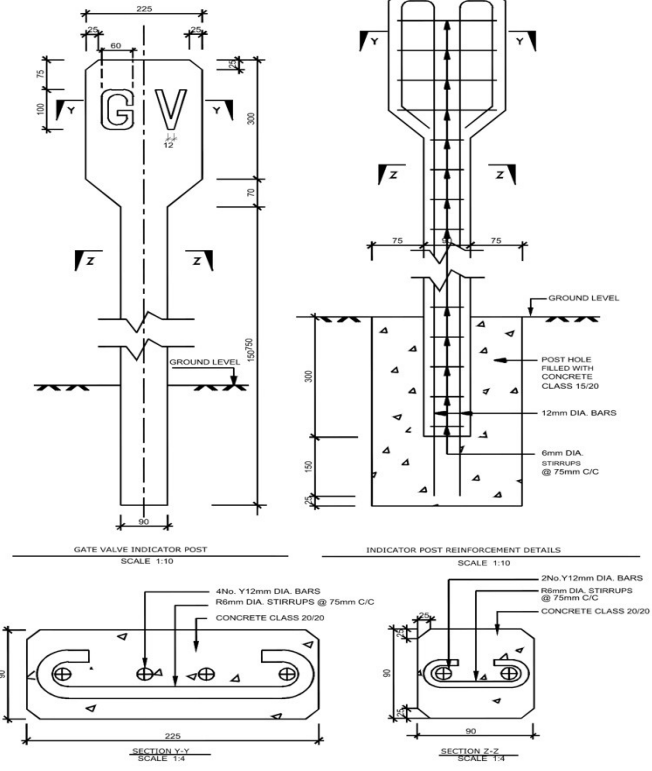
## Anchor Blocks Design and Layout 10



Anchor Blocks Design and Layout 2



NOTE:-  
ALL DETAILS TO BE SAME AS  
GATE VALVE BUT THE SIGN TO  
BE CHANGED AS INDICATED



**DESIGN NOTES**

- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED
- ANCHOR BLOCKS TO BE INSTALLED FOR PIPES LAID AT SLOPES EXCEEDING 1:6 SLOPE
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|--------------|-----|
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| AIR VALVE    | AV  |
| WASHOUT      | WO  |
| WATER MAIN   | WM  |
| BULK METER   | M   |
| "Y" JUNCTION | Y   |

- ALL INDICATOR POSTS TO BE PAINTED WITH 2 COATS BLUE OIL BASED PAINT AND WHITE LETTERING TO ENGINEER'S APPROVAL

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OD - OUTSIDE DIAMETER  
ND - NOMINAL DIAMETER  
Dia - DIAMETER  
c/c - CENTRE TO CENTRE  
No. - NUMBER  
uPVC - UNPLASTICISED POLYVINYL CHLORIDE  
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AV - AIR VALVE  
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M - BULK METER  
m<sup>3</sup> - CUBIC METER

**GENERAL NOTES**

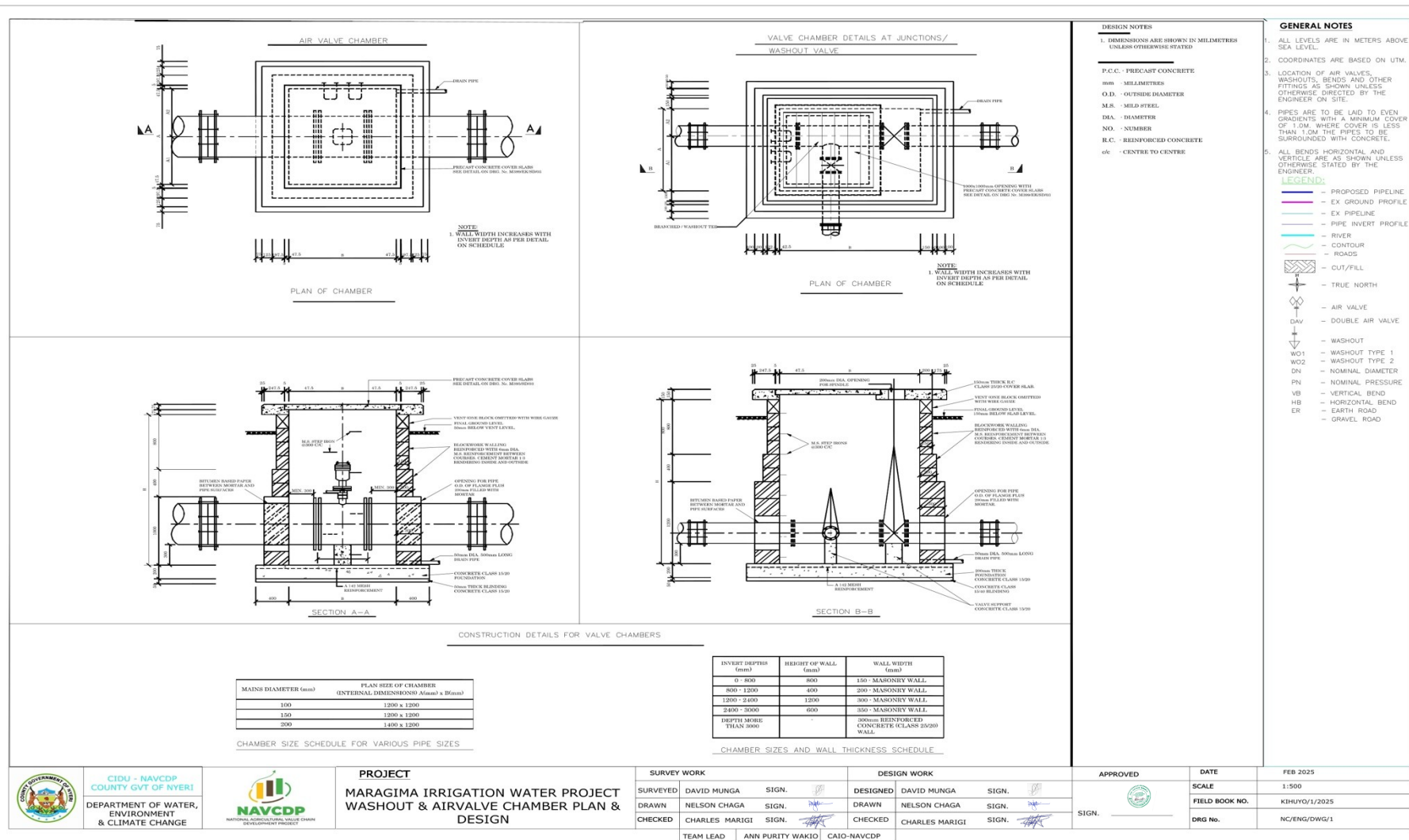
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- EARTH ROAD
- GRAVEL ROAD

|                                                                                     |                                      |                                                                                                                                                           |                                                                                    |  |             |       |          |                  |                                                                                             |                |                                                                                                                  |              |          |
|-------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--|-------------|-------|----------|------------------|---------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------|--------------|----------|
|  | CIDU - NAVCDP<br>COUNTY GVT OF NYERI | <br>NAVCDP<br>NATIONAL AGRICULTURAL VALUE CHAIN<br>DEVELOPMENT PROGRAM | PROJECT<br>MARAGIMA-TAGWA IRRIGATION WATER<br>PROJECT<br>MARK POST DESIGN & LAYOUT |  | SURVEY WORK |       |          | DESIGN WORK      |                                                                                             |                | APPROVED<br><br>SIGN. _____ | DATE         | FEB 2025 |
|                                                                                     |                                      |                                                                                                                                                           |                                                                                    |  | SURVEYED    | SIGN. | DESIGNED | DAVID MUNGA      | SIGN.  | SCALE          |                                                                                                                  | 1:400        |          |
|                                                                                     |                                      |                                                                                                                                                           |                                                                                    |  | DRAWN       | SIGN. | DRAWN    | NELSON CHAGA     | SIGN.  | FIELD BOOK NO. |                                                                                                                  | KHUYO/1/2025 |          |
|                                                                                     |                                      |                                                                                                                                                           |                                                                                    |  | CHECKED     | SIGN. | CHECKED  | CHARLES MARIGI   | SIGN.  | DRG No.        |                                                                                                                  | NC/ENG/DWG/1 |          |
|                                                                                     |                                      |                                                                                                                                                           |                                                                                    |  | TEAM LEAD   |       |          | ANN PURITY WAKIO |                                                                                             |                |                                                                                                                  | CAJO-NAVCDP  |          |

## Mark Post Design & Layout



**CIDU - NAVCDP**  
COUNTY GOVT OF NYERI  
DEPARTMENT OF WATER,  
ENVIRONMENT  
& CLIMATE CHANGE



**PROJECT**  
**MARAGIMA IRRIGATION WATER PROJECT**  
**WASHOUT & AIRVALVE CHAMBER PLAN & DESIGN**

**SURVEY WORK**

|           |                  |             |  |
|-----------|------------------|-------------|--|
| SURVEYED  | DAVID MUNGA      | SIGN.       |  |
| DRAWN     | NELSON CHAGA     | SIGN.       |  |
| CHECKED   | CHARLES MARIGI   | SIGN.       |  |
| TEAM LEAD | ANN PURITY WAKIO | CAIO-NAVCDP |  |

**DESIGN WORK**

|          |                |       |  |
|----------|----------------|-------|--|
| DESIGNED | DAVID MUNGA    | SIGN. |  |
| DRAWN    | NELSON CHAGA   | SIGN. |  |
| CHECKED  | CHARLES MARIGI | SIGN. |  |

**APPROVED**

SIGN.

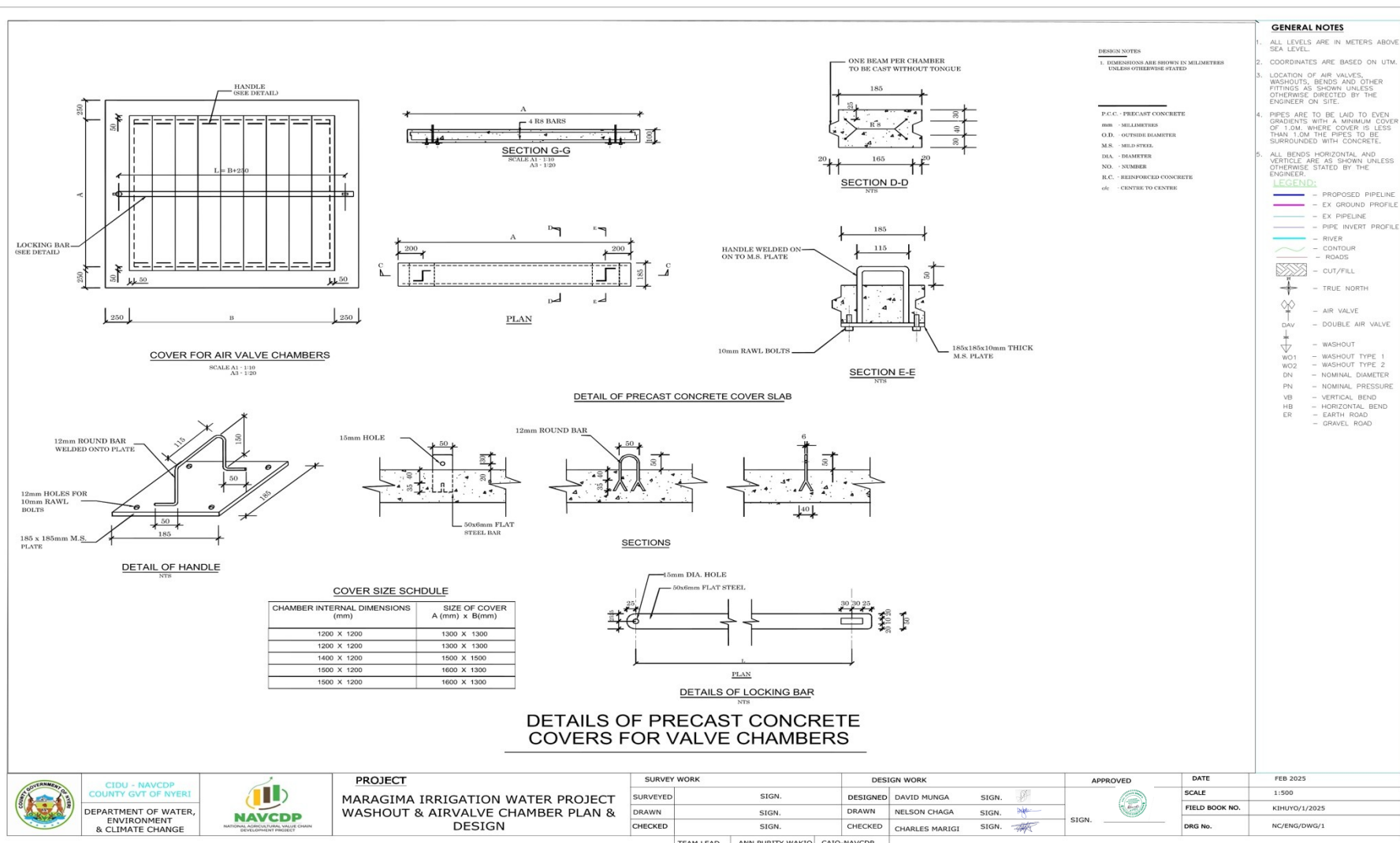
**DATE**  
FEB 2025

**SCALE**  
1:500

**FIELD BOOK NO.**  
KIHUYO/1/2025

**DRG No.**  
NC/ENG/DWG/1

## Washout & Air valve Chamber Plan



|                                                                                     |                                                                                                      |                                                                                                                                                                          |                                                                                                 |             |       |                  |                |             |                                                                                       |                                                                                                                    |                |               |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------|-------|------------------|----------------|-------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------|---------------|
|  | CIDU - NAVCDP<br>COUNTY GOVT OF NYERI<br><br>DEPARTMENT OF WATER,<br>ENVIRONMENT<br>& CLIMATE CHANGE | <br><b>NAVCDP</b><br>NATIONAL AGRICULTURAL EXTENSION, RESEARCH AND TRAINING INSTITUTE | PROJECT<br><br>MARAGIMA IRRIGATION WATER PROJECT<br>WASHOUT & AIRVALVE CHAMBER PLAN &<br>DESIGN | SURVEY WORK |       |                  | DESIGN WORK    |             |                                                                                       | APPROVED<br><br><br><br>SIGN. | DATE           | FEB 2025      |
|                                                                                     |                                                                                                      |                                                                                                                                                                          |                                                                                                 | SURVEYED    | SIGN. | DESIGNED         | DAVID MUNGA    | SIGN.       |  |                                                                                                                    | SCALE          | 1:500         |
|                                                                                     |                                                                                                      |                                                                                                                                                                          |                                                                                                 | DRAWN       | SIGN. | DRAWN            | NELSON CHAGA   | SIGN.       |  |                                                                                                                    | FIELD BOOK NO. | KIHUYO/1/2025 |
|                                                                                     |                                                                                                      |                                                                                                                                                                          |                                                                                                 | CHECKED     | SIGN. | CHECKED          | CHARLES MARIGI | SIGN.       |  |                                                                                                                    | DRG No.        | NC/ENG/DWG/1  |
|                                                                                     |                                                                                                      |                                                                                                                                                                          |                                                                                                 | TEAM LEAD   |       | ANN PURITY WAKIO |                | CAIO-NAVCDP |                                                                                       |                                                                                                                    |                |               |

## Valve Chambers