



Kenya National Highways Authority

Quality Highways, Better Connections

TENDER No. KeNHA/R8/329/2023

**MAINTENANCE OF STRUCTURES ALONG THIKA – GARISSA
(A3) ROAD**

Reserved for Special - Women

AUGUST 2023

**DIRECTOR HIGHWAY DESIGN & SAFETY
KENYA NATIONAL HIGHWAYS AUTHORITY
P.O. BOX 49712-00100
NAIROBI**

**DIRECTOR GENERAL
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TABLE OF CONTENTS

SECTION I INVITATION TO TENDER.....	4
PART 1 TENDERING PROCEDURES	8
SECTION II - INSTRUCTIONS TO TENDERERS.....	9
SECTION III - TENDER DATA SHEET (TDS).....	30
SECTION IV- EVALUATION AND QUALIFICATION CRITERIA	33
SECTION V - TENDERING FORMS.....	50
FORM ELI-1.1- TENDERER INFORMATION FORM	51
FORM ELI- 1.2- TENDERER JV INFORMATION.....	52
FORM ELI - 1.3- QUALIFICATION OF FOREIGN CONTRACTORS	53
FORM ELI - 1.4- DECLARATIONS OF MATERIALS, EQUIPMENT AND LABOUR SOURCES	55
FORM OF TENDER	57
A. TENDERER'S ELIGIBILITY - CONFIDENTIAL BUSINESS QUESTIONNAIRE.....	61
B. CERTIFICATE OF INDEPENDENT TENDER DETERMINATION	64
FORM SD 1: SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015.....	66
FORM SD 2: SELF DECLARATION THAT THE TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE.....	67
FORM SD 3: DECLARATION AND COMMITMENT TO THE CODE OF ETHICS	68
APPENDIX TO FORM OF TENDER	72
FORM CON – 1 HISTORICAL CONTRACT NON-PERFORMANCE, PENDING LITIGATION AND LITIGATION HISTORY	74
FORM CON – 2: DECLARATION FORM – FAIR EMPLOYMENT LAW AND PRACTICES	75
FORM CON – 3: DECLARATION OF KNOWLEDGE OF SITE.....	76
FORM FIN – 3.1: FINANCIAL SITUATION AND PERFORMANCE.....	77
FORM FIN – 3.2: AVERAGE ANNUAL CONSTRUCTION TURNOVER	81
FORM FIN - 3.3: CURRENT CONTRACT COMMITMENTS / WORKS IN PROGRESS	82
FORM EXP - 4.1: GENERAL CONSTRUCTION EXPERIENCE	83
FORM EXP - 4.2(A): SPECIFIC CONSTRUCTION AND CONTRACT MANAGEMENT EXPERIENCE.....	84
FORM EXP - 4.2(B): CONSTRUCTION EXPERIENCE IN KEY ACTIVITIES.....	86
SCHEDULE A.....	89
SCHEDULE B	90
SCHEDULE C	91
SCHEDULE D	92
SCHEDULE E	93
SCHEDULE F.....	94
Form PER -1 Key Personnel Schedule.....	94

Form PER -2	95
SCHEDULE G	98
FORM OF DECLARATION OF FAIR EMPLOYMENT LAWS AND PRACTICES	101
FORM OF DECLARATION OF CONTRACTS TERMINATED IN THE LAST THREE (3) YEARS	102
PART 2 - WORKS' REQUIREMENTS	103
SECTION VI - BILLS OF QUANTITIES.....	104
SECTION VII: STANDARD SPECIFICATIONS	141
SECTION VIII: SPECIAL SPECIFICATIONS	142
SECTION IX – DRAWINGS	278
PART 3 – CONDITIONS OF CONTRACT AND CONTRACT FORMS.....	279
SECTION X CONDITIONS OF CONTRACT, PART I -GENERAL CONDITIONS.....	280
SECTION XI: CONDITIONS OF CONTRACT, PART II - CONDITIONS OF PARTICULAR APPLICATION	282
SECTION XII - CONTRACT FORMS.....	311
FORM NO. 1 - NOTIFICATION OF INTENTION TO AWARD	312
FORM NO. 2 - NOTIFICATION OF AWARD.....	315
FORM NO. 3 – CONTRACT AGREEMENT	316
FORM NO. 4 - PERFORMANCE SECURITY	317
FORM NO. 5 - ADVANCE PAYMENT SECURITY.....	318
FORM NO. 6 - RETENTION MONEY SECURITY	320
FORM NO. 7 - BENEFICIAL OWNERSHIP DISCLOSURE FORM.....	321

SECTION I INVITATION TO TENDER

TENDER No. KeNHA/R8/329/2023 – MAINTENANCE OF STRUCTURES ALONG THIKA – GARISSA (A3) ROAD

The Kenya National Highways Authority (KeNHA) is a State Corporation established under the Kenya Roads Act, 2007, with the responsibility for the management, development, rehabilitation and maintenance of national roads.

The Authority invites bids from eligible construction companies registered with the **National Construction Authority (NCA) in Category NCA 1, 2 or 3** for the **MAINTENANCE OF STRUCTURES ALONG THIKA – GARISSA (A3) ROAD** to be funded through Road Maintenance Fuel Levy Fund (RMLF).

SCOPE OF WORK

The scope of works shall be as described in the tender document.

QUALIFICATION FOR TENDERING

Mandatory Requirements

The following **MUST** be submitted together with the bid.

1. Copy of Certificate of incorporation
2. Copy of **Valid** Annual Practising Licence with the National Construction Authority in the classes specified above
3. Copy of **Valid** Tax Compliance Certificate
4. Copy of recent CR 12 form (Issued within the last Six 6 months from the Tender Opening Date).
5. Copy of Valid Registration Certificate for Access to Government Procurement Opportunities – (AGPO) in the category of **[WOMEN]** as specified in the Tender Notice.
6. Bidders shall sequentially serialise all pages of each tender submitted. A Guide Note on Serialization is outlined in the Notes below

Other Requirements

As specified in the respective tender documents covering the following: -

1. Similar previous experience where applicable.
2. Professional and Technical Personnel.
3. Current work load.
4. Litigation history Current Sworn Affidavit (i.e., within three months of the tender opening date)
5. Eligibility
 - a. Bidders with history of Non-performance (e.g., failure to complete the projects for the last three (3) Financial Years, notice of termination or termination of contracts in the last three (3) Financial Years will be disqualified.
 - b. Only those bidders registered in the NCA 1, 2 or 3 category as indicated in the tender document shall bid for the respective tenders
 - c. To enhance equity, bidders shall bid for a maximum of Two (2) Tenders, but can only be Awarded a Maximum of One (1) Tenders, under this Tender Notice. Bidders who participate in more than Two (2) tenders shall be disqualified.
 - d. Director (s) bidding under different companies for the same tender shall be disqualified
 - e. Director (s) bidding under different companies should not participate in more than Two (2) tenders
 - f. Bidders to comply with Section 157 of the Public Procurement and Asset Disposal Act, 2015 (PPADA, 2015) on participation of candidates in preference and reservations.
 - g. Any form of Canvassing will lead to disqualification
6. Source of indices and base values

Notes:

1. All submitted Documents may be verified from the issuing agencies, KeNHA Reserves the right to verify all submitted documents.
2. The bidders to ensure that their rates in the bills of quantities are within the known prevailing market rates for road works pursuant to Section 70(6) (b) of PPADA, 2015 read together with Regulation 43(4) of the Public Procurement and Asset Disposal Regulations, 2020.

Procurement shall be based on the post qualification method and the above details will be submitted with the priced bid.

There shall be a **mandatory pre-tender site visit** as specified in the detailed tender notice above and as uploaded onto the KeNHA website.

NOTE:

Every Bidder shall be represented by one Technical Person with a Minimum qualification of a Diploma in Civil/Highway Engineering. The Individual SHALL Bring along the following in hard copies:

1. **Original ID/Passport and a CERTIFIED Copy**
2. **CERTIFIED copy of Diploma/H. Dip. /Degree Certificate**
3. **CERTIFIED Copy of Registration Certificate and proof of current subscription by Engineers Board of Kenya (EBK)/ Kenya Engineering Technology Registration Board (KETRB)/ Institute of Engineering Technologists and Technicians (IET)**
4. **Original Introductory letter bearing the Company letterhead and an Official Stamp authorizing them to represent them in the specific pre-tender site visit/Pre-Tender Conference. The letter shall be duly signed. Photocopies or any other media shall not be accepted.**
 - The copies of ID/Passport, Academic Certificates, Professional Registration Certificate, proof of current subscription **SHALL** be certified by commissioner of oaths or Notaries public
 - All the above documents shall be retained by the Procuring Entity's and may be verified later for authenticity.

One (1) person shall only represent one (1) company per Tender.

The detailed tender notice is available in the KeNHA website and Public Procurement Information Portal (PIIP). Clarifications and Questions may be sent to procurement@kenha.co.ke as indicated in the Tender Notice.

NOTE:

1. Every bidder shall make their own arrangements to familiarize themselves with the site conditions and the Road and its features.
2. **Clarity on Serialization of Tender Documents by Prospective Bidders**

Please note that all pages of the tender documents submitted by bidders shall be sequentially serialized numerically that is; 1, 2, 3, 4, 5... etc. The serialization shall be undertaken by the bidder, by doing fresh numbering on its documents. The pagination of the tender documents as downloaded from the KeNHA website should not be used as a means of Serialization. The bidder's serialization should follow the same logical sequence from the first page to the end.

Interested eligible candidates may obtain further information and inspect tender documents from the **Procurement Office, Kenya National Highways Authority, Lower Eastern Regional Office, Opposite Machakos School** as indicated in the Tender Notice during normal working hours.

A complete set of tender documents may be obtained by interested tenderers from the Kenya National Highways Authority website: www.kenha.co.ke or PPIP portal: www.tenders.go.ke free of charge. Bidders are encouraged to download tender documents to minimise physical visits to the **KeNHA Regional Offices**.

Completed tender documents are to be enclosed in plain sealed envelope clearly marked with tender name, reference number and submitted to: -

Office of the Regional Director – Lower Eastern

Kenya National Highways Authority,

P. O. Box 2603-90100,

MACHAKOS, KENYA

or

deposited in the Tender Box at the reception area, KeNHA Lower **Eastern** Regional Office, Machakos so as to be received on or before **the date and time indicated in the Tender Notice**. Electronic Tenders **will not** be permitted.

All interested bidders are required to continually check the Kenya National Highways Authority website: www.kenha.co.ke for any tender addendums or clarifications that may arise before submission date.

Tenders will be opened immediately thereafter in the presence of Tenderers/Representatives who wish to attend at the KeNHA Lower Eastern Regional Office Board Room.

Deputy Director, Supply Chain Management

For: DIRECTOR GENERAL

PART 1 TENDERING PROCEDURES

SECTION II - INSTRUCTIONS TO TENDERERS

A. GENERAL PROVISIONS

1. Scope of Tender

- 1.1 The Procuring Entity, as indicated in the TDS, issues this tendering document for the procurement of Works and Services as listed below for the award of a Performance-based Road Contract. The name, identification, and number of lots (contracts) of this ITT are specified in the TDS.

2. Interpretations

Throughout this tendering document:

The term “in writing” means communicated in written form (e.g. by mail, e-mail, and fax, including if specified in the TDS, distributed or received through electronic-procurement system used by the Procuring Entity) with proof of receipt;

if the context so requires, “singular” means “plural” and vice versa; and “Day” means calendar day, unless otherwise specified as a “Business Day.” A Business Day is any day that is a working day of the Procuring Entity. It excludes the Procuring Entity's official public holidays.

3. Fraud and Corruption

- 3.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015, Section 62 “Declaration not to engage in corruption”. The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.
- 3.2 The Procuring Entity requires compliance with the provisions of the Competition Act 2010, regarding collusive practices in contracting. Any tenderer found to have engaged in collusive conduct shall be disqualified and criminal and/or civil sanctions may be imposed. To this effect, Tenders shall be required to complete and sign the “Certificate of Independent Tender Determination” annexed to the Form of Tender.
- 3.3 Unfair Competitive Advantage-Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. To that end, the Procuring Entity shall indicate in the Data Sheet and make available to all the firms together with this tender document all information that would in that respect give such firm any unfair competitive advantage over competing firms.
- 3.4 Tenderers shall permit and shall cause their agents (where declared or not), subcontractors, sub consultants, service providers, suppliers, and their personnel, to permit the Procuring Entity to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, tender submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Procuring Entity.

4. Eligible Tenderers

- 4.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 4.6 or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a Form 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 Tendering process and, in the event the JV is awarded the Contract, during contract execution. Members of a joint venture may not also make an individual tender, be a subcontractor in a separate tender or be part of another joint venture for the purposes of the same Tender. The maximum number of JV members shall be specified in the TDS.

- 4.2 Public Officers of the Procuring Entity, their Spouses, Child, Parent, Brothers or Sister. Child, Parent, Brother or Sister of a Spouse, their business associates or agents and firms/organizations in which they have a substantial or controlling interest shall not be eligible to tender or be awarded a contract. Public Officers with such relatives are also not allowed to participate in any procurement proceedings.
- 4.3 A Tenderer shall not have a conflict of interest. Any Tenderer found to have a conflict of interest shall be disqualified. A Tenderer may be considered to have a conflict of interest for the purpose of this Tendering process, if the Tenderer:
- a) Directly or indirectly controls, is controlled by or is under common control with another Tenderer; or
 - b) Receives or has received any direct or indirect subsidy from another Tenderer; or
 - c) Has the same legal representative as another Tenderer; or
 - d) Has a relationship with another Tenderer, directly or through common third parties, that puts it in a position to influence the Tender of another Tenderer, or influence the decisions of the Procuring Entity regarding this Tendering process; or
 - e) 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 Tender; or
 - f) Or any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity or Procuring Entity as Engineer for the Contract implementation; or
 - g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the TDS ITT 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; or
 - h) has a close business or family relationship with a professional staff of the Procuring Entity, who:
 - i) are directly or indirectly involved in the preparation of the tendering document or specifications of the Contract, and/or the Tender evaluation process of such Contract; or
 - ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the Tendering process and execution of the Contract.
- 4.4 A firm that is a Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative Tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. A firm that is not a Tenderer or a JV member may participate as a subcontractor in more than one Tender.
- 4.5 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT 4.9. A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent

documents of constitution or association) and its registration documents, as the case maybe. 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.

- 4.6 Tenderer that has been debarred from participating in public procurement shall be ineligible to be prequalified for a tender or be awarded a contract. The list of debarred firms and individuals is available from the website of PPRA www.ppra.go.keoremailcomplaints@ppra.go.ke.
- 4.7 Tenderers that are state-owned enterprises or institutions in Kenya may be eligible to compete and be awarded a Contract(s) only if they can establish that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not under supervision of the Procuring Entity.
- 4.8 Tenderer shall not be under suspension from Tendering by the Procuring Entity as the result of the operation of a Tender-Securing or Proposal-Securing Declaration.
- 4.9 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, if Kenya prohibits commercial relations with that country, or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.
- 4.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, subcontracts and labor) from national suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided in for this purpose is be provided in “SECTION III - EVALUATION AND QUALIFICATION CRITERIA, Item 9”.
- 4.11 Pursuant to the eligibility requirements of ITT 4.10, a tender is considered a foreign tenderer, if the tenderer is not registered in Kenya or if the tenderer is registered in Kenya and has less than 51 percent ownership by Kenyan citizens. JVs are considered as foreign tenderers if the individual member firms are not registered in Kenya or if are registered in Kenya and have less than 51 percent ownership by Kenyan citizens. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.
- 4.12 The National Construction Authority Act of Kenya requires that all local and foreign contractors be registered with the National Construction Authority and be issued with a Registration Certificate before they can undertake any construction works in Kenya. Registration for foreign contractors shall not be a condition for tender, but it shall be a condition of contract award and signature. A selected tenderer shall be given opportunity to register before such award and signature of contract. Application for registration with National Construction Authority may be accessed from the website www.nca.go.ke.
- 4.13 The Competition Act of Kenya requires that firms wishing to tender as Joint Venture undertakings which may prevent, distort or lessen competition in provision of services are prohibited unless they are exempt in accordance with the provisions of Section 25 of the Competition Act, 2010. JVs will be required to seek for exemption from the Competition Authority. Exemption shall not be a condition for tender, but it shall be a condition of contract award and signature. A JV tenderer shall be given opportunity to seek such exemption as a condition of award and signature of contract. Application for exemption from the Competition Authority of Kenya may be accessed from the website www.cak.go.ke

- 4.14 A Tenderer may be considered ineligible if he/she offers goods, works and production processes with characteristics that have been declared by the relevant national environmental protection agency or by other competent authority as harmful to human beings and to the environment shall not be eligible for procurement.
- 4.15 A Kenyan tenderer shall provide evidence of having fulfilled his/her tax obligations by producing a valid tax compliance or tax exemption certificate issued by the Kenya Revenue Authority.

5. Eligible Materials, Equipment, and Services

- 5.1 The materials, equipment and services to be supplied under the Contract may have their origin in any eligible country and all expenditures under the Contract will be limited to such materials, equipment, and services. At the Procuring Entity's request, Tenderers may be required to provide evidence of the origin of materials, equipment and services.
- 5.2 For purposes of ITT 5.1 above, “origin” means the place where the materials and equipment are mined, grown, produced or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that is substantially different in its basic characteristics or in purpose or utility from its components.

B. Contents of Tendering Document

6 Sections of Tendering Document

- 6.1 The tendering document consists of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITT 10.

PART 1 - Tendering Procedures

Section I- Instructions to Tenderers (ITT) Section II-Tender Data Sheet (TDS)

Section III- Evaluation and Qualification Criteria Section IV-Tendering Forms

PART 2 - Works and Services' Requirements

Section V - Specifications

PART 3-Conditions of Contract and Contract Forms

Section VI - General Conditions of Contract

Section VII - Special Conditions of Contract Section VIII-Contract Forms

- 6.2 The Invitation to Tender (ITT) or the notice to the prequalified Tenderers issued by the Procuring Entity is not part of the tendering document.
- 6.3 Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the tendering document, responses to requests for clarification, the minutes of the pre-Tender meeting (if any), or Addenda to the tendering document in accordance with ITT 10. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail.
- 6.4 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the tendering document and to furnish with its Tender all information and documentation as is required by the tendering document.

7 Site Visit

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

8 Pre-Tender Meeting and a pre-arranged pretender site visit

- 8.1 The Procuring Entity shall specify in the TDS if a pre-tender conference will be held, when and where. The Procuring Entity shall also specify in the TDS if a pre-arranged pretender visit of the site of the works will be held and when. The Tenderer's designated representative is invited to attend a pre-arranged pretender visit of the site of the works. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 8.2 The Tenderer is requested to submit any questions in writing, to reach the Procuring Entity not later than the period specified in the TDS before the meeting.
- 8.3 Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all

Tenderers who have acquired the Tender Documents in accordance with ITT 6.3. Minutes shall not identify the source of the questions asked.

- 8.4 The Procuring Entity shall also promptly publish anonymized (no names) Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works at the web page identified in the TDS. Any modification to the Tender Documents that may become necessary as a result of the pre-Tender meeting shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT 10 and not through the minutes of the pre-Tender meeting. Nonattendance at the pre-Tender meeting will not be a cause for disqualification of a Tenderer.

9 Clarification of Tender Documents

- 9.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the TDS or raise its enquiries during the pre-Tender meeting and the pre-arranged pretender visit of the site of the works if provided for in accordance with ITT 8.4. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the TDS prior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender Documents in accordance with ITT 6.3, including a description of the inquiry but without identifying its source. If so specified in the TDS, the Procuring Entity shall also promptly publish its response at the web page identified in the TDS. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents appropriately following the procedure under ITT 10.

10 Amendment of Tendering Document

- 10.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tendering document by issuing addenda.
- 10.2 Any addendum issued shall be part of the tendering document and shall be communicated in writing to all who have obtained the tendering document from the Procuring Entity in accordance with ITT 6.3. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's website in accordance with ITT 8.4.
- 10.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity shall extend, as necessary, the deadline for submission of Tenders, in accordance with ITT 24.2 below.

C. Preparation of Tenders

11 Cost of Tendering

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

12 Language of Tender

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

13 Documents Comprising the Tender

13.1 The Tender shall comprise the following:

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

13.2 In addition to the requirements under ITT 13.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a Form of Intent to execute a Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender, together with a copy of the proposed agreement.

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

14 Form of Tender, and Schedules

14.1 The Form of Tender and Schedules, including the Bills of Quantities, shall be prepared using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested. The Tenderer chronologically serialize all pages of the tender documents submitted.

15 Alternative Tenders

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

15.2 When alternative times for reaching the required Service Levels or for the completion of Rehabilitation or Improvement Works are explicitly invited, a statement to that effect will be included in the TDS, as will the method of evaluating different times for completion.

15.3 Except as provided under ITT 15.4 below, Tenderers wishing to offer technical alternatives to the requirements of the tendering document must first price the Procuring Entity's design as described in the tendering document and shall further provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Best Evaluated Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

15.4 When specified in the TDS, Tenderers are permitted to submit alternative technical solutions for specified parts of the Rehabilitation and/or Improvement Works, and such parts will be identified in the TDS, as will the method for their evaluating, and described in Section VII, Works and Services' Requirements.

16 Tender Prices and Discounts

- 16.1 The prices and discounts quoted by the Tenderer in the Form of Tender and in the Bills of Quantities shall conform to the requirements specified below.
- 16.2 The Tenderer shall fill in rates and prices for all items of the Works and Services described in the Bills of Quantities. Items against which no rate or price is entered by the Tenderer will not be paid for by the Procuring Entity when executed and shall be deemed covered by the rates for other items and prices in the Bills of Quantities and will not be paid for separately by the Procuring Entity. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Tender, and provided that the Tender is determined substantially responsive notwithstanding this omission, the average price of the item quoted by substantially responsive Tenderers will be added to the Tender price and the equivalent total cost of the Tender so determined will be used for price comparison.
- 16.3 The price to be quoted in the Form of Tender, in accordance with ITT 14.1, shall be the total price of the Tender, excluding any discounts offered.
- 16.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 16.1.
- 16.5 Unless otherwise provided in the TDS and the Contract, the rates and prices quoted by the Tenderer are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract. In such a case, the Tenderer shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Procuring Entity may require the Tenderer to justify its proposed indices and weightings.
- 16.6 If so indicated in ITT 1.1, Tenders are being invited for individual lots (contracts) or for any combination of lots (packages). Tenderers wishing to offer any price reduction for the award of more than one Contract shall specify in their tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITT 14.4, provided the Tenders for all lots (contracts) are submitted and opened at the same time.
- 16.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of Tenders, shall be included in the rates and prices and the total Tender Price submitted by the Tenderer.

17 Currencies of Tender and Payment

- 17.1 The currency (ies) of the Tender and the currency (ies) of payments shall be the same and shall be as specified in the TDS.
- 17.2 Tenderers may be required by the Procuring Entity to justify, to the Procuring Entity's satisfaction, their foreign currency requirements, and to substantiate that the amounts shown in the Summary of Payment Currency Schedule, in which case a detailed breakdown of the foreign currency requirements shall be provided by Tenderers.

18 Documents Comprising the Technical Proposal

- 18.1 The Tenderer shall furnish a technical proposal (if so required) including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV, Tendering Forms, in sufficient detail to demonstrate the adequacy of the Tenderers' proposal to meet the work and services' requirements and the completion time.

19 Documents Establishing the Qualifications of the Tenderer

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

- 19.2 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract the Tenderer shall provide the information requested in the corresponding information sheets included in Section IV, Tendering Forms.
- 19.3 If a margin of preference applies as specified in accordance with ITT 36.1, domestic Tenderers, 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 ITT 36.1.
- 19.4 Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractors qualifies for a margin of preference. Further the information will enable the Procuring Entity identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and thereby help to prevent any corrupt influence in relation to the procurement process or contract management.
- 19.5 The purpose of the information described in ITT 19.4 above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.
- 19.6 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to ownership and control which information on any changes to the information which was provided by the tenderer under ITT 19.4. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.
- 19.7 All information provided by the tenderer pursuant to these requirements must be complete, current and accurate as at the date of provision to the Procuring Entity. In submitting the information required pursuant to these requirements, the Tenderer shall warrant that the information submitted is complete, current and accurate as at the date of submission to the Procuring Entity.
- 19.8 If a tenderer fails to submit the information required by these requirements, its tenderer will be rejected. Similarly, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.
- 19.9 If information submitted by a tenderer pursuant to these requirements, or obtained by the Procuring Entity (whether through its own enquiries, through notification by the public or otherwise), shows any conflict of interest which could materially and improperly benefit the tenderer in relation to the procurement or contract management process, then:
- i) If the procurement process is still ongoing, the tenderer will be disqualified from the procurement process,
 - ii) If the contract has been awarded to that tenderer, the contract award will be set aside,
 - iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other persons have committed any criminal offence.
- 19.10 If a tenderer submits information pursuant to these requirements that is incomplete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 19.9 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material, or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tenderer.

20 Period of Validity of Tenders

- 20.1 Tenders shall remain valid for the period specified in the TDS. The Tender Validity period starts from the date fixed for the Tender submission deadline (as prescribed by the Procuring Entity in accordance with ITT 24). A Tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.
- 20.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT 21, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting its Tender Security. A Tenderer granting the request shall not be required or permitted to modify its Tender, except as provided in ITT 26.3.

21 Tender Security

- 21.1 The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender Security as specified in the TDS, in original form and, in the case of a Tender security, in the amount and currency specified in the TDS.
- 21.1 A Tender-Securing Declaration shall use the form included in Section IV, Tendering Forms.
- 21.2 The Tender Security shall be a demand guarantee at the Tenderer's option, in any of the following forms:
- a cash;
 - i. a bank guarantee;
 - ii. a guarantee by an insurance company registered and licensed by the Insurance Regulatory Authority listed by the Authority; or
 - iii. a guarantee issued by a financial institution approved and licensed by the Central Bank of Kenya, from a reputable source, and an eligible country.
 - iv. Other forms of Security as specified in the TDS.
- 21.3 If the unconditional guarantee is issued by a non-bank financial institution located outside Kenya, the issuing non-bank financial institution shall have a correspondent financial institution located in Kenya to make it enforceable unless the Procuring Entity has agreed in writing, prior to Tender submission, that a correspondent financial institution is not required. In the case of a bank guarantee, the Tender Security shall be submitted either using the Tender Security Form included in Section IV, Tendering Forms, or in another substantially similar format approved by the Procuring Entity prior to Tender submission. The Tender Security shall be valid for thirty (30) days beyond the original validity period of the Tender, or beyond any period of extension if requested under ITT 24.2.
- 21.4 If a Tender Security or Tender-Securing Declaration is specified pursuant to ITT 21.1, any Tender not accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.
- 21.5 If a Tender Security is specified pursuant to ITT 21.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the Performance Security. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined non responsive or a bidder declines to extend tender validity period.

- 21.6 The Tender Security of the successful Tenderer shall be returned as promptly as possible once the successful Tenderer has signed the Contract and furnished the required Performance Security.
- 21.7 The Tender Security may be forfeited or the Tender-Securing Declaration executed:
- a if a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender or any extension thereto provided by the Tenderer; or
 - b if the successful Tenderer fails to:
 - i. sign the Contract in accordance with ITT 48; or
 - ii. furnish a performance security.
- 21.8 Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA that PPRA debar the Tenderer from participating in public procurement as provided in the law.
- 21.9 The Tender Security or the Tender Securing Declaration of a JV shall be in the name of the JV that submits the Tender. If the JV has not been legally constituted at the time of Tendering, the Tender Security or the Tender- Securing Declaration shall be in the names of all future members as named in the Form of intent referred to in ITT 4.1 and ITT 13.2.

22 Format and Signing of Tender

- 22.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 13 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 15, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies of the Tender, in the number specified in the TDS and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.
- 22.2 Tenderers shall mark as "CONFIDENTIAL" all information in their Tenders which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.
- 22.3 The original and all copies of the Tender shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified in the TDS and shall be attached to the Tender. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Tender where entries or amendments have been made shall be signed or initialed by the person signing the Tender.
- 22.4 In case the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.
- 22.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender.

D. Submission and Opening of Tenders

23 Sealing and Marking of Tenders

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

container, the Tenderer shall place the following separate, sealed envelopes:

- a. in an envelope or package or container marked “ORIGINAL”, all documents comprising the Tender, as described in ITT 13; and
- b. in an envelope or package or container marked “COPIES”, all required copies of the Tender; and
- c. if alternative Tenders are permitted in accordance with ITT 15, and if relevant:
 - i. in an envelope or package or container marked “ORIGINAL - ALTERNATIVE TENDER”, the alternative Tender; and
 - ii. in the envelope or package or container marked “COPIES-ALTERNATIVE TENDER”, all required copies of the alternative Tender.

23.2 The inner envelopes or packages or containers shall:

- a Bear the name and address of the Procuring Entity.
- b Bear the name and address of the Tenderer; and
- c Bear the name and Reference number of the Tender.

23.3 Where a tender package or container cannot fit in the tender box, the procuring entity shall:

- a Specify in the TDS where such documents should be received.
- b Maintain a record of tenders received and issue acknowledgement receipt note to each tenderer specifying time and date of receipt.
- c Ensure all tenders received are handed over to the tender opening committee for opening at the specified opening place and time.

23.4 If all envelopes are not sealed and marked as required, the Procuring Entity will assume no responsibility for the misplacement or premature opening of the Tender. Tenders that are misplaced or opened prematurely will not be accepted.

24 Deadline for Submission of Tenders

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

21.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the tendering document in accordance with ITT 10, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

25 Late Tenders

25.1 The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of Tenders, in accordance with ITT 22. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned unopened to the Tenderer.

26 Withdrawal, Substitution, and Modification of Tenders

26.1 A Tenderer may withdraw, substitute, or modify its Tender after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITT 20.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

- a prepared and submitted in accordance with ITT 20 and ITT 21 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION;” and
- b received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 22.

26.2 Tenders requested to be withdrawn in accordance with ITT 24.1 shall be returned unopened to the Tenderers.

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

27 Tender Opening

27.1 Except in the cases specified in ITT 23 and ITT 24.2, the Procuring Entity shall publicly open and read out in accordance with this ITT all Tenders received by the deadline, at the date, time and place specified in the TDS, in the presence of Tenderers' designated representatives and anyone who chooses to attend. Any specific electronic Tender opening procedures required if electronic tendering is permitted in accordance with ITT 22.1, shall be as specified in the TDS.

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

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

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

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

27.6 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further. The Form of Tender and the Bill of Quantities are to be initialed by representatives of the Procuring Entity attending Tender opening in the manner specified in the TDS.

27.7 The Procuring Entity shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 23.1).

27.8 The Procuring Entity shall prepare a record of the Tender opening that shall include, as a minimum:

- i. The name of the Tenderer and whether there is a withdrawal, substitution, or modification;
- ii. The Tender Price, per lot (contract) if applicable, including any discounts;
- iii. Any alternative Tenders;

iv. The presence or absence of a Tender Security, if one was required.

v. Number of pages of each tender document submitted

27.9 The Tenderers' representatives who are present shall be requested to sign the record. The omission of a Tenderer'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 Tenderers. A copy of the tender opening register shall be issued to a Tenderer upon request

E. Evaluation and Comparison of Tenders

28 Confidentiality

29.0 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderers or any other persons not officially concerned with such process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 43.

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

29.2 Notwithstanding ITT 28.2, from the time of Tender opening to the time of Contract award, if any Tenderer wishes to contact the Procuring Entity on any matter related to the Tendering process, it may do so in writing.

29 Clarification of Tenders

29.1 To assist in the examination, evaluation, and comparison of the Tenders, and qualification of the Tenderers, the Procuring Entity may, at its discretion, ask any Tenderer for a clarification of its Tender. Any clarification submitted by a Tenderer that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change in the prices or substance of the Tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the Tenders, in accordance with ITT 33.

29.2 If a Tenderer does not provide clarifications of its Tender by the date and time set in the Contracting Agency's request for clarification, its Tender may be rejected.

30 Deviations, Reservations, and Omissions

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

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

31 Determination of Responsiveness

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

31.2 A substantially responsive Tender is one that meets the requirements of the tendering 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
- ii. Limit in any substantial way, in consistent with the tendering document, the Procuring Entity's rights or the Tenderer's obligations under the proposed Contract; or
- b. if rectified, would unfairly affect the competitive position of other Tenderers presenting substantially responsive Tenders.

31.3 The Procuring Entity shall examine the technical aspects of the Tender submitted in accordance with ITT18, Technical Proposal, in particular, to confirm that all requirements of Section VII, Specifications for Works and Services have been met without any material deviation, reservation or omission.

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

32 Non-material Non-conformities

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

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

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

33 Correction of Arithmetical Errors

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

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

- a Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualification of the tender as non-responsive.
- b Any errors in the submitted tender arising from a miscalculation of unit price, quantity, subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive. and
- c If there is a discrepancy between words and figures, the amount in words shall prevail

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

34 Conversion to Single Currency

34.1 For evaluation and comparison purposes, the currency(ies) of the Tender shall be converted into a single currency which is Kenya Shillings. The source of the exchange rates shall be the Central Bank of Kenya.

35 Nominated Subcontractors

- 35.1 Unless otherwise stated in the TDS, the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected/nominated by the Procuring Entity. In case the Procuring Entity nominates a subcontractor, the subcontract agreement shall be signed by the Subcontractor and the Procuring Entity. The main contract shall specify the working arrangements between the main contractor and the nominated subcontractor.
- 35.2 Tenderers may propose subcontracting up to the percentage of total value of contracts or the volume of works as specified in the TDS. Subcontractors proposed by the Tenderer shall be fully qualified for their parts of the Works.
- 35.1 The subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works unless their specialized parts of the Works were previously designated so by the Procuring Entity in the TDS as can be met by subcontractors referred to here after as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractors proposed by the Tenderer may be added to the qualifications of the Tenderer.

36 Margin of Preference and Reservations

- 36.1 A margin of preference on local contractors may be allowed only when the contract is open to international competitive tendering where foreign contractors are expected to participate in the tendering process and where the contract exceeds the value/threshold specified in the Regulations.
- 36.2 A margin of preference shall not be allowed unless it is specified so in the TDS.
- 36.3 Contracts procured on basis of international competitive tendering shall not be subject to reservations exclusive to specific groups as provided in ITT 36.5.
- 36.4 An individual firm is considered a Kenyan tenderer for purposes of the margin of preference if it is registered in Kenya, has more than 51 percent ownership by nationals of Kenya, and if it does not subcontract more than 10 percent of the contract price, excluding provisional sums, to foreign contractors. JVs are considered as Kenyan Tenderer and eligible for domestic preference only if the individual member firms are registered in Kenya or have more than 51 percent ownership by nationals of Kenya, and the JV shall be registered in Kenya. The JV shall not subcontract more than 10 percent of the contract price, excluding provisional sums, to foreign firms.
- 36.5 Where it is intended to reserve a contract to a specific group of businesses (these groups are Small and Medium Enterprises, Women Enterprises, Youth Enterprises and Enterprises of persons living with disability, as the case may be), and who are appropriately registered as such by a competent authority, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses or firms belonging to the specified group are eligible to tender. No tender shall be reserved to more than one group. If not so stated in the Invitation to Tender and in the Tender documents, the invitation to tender will be open to all interested tenderers.

37 Evaluation of Tenders

- 37.1 The Procuring Entity shall use the criteria and methodologies listed in this ITT and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Procuring Entity shall determine the Best Evaluated Tender in accordance with ITT 39.
- 37.2 To evaluate a Tender, the Procuring Entity shall consider the following:
- a Price adjustment due to discounts offered in accordance with ITT 16.4;

- b Price adjustment due to quantifiable non-material non-conformities in accordance with ITT 32.3;
- c converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT 34; and
- d any additional evaluation factors specified in the TDS and Section III, Evaluation and Qualification Criteria.

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

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

37.5 The price of the Rehabilitation and Improvement Works included in each Tender shall not be higher than the threshold indicated in the TDS. If the Tenderer estimates that its costs for the Rehabilitation and Improvement Works are higher than the threshold indicated in the TDS, it shall include the portion above the threshold in its price for the Maintenance Services. If the Tender price in the Best Evaluated Tender is above the threshold indicated in the TDS for the Rehabilitation and Improvement Works, the Procuring Entity may reject the Tender.

38 Comparison of Tenders

38.1 The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders in accordance with ITT 34.2 to determine the Tender that has the lowest evaluated cost.

38.2 After application of the criteria established in ITT 37.1 to ITT 37.5, the Evaluated Tender Price for comparison of Tenders will be:

- a The lump-sum price offered by the Tenderer for the Maintenance Services; plus
- b The lump-sum price offered by the Tenderer for the Rehabilitation Works, if the tendering document requires prices for this type of works; plus
- c the total price of the priced Bill of Quantities for the Improvement Works, if the tendering document requires prices for this type of works; plus
- d the total price of the priced Bill of Quantities for the Emergency Works.

39 Abnormally Low Tenders

39.1 An Abnormally Low Tender is one where the Tender price, in combination with other constituent elements of the Tender, appears unreasonably low to the extent that the Tender price raises material concerns as to the capability of the Tenderer to perform the Contract for the offered Tender price.

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

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

40 Abnormally High Tenders

40.1 An abnormally high price is one where the tender price, in combination with other constituent

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

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

- i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.
- ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case may be.

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

41 Unbalanced Tenders or Front Loaded

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

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

- a) Accept the Tender; or
- b) Require that the amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding 20% of the Contract price; or
- c) Reject the Tender.

42 Qualification of the Tenderer

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

42.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 19.2. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors, if permitted in TDS when prequalification has not taken place) or any other firm(s) different from the Tenderer.

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

43 Lowest Evaluated Tender

- 43.1 Having compared the evaluated costs of Tenders, the Procuring Entity shall determine the Best Evaluated Tender. The Best Evaluated Tender is the Tender of the Tenderer that meets the Qualification Criteria and whose Tender has been determined to be:
- a) Most responsive to the tendering document; and
 - b) The lowest evaluated cost.

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

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

45 Notice of Intention to enter in to a Contract

- 45.1 Upon award of the contract and Prior to the expiry of the Tender Validity Period the Procuring Entity shall issue a Notification of Intention to Enter into a Contract/Notification of award to all tenderers which shall contain, at a minimum, the following information:
- a) The name and address of the Tenderer submitting the successful tender;
 - b) The Contract price of the successful tender;
 - c) A statement of the reason(s) the tender of the unsuccessful tenderer to whom the letter is addressed was unsuccessful, unless the price information in © above already reveals the reason;
 - d) The expiry date of the Standstill Period; and
 - e) Instructions on how to request a debriefing and/or submit a complaint during the standstill period;

46 Standstill Period

- 46.1 The Contract shall not be signed earlier than the expiry of a Standstill Period of 14 days to allow any dissatisfied tender to launch a complaint. Where only one Tender is submitted, the Standstill Period shall not apply. Where only one Tender is submitted, the Standstill Period shall not apply.
- 46.2 Where a Standstill Period applies, it shall commence only when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to Enter into a Contract with the successful Tenderer.

47 Debriefing by the Procuring Entity

- 47.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 43, an unsuccessful tenderer may make a written request to the Procuring Entity for a debriefing on specific issues or concerns regarding their tender. The Procuring Entity shall provide the debriefing within five days of receipt of the request.
- 47.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending such a debriefing meeting.

F. Contract Negotiations and Award of Contract

48 Negotiations

- 48.1 Before signature of contract, the procuring Entity may conduct negotiations with the best evaluated tenderer. The negotiations will be held at the date and address indicated in the TDS with the Tender's Representatives who must have written power of attorney to negotiate a Contract on behalf of the Tenderer.
- 48.2 The Procuring Entity shall prepare minutes of negotiations that are signed by the Procuring Entity and the Tender's authorized representative.
- 48.3 The negotiations include discussions of the Schedule of Requirements, the proposed methodology, the Procuring Entity's inputs, the Special Conditions of the Contract, and finalizing the "Works and Services' Requirements" part of the Contract. These discussions shall not substantially alter the original scope of services or the terms of the contract, lest the quality of the final product, its price, or the relevance of the initial evaluation be affected.
- 48.4 The financial negotiations include the clarification of the tax liability in Kenya and how it should be reflected in the Contract. If the selection method included cost as a factor in the evaluation, the total price stated in the Financial Proposal for a Lump-Sum contract shall not be negotiated. The Procuring Entity may ask for clarifications and, if the costs are very high, ask to change the rates.
- 48.5 The negotiations are concluded with a review of the finalized draft Contract, which then shall be initialed by the Procuring Entity and the Tender's authorized representative. If the negotiations fail, the Procuring Entity shall inform the Tender in writing of all pending issues and disagreements and provide a final opportunity to the Tenderer to respond. If disagreement persists, the Procuring Entity shall terminate the negotiations informing the Tenderer of the reasons for doing so. The Procuring Entity will invite the next-ranked Tenderer to negotiate a Contract. Once the Procuring Entity commences negotiations with the next-ranked Tenderer, the Procuring Entity shall not reopen the earlier negotiations.

49 Letter of Award

- 49.1 Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 44.1, upon addressing a complaint that has been filed within the Standstill Period, the Procuring Entity shall transmit the Letter of Award to the successful Tenderer. The letter of award shall request the successful tenderer to furnish the Performance Security within 21 days of the date of the letter.

50 Signing of Contract

- 50.1 Upon the expiry of the fourteen days of the Notification of Intention to enter into contract and upon the parties meeting their respective statutory requirements, the Procuring Entity shall send the successful Tenderer the Contract Agreement.
- 50.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and return it to the Procuring Entity.
- 50.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period

51 Performance Security

- 51.1 Within twenty-one (21) days of the receipt of the Letter of Award from the Procuring Entity, the successful Tenderer shall furnish the Performance Security and if required in the TDS, using

for that purpose the Performance Security Forms included in Section VIII, Contract Forms, or another form acceptable to the Procuring Entity. If the Performance Security furnished by the successful Tenderer is in the form of a bond, it shall be issued by a bonding or insurance company that has been verified by the successful Tenderer to be acceptable to the Procuring Entity. A foreign institution providing a bond shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent financial institution is not required.

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

52 Publication of Procurement Contract

- 52.1 Within fourteen days after signing the contract, the Procuring Entity shall publish the awarded contract at its notice boards and websites; and on the Website of the Authority. At the minimum, the notice shall contain the following information:
- a) Name and address of the Procuring Entity;
 - b) Name and reference number of the contract being awarded, a summary of its scope and the selection method used;
 - c) The name of the successful Tenderer, the final total contract price, the contract duration.
 - d) dates of signature, commencement and completion of contract; names of all Tenderers that submitted Tenders, and their Tender prices as read out at Tender opening.

53 Procurement Related Complaints

- 53.1 The procedures for making a Procurement-related Complaint are as specified in the TDS.

SECTION III - TENDER DATA SHEET (TDS)

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

A. General	
ITT 2.1	<p>The name of the contract is <i>MAINTENANCE OF STRUCTURES ALONG THIKA – GARISSA (A3) ROAD</i></p> <p>The Reference number of the Contract is: KeNHA/R8/329/2023</p>
ITT2.3	<p>The information made available to competing firms is as follows:</p> <p style="text-align: center;">NONE</p>
ITT2.4	<p>The firms that provided consultancy services for the contract being tendered for are:</p> <p style="text-align: center;">NONE</p>
ITT3.1	NO Joint Ventures (JV) shall be allowed
B.	
ITT 7.1	<p>i) The Tenderer will submit any request for clarification in writing at the Address:</p> <p style="text-align: center;"><i>Provided in the detailed Tender Notice</i></p> <p>To reach the Procuring Entity not later than ten (10) days prior to the deadline of bid submission.</p> <p>ii) The Procuring Entity will publish the response at the Website www.kenha.co.ke</p>
ITT 7.2	A) A MANDATORY Pre-tender site visit shall take place on the date and time indicated in the Tender Notice.
ITT 7.3	<p>The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than 10 days to the submission date</p> <p>The Procuring Entity will publish its response at the website www.kenha.co.ke</p>
C. Preparation of Tenders	
ITP 11.1 (h)	The Tenderer shall submit the following additional documents in its Tender: As indicated in the <i>Long Tender Notice</i>
ITT 13.1	Alternative Tenders shall not be considered.
ITT 13.2	Alternative times for completion shall not be permitted.
ITT 13.4	Alternative technical solutions shall not be permitted for any parts of the Works.
ITT 14.5	The prices quoted by the Tenderer shall be: Subject to adjustment
ITT 15.2	Foreign currency requirements not allowed.
ITT 18.1	The Tender validity period shall be 140 days from the specified date of opening as

	indicated in the invitation to Tender
ITT 18.2	<p>a) The Number of days beyond the expiry of the initial tender validity period will be 60 days.</p> <p>The Tender price shall be adjusted by the following percentages of the tender price:</p> <p>(i) By 0 % of the local currency portion of the Contract price adjusted to reflect local inflation during the period of extension,</p> <p>and</p> <p>(ii) By 0 % the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension.</p>
ITT 19.1	A tender securing declaration shall be required as per the prescribed form
ITT 19.2 (IV)	The other security is <u>Not Applicable</u>
ITT 19.5	Other documents required are as specified in Form No. 3; Contract Agreement
ITT 19.9	NOT APPLICABLE
ITT 20.1	In addition to the original of the Tender, the number of copies is: ONE ORIGINAL BID DOCUMENT(HARDCOPY)
ITT 20.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: <i><u>Certificate of Independent Tender Determination Part B of Form of Tender</u></i>
D. Submission and Opening of Tenders	
ITT 21.3	A tender package or container that cannot fit in the tender box shall be received as follows: shall be received at the Supply Chain Management Offices of the location specified in the tender notice.
ITT 22.1	The Tender opening shall take place at: <u>As indicated in the invitation to Tender</u>
ITT 25.1	Tenders shall not be submitted electronically.
ITT 25.6	<p>The number of representatives of the Procuring Entity to sign is <i>at least four</i></p> <p>The Form of Tender and summary page of the BOQ <i>shall be</i> initialed by representatives of the Procuring Entity attending Tender opening.</p> <p>If initialization is required, it shall be conducted as follows:</p> <ul style="list-style-type: none"> • <i>By all members of the Tender opening committee</i> • <i>Form of Bid and the Summary page of the BOQ</i>
E. Evaluation, and Comparison of Tenders	
ITT 30.3	The adjustment shall be based on the average price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
ITT 31.2	The error shall be considered a major deviation that leads to disqualification of the tender if the percentage of the error (error over the tender price quoted) is: ± 0.1%
ITT 32.1	The currency that shall be used for Tender evaluation and comparison purposes to convert at the selling exchange rate all Tender prices expressed in various currencies into a single currency is: Kenya Shillings

ITT 33.2	A margin of preference <i>shall</i> apply as provided in PPAD Act 2015 and Regulations 2020
ITT 33.4	The invitation to tender is extended to all groups and does not qualify for reservations.
ITT 34.1	At this time, the Procuring Entity does not intend to execute certain specific parts of the Works by subcontractors selected in advance.
ITT 34.2	Contractor's may propose subcontracting: Maximum percentage of subcontracting permitted is: 40% <i>of the total contract amount</i> . Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience.
ITT 34.3	<p>The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows:</p> <ol style="list-style-type: none"> 1. SUPERSTRUCTURE LAUNCHING 2. JACK UP AND DOWN SUPERSTRUCTURE FOR BEARING REPLACEMENT <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 Tenderer for the purpose of evaluation.</p>
ITT 35.2 (d)	Additional requirements apply. These are detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria.
ITT 48.2	Additional requirements are: As detailed in the Qualification Criteria/Form
ITT 49.1	<p>The procedures for making a Procurement-related Complaint are available from the PPRA website info@ppra.go.ke or complaints @ppra.go.ke. If a Tenderer wishes to make a Procurement-related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to:</p> <p>For the attention: Director General</p> <p>Procuring Entity: Kenya National Highways Authority (KeNHA)</p> <p>Email address: dg@kenha.co.ke</p> <p>In summary, a Procurement-related Complaint may challenge any of the following:</p> <ol style="list-style-type: none"> (i) the terms of the Tender Documents; and (ii) the Procuring Entity's decision to award the contract.

SECTION IV- EVALUATION AND QUALIFICATION CRITERIA

General Provisions

1 General Provisions

- 1.1 This section contains the criteria that the Employer shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in Section IV, Tendering Forms. The Procuring Entity shall use **the Standard Tender Evaluation Document for Goods and Works** for evaluating Tenders.
- 1.2 Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the Kenya Shilling equivalent using the rate of exchange determined as follows:
- a) For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.
 - b) Value of single contract - Exchange rate prevailing on the date of the contract signature.
 - c) Exchange rates shall be taken from the publicly available source identified in the ITT 14.3. Any error in determining the exchange rates in the Tender may be corrected by the Procuring Entity.
- 1.3 Evaluation and contract award Criteria

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

2. Preliminary examination for Determination of Responsiveness

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

[The Procuring Entity will provide the preliminary evaluation criteria. To facilitate, a template may be attached or clearly described all information and list of documentation to be submitted by Tenderers to enable preliminary evaluation of the Tender]

3. Tender Evaluation (ITT 35)

Price evaluation: In addition to the criteria listed in ITT 35.2 (a) – (d) the following criteria shall apply:

- i) **Alternative Completion Times**, if permitted under ITT 13.2, will be evaluated as follows:

N/A

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

N/A

- iii) **Other Criteria;** if permitted under ITT 35.2(d):

N/A

4. Alternative Tenders (ITT 13.1)

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

The Procuring Entity shall consider Tenders offered for alternatives as specified in Part2-Works Requirements. Only the technical alternatives, if any, of the Tenderer with the Best Evaluated Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

5. Margin of Preference

- 6.1 If the TDS so specifies, the Procuring Entity will grant a margin of preference of fifteen percent (15%) to be loaded one valuated price of the foreign tenderers, where the percentage of shareholding of Kenyan citizens is less than fifty-one percent (51%).
- 6.2 Contractors applying for such preference shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contract or or group of contractors qualifies for a margin of preference.
- 6.3 After Tenders have been received and reviewed by the Procuring Entity, responsive Tenders shall be assessed to ascertain their percentage of shareholding of Kenyan citizens. Responsive tenders to shall be classified into the following groups:
- i) Group A: tenders offered by Kenyan Contractors and other Tenderers where Kenyan citizens hold shares of over fifty one percent (51%).
 - ii) Group B: tenders offered by foreign Contractors and other Tenderers where Kenyan citizens hold shares of less than fifty one percent (51%).
- 6.4 All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tender in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A is the lowest, it shall be selected for the award. If a tender from Group B is the lowest, an amount equal to the percentage indicated in Item 3.1 of the respective tender price, including unconditional discounts and excluding provisional sums and the cost of day works, if any, shall be added to the evaluated price offered in each tender from Group B. All tenders shall then be compared using new prices with added prices to Group Band the lowest evaluated tender from Group A. If the tender from Group A is still the lowest tender, it shall be selected for award. If not, the lowest evaluated tender from Group B based on the first evaluation price shall be selected.

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

- a) In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of pre-qualification data, if so required.
- b) In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.
 - i) The Tenderer shall demonstrate that they have access to, or have 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 estimated at a minimum of **Kenya Shillings Three-hundred (300) Million**.
 - ii) Minimum average annual construction turnover of **Kenya Shillings Three-hundred (300) Million** equivalent calculated as total certified payments received for contracts in progress and/or completed within the last three (3) years.

- iii) At least two (2) contracts of a similar nature executed within Kenya, or the East African Community or abroad, that have been satisfactorily and substantially completed within the last three (3) years as a prime contractor, or joint venture member or sub-contractor each of minimum value **Kenya shillings Five-hundred (500) Million.**
- iv) Contractor's Representative and Key Personnel, which are specified as a site agent with a minimum Qualification of Bachelors in Civil/Highway Engineering, Registered as a Professional Engineer with the Engineering Board of Kenya (EBK) and at least 10 years' experience as a Site Agent. Must be Kenyan citizen.
- v) Contractor's Key equipment listed on the table "Contractor's Equipment" below:

Contractor's Equipment

PLANT AND EQUIPMENT		Max 21
Relevant Equipment	Owned (Max 21marks) The following equipment will attract marks as indicated below; <ul style="list-style-type: none"> • 2 No. Excavator Breaker– 4mks • 1 No. Excavator Bucket – 1mks • 10No. Hydraulic Jacks (each of capacity class 50 tonnage) – 3mks • 2 No. Grader – 1mks • 1 No. Abrasive grit blaster machine – 3mks • 1 No. Crane (Rough Terrain) 25 tons– 4mks • 1 No. Excavators – 1mks • 5 No. Tippers (each with capacity of 28 tons) – 1 mk • 1 No. Flat Bed Lorries – 1 mk • 1 No. Wheel Loader – 1mks 	0 - 21
	Leased (Max 10 marks) – 1 point for each equipment type leased	0 - 10

vi) Other conditions depending on their seriousness.

c) History of non-performing contracts:

Tenderer and each member of JV incase the Tenderer is a JV, shall demonstrate that Non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last three (3) years. The required information shall be furnished in the appropriate form.

d) Pending Litigation

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

e) Litigation History

There shall be no consistent history of court/arbitral award decisions against the Tenderer, in the last three (3) years. All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the year's specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

SECTION IV: EVALUATION AND QUALIFICATION CRITERIA CONTD...

This Section contains all the factors, methods and criteria that the Employer shall use to evaluate applications. The information to be provided in relation to each factor and the definitions of the corresponding terms are included in the respective Application Forms.

1. Eligibility Requirements
2. Historical Contract Non-Performance
3. Financial Situation
4. Technical/Engineering Works Experience
5. Program of Works and Work Methodology
6. Key Professional and Technical Site Staff
7. Major Plant and Equipment to be used in the Project

QUALIFICATION FORM

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
A. PRELIMINARY EVALUATION				
1.	Nationality	Nationality in accordance with ITT 3.6	Forms ELI - 1.1, 1.2 and 1.3, with attachments	
2.	Goods, equipment and services to be supplied under the contract	To have their origin in any country that is not determined ineligible under ITT 3.9 & 4.1	Forms ELI - 1.4	
3.	Conflict of Interest	No conflicts of interest in accordance with ITT 3.3	Form of Tender	
4.	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.7	Form of Tender - Form SD 1	
5.	State- owned Enterprise	Meets conditions of ITT 3.8	Forms ELI - 1.1 and 1.2, with attachments	
6.	Appendix to Form of Bid	Form properly filled & signed	Appendix to Form of Bid in the Prescribed Format	
7.	Suspension Based on Execution of Tender/Proposal Securing Declaration by the Procuring Entity	Not under suspension based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 3.7.	To be confirmed from Internal records by the procuring entity	
8.	Pending Litigation	Tender's financial position and prospective long-term profitability still sound according to Qualification Criteria 6(d) & 6(e) and assuming that	Form CON - 1	

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
		all pending litigation will NOT be resolved against the Tenderer.		
9.	Litigation History	No consistent history of court/arbitral award decisions against the Tenderer for the last three (3) years.	Form CON - 1	
10.	History of Non-Performing Contracts	<p>Non-performance of a contract did not occur as a result of contractor default for the last three (3) years.</p> <p>Non-performance shall be deemed to have occurred by evidence of:</p> <ul style="list-style-type: none"> • Termination Letter • Liquidated Damages 	<p>Form CON-1</p> <p>If a bidder fails to disclose, shall be disqualified</p> <p>Reference to be made to procuring Authority's records</p>	
11.	Declaration of Fair employment laws and practices	Bidders shall declare they are not guilty of any serious violation of fair employment laws and practices and will be bound to abide by the industry CBA at minimum	Form CON - 2	
12.	Declaration of Knowledge of Site /Pre-Bid Conference	Attend Pre-Tender Site Visits as per TDS, ITT 5.2	Form CON - 3	
13.	Tender Security	Tender Securing Declaration document	Form in the Prescribed Format	
14.	Priced Bill of Quantities	<ul style="list-style-type: none"> - Fill all rates, and amounts, - NO Alterations of the Quantities accepted, - All bidders own Corrections must be Countersigned 	Bills of Quantity in the Prescribed Format	

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
		- NO Errors noted in the Bills of Quantities		
15.	Annual Practicing License with the National Construction Authority	Proof of registration with the National Construction Authority in Class 1, 2 or 3 as Roads/Bridges Contractor	Copy of Current NCA Practicing License	
16.	Registration Certificate for Access to Government Procurement Opportunities (AGPO)	Registration Certificate for Access to Government Procurement Opportunities (AGPO) in WOMEN category.	Copy of Valid AGPO Certificate in WOMEN Category	
17.	Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority in accordance with ITT 4.14.	Provide Valid Tax Compliance Certificate	
18.	Serialization of the Bid	Bidders shall sequentially serialize all pages of each tender submitted. Any written Pages or document attached or inserted Documents MUST be sequentially serialized.	The Serialization MUST be numerically sequential starting from Numeric 1.	
19.	Completeness of tender document	The person or persons signing the bid shall initial all pages of the bid where entries have been made.	All pages with entries (Typed or hand written) must be initialed. Any alterations made in the tender document must be	

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
			countersigned.	
B. TECHNICAL EVALUATION				
1.	Financial Capabilities	(i) Bidders shall provide audited balance sheets or, if not required by the laws of the Tenderer's country, other financial statements acceptable to the Procuring Entity, for the last 3 years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability (as demonstrated by Financial Evaluation ratios).	Form FIN - 3.1, with attachments Attachments include: i. Audited accounts All pages must be initialed and stamped by both a practicing Auditor registered with ICPAK and one of the Directors. Auditor's practicing membership number from ICPAK must be indicated and a valid practicing license shall be provided. The Financial ratio Form to	(i) 0 – 6 Marks

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
		<p>The Tenderer shall demonstrate that they have access to, or have 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 estimated at Ksh Three-hundred (300) Million</p> <p>The Tenderers shall also demonstrate, to the satisfaction of the Procuring Entity, that they have adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.</p>	<p>be signed by the Auditor registered with ICPAK and one of the Directors</p> <p>ii. Financial Ratios</p> <p>Computation shall be made for the following Ratios and marks awarded to each of the ratios:</p> <ul style="list-style-type: none"> -Working Capital - Debt to Equity Ratio - Current ratio - Operating Cash Flow ratio <ul style="list-style-type: none"> • Line of Credit • Working Capital • Operating Cash Flow ratio <ul style="list-style-type: none"> • Bank statements 	(ii) 0 – 5 Marks

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
		(ii) Bank statements for six (6) months up to date of tender opening.	Etc.	(iii) 0 – 5 Marks
	Average Annual Construction Turnover	(iii) Minimum average annual construction turnover of Kenya Shillings Five-hundred (500) Million , equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 3-year years, divided by 3 years	Form FIN - 3.2 <i>Attachments include Financial Statements</i>	0 – 8 Marks
2.	Ongoing Works	The total value of outstanding works on the on-going contracts should not exceed the average annual turnover for the last three years.	Form FIN - 3.3 Any bidder with more than 2 ongoing projects (not completed) loses two marks.	0 – 4 Marks
	General Construction Experience	Experience under construction contracts in the role as a main contractor or subcontractor for at least the last Five [5] years prior to the applications submission deadline. Grading shall be based on general projects handled. Five projects and above earns maximum points and prorated downwards.	Form EXP -4.1 <i>Attach Letters of Award and Completion Certificates</i>	0 – 5 Marks (1 Mark for each General Construction project)
	Specific Construction & Contract Management Experience	Participation as a Road's Contractor, Management Contractor or Subcontractor, in at least two (2) Road/Bridges construction contracts in East Africa Community with a value of	Form EXP 4.2(a)&(b) <i>Provide Letters of Award and Completion Certificates and write-up indicating description of works</i>	

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)		
		<p>at least Kshs. Three-hundred (300) Million each, successfully and substantially completed within the last 5 years. The similarity shall be based on the following minimum construction experience;</p> <ul style="list-style-type: none">Construction of composite bridge and superstructure launching – minimum span length 20m <p>NB: The above quantities represent the upper limit, any quantity that is less than the above stated will be marked on a pro rata basis.</p>	<p><i>For subcontracted works, the bidder should provide the following;</i></p> <ul style="list-style-type: none"><i>Award letter of the main contractor</i><i>Award letter of the subcontract.</i><i>Completion letter of the subcontract and write-up indicating description of works</i><i>Subcontract approval from the Engineer/supervision Authority</i>	<ul style="list-style-type: none">0-5 marks0-3 marks0-3marks0-3marks		
3.	Contractor's Representative and Key Personnel	Curriculum Vitae (CVs) of the Proposed Key Staff must be presented in the provided format and duly signed by the proposed individual.	Schedule F (Form PER. 1 and PER. 2)	16 Marks		
		Copies of certificates and Annual Practicing Licenses (for Engineers) and Academic Certificates for all staff is mandatory;				
		KEY PERSONNEL				
		Max 16				
		Site Agent (Max 9 marks)	Registration	Registered Engineer	3	
		Qualification	Degree	2		
		Relevant experience	15 years and above	4		

Item No.	Qualification Subject	Qualification Requirement		Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
		*Must be Kenyan Citizen (0 marks if requirement not met)		7-14years	3
				3-6 years	2
				0-3years	1
		Surveyor (Max 4marks)	Qualification	Degree	2
				HND	1.0
				Diploma	1
			Relevant experience	15 years and above	2
				7-14years	1.0
				3-6 years	1
				0-3years	0.5
		Foreman (Max 3marks)	Qualification	Degree	1.5
				HND	1.0
				Diploma	1
			Relevant experience	15 years and above	1.5
				7-14years	1.5
				3-6 years	1.0
				0-3years	1

4.	Proposed Methodology and Work plan	WORK METHODOLOGY			Max 16
		Adequacy and quality of the proposed methodology	Program of works & cash flow projection		0 - 3
			Detailed Methodology		0 - 5
			Proposed Equipment Scheduling/Work statement.		0 - 3
			Methodology on safety during the construction period.		0 - 2
			Methodology on Environmental and Social Safeguard issues.		0- 3
5.	Contractors Key equipment	<ul style="list-style-type: none"> Bidders shall declare they have possession/Ownership of various equipment as proposed to be used in the Project by providing Logbooks that demonstrate proof of ownership For Bidders planning to hire, they shall provide an Active Lease Agreement in Place that can be used during the Project Life. The copy of logbooks of the lessor(s) shall also be provided. 	Schedule D of Technical Proposal	21 Marks	

			PLANT AND EQUIPMENT		Max 21
			Relevant Equipment	Owned (Max 21marks) The following equipment will attract marks as indicated below; <ul style="list-style-type: none">• 2 No. Excavator Breaker– 4mks• 1 No. Excavator Bucket – 1mks• 10No. Hydraulic Jacks (each of capacity class 50 tonnage) – 3mks• 2 No. Grader – 1mks• 1 No. Abrasive grit blaster machine – 3mks• 1 No. Crane (Rough Terrain) 25 tons– 4mks• 1 No. Excavators – 1mks• 5 No. Tippers (each with capacity of 28 tons) – 1 mk• 1 No. Flat Bed Lorries – 1 mk• 1 No. Wheel Loader – 1mks	0 - 21
				Leased (Max 10 marks) – 1 point for each equipment type leased	0 - 10
<i>Tenderers who score less than the required pass (75%) will be automatically disqualified. Tenderers who pass the technical evaluation will be evaluated further.</i>					
C. FINANCIAL EVALUATION: The lowest evaluated bidder shall be subjected to Financial Evaluation which include but not limited to sensitivity analysis of the rates to detect abnormally low bids or abnormally high bids or unbalanced tenders or front loaded . Treatment of Abnormally Low Bid/Abnormally high Bid/ Unbalanced bid The Procuring Entity may undertake an analysis of bidders’ rates which are potentially lower/higher than the known prevailing market rates. The bidders shall be required to provide objective justification including supporting documents on derivation of their rates within stipulated time to the Procuring Entity (<i>See Schedule G, Part I&II on Derivation of Rates</i>).					

In addressing the above criteria, the following steps shall be undertaken by the Procuring Entity;

- a. **Identify:** The Procuring Entity identifies a potential Abnormally Low/High Bid based on comparison with known prevailing market rates or with the project's total cost estimate.
- b. **Evaluate:** The Procuring Entity clarifies with the Bidder/proposer (hereafter the Bidder). The Bidder prepares a justification of their price based on the request from the Procuring Entity. The procuring Entity fully analyzes the Bidder's justification to verify if it is an Abnormally Low/High Bid. Due diligence may be carried out by the Procuring Entity on the bidder's documentation.
- c. **Determination:** The Procuring Entity fully documents the decision to accept or reject the Bid and executes appropriate action(s)/recommendation(s).

In view of the above, the procuring Entity shall evaluate and analyze the Bidders' submissions against the known prevailing market rates and cost estimation guidelines. The analysis of the bidder's justification shall take into account all evidence provided in response to the request. Accordingly, the Procuring Entity's relevant committee shall make a recommendation to the Accounting Officer.

D. POST QUALIFICATION: The procuring entity shall verify the documents provided by the bidder with the issuing authority.

**Bidders attaining 75% from the Technical Evaluation will proceed to Financial Evaluation*

APPENDIX TO THE QUALIFICATION CRITERIA

ITEM		DESCRIPTION			POINT SCALE	SCORE
1	FINANCIAL CAPACITY				Max 24	
	a	Audited Statements			0-6	
	b	Line of credit			0-5	
	c	Bank statement (Last six months to the date of tender)			0-5	
	d	Turnover			0-8	
2	EXPERIENCE				Max 19	
		General Experience			0-5	
		Specific experience in related works			0-14	
3	CURRENT COMMITMENTS				Max 4	
		On-going works			0-4	
4	KEY PERSONNEL				Max 16	
	Site Agent (Max 9 marks)	Registration	Registered Engineer		3	
		Qualification	Degree		2	
		Relevant experience	15 years and above		4	
			7-14years		3	
			3-6 years		2	
			0-3years		1	
	Surveyor (Max 4marks)	Qualification	Degree		2	
			HND		1.0	
			Diploma		1	
		Relevant experience	15 years and above		2	
			7-14years		1.0	
			3-6 years		1	
			0-3years		0.5	
	Foreman (Max 3marks)	Qualification	Degree		1.5	
			HND		1.0	
			Diploma		1	
		Relevant experience	15 years and above		1.5	
			7-14years		1.5	
			3-6 years		1.0	
			0-3years		1	
5	PLANT AND EQUIPMENT				Max 21	
		Relevant Equipment	Owned (Max 21marks) The following equipment will attract marks as indicated below; • 2 No. Excavator Breaker– 4mks • 1 No. Excavator Bucket – 1mks		0 - 21	

ITEM		DESCRIPTION	POINT SCALE	SCORE
		<ul style="list-style-type: none"> • 10No. Hydraulic Jacks (each of capacity class 200 tonnage) – 3mks • 2 No. Grader – 1mks • 1 No. Abrasive grit blaster machine – 3mks • 1 No. Crane (Rough Terrain) 25 tons– 4mks • 1 No. Excavators – 1mks • 5 No. Tippers (each with capacity of 28 tons) – 1 mk • 1 No. Flat Bed Lorries – 1 mk • 1 No. Wheel Loader – 1mks 		
		Leased (Max 10 marks) – 1 point for each equipment type leased	0 - 10	
		WORK METHODOLOGY	Max 16	
		Program of works & cash flow projection	0-3	
		Detailed Methodology	0-5	
		Proposed Equipment Scheduling/Work statement.	0-3	
		Methodology on safety during the construction period.	0-2	
		Methodology on Environmental and Social Safeguard issues.	0 -3	
		TOTAL	MAX 100	

SECTION V - TENDERING FORMS

- 1. TENDERER'S QUALIFICATION FORMS**
 - Form ELI - 1.1- Tenderer Information Form
 - Form ELI - 1.2- Tenderer JV information
 - Form ELI - 1.3- Qualification of Foreign Contractors
 - Form ELI - 1.4- Declarations of materials, equipment and labor sources
- 2. FORM OF TENDER**
 - A. TENDERER'S ELIGIBILITY - CONFIDENTIAL BUSINESS QUESTIONNAIRE**
 - B. CERTIFICATE OF INDEPENDENT TENDER DETERMINATION**
 - C. SELF-DECLARATION FORMS**
 - FORM SD1
 - FORM SD2
 - FORM SD3
- 3. APPENDIX TO FORM OF TENDER**
- 4. CONTRACTUAL FORMS**
 - FORM CON – 1
 - FORM CON – 2
 - FORM CON – 3
- 5. FINANCIAL FORMS**
 - FORM FIN - 3 .1
 - FORM FIN - 3.2
 - FORM FIN - 3.3
- 6. TECHNICAL EXPERIENCE**
 - FORM EXP - 4.1
 - FORM EXP - 4.2 (A)
 - FORM EXP - 4.2 (B)
- 7. TECHNICAL PROPOSAL**
 - SCHEDULE A. Projected Cash Flow
 - SCHEDULE B. Site Organizations
 - SCHEDULE C. Subcontractors
 - SCHEDULE D. Contractor's Equipment
 - SCHEDULE E. Initial Tentative Program of Performance
 - SCHEDULE F. Key Personnel Proposed
- 8. FORM OF TENDER SECURITY - DEMAND GUARANTEE**
- 9. FORM OF TENDER SECURITY (TENDER BOND)**
- 10. FORM OF TENDER-SECURING DECLARATION**
- 11. FORM OF DECLARATION OF FAIR EMPLOYMENT LAWS AND PRACTICES**
- 12. FORM OF DECLARATION OF CONTRACTS TERMINATED IN THE LAST THREE (3) YEARS**

TENDERER'S QUALIFICATION FORMS

FORM ELI-1.1- TENDERER INFORMATION FORM

Form ELI-1.1
Tenderer Information Form
Date: _____
ITT No. and title: _____
Page _____ of _____ pages
Tenderer's name:
In case of Joint Venture (JV), name of each member:.....
Tenderer's actual or intended country of registration: [indicate country of Constitution]
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name: Address: Telephone/Fax numbers: E-mail address:
<p>1. Attached are copies of original documents of:</p> <p>I. <i>Certificate of Incorporation and CR12</i> of the legal entity named above, in accordance with ITT 4.1.</p> <p>II. <i>Copies of National Identification documents for Directors</i></p> <p><input type="checkbox"/> In case of a JV, Form of intent to form JV or JV agreement, in accordance with ITT 4.1.</p> <p><input type="checkbox"/> In case of a state-owned enterprise or institution, in accordance with ITT 4.7. documents establishing:</p> <ul style="list-style-type: none"> • Legal and financial autonomy • Operation under commercial law • Establishing that tenderer is not under the supervision of the Procuring Entity, <p>2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership (<i>Not Applicable</i>).</p>

FORM ELI- 1.2- TENDERER JV INFORMATION

Tenderer's JV Information Form

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

Date: _____

ITT No. and title: _____

Page _____ of _____ pages

Tenderer's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of: i. Certificate of Incorporation and CR 12 of the legal entity named above, including Registered JV agreement (Registration of Documents Act) , in accordance with ITT 4.1. ii. Copies of National Identification documents for all Directors <input type="checkbox"/> In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 4.7. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership (<i>Not Applicable</i>).

FORM ELI - 1.3- QUALIFICATION OF FOREIGN CONTRACTORS

Qualification of Foreign Tenderers

Pursuant to ITT 4.10, a foreign tenderer must complete this form to demonstrate that the tender fulfils this condition (the 40% Rule).

ITEM	Description of Work Item	Describe location of source	COST in K. shillings	Comments, if any
A	Local Labour			
1				
2				
3				
4				
5				
B	Sub contracts from Local sources			
1				
2				
3				
4				
5				
C	Local materials			
1				
2				
3				
4				
5				
D	Use of Local Plant and Equipment			
1				
2				
3				
4				
5				
E	Add any other items			

1				
2				
3				
4				
5				
6				
7				
	TOTAL COST LOCAL CONTENT			
	PERCENTAGE OF CONTRACT PRICE			

FORM ELI - 1.4- DECLARATIONS OF MATERIALS, EQUIPMENT AND LABOUR SOURCES

Pursuant to ITT 5.1, tenderers must complete this form to demonstrate that the tender fulfils this condition

ITEM	Description of Work Item	Describe location of source	Comments, if any
A	Materials		
1			
2			
3			
4			
5			
6			
B	Equipment		
1			
2			
3			
4			
5			
C	Labour		
1			
2			
3			
4			
5			
67			
	TOTAL COST LOCAL CONTENT		
	PERCENTAGE OF CONTRACT PRICE		

**SCHEDULE OF ADJUSTMENT DATA**

In this Table, the bidder shall fill in columns (d) and (e) and specify a value within the ranges given by the Employer in B, C, D, E, F, G and H of column (f), so that the total weighting equals 1.00.

The Source of Index is the Kenya National Bureau of Statistics (KNBS).

The Base Date is: ____/____/____
(Day) (Month) (Year)

(a) Index Code	(b) Index Description	(c) Source of Index	(d) Base Value	(e) Bidder's Proposed Weighting	(f) Range of Weighting
Fixed	Non-adjustable			0.1	A: 0.10
LB	Labour	KNBS Civil Engineering Cost Index			B: 0.01 – 0.10
EQ	Equipment & Spares	KNBS Civil Engineering Cost Index			C: 0.01 – 0.25
FU	Fuel & Lubricants	KNBS Civil Engineering Cost Index			D: 0.01 – 0.25
CE	Cement	KNBS Civil Engineering Cost Index			E: 0.05 – 0.20
RS	Reinforcement & Steel Products	KNBS Civil Engineering Cost Index			F: 0.01 – 0.10
SS	Structural Steel	KNBS Civil Engineering Cost Index			G: 0.07 – 0.10
BI	Bitumen	KNBS Civil Engineering Cost Index			H: 0.15 – 0.25
			Total		1.00

Signature: _____

Date: _____

(Failure to sign this schedule will imply the bidder does not accept the above conditions and hence be disqualified from this tender.)

Note:

Indices prevailing at 28 days before the tender submission deadline shall apply.

FORM OF TENDER

INSTRUCTIONS TO TENDERERS

- (i) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address.
- (ii) All italicized text is to help Tenderer in preparing this form.
- (iii) Tenderer must complete and sign and TENDERER'S ELIGIBILITY- CONFIDENTIAL BUSINESS QUESTIONNAIRE, CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION OF THE TENDERER, all attached to this Form of Tender.
- iv) The Form of Tender shall include the following Forms duly completed and signed by the Tenderer.
 - A) Tenderer's Eligibility- Confidential Business Questionnaire
 - B) Certificate of Independent Tender Determination
 - C) Self-Declaration of the Tenderer

FORM OF TENDER

Date of this Tender submission: **As indicated in the Tender Notice**

Invitation to Tender No.: **KeNHA/R8/329/2023** Alternative No.: *[Not Applicable]*

To:

We, the undersigned, declare that:

- a) *No reservations:* We have examined and have no reservations to the tendering document, including Addenda issued in accordance with Instructions to Tenderers (ITT) ;
- b) *Eligibility:* We meet the eligibility requirements and have no conflict of interest in accordance with ITT4;
- c) *Tender-Securing Declaration:* We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender-Securing Declaration or Proposal-Securing Declaration in Kenya in accordance with ITT 4.8.
- d) *Conformity:* We offer to execute in conformity with the tendering document and in accordance with the construction or service schedule the following Works:

MAINTENANCE OF STRUCTURES ALONG THIKA – GARISSA (A3) ROAD

Tender No.: KeNHA/R8/329//2023

- e) *Tender Price:* The total price of our Tender is [name of currency] (*amount in figures and words*).

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

- f) *Combined Price:* We hereby confirm that our combined price for Rehabilitation Works and Improvement Works does not exceed the threshold given in the TDS ITT 37.5, which is [insert percentage of the total contract price].
- g) *Tender Validity Period:* Our Tender shall be valid for a period specified in TDS 18.1 (or as amended if applicable) from the date fixed for the Tender submission deadline specified in TDS 22.1 (or as amended if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

- h) *Performance Security*: If our Tender is accepted, we commit to obtain a Performance Security in accordance with the tendering document;
- i) *One Tender per Tenderer*: We are not submitting any other Tender (s) as an individual Tenderer, and we are not participating in any other Tender(s) as a Joint Venture member or as a subcontractor, and meet the requirements of ITT 4.4, other than alternative Tenders submitted in accordance with ITT 13;
- a) *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 Procuring Entity. Further, we are not ineligible under Kenya laws or official regulations or pursuant to a decision of the United Nations Security Council;
- b) *State-owned enterprise or institution*: [select the appropriate option and delete the other] [We are not a state-owned enterprise or institution] / [We are a state-owned enterprise or institution but meet the requirements of ITT 4.7];
- c) *Commissions, gratuities and fees*: We have paid, or will pay the following commissions, gratuities, or fees with respect to the Tendering 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.”).

- d) *Binding Contract*: We understand that this Tender, together with your written acceptance thereof included in your Form of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- e) *Not Bound to Accept*: We understand that you are not bound to accept the lowest evaluated cost Tender, the Best Evaluated Tender or any other Tender that you may receive;
- f) *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;
- g) *Collusive practices*: We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded. To this effect we have signed the “Certificate of Independent Tender Determination” attached below.
- r) We undertake to adhere by the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal, copy available from www.ppra.go.ke during the procurement process and the execution of any resulting contract.
- s) We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:
- a) Tenderer's Eligibility; Confidential Business Questionnaire – to establish we are not in any conflict to interest.
- b) Certificate of Independent Tender Determination – to declare that we completed the tender without colluding with other tenderers.
- a) Self-Declaration of the Tenderer – to declare that we will, if awarded a contract, not

engage in any form of fraud and corruption.

b) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal.

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

Name of the Tenderer:

.....
.....

Name of the person duly authorized to sign the Tender on behalf of the Tenderer:

.....
.....

Title of the person signing the Tender:

.....
.....

Signature of the person named above:

.....
.....

Date signed..... day of, Year

Name in the capacity of_____

Signed

Duly authorized to sign the Tender for and on behalf of

Dated on_____ day of _____, _____

A. TENDERER'S ELIGIBILITY - CONFIDENTIAL BUSINESS QUESTIONNAIRE

Instruction to Tenderer

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

a) Tenderer's details

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

General and Specific Details

b) Sole Proprietor, provide the following details

Name in full _____ Age _____

Nationality _____ Country of Origin _____

Citizenship _____

c) Partnership, provide the following details.

	Name of Partners	Nationality	Citizenship	%Shares Owned
1				
2				
3				

(d) Registered Company, provide the following details.

i) Private or public Company_____

ii) State the nominal and issued capital of the Company-

Nominal Kenya Shillings

(Equivalent).....

Issued Kenya Shillings

(Equivalent).....

iii) Give details of Directors as follows.

	Name of Directors	Nationality	Citizenship	%Shares Owned
1				
2				
3				

e) DISCLOSURE OF INTEREST - Interest of the Firm in the Procuring Entity.

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

If yes, provide details as follows.

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

ii) Conflict of interest disclosure

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

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

f) Certification

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

Full Name _____

Title or Designation _____

(Signature)

(Date)

B. CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying Letter of Tender to the **KENYA NATIONAL HIGHWAYS AUTHORITY for MAINTENANCE OF STRUCTURES ALONG THIKA – GARISSA (A3) ROAD**, Tender No: **KeNHA/R8/329//2023** in response to the request for tenders made by: **KENYA NATIONAL HIGHWAYS AUTHORITY** do hereby make the following statements that I certify to be true and complete in every respect:

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

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

Name _____

Title _____

Date _____

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

C. SELF-DECLARATION FORMS

FORM SD 1: SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015

I,
.....
.....

of Post Office Box.....being a resident
of.....

in the Republic of.....do hereby make a statement as
follows: -

1. THAT I am the Company Secretary/ Chief Executive/Managing Director/Principal Officer/Director of
.....
..... who is a Bidder in respect of Tender No.: **KeNHA/R8/329//2023** for **MAINTENANCE OF STRUCTURES ALONG THIKA – GARISSA (A3) ROAD** for **Kenya National Highways Authority** and duly authorized and competent to make this statement.
2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.
3. THAT what is deponed to herein above is true to the best of my knowledge, information and belief.

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

Bidder Official Stamp

FORM SD 2: SELF DECLARATION THAT THE TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE

I,
.....
.....

of Post Office Box.....being a resident
of.....

in the Republic of.....do hereby make a statement as follows: -

4. THAT I am the Company Secretary/ Chief Executive/Managing Director/Principal Officer/Director of
.....
..... who is a Bidder in respect of Tender No.: **KeNHA/R8/329//2023** for **MAINTENANCE OF STRUCTURES ALONG THIKA – GARISSA (A3) ROAD** for **Kenya National Highways Authority** and duly authorized and competent to make this statement.
1. THAT the aforesaid Bidder, its servants and/or agents /subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of **Kenya National Highways Authority** which is the procuring entity.
2. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered any inducement to any member of the Board, Management, Staff and/or employees and/or agents of **Kenya National Highways Authority**.
3. THAT the aforesaid Bidder will not engage/has not engaged in any corrosive practice with other bidders participating in the subject tender
4. THAT what is deponed to herein above is true to the best of my knowledge information and belief.

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

Bidder's Official Stamp

FORM SD 3: DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

I,
.....
.....

on behalf
of.....
declare that I have read and fully understood the contents of the Public Procurement & Asset Disposal Act, 2015, Regulations and the Code of Ethics for persons participating in Public Procurement and Asset Disposal and my responsibilities under the Code.

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

Name of Authorized
signatory.....

Sign.....
.

Position.....

Office
address.....Telephone.....

E-mail.....

Name of the

Firm/Company.....

Date.....

(Company Seal/ Rubber Stamp where applicable)

Witness

Name.....

Sign.....
...

Date.....

APPENDIX 1-FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

1. Purpose

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

2. Requirements

- 1.2 The Government of Kenya requires that all parties including Procuring Entities, Tenderers, (applicants/proposers), Consultants, Contractors and Suppliers; any Sub-contractors, Sub-consultants, Service providers or Suppliers; any Agents (whether declared or not); and any of their Personnel, involved and engaged in procurement under Kenya's Laws and Regulation, observe the highest standard of ethics during the procurement process, selection and contract execution of all contracts, and refrain from Fraud and Corruption and fully comply with Kenya's laws and Regulations as per paragraphs 1.1 above.
- 1.3 Kenya's public procurement and asset disposal act (*no. 33 of 2015*) under Section 66 describes rules to be followed and actions to be taken in dealing with Corrupt, Coercive, Obstructive, Collusive or Fraudulent practices, and Conflicts of Interest in procurement including consequences for offences committed. A few of the provisions noted below highlight Kenya's policy of no tolerance for such practices and behavior:
 - 1) a person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or asset disposal proceeding;
 - 2) A person referred to under subsection (1) who contravenes the provisions of that sub-section commits an offence;
 - 3) Without limiting the generality of the subsection (1) and (2), the person shall be—
 - a) disqualified from entering into a contract for a procurement or asset disposal proceeding; or
 - b) if a contract has already been entered into with the person, the contract shall be voidable;
 - 4) The voiding of a contract by the procuring entity under subsection (7) does not limit any legal remedy the procuring entity may have;
 - 5) An employee or agent of the procuring entity or a member of the Board or committee of the procuring entity who has a conflict of interest with respect to a procurement—
 - a) shall not take part in the procurement proceedings;
 - b) shall not, after a procurement contract has been entered into, take part in any decision relating to the procurement or contract; and
 - c) shall not be a subcontractor for the bidder to whom was awarded contract, or a member of the group of bidders to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.

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

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

- i) Defines broadly, for the purposes of the above provisions, the terms set forth below as follows: "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
- iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- v) "obstructive practice" is:
 - deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.
- b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:

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

- c) Rejects a proposal for award¹ of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- d) Pursuant to the Kenya's above stated Acts and Regulations, may sanction or recommend to appropriate authority(ies) for sanctioning and debarment of a firm or individual, as applicable under the Acts and Regulations;

- e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring (i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub- consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect² all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the PPRA or any other appropriate authority appointed by Government of Kenya; and
- f) Pursuant to Section 62 of the above Act, requires Applicants/Tenderers to submit along with their Applications/Tenders/Proposals a “Self-Declaration Form” as included in the procurement document declaring that they and all parties involved in the procurement process and contract execution have not engaged/will not engage in any corrupt or fraudulent practices.

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

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

APPENDIX TO FORM OF TENDER

(This appendix forms part of the bid)

CONDITIONS OF CONTRACT	CLAUSE	AMOUNT
Tender Securing Declaration document	ITT 19.1	Duly Filled and Signed in the Prescribed format as provided
Amount of Performance Security (Unconditional Bank Guarantee)	10.1	1% of Tender Sum in the form of Unconditional Bank Guarantee
Submission of Performance Security		Submitted by the 14 th day from the date of the award letter
Programme of Works to be submitted	14.1	Not later than 14 (Fourteen) days after issuance of Order to Commence
Cash flow estimate to be submitted	14.3	Not later than 14 (Fourteen) days after issuance of Order to Commence
Payment of Monthly Salaries / allowances to Contractor's Employees and allowances due to all officers seconded by the Engineer to the assignment.	16.1	Monthly Payment to be made on or before the Fifth (5 th) day of the following month. Any delays shall attract a penalty of Ksh. 50,000.00 per day for the period salaries/allowances are delayed
Road Safety Implementation Plan	19.1	Not later than Fourteen (14) days after issuance of Order to Commence
Penalty for not implementing approved Safety Plan.	19.1	Upto Kshs. 50, 000.00 per day
Scope of Insurance Policy Cover	22.1	Furnish the Engineer with a copy of Insurance Policy of WIBA not later than Fourteen (14) days after issuance of Order to Commence
Minimum amount of Contractors All Risk Insurance Cover	23.2	Contract Price
Submission of Contractors All Risk Insurance Cover		Submitted by the 14 th day from the date of award letter
Period for commencement, from Engineer's order to commence	41.1	14 days
Time for completion	43.1	24 Months
Amount of Liquidated damages	47.1	0.05% of Contract Price per day
Limit of liquidated damages	47.1	5% of Contract Value
Defects Liability period	49.1	12 Months
Percentage of Retention	60.3	10% of the Interim Payment Certificate
Limit of Retention Money	60.3	5% of the Contract Price
Minimum amount of interim certificates	60.2	5% of Contract Price
Time within which payment to be made after Interim Payment Certificate signed by Engineer	60.10	90 (ninety) days
Time within which payment to be made after Final Payment Certificate signed by Engineer	60.10	90 (ninety) days
Advance Payment	60.12	N/A

CONDITIONS OF CONTRACT	CLAUSE	AMOUNT
Appointer of Arbitrator	67(3)	The Chairperson, Chartered Institute of Arbitrators - Kenya.
Notice to Employer and Engineer	68.2	The Employer's address is: The Director General, Kenya National Highways Authority, Barabara Plaza, Off Airport South Road, Opp. KCAA, P.O. Box 49712 - 00100, <u>NAIROBI</u>
		<p>The Engineer's address is: Deputy Director (Structures) Kenya National Highways Authority, Barabara Plaza, Off Airport South Road, Opp. KCAA, P.O. Box 49712 - 00100 <u>NAIROBI</u></p> <p>The Contractor's address is:</p> <p>Name.....</p> <p>P.O Box.....</p> <p>City/Town.....</p> <p>Email:.....</p> <p>Telephone.....</p>

Signature of Tenderer.....

Date

FORM CON – 1 HISTORICAL CONTRACT NON-PERFORMANCE, PENDING LITIGATION AND LITIGATION HISTORY

Tenderer's Name: _____ Date: _____

JV Member's Name _____ ITT No. and title: _____

Non- Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> Contract non-performance did not occur for the last three (3) years from the day of tender opening. <input type="checkbox"/> Contract(s) not performed for the last three (3) years from the day of tender opening			
Year	Non-performed portion of contract	Contract Identification	Total Contract Amount (Kenya Shilling equivalent)
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	Contract Identification: <i>[indicate complete contract name/number; and any other identification]</i> Name of Procuring Entity: <i>[insert full name]</i> Address of Procuring Entity: <i>[insert street/city/country]</i> Reason(s) for nonperformance: <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>
Pending Litigation, in accordance with Section III, Qualification Criteria and Requirements			
<input type="checkbox"/> No pending litigation in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 8. <input type="checkbox"/> Pending Litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 9 as indicated below			
Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (Kenya Shilling equivalent)
		Contract Identification: Name of Procuring Entity: Address of Procuring Entity: Matter in dispute: Party who initiated the dispute: Status of dispute:	
		Contract Identification: Name of Procuring Entity: Address of Procuring Entity: Matter in dispute: Party who initiated the dispute: Status of dispute:	
Litigation History in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4. <input type="checkbox"/> Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below			
Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (Kenya Shilling equivalent)

Signature of Tenderer..... Date

FORM CON – 2: DECLARATION FORM – FAIR EMPLOYMENT LAW AND PRACTICES

Date

To

The Director General,

Kenya National Highways Authority (KeNHA),

P.O. Box 49712-00100

NAIROBI

We (name and address)_____

_____declare the following:

1. Have not been involved in and will not be involved in violation of fair employment laws and practices.
2. THAT what is declared hereinabove is true to the best of my knowledge, information and belief

-----

Name of Bidder's authorized Representative

Signature

Date

(To be signed by authorized representative and officially stamped)

FORM CON – 3: DECLARATION OF KNOWLEDGE OF SITE

This is to certify that

[Name/s].....

.....

Being the authorized representative/Agent of [Name of bidder]

.....

.....

Has familiarised himself/herself with the Site conditions in accordance with the Instructions to bidders and the Tender Notice for purposes of bidding for this road project.

Tender No. KeNHA/R8/329/2023 - MAINTENANCE OF STRUCTURES ALONG THIKA – GARISSA (A3) ROAD

Having studied the tender Documents, and gained knowledge of local conditions on site likely to influence the works and cost thereof, I certify that I am satisfied with the description of the works and understand the scope of works as specified and as implied in this tender.

.....

.....

(Signed and Stamped by Authorised Bidders Agent/ Representative)

(Designation)

FORM FIN – 3.1: FINANCIAL SITUATION AND PERFORMANCE

PART 1

Tenderer's Name: _____ Date: _____ JV _____ Member's
Name _____ ITT No. and title: _____

1. Financial data

Type of Financial information (Kenya Shillings)	Historic information for previous years, (Amount in Millions (Kshs.))		
	2020	2021	2022
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 (Kenya Shilling equivalent)
1	Letter of line of Credit from a recognized Financial Institution	
2	Bank account balance (demonstrated by bank statements)	

3		
---	--	--

3. Financial documents

The Tenderer and its parties shall provide copies of financial statements for the last *two (2)* years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

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

Attached are copies of financial statements for the two (2) years required above; and complying with the requirements

PART 2

Detailed Financial Situation Evaluation

No.	Description	Auditors Assessment 2020	Auditors Assessment 2021	Auditors Assessment 2022	Evaluation Score Award Criteria
1.	Current Ratio= <u>Current Assets</u> Current Liabilities				Current Ratio more than 1 = 1 marks
2.	Debt to Equity Ratio = <u>Total Liabilities</u> Total Equity				Equity Capital Ratio less than 1 = 1 Marks
3.	Working Capital = Current Assets-Current Liabilities				Positive Working Capital = 1 marks
4.	Operating Cash Flow Ratio = Cash Flow from <u>Operations</u> Current Liabilities				Operating Cash-flow more than 1 = 1 marks
5.	Working Capital in Ksh.				Working Capital is equal or more than 10% of Engineers Estimate= 4 Marks

The above Financial Ratios have to be derived from first Principles from the Audit Statements. The Auditor who has undertaken the analysis has to demonstrate the financial ratios and append his signature and stamp to the Document as below:

The Auditor shall be required to provide his/her workings and demonstrate the source of the workings from the various Audited statements by including the Page Numbers and references of the source of the figures used in the computation of the assigned values.

The Auditor undertaking the above Financial Analysis MUST duly fill the Contact Sheet below in all aspects and attach current annual practising license.

Financial ratios Computed by a Certified Public Accountant:

CPA: Name	
ICPAK Number	
Telephone Number	
Email Address	
Postal Address	
Physical Address	
Contact Person	
Mobile Contact of the Contact Person	
Signature	
Date	
Personal/Corporate Stamp	

Ratios attested by the Company Director:

Director's Name	
ID/Passport Number	
Telephone Number	
Email Address	
Postal Address	
Physical Address	
Signature	
Date	
Personal/Corporate Stamp	

FORM FIN – 3.2: AVERAGE ANNUAL CONSTRUCTION TURNOVER

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

		Annual turnover data (construction only)	
Year	Amount Currency <i>[insert amount and indicate currency]</i>	Exchange Rate (where applicable)	Kenya Shilling equivalent
2018			
2019			
2020			
Average Annual Construction Turnover*			

* See Section III, Evaluation and Qualification Criteria.

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 - 3.3: CURRENT CONTRACT COMMITMENTS / WORKS IN PROGRESS

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

Current Contract Commitments					
No.	Name of Contract	Procuring Entity's Contact Address, Tel, Fax	Value of Outstanding Work (Kenya Shilling equivalent)	Estimated Completion Date	Average Monthly Invoicing Over Last Six Months [Kshs. /Month]
1					
2					
3					
4					
5					

FORM EXP - 4.1: GENERAL CONSTRUCTION EXPERIENCE

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

Starting Year	Ending Year	Contract Identification	Role of Tenderer
		Contract name: Brief Description of the Works and Services performed by the Tenderer: Amount of contract: Name of Procuring Entity: Address:	Main Contractor/ Subcontractor/ Management Contractor
		Contract name: Brief Description of the Works and Services performed by the Tenderer: Amount of contract: Name of Procuring Entity: Address:	
		Contract name: Brief Description of the Works and Services performed by the Tenderer: Amount of contract: Name of Procuring Entity: Address:	

FORM EXP - 4.2(A): SPECIFIC CONSTRUCTION AND CONTRACT MANAGEMENT EXPERIENCE

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

Similar Contract No..	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor <input type="checkbox"/>	Member in JV <input type="checkbox"/>	Management Contractor <input type="checkbox"/>	Sub-Contractor <input type="checkbox"/>
Total Contract Amount			Kenya Shillings	
If member in a JV or sub-contractor, specify participation in total Contract amount				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				
Description of the similarity in accordance with Sub-Factor 4.2(b) of Section III:				
1. Amount				
2. Physical size of required Works and Services 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

Tenderer's Name:

Date:

Tenderer's JV Member Name:

Sub-contractor's Name (as per ITT 33.2):

ITT No. and title:

Page of _____ pages

All Sub-contractors for key activities must complete the information in this form as per ITT 33.2 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 Contact	Prime Contractor <input type="checkbox"/>	Member in JV <input type="checkbox"/>	Management Contractor <input type="checkbox"/>	Sub-Contractor <input type="checkbox"/>
Total Contract Amount			Kenya Shillings	
Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year	Total quantity in the contract (i)	Percentage participation (ii)	Actual Quantity Performed (i)*(ii)	
Year 1				
Year 2				
Year 3				
Year 4				

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

If applicable

2 Activity No. Two

3.

TECHNICAL PROPOSAL

The Tenderer's Technical Proposal shall include the following elements:

SCHEDULE A. Projected Cash Flow

SCHEDULE B. Site

Organizations

SCHEDULE C. Subcontractors

SCHEDULE D. Contractor's Equipment

SCHEDULE E. Initial Tentative Program of Performance

SCHEDULE F. Key Personnel Proposed

SCHEDULE G. Schedule of Material Basic prices

Instructions on how to present the various schedules of the Technical Proposal are given on the following pages

SCHEDULE A

Projected Cash Flow

- 1) Tenderers shall tabulate below estimates, based on their preliminary work programme, of:
 - a) On the expenditure side, the value of the work which will be carried out;
 - b) On the revenue side, the net payments to which they will become entitled with due allowance for the advance payment and repayment, materials prepayments, and retention money, but excluding price adjustments for rise and fall and provisional sums for emergency works.
 - c) The projected net cash flow during the contract period.
- 2) The prospective successful Tenderer may be required to submit full details to substantiate his estimates.

3)

Period (Months)	Cost of Maintenance Services	Cost of Rehabilitation and Improvement Works	Net Payment to be received	Net Cash flow
1-6				
7-12				
13-18				
19-24				
25-30				
31-36				
37-42				
43-48				
ETC				

SCHEDULE B

Site Organization

Tenderers shall give below full particulars of the organization they propose to establish, direct, and administer the performance of the Contract. In particular, Tenderers shall indicate the location of site camps and the resources they intend to allocate to Self-Control Units for planning and monitoring purposes.

1. SITE ORGANIZATION CHART
2. NARRATIVE DESCRIPTION OF SITE ORGANIZATION CHART

SCHEDULE C

SUB-CONTRACTORS / PARTNERS

Tenderers shall list below those parts of the Works and Services which they propose to subcontract, and state the approximate value of those parts and the names and addresses of the proposed subcontractors, if those are known at Tendering stage. Tenderers shall also list other business partners involved in the execution of the contract and their respective roles and responsibilities.

Part of Works /
Services:

Approximate
value:

Name and address of proposed subcontractor / partner:

Part of Works /
Services:

Approximate
value:

Name and address of proposed subcontractor / partner:

Part of Works /
Services:

Approximate
value:

Name and address of proposed subcontractor / partner:

Part of Works /
Services:

Approximate
value:

Name and address of proposed subcontractor / partner:

SCHEDULE D

Contractor's Equipment Form EQU

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

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current Status	Current Location:	
	Details of current commitments	
Source	Indicate source of equipment <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured	

Omit the following information for equipment owned by the Tenderer.

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

SCHEDULE E

Initial Tentative Program of Performance

To demonstrate a clear understanding of the requirements of the Contract, Tenderers shall provide the following:

- i) A bar chart sub-divided into sections for each road showing the major activities to be carried out for Maintenance Services, Rehabilitation Works and Improvement Works, if any. The activities shall be shown against time, with linkages shown between related/sequential activities as far as possible and appropriate.
- ii) A bar chart or schedule showing the usage of major plant, including those listed in Schedule D (Contractor's Equipment).

SCHEDULE F

Form PER -1 Key Personnel Schedule

Tenderers 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: Site Agent	
	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/weeks/months that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>Full time site presence</i>
2.	Title of position: ...	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment for this position:	<i>[insert the number of days/weeks/months that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>Full time site presence</i>

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date: (day month year): _____

Form PER -2

Resume and Declaration – Key Personnel

Name of Tenderer

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

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

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

Declaration

I, the undersigned 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 Tender:

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

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

- be taken into consideration during Tender evaluation;
- my disqualification from participating in the Tender;
- my dismissal from the contract.

Name of Key Personnel: *[insert name]*

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date: (day month year): _____

FORM OF TENDER-SECURING DECLARATION

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

Date:.....*[insert date (as day, month and year) of Tender Submission]*

Tender No.:.....*[insert number of tendering process]*

To:.....*[insert complete name of*

Purchaser] I/We, the undersigned, declare

that:

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

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

partner or sole proprietor, etc.).....

Name:.....

Duly authorized to sign the bid for and on behalf of: *[insert complete name of*

Tenderer] Dated on..... day of..... *[Insert date of*

signing]

Seal or stamp

SCHEDULE G

PART I. SCHEDULE OF MATERIALS; -BASIC PRICES

ITEM NO	DESCRIPTION	NAME OF SUPPLIER	COUNTRY OF ORIGIN	UNIT	RATE	
					KSHS	CTS
1.	Cut-back Bitumen MC 30 in bulk			Litre		
2.	Cut-back Bitumen MC 30 in drums			Litre		
3.	Bitumen 80/100 in bulk			Kg		
4..	Bitumen 80/100 in drums			Kg		
5..	Bitumen Emulsion K1-60 in bulk			Litre		
6.	Bitumen Emulsion K1-60 in drums			Litre		
7.	Petrol, Regular Grade			Litre		
8.	Petrol, Premium/ super Grade			Litre		
9.	Automotive Diesel Fuel			Litre		
10.	Industrial Diesel Oil			Litre		
11.	Industrial Fuel Oil			Litre		
12.	Kerosene Fuel			Litre		
13.	Cement			Tonne		
14.	Flex beam Guardrail			Metre		
15.	Gabion Mesh			m ²		
16.	Reinforcing Steel			Tonne		
17.	Lime			Tonne		

I certify that the above information is correct

.....
(Title)

.....
(Signature)

.....
(Date)

The prices inserted above shall be those prevailing 30 days before the submission of Tenders and shall be quoted in Kenya Shillings using the prevailing exchange rates by Central Bank Kenya.
Prices of imported materials to be quoted CIF Mombasa or Nairobi as appropriate depending on whether materials are imported by the tenderer directly or through a local agent.

PART II. SHEDULE OF RATES DERIVATION
(For use during Tender Evaluation)

Form for Detailed Breakdown of Cost Comparison

Bill item No.

Description

Units

Quantity

Rate build up

*a) Direct cost
(DC)*

i) Unit work Price

1) Material
Cost

Description	Units	Quantity	Market Price	Amount
<i>Sub Total For Material</i>				

2) Labour
Price

Personnel	No. Required	Rate /day	Amount
<i>Sub Total For Labor</i>			
Productivity ratio			

3) Machinery

Machinery type	No. Required	Rate /day	Amount	Hired/Owned
<i>Sub Total for Machinery</i>				
Productivity ratio				

Sub-total of unit price

Sum (1+2+3)

ii) Haulage Cost

Sub-totals of DC

b) Indirect Cost

*c) Overheads
and Profits*

Total Cost Sum (a+b+c)		
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Notes:

This form has been based on the principles of Cost Estimation Manual.
 The form shall be filled upon request by the Procuring Entity during Tender Evaluation.

I certify that the above information is correct

.....
(Title)

.....
(Signature)

.....
(Date& Official Stamp)

FORM OF DECLARATION OF FAIR EMPLOYMENT LAWS AND PRACTICES

Date _____

To

The Director General,
Kenya National Highways Authority (KeNHA),
P.O. Box 49712-00100

NAIROBI

We (name and address) _____

_____ declare the following:

1. Have not been involved in and will not be involved in violation of fair employment laws and practices.
2. THAT what is declared hereinabove is true to the best of my knowledge, information and belief

Name of Bidder's authorized Representative

Signature

Date

(To be signed by authorized representative and officially stamped)

**FORM OF DECLARATION OF CONTRACTS TERMINATED IN THE LAST THREE (3)
YEARS**

NAME OF CONTRACT	NAME OF CLIENT	VALUE OF WORKS (KSHS)	YEAR TERMINATED

Note: Failure to disclose terminated Contracts shall lead to disqualification.

I certify that the above information provided is true to best of my knowledge.

.....

(Signature of Bidder)

.....

(Date)

PART 2 - WORKS' REQUIREMENTS

SECTION VI - BILLS OF QUANTITIES

PREAMBLE TO BILL OF QUANTITIES

1. The Bills of Quantities shall be read in conjunction with the Instructions to Tenderers, General and Particular Conditions of Contract, Technical Specifications, and Drawings.
2. The quantities given in the Bills of Quantities are estimated and provisional, and are given to provide a common basis for tendering. 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 tender in the priced Bills 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 tender in the priced Bills of Quantities shall, except in so far as it is otherwise provided under the Contract, include all Constructional Plant, labor, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
4. A rate or price shall be entered against each item in the priced Bills of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bills of Quantities.
5. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bills 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 Bills of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bills of Quantities.
7. Provisional Sums included and so designated in the Bills of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clause 13.5 and Clause 13.6 of the General Conditions.
8. The method of measurement of completed work for payment shall be in accordance with *[insert the name of a standard reference guide, or full details of the methods to be used]*
6.

The price and rates entered in the Bills of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Constructional plant to be used, labour, insurance, supervision, compliance testing, materials, erection, maintenance of works, overheads and profits, taxes and duties together with all general risks, liabilities and obligations set out or implied in the Contract, transport, electricity and telephones, water, use and replenishment of all consumables, including those required under the contract by the Engineer and his staff.

Bill of Quantities Summary		Amount (KShs)
BILL NO.	Description	
1	OFFICE ADMINISTRATION AND OVERHEADS / PRELIMINARIES	
4	SITE CLEARANCE	
5	EARTHWORKS	
7	EXCAVATION AND FILLING FOR STRUCTURES	
8	CULVERT AND DRAINAGE WORKS	
9	PASSAGE OF TRAFFIC	
15	BITUMINOUS SURFACE TREATMENT AND SURFACE DRESSING	
16	BITUMINOUS MIXES	
17	CONCRETE WORKS	
19	STRUCTURAL STEELWORK	
20	ROAD FURNITURE REPAIR	
21	MISCELLANEOUS BRIDGE WORKS	
a	<i>SUB TOTAL 1</i>	
	CONTIGENCIES (10% OF SUB-TOTAL 1)	
	VARIATION OF PRICE (10% OF SUB-TOTAL 1)	
b	<i>SUB TOTAL 2</i>	
	Add 16% VALUE ADDED TAX	
	GRAND TOTAL	

Bill No.1	OFFICE ADMINISTRATION AND OVERHEADS / PRELIMINARIES				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh))
1.01A	Publicity signs (supply and erect)	No.	2.00		
1.02A	Payment for Material testing as detailed in Appendix C and as maybe instructed by the Engineer	Sum	1,101,200	1.00	1,101,200
1.02B	Extra over item 01-80-010 for contractors' overheads and profits	%	1,101,200		
1.03	Allow Payment for survey equipment as per Schedule in Appendix D to be used by the Engineer's Representative for the entire duration of the Contract. Ownership to revert to the Client.	Sum	1.00		
1.04A	Provide, fuel and maintain for the duration of the contract, complete with drivers and comprehensive insurance, three (3) fully loaded 4WD double cabin pickups of minimum 3200cc Turbo diesel engine capacity complete with weather shields, stainless steel nudge bar, tonneau cover; hard sports type, lockable all as per cl. 138 of special specifications and approved by the Engineer, inclusive of the first 4000km per vehicle month.	V. mth	108.00		
1.04B	Extra Over Item 1.11 for Kilometers travelled in any month in excess of 4,000 for the vehicles provided in Item 1.11 for all running costs	km	30,000.00		
1.05	Payment of Engineer Miscellaneous account to be spent in whole or part as detailed in Appendix B	Sum	1.00		
1.06A	Allow a provisional sum for removal and alteration of services inclusive of liaison with the appropriate bodies including all activities required of the Contractor in accordance with Specifications. Such services include: water, powerlines, telecommunication cables etc.	PC Sum	2,500,000	1.00	2,500,000
1.06B	Include percentage of Item 1.15 for the Contractor's overheads and profit	%	2,500,000		
	Attendance to the Engineer				

1.07A	Payment of Engineers Supervisory Staff including overtime in accordance with clause 137 & 140 of Special Specifications and as per remuneration Rates in Appendix A as instructed by the Engineer	Sum	39,331,200	1.00	39,331,200
1.07B	E.O. item 1.17 for the contractor's overheads and profit.	%	39,331,200		
1.08A	Allow a lump-sum for training of Employer's Engineers, technicians and other staff as directed by Engineer (Refer to Appendix E)	Sum	4,520,000	1.00	4,520,000
1.08B	E.O. item 1.17 for the contractor's overheads and profit.	%	4,520,000		
1.09A	Allow sum for acquisition of NEMA Licenses and Environmental Mitigation measures as instructed by the Engineer.	Sum	1,000,000	1.00	1,000,000
1.09B	E.O. item 1.17 for the contractor's overheads and profit.	%	1,000,000		
	Total of Bill No. 1 Carried forward to Grand Summary Page				

Bill No.4	SITE CLEARANCE				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
	KITHYOKO BRIDGE				
4.01	Tree cutting and stump removal (200-450 mm)	No	2		
4.02	Light bush clearing	m ²	800		
4.03	Top soil stripping 200mm deep	m ³	720		
	Sub - Total A				
	NGUUTANI BRIDGE				
4.04	Tree cutting and stump removal (>450 mm) before river training.	No	2		
4.05	Light bush clearing	m ²	800		
4.06	Top soil stripping 200mm deep	m ³	720		
	Sub - Total B				
	KAVENGE BRIDGE				
4.07	Tree cutting and stump removal (>450 mm)	No	1		
4.08	Light bush clearing	m ²	400		
4.09	Top soil stripping 200mm deep	m ³	720		
	Sub - Total C				
	KAVAINI BRIDGE				
4.1	Light bush clearing	m ²	1600		
4.11	Top soil stripping 200mm deep	m ³	720		
	Sub - Total D				
Total of Bill No. 4 Carried forward to Grand Summary Page					

Bill No.5	EARTHWORKS				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
	KITHYOKO BRIDGE				
5.01	Cut to spoil in soft material	m ³	300		
5.02	Cut to spoil in hard material	m ³	30		
5.03	Compaction of 300mm below formation level in cut	m ³	180		
5.04	Provide, place and compact rockfill as directed	m ³	440		
	Sub - Total A				
	NGUUTANI BRIDGE				
5.05	Cut to spoil in soft material	m ³	300		
5.06	Cut to spoil in hard material	m ³	30		
5.07	Compaction of 300mm below formation level in cut	m ³	180		
5.08	Provide, place and compact rockfill as directed	m ³	420		
	Sub - Total B				
	KAVENGE BRIDGE				
5.09	Cut to spoil in soft material	m ³	300		
5.1	Cut to spoil in hard material	m ³	30		
5.11	Compaction of 300mm below formation level in cut	m ³	180		
5.12	Provide, place and compact rockfill as directed	m ³	440		
	Sub - Total C				
	KAVAINI BRIDGE				
5.13	Cut to spoil in soft material	m ³	300		
5.14	Cut to spoil in hard material	m ³	30		
5.15	Compaction of 300mm below formation level in cut	m ³	180		
5.16	Provide, place and compact rockfill as directed	m ³	420		
	Sub - Total D				
Total of Bill No. 5 Carried forward to Grand Summary Page					

Bill No.7	EXCAVATION AND FILLING FOR STRUCTURE				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
	KITHYOKO BRIDGE				
7.01	Stone pitching	m ²	800		
7.02	Excavation for gabion boxes and mattress in soft material	m ³	100		
7.03	Provide and place approved gabion mattresses as specified or as directed by the Engineer	m ²	275		
7.04	Provide, handle and place rock fill to gabions boxes and mattresses	m ³	50		
7.05	Allow for grouting of the rock fill where necessary	m ²	100		
	Sub - Total A				
	NGUUTANI BRIDGE				
7.06	River training in soft material	m ³	500		
7.07	Provide and place approved gabion boxes and mattresses as specified or as directed by the Engineer	m ²	825		
7.08	Provide and place rock fill to gabions and mattresses	m ³	150		
7.09	Allow for grouting of the rock fill where necessary	m ²	150		
7.1	Stone pitching	m ²	800		
	Sub - Total B				
	KAVENGE BRIDGE				
7.11	Stone pitching	m ²	800		
7.12	Provide and place approved gabion boxes and mattresses as specified or as directed by the Engineer	m ²	5390		
7.13	Provide and place rock fill to gabions and mattresses	m ³	980		
7.14	Allow for grouting of the rock fill where necessary	m ²	1960		
	Sub - Total C				

	KAVAINI BRIDGE				
7.15	Provide and place approved gabion boxes and mattresses as specified or as directed by the Engineer	m ²	440		
7.16	Provide and place rock fill to gabions and mattresses	m ³	80		
7.17	Masonry slope protection	m ²	1600		
	Sub - Total D				
Total of Bill No. 7 Carried forward to Grand Summary Page					

Bill No.8	CULVERT AND DRAINAGE WORKS				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
8.01	Supply of corrugated steel pipe culverts of steel grade S250 and sheet thickness of minimum 3.5mm and diameter 1.5m and final measured length of 1.0m	Pcs	100		
8.02	Supply of corrugated steel pipe culverts of steel grade S250 and sheet thickness of minimum 3.5mm and diameter 1.8m and final measured length of 1.0m	Pcs	100		
8.02B	Supply of corrugated steel pipe culverts of steel grade S250 and sheet thickness of minimum 3.5mm and diameter 2.0m and final measured length of 1.0m	Pcs	100		
	Sub - Total A				
	KITHYOKO BRIDGE				
8.03	Provide, lay and join 1200mm inner dia concrete pipes	MT	32.5		
8.04	Provide and place class 15/20 concrete to beds, drifts and approach slabs	M ³	75		
8.05	Provide and place class 25/20 concrete to headwalls, wing walls, aprons, surrounds to walls, inlets and outlets to pipe culverts including formwork	M ³	378		
	Sub - Total B				
	NGUUTANI BRIDGE				
8.06	Provide, lay and join 1200mm inner dia concrete pipes	MT	32.5		
8.07	Provide and place class 15/20 concrete to beds, drifts and approach slabs	M ³	70		
8.08	Provide and place class 25/20 concrete to headwalls, wing walls, aprons, surrounds to walls, inlets and outlets to pipe culverts including formwork	M ³	235		
	Sub - Total C				

	KAVENGE BRIDGE				
8.09	Provide, lay and join 1200mm inner dia concrete pipes	MT	32.5		
8.1	Provide and place class 15/20 concrete to beds, drifts and approach slabs	M ³	75		
8.12	Provide and place class 25/20 concrete to headwalls, wing walls, aprons, surrounds to walls, inlets and outlets to pipe culverts including formwork	M ³	382		
	Sub – Total D				
	KAVAINI BRIDGE				
8.13	Provide, lay and join 1200mm inner dia concrete pipes	MT	32.5		
8.14	Provide and place class 15/20 concrete to beds, drifts and approach slabs	M ³	70		
8.15	Provide and place class 25/20 concrete to headwalls, wing walls, aprons, surrounds to walls, inlets and outlets to pipe culverts including formwork	M ³	220		
	Sub - Total E				
Total of Bill No. 8 Carried forward to Grand Summary Page					

Bill No.9	Passage of Traffic				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
	KITHYOKO BRIDGE				
	Diversion of 1 km road of width 6.5m; gravel thickness 0.15m				
9.01	Heavy grading with watering and compaction	m ²	4500		
9.02	Provide and place gravel material on diversion	m ³	675.0		
9.03	Watering twice per day for 60 days to keep dust down	m ³	468		
	Drift;				
9.04	Excavation in soft material	m ³	175		
9.05	Rock fill; for drift bed	m ³	310		
9.06	Reinforcement	Tons	6		
9.07	Concrete Class 25/20 for drift inclusive of formwork	m ³	176		
	Signages				
9.08	Warning signs	No.	4		
9.09	Edge maker posts for drift	No.	8		
	Sub - Total A				
	NGUUTANI BRIDGE				
	Diversion of 1 km road of width 6.5m; gravel thickness 0.15m				
9.1	Heavy grading with watering and compaction	m ²	4500		
9.11	Provide and place gravel material on diversion	m ³	675.0		
9.12	Watering twice per day for 60 days to keep dust down	m ³	468		
	Drift;				
9.13	Excavation in soft material	m ³	70		
9.14	Rock fill; for drift bed	m ³	120		
9.15	Reinforcement	Tons	3		
9.16	Concrete Class 25/20 for drift inclusive of formwork	m ³	70		
	Signages				
9.17	Warning signs	No.	4		
9.18	Edge maker posts for drift	No.	8		
	Sub - Total B				

	KAVENGE BRIDGE				
	Diversion of 1 km road of width 6.5m; gravel thickness 0.15m				
9.19	Heavy grading with watering and compaction	m ²	4500		
9.2	Provide and place gravel material on diversion	m ³	675.0		
9.21	Watering twice per day for 60 days to keep dust down	m ³	468		
	Drift;				
9.23	Excavation in soft material	m ³	90		
9.24	Rock fill; for drift bed	m ³	160		
9.25	Reinforcement	Tons	3		
9.26	Concrete Class 25/20 for drift inclusive of formwork	m ³	90		
	Signages				
9.27	Warning signs	No.	4		
9.28	Edge maker posts for drift	No.	8		
	Sub - Total C				
	KAVAINI BRIDGE				
	Diversion of 1 km road of width 6.5m; gravel thickness 0.15m				
9.29	Heavy grading with watering and compaction	m ²	4500		
9.3	Provide and place gravel material on diversion	m ³	675.0		
9.31	Watering twice per day for 60 days to keep dust down	m ³	468		
	Drift;				
9.33	Rock fill; for drift bed	m ³	110		
9.34	Reinforcement	Tons	2		
9.35	Concrete Class 25/20 for drift inclusive of formwork	m ³	60		
	Signages				
9.36	Warning signs	No.	4		
9.37	Edge maker posts for drift	No.	8		
	Sub - Total D				
Total of Bill No. 9 Carried forward to Grand Summary Page					

Bill No.15	BITUMINOUS SURFACE TREATMENT AND SURFACE DRESSING				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
	KITHYOKO BRIDGE				
15.01	Provide, spread and roll 10/14 mm precoated chippings as directed by the Engineer	m ³	7		
15.02	Provide, heat, cut to suit and spray 80/100 Pen. grade bitumen at rate of 0.7-1.1 L/m2 as binder for single seal; all in accordance with the specifications and as directed by the Engineer.	L	500		
	Sub - Total A				
	NGUUTANI BRIDGE				
15.03	Provide, spread and roll 10/14 mm precoated chippings as directed by the Engineer	m ³	3		
15.04	Provide, heat, cut to suit and spray 80/100 Pen. grade bitumen at rate of 0.7-1.1 L/m2 as binder for single seal; all in accordance with the specifications and as directed by the Engineer.	L	160		
	Sub - Total B				
	KAVENGE BRIDGE				
15.05	Provide, spread and roll 10/14 mm precoated chippings as directed by the Engineer	m ³	3		
15.06	Provide, heat, cut to suit and spray 80/100 Pen. grade bitumen at rate of 0.7-1.1 L/m2 as binder for single seal; all in accordance with the specifications and as directed by the Engineer.	L	215		
	Sub - Total C				

	KAVAINI BRIDGE				
15.07	Provide, spread and roll 10/14 mm precoated chippings as directed by the Engineer	m ³	2		
15.08	Provide, heat, cut to suit and spray 80/100 Pen. grade bitumen at rate of 0.7-1.1 L/m ² as binder for single seal; all in accordance with the specifications and as directed by the Engineer.	L	135		
	Sub - Total D				
Total of Bill No. 15 Carried forward to Grand Summary Page					

Bill No.16	BITUMINOUS MIXES				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
	KITHYOKO BRIDGE				
16.01	Provide lay and compact 50 mm thick Type II Superpave Asphalt Concrete wearing course on carriageway and as bridge surfacing in accordance with the specifications and as directed by the Engineer	m ³	30		
16.02	Provide and spray K1-70 tack coat on road carriageway at rate of 0.3-0.8L/m ² ; all in accordance with the specifications and as directed by the Engineer	L	570		
	Sub - Total A				
	NGUUTANI BRIDGE				
16.03	Provide lay and compact 50 mm thick Type II Superpave Asphalt Concrete wearing course on carriageway and as bridge surfacing in accordance with the specifications and as directed by the Engineer	m ³	10		

16.04	Provide and spray K1-70 tack coat on road carriageway at rate of 0.3-0.8L/m ² ; all in accordance with the specifications and as directed by the Engineer	L	80		
	Sub - Total B				
	KAVENGE BRIDGE				
16.05	Provide lay and compact 50 mm thick Type II Superpave Asphalt Concrete wearing course on carriageway and as bridge surfacing in accordance with the specifications and as directed by the Engineer	m ³	15		
16.06	Provide and spray K1-70 tack coat on road carriageway at rate of 0.3-0.8L/m ² ; all in accordance with the specifications and as directed by the Engineer	L	270		
	Sub - Total C				
	KAVAINI BRIDGE				
16.07	Provide lay and compact 50 mm thick Type II Superpave Asphalt Concrete wearing course on carriageway and as bridge surfacing in accordance with the specifications and as directed by the Engineer	m ³	10		
16.08	Provide and spray K1-70 tack coat on road carriageway at rate of 0.3-0.8L/m ² ; all in accordance with the specifications and as directed by the Engineer	L	190		
	Sub - Total D				
Total of Bill No. 19 Carried forward to Grand Summary Page					

Bill No.17	CONCRETE WORKS				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
	KITHYOKO BRIDGE				
17.01	Provide, cut bend and fix into position high yield reinforcement bar of any size to BS 4461 as directed and as shown on the drawing	Ton	30		
17.02	Provide and place concrete of the deck slab and sidewalk of Class 25 and provision of deck drainage with piping and fittings as per the drawings.	m ³	167		
17.03	Horizontal formwork class F2 finish	m ²	588		
17.04	Allow for removal of steel girders for surface treatment launching, erecting and placing of the same to the final bridge position.	No.	30		
	Sub - Total A				
	NGUUTANI BRIDGE				
17.05	Provide, cut bend and fix into position high yield reinforcement bar of any size to BS 4461 as directed and as shown on the drawing	Ton	3		
17.06	Provide and place concrete of the deck slab and sidewalk of Class 25 and provision of deck drainage with piping and fittings as per the drawings.	m ³	10		
17.07	Horizontal formwork class F2 finish	m ²	200		
17.08	Allow for removal of steel girders for surface treatment launching, erecting and placing of the same to the final bridge position.	No.	10		
	Sub - Total B				

	KAVENGE BRIDGE				
17.09	Provide, cut bend and fix into position high yield reinforcement bar of any size to BS 4461 as directed and as shown on the drawing	Ton	12		
17.1	Provide and place concrete of the deck slab and sidewalk of Class 25 and provision of deck drainage with piping and fittings as per the drawings.	m ³	70		
17.11	Horizontal formwork class F2 finish	m ²	310		
17.12	Allow for removal of steel girders for surface treatment launching, erecting and placing of the same to the final bridge position.	No.	15		
	Sub - Total C				
Total of Bill No. 19 Carried forward to Grand Summary Page					

Bill No.19	STRUCTURAL STEELWORK				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
19.00	Provide and install trapezoidal steel sheet plate for decking of 5mm as instructed by the Engineer. Rate to include welding, bolting and anti-corrosion painting as per specifications.	Tons	10		
	KITHYOKO BRIDGE				
19.01	Surface cleaning of steel girders and crossbeams by abrasive blasting, apply 2 surface coatings of galvanic cathodic protectionon with 96% zinc product.	m ²	733		
19.02	Tightening of loose bolts	LS	1		
19.03	Provide and properly weld/fuse in place C-section steel bracings as instructed by the Engineer	Tons	3.5		
19.04	Provide and properly weld/fuse in place 20mm thick S355 steel plate to bottom flange of girders as directed by the Engineer	Tons	45		
19.05	Provide and properly weld/fuse in place 3 No. shear stud per row at 300mm longitudinal spacing. Size of shear stud is 150mm height by 30mm diameter and caps of 50mm diameter by 30mm thickness	No	5400		
	Sub - Total A				
	NGUUTANI BRIDGE				
19.06	Surface cleaning of steel girders and crossbeams by abrasive blasting, apply 2 surface coatings of galvanic cathodic protectionon with 96% zinc product.	m ²	225		

19.07	Tightening of loose bolts	LS	1		
19.08	Replacement of any size bolts as directed by the Engineer	No.	10		
19.09	Provide and properly weld/fuse in place C-section steel bracings as instructed by the Engineer	Tons	1.5		
19.1	Provide and properly weld/fuse in place 20mm thick S355 steel plate to bottom flange of girders as directed by the Engineer	Tons	4		
19.11	Provide and properly weld/fuse in place 3 No. shear stud per row at 300mm longitudinal spacing. Size of shear stud is 150mm height by 30mm diameter and caps of 50mm diameter by 30mm thickness	No.	1060		
	Sub - Total B				
	KAVENGE BRIDGE				
19.1	Surface cleaning of steel girders and crossbeams by abrasive blasting, apply 2 surface coatings of galvanic cathodic protection with 96% zinc product.	m ²	426.00		
19.11	Replacement of any size bolts as directed by the Engineer	no.	20.00		
19.12	Provide and properly weld/fuse in place C-section steel bracings as instructed by the Engineer	Tons	2.00		
19.13	Provide and properly weld/fuse in place 20mm thick S355 steel plate to bottom flange of girders as directed by the Engineer	Tons	7.00		
19.14	Tightening of loose bolts	LS	1.00		
19.15	Provide and properly weld/fuse in place 3 No. shear stud per row at 300mm longitudinal spacing. Size of shear stud is 150mm height by 30mm	No.	1,700.00		

	diameter and caps of 50mm diameter by 30mm thickness				
	Sub - Total C				

	KAVAINI BRIDGE				
19.16	Surface cleaning of steel girders and crossbeams by abrasive blasting, apply 2 surface coatings of galvanic cathodic protectionon with 96% zinc product.	m ²	213		
19.17	Replacement / tightening of any size bolts as directed by the Engineer	LS	1		
	Sub - Total D				
Total of Bill No. 19 Carried forward to Grand Summary Page					

Bill No.20	ROAD FURNITURE				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
	KITHYOKO BRIDGE				
20.01	Provide and fix pipe handrails to bridges as shown on the drawings and as directed by the Engineer.	m	145		
20.02	Provide and fix guard rails to bridges as shown on the drawings guard rail post and anchor bolting to the bridge deck and guard rail reflectors as directed by the Engineer.	m	145		
20.03	Provide yellow marking with thermoplastic material	m ²	8		
20.04	Provide white marking with thermoplastic material	m ²	15		
20.05	Provide and erect chevrons complete with composite posts	No.	4		
	Sub - Total A				
	NGUUTANI BRIDGE				
20.06	Provide and fix pipe handrails to bridges as shown on the drawings and as directed by the Engineer.	m	46		
20.07	Provide and fix guard rails to bridges as shown on the drawings guard rail post and anchor bolting to the bridge deck and guard rail reflectors as directed by the Engineer.	m	45		
20.08	Provide yellow marking with thermoplastic material	m ²	3		
20.09	Provide white marking with thermoplastic material	m ²	5		
20.1	Provide and erect chevrons complete with composite posts	No.	4		
	Sub - Total B				

	KAVERGE BRIDGE				
20.11	Provide and fix pipe handrails to bridges as shown on the drawings and as directed by the Engineer.	m	70		
20.12	Provide and fix guard rails to bridges as shown on the drawings guard rail post and anchor bolting to the bridge deck and guard rail reflectors as directed by the Engineer.	m	70		
20.13	Provide yellow marking with thermoplastic material	m ²	4		
20.14	Provide white marking with thermoplastic material	m ²	7		
20.15	Provide and erect chevrons complete with composite posts	No.	4		
	Sub - Total C				
	KAVAINI BRIDGE				
20.16	Provide and fix pipe handrails to bridges as shown on the drawings and as directed by the Engineer.	m	43		
20.17	Provide and fix guard rails to bridges as shown on the drawings guard rail post and anchor bolting to the bridge deck and guard rail reflectors as directed by the Engineer.	m	43		
20.18	Provide yellow marking with thermoplastic material	m ²	3		
20.19	Provide white marking with thermoplastic material	m ²	5		
20.2	Provide and erect chevrons complete with composite posts	No.	4		
	Sub - Total D				
Total of Bill No. 20 Carried forward to Grand Summary Page					

Bill No.21	MISCELLANEOUS BRIDGE WORKS				
Item No.	Description	Units	Quantity	Rate (Ksh)	Amount (KSh)
	KITHYOKO BRIDGE				
21.01	Hacking and removal of the existing deck together with side rails. Cart away of materials to an approved dumping site.	LS	1		
21.02	Jack up girder and jack down after bearing replacement	LS	1		
21.03	Supply, fit and fix in position true to line and level elastomeric bearings complete with all accessories as per the drawings and specifications.	No.	61		
21.06	Provide and install Finger type Expansion joint as instructed or in drawings.	m	60.2		
21.07	Repair the damages to the bridge elements with epoxy mortar coating to seal exposed reinforcement and cracks.	m ²	5		
21.08	Cleaning of the bearing seat areas for the abutments and piers	m ²	101		
	Sub - Total A				
	NGUUTANI BRIDGE				
21.09	Hacking and removal of the existing deck together with side rails. Cart away of materials to an approved dumping site.	LS	1		
21.1	Jack up girder and jack down after bearing replacement	LS	1		
21.11	Supply, fit and fix in position true to line and level elastomeric bearings complete with all accessories as per the drawings and specifications.	No.	21		
21.14	Provide and install Finger type Expansion joint as instructed or in drawings.	m	8.6		
21.15	Repair the damages to the bridge elements with epoxy mortar coating to seal exposed reinforcement and cracks.	m ²	25		

21.16	Cleaning of the bearing seat areas for the abutments and piers	m ²	5		
	Sub - Total B				
	KAVERGE BRIDGE				
21.17	Hacking and removal of the existing deck together with side rails. Cart away of materials to an approved dumping site.	LS	1		
21.18	Jack up girder and jack down after bearing replacement	LS	1		
21.19	Supply, fit and fix in position true to line and level elastomeric bearings complete with all accessories as per the drawings and specifications.	No.	31		
21.2	Fixing of formwork, casting of the deck slab and sidewalk with Class 25 concrete and provision of deck drainage with piping and fittings as per the drawings.	m ³	70		
21.21	Horizontal formwork class F2 finish	m ²	310		
21.22	Provide and install Finger type Expansion joint as instructed or in drawings.	m	17.2		
21.23	Repair the damages to the bridge elements with epoxy mortar coating to seal exposed reinforcement and cracks.	m ²	11		
21.24	Cleaning of the bearing seat areas for the abutments and piers	m ²	100		
	Sub - Total C				

	KAVAINI BRIDGE				
21.25	Provide and fix water tight expansion joint with structural steel and anchorage assembly complete as per the drawings, specifications and directed by the Engineer, including acceptance testing as specified, to be installed under supervision of a specialist.	m	9		
21.26	Provide and fix water tight non - expansion joint with structural steel and anchorage assembly complete as per the drawings, specifications and directed by the Engineer, including acceptance testing as specified, to be installed under supervision of a specialist.	m	18		
21.27	Extend the drainage pipes in the bridge deck as instructed	No.	8		
21.28	Relocate the drainages that are above the cross beams	No.	4		
21.29	Cleaning of the bearing seat areas for the abutments and piers	m ³	6.5		
21.3	Sectional repair to joints area/ concrete slab	m ³	1		
21.31	Sectional repair to top of concrete slab	m ³	1		
21.32	Crack injection on bottom slab with epoxy material	m	171		
21.33	Place carbon fibre sheets under bridge deck as per the drawings, special specifications and directed by the Engineer	m ²	160		
	Sub - Total D				
Total of Bill No. 21 Carried forward to Grand Summary Page					

Appendix A - Payment of Engineers Supervisory Staff including overtime						
S/No	Description		Allowances/Wages & Salaries			
		Unit	Contract Duration (Construction period - 24 months)	Contract Duration (DLP period - 6 months)	Rate per day/ month	Amount (Kshs)
1	Project Engineer	Man - Days	528	120	4,200.00	2,721,600.00
2	Assistant Project Engineer	Man - Days	528	120	2,800.00	1,814,400.00
3	Resident Engineer	Man - Days	528	120	3,500.00	2,268,000.00
4	Assistant Resident Engineer	Man - Days	528	120	2,800.00	1,814,400.00
4	Project Surveyor	Man - Days	528	60	2,800.00	1,646,400.00
5	Project Sociologist/Environmental/ or other officers as appointed by the Engineer	Man - Days	528	60	3,500.00	4,116,000.00
6	Project Bridge Inspector	Man - Days	528	60	2,800.00	1,646,400.00
6	Assistant Engineers (1No.)/ or other officers as appointed by the Engineer	Man-Months	24	0	117,500.00	2,820,000.00
7	Project Inspector/ or other officers as appointed by the Engineer	Man-Months	24	0	75,500.00	1,812,000.00
8	Project Surveyor/ or other officers as appointed by the Engineer	Man-Months	24	0	93,500.00	4,488,000.00
9	Project Chainman/ or other officers as appointed by the Engineer	Man-Months	24	0	36,500.00	1,752,000.00

10	Trainee Engineer (2 No.)	Man-Months	24	0	50,000.00	2,400,000.00
11	Office Administrator/ or other officers as appointed by the Engineer	Man-Months	24	0	67,500.00	1,620,000.00
	Office Assistant/ or other officers as appointed by the Engineer	Man-Months	24	0	36,500.00	876,000.00
12	Lab Technician/ or other officers as appointed by the Engineer	Man-Months	24	0	52,500.00	1,260,000.00
13	Lab Attendant/ or other officers as appointed by the Engineer	Man - Months	24	0	36,500.00	876,000.00
14	Casuals (3no.)	Man - Months	72	0	25,000.00	5,400,000.00
GRAND TOTAL						39,331,200.00

APPENDIX B

KeNHA RE's OFFICE MISCELLANEOUS EXPENSES

<u>1. Stationaries & Consumables</u>	-	-	-	-	-
NO.	DESCRIPTION	UNIT	Quantity	Rate (Ksh)	Amount (Ksh)
1	A3 Photocopy Papers (White)	Reams	10		
2	A4 Photocopy Papers (White)	Reams	350		
3	A4 Photocopy Papers (Coloured)	Reams	120		
4	Paper Conqueror Laid A4 (Blue, Cream)	Reams	10		
5	External Hard Disk 1TB	No.	5		
6	In/Out-tray	No.	10		
7	Flash Disk 64GB (OTG)3.0	No.	10		
8	Reflector Jackets	No	200		
9	Gumboots	No.	50		
10	Rains coats	No.	50		
11	Diaries	No.	50		
12	Scientific Calculator	No	5		
13	Cordless Mouse	No	5		
14	Mouse Pads	No	10		
15	Hp Toner- for HP Color LaserJet Pro MFP M404dn	No.	10		
16	Hp Toner-Cb541A for HP OfficeJet Pro 8710	sets	10		
17	Hp Toner- for HP Color LaserJet Pro M283fdw	Set	6		
18	Toner for KYOCERA ECOSYS M6235cidn KX	set	10		
19	Toner for KYOCERA TASKALF 2553ci	set	3		

20	Provide and maintain the Engineer's staff mobile Phones as per Special Specifications	No	4		
21	Provide and maintain four Laptops / design work stations computers as per clause 133 of the Special Specifications complete with specified printer and software to the approval of the Engineer to revert to his office at the end of the project.	No	4		
22	Provide and maintain two personal computers as per clause 133 of the Special Specifications to the approval of the Engineer to revert to his office at the end of the project.	No	2		
23	Consumables and Lunches	No	24	50,000.00	1,200,000.00
GRAND TOTAL CARRIED FORWARD TO BILL ITEM 1.05					

APPENDIX C

LAB TESTS CHARGE SHEET AS PER MTRD

CONCRETE CUBES				
S/No.	Description	Cost (Kshs)	No of Test	Total Cost (Kshs)
1	Cube Crushin per Cube	400	48	19,200.00
2	Making and Crushing of cubes (set of 3)	1500	4	6,000.00
AGGREGATES				
1	Flakines Index (FI)	600	3	1,800.00
2	Bulk Density	500	3	1,500.00
3	LAA	1000	3	3,000.00
4	ACV	1000	3	3,000.00
5	Seave Analysis(Course Aggregates)	500	3	1,500.00
6	Seave Analysis(Fine Aggregates and Sand)	500	3	1,500.00
7	Water Absorption and Specific Gravity	900	3	2,700.00
8	SG	500	3	1,500.00
9	Silt and Clay Content	500	3	1,500.00
10	AIV	700	3	2,100.00
11	10% Fines	1200	3	3,600.00
12	Weathering 5 cycles(SSS)	3000	3	9,000.00
13	Arithmetical Mix Design(Calculation only)	2500	3	7,500.00

14	Concrete mix Design (Complete)	10000	2	20,000.00
TAR,BITUMEN,ASPHALTS & SEALING COMPOUNDS				
1	Desiltation of volatiles	750	2	1,500.00
2	Water Content in Bitumen	750	2	1,500.00
3	Penetration Test	500	2	1,000.00
4	Softening Point	500	2	1,000.00
5	Viscosity of Petroleum Products	750	2	1,500.00
6	Pre-Mix Design analysis	6000	2	12,000.00
7	Mix Desing including Marshall & Voids	15000	2	30,000.00
8	Crushing Marshall Specimen (Sets of 3)	1800	2	3,600.00
9	Solubility in Trychloroethylene or Carbon Di-sulphide	750	2	1,500.00
10	Ductility Test in Bitumen	500	2	1,000.00
11	Differentiation Between Tar and Bitumen (Spot Test Only)	300	2	600.00
12	Identifiacion of solvents	500	2	1,000.00
13	Fibre Aggregates	500	2	1,000.00
14	Identifacion of deparated fibre, aggregates etc.	500	2	1,000.00
15	Flash Point of Petroleum Products	750	2	1,500.00
16	Ash Content	1000	2	2,000.00
17	EVT (Determination)	500	2	1,000.00
18	Affinity for Bitumen	750	2	1,500.00
19	Mastic Asphalt Analysis	4000	2	8,000.00
20	Loss on Heating Test	1000	2	2,000.00

21	Recovery of Bitumen from Mixes	3000	2	6,000.00
22	Hot Extraction Method	1500	2	3,000.00
23	Analysis of emulsified Bitumen	1500	2	3,000.00
24	Stability of Sand Mixes	1000	2	2,000.00
25	Storage Stability of emulsion(Short Period)	950	2	1,900.00
26	Partial Charge Test on Emulsion	750	2	1,500.00
27	Wet Track Abrasion Test on Bitumen Emulsion Slurry	4000	2	8,000.00
28	Bitumen Content Determination by Use of Nucler Gauge	1000	2	2,000.00
29	Surface Texture Depth Determination	900	2	1,800.00
30	Premix/ Asphaltic Specific gravity Determination	750	2	1,500.00
31	Core Cutting per core	1500	2	3,000.00
32	Mix Design by vibrating Hammer Method	15000	1	15,000.00
33	Mix Design By Gyratory Compactor Method	17500	2	35,000.00
34	Core Analysis Including Binder Recovery and testing	7500	2	15,000.00
35	Surface Dressing Design	5000	2	10,000.00
36	Spread and Spray Rate Measurement per test	1000	2	2,000.00
37	Slurry Seal Design	5000	2	10,000.00
38	CutBack Bitumen Design and Analysis	10000	2	20,000.00

SOIL ANALYSIS				
1	Determination of liquid, plastic and linear shrinkage (Atterbergs)	500	2	1,000.00
2	Seave Analysis Down to 200 Mesh (0.075mm) Dry	400	2	800.00
3	Seave Analysis Down to 200 Mesh (0.075mm) Wet	500	2	1,000.00
4	Complete sieve analysis	1000	2	2,000.00
5	Moisture density (compaction test) BS or MOD, AASHTO T180	1100	2	2,200.00
6	CBR statically compacted to 100% MDD, OMC AT 4 Day soak	800	2	1,600.00
7	CBR for stabilized samples	1200	2	2,400.00
8	Determination of specific gravity of medium grained soils	600	2	1,200.00
9	UCS tests on stabilised soil 200 x 100 mm dia. Set of 3 tests only	1500	2	3,000.00
10	Moisture content determination	400	2	800.00
11	Sand replacement test for stabilised samples	750	2	1,500.00
12	Moisture/Density content determination (Compaction Test) Proctor T90 - Sample Preparation before testing	300	2	600.00
13	Moisture/Density content determination (Compaction Test) Proctor T90 - Vibrating Hammer	1600	2	3,200.00

OTHERS				
1	Thermoplastic Paint Testing with beads	10000	3	30,000.00
2	Guardrail Flex Beam, Post,Bolts and Nuts	6500	2	13,000.00
3	Gabion Box	6500	2	13,000.00
4	Major Tests on AC	18000	5	90,000.00
5	Destructive tests on elastomeric bearings	20000	5	100,000.00
6	Chemical Analysis of Cement	4000	4	16,000.00
7	Cat eyes	4400	4	17,600.00
	SubTotal A			601,200.00
	Description	Quantity	Rate	Amount
	Allowances for MTRD Team	500,000.00	1	500,000.00
	SubTotal B			500,000.00
GRAND TOTAL CARRIED FORWARD TO BILL ITEM 1.03				1,101,200.00

APPENDIX D				
TECHNICAL SPECIFICATION FOR SURVEY EQUIPMENT				
Item Description	Unit	Quantity	Rate	Amount
Comnav N3 Base Rover Configuration (RTK) including;	No.	1		
2 No. Comnav N3 Receiver Set				
1 No. Comnav R550 Data Collector Set + Android Survey Master Field Software (current version) & supporting other data collection software i.e., field genius, Carlson-SurvCe + Rotating Tribrach Adapter				
1 No. G73007 Tribrach with optical plummet(Leica style), Green 1.00 G61102 Pole clamp+vial+compass				
1 No. G61207 Quick Release cradles				
1 No. G22000 Fiber Glass Round Head Tripod, Black 1				
1 No. G61009 Snap-Lock Rover Rods 2m				
Foif RTS010 Total Staion including(Accessories);	No.	1		
1 No. Prism Pole				
1 No. Circular Prism				
1 No. Wooden Tripod				
Bosch. Automatic Level including;	No.	1		
5m leveling Staff				
Aluminium Tripod				
Grand Total Carried to Bill 1.03				

APPENDIX E

PART I : PAYMENT FOR TRAINING

S.No.	Description	Amount	No of staff	Total	
1	Specialized training on bridges	2,000,000.00	Group	2,000,000.00	
	SubTotal A			2,000,000.00	
S.No.	Description	Unit	Duration of Contract	Rate per month	Amount (Kshs)
2	Intern Engineers (2No.)	Man - Months	48.00	25,000.00	1,200,000.00
3	Intern Inspectors (2No.)	Man - Months	48.00	25,000.00	1,200,000.00
4	Attaches (16No.)	Man - Months	12.00	10,000.00	120,000.00
	SubTotal B				2,520,000.00
	GRAND TOTAL				4,520,000.00
GRAND TOTAL CARRIED TO BILL ITEM 1.08					

SECTION VII: STANDARD SPECIFICATIONS

Standard Specifications refers to the Standard Specifications for Road and Bridge Construction, 1986 Edition.

Standard Specifications will apply for any works or processes not specified in the Special Specifications.

SECTION VIII: SPECIAL SPECIFICATIONS

TABLE OF CONTENTS

SECTION VIII: SPECIAL SPECIFICATIONS	142
1. SECTION 1 – GENERAL	148
101 SPECIAL SPECIFICATIONS.....	148
102 LOCATION OF CONTRACT.....	148
103 CONTRACT DRAWINGS.....	152
104 PROGRAMME OF EXECUTION OF THE WORKS.....	155
105 ORDER OF EXECUTION OF WORKS	155
106 SUBMISSION TO THE ENGINEER: WORKMANSHIP AND QUALITY CONTROL	155
107 CERTIFICATE OF SUBSTANTIAL COMPLETION.....	156
108 METHOD OF CONSTRUCTION	156
109 NOTICE OF OPERATIONS.....	156
117 HEALTH, SAFETY, AND ACCIDENTS	157
119 USE OF EXPLOSIVES.....	157
120 PROTECTION OF EXISTING WORKS AND SERVICES.....	157
121 DIVERSION OF SERVICES	157
123 LIAISONS WITH GOVERNMENT AND POLICE OFFICIALS.....	158
124 LAND FOR ALL CAMPS SITES AND FOR THE CONTRACTOR'S OWN PURPOSES, INCLUDING TEMPORARY WORKS	158
126 MATERIALS AND MANUFACTURED GOODS	158
127 INFORMATION FROM EXPLANATORY BORING AND TEST PITS	158
128 STORAGE OF MATERIALS.....	159
129 TEST CERTIFICATES.....	159
130 PROGRESS PHOTOGRAPHS.....	160
131 SIGNBOARDS.....	160
132 MAIN OFFICE.....	160
133 ENGINEERS OFFICE.....	160
134 ENGINEER'S LABORATORY AND SURVEY EQUIPMENT.....	169
137 ATTENDANCE UPON THE ENGINEER AND HIS STAFF.....	169
138 VEHICLES AND DRIVERS FOR THE ENGINEER AND HIS STAFF AND METHOD OF PAYMENT.....	170
139 RECEIPTED ACCOUNTS.....	171
140 HOUSING ACCOMMODATION FOR THE RESIDENT ENGINEER AND HIS STAFF, OFFICE AND LABORATORY INCLUDING FURNITURE.....	171

142	ENVIRONMENTAL PROTECTION	174
2.	SECTION 2 – MATERIALS AND TESTING OF MATERIALS	176
202	TESTING BY THE CONTRACTOR	176
204	SIEVES	176
205	SOILS AND GRAVEL	176
211	BITUMINOUS BINDERS	176
214	PRESTRESSING STEEL.....	176
224	TRIAL SECTIONS	176
226	FREQUENCY OF TESTING	177
227	MEASUREMENT AND PAYMENT	177
228	WORKMANSHIP AND QUALITY CONTROL	177
3.	SECTION 3 - SETTING OUT AND TOLERANCES.....	179
301	SETTING OUT	179
302	TOLERANCES	179
305	AS BUILT DRAWINGS AND MAINTENANCE MANUALS.....	180
4.	SECTION 4 - SITE CLEARANCE AND TOP SOIL STRIPPING.....	181
401	SITE CLEARANCE.....	181
402	REMOVAL OF TOPSOIL	181
403	REMOVAL OF STRUCTURES, FENCES AND OBSTRUCTIONS...	181
5.	SECTION 5 –EARTHWORKS	182
501	SCOPE OF SECTION	182
503	CLASSIFICATION OF MATERIAL	182
504	PREPARATION PRIOR TO FORMING EMBANKMENT.....	182
505	CONSTRUCTION OF EMBANKMENTS.....	183
508	COMPACTION OF EARTHWORKS	183
509	MASS-HAUL DIAGRAM	184
510	SPOIL MATERIAL.....	184
511	BORROW PITS	184
514	TOPSOILING AND GRASSING	184
515	SIDE DRAINS.....	184
517	MEASUREMENT AND PAYMENT	184
6.	SECTION 6 - QUARRIES, BORROW PITS, STOCKPILES AND SPOIL AREAS.....	186
603	GENERAL	186
605	SAFETY AND PUBLIC HEALTH REQUIREMENT	186

607	SITE CLEARANCE AND REMOVAL OF TOPSOIL AND OVERBURDEN	186
611	OBTAINING OF BORROW MATERIALS	186
612	OPENING AND WORKING OF BORROW PITS	187
613	REINSTATEMENT OF BORROW AREAS	188
614	DISPOSAL OF BORROW MATERIAL	189
615	MEASUREMENT AND PAYMENT	189
7.	SECTION 7 - EXCAVATION AND FILLING FOR STRUCTURES	190
703	EXCAVATION OF FOUNDATIONS FOR STRUCTURES	190
707	BACKFILLING FOR STRUCTURES	190
709	EXCAVATIONS FOR RIVER TRAINING AND NEW WATER COURSES	190
710	STONE PITCHING	190
711	GABIONS	191
712	RIP-RAP PROTECTION WORK	193
714	BACKFILL BELOW STRUCTURES	194
8.	SECTION 8 - CULVERT AND DRAINAGE WORKS	195
801	SCOPE OF SECTION	195
804	EXCAVATION FOR CULVERTS AND DRAINAGE WORKS	195
805	EXCAVATION IN HARD MATERIAL	195
809	BEDDING AND LAYING OF PIPE CULVERTS	196
810	JOINTING CONCRETE PIPES	197
811	CONCRETE BEDS, SURROUNDS AND HAUNCHES	197
812	BACKFILLING OVER PIPE CULVERTS	197
813	PRECAST CONCRETE OPEN CHANNELS	198
814	SUBSOIL DRAINS	199
817	MITRE DRAINS, CUT-OFF DRAINS, CATCHWATER DRAINS, SIDE DRAINS, CULVERT OUTFALL DRAINS AND EARTH DAMS	200
819	CLEANING AND MAINTENANCE	201
820	MEASUREMENT AND PAYMENT	201
9.	SECTION 9 – PASSAGE OF TRAFFIC	203
901	TRAFFIC CONTROL AND DEVIATIONS	203
903	MAINTENANCE OF EXISTING ROAD	204
904	CONSTRUCTION OF DEVIATIONS	204
906	PASSAGE OF TRAFFIC THROUGH THE WORKS	205
907	SIGNS, BARRIERS AND LIGHTS	205
909	ASSISTANCE TO PUBLIC	205

912	MEASUREMENT AND PAYMENT	205
13.	SECTION 15 - BITUMINOUS SURFACE TREATMENTS....	207
	PART A – GENERAL.....	207
1501A	BITUMINOUS SURFACE TREATMENT.....	207
1504A	HEATING OF BITUMINOUS BINDER	207
1505A	ADHESION AGENT	207
1506A	CONSTRUCTION LIMITATIONS	207
	PART B - PRIME COAT	208
1502B	MATERIALS FOR PRIME COAT AND TACK COAT	208
1504B	SPRAYING OF PRIME COAT AND TACK COAT	208
1506B	TOLERANCES	208
14.	SECTION 16 - BITUMINOUS MIX BASES, BINDER COURSES AND WEARING COURSES	209
	PART A – GENERAL.....	209
1603A	CONSTRUCTION PLANT	209
1606A	SITE TRIALS	209
1607A	MIXING OF AGGREGATES AND BITUMEN.....	209
1608A	TRANSPORTING THE MIXTURE	210
1609A	LAYING THE MIXTURE	210
1610A	COMPACTION	211
1611A	FINISHING, JOINTS AND EDGES.....	211
1614A	TOLERANCES	212
1616A	MEASUREMENT AND PAYMENT FOR ROAD REINFORCEMENT.....	212
	PART B - ASPHALT CONCRETE FOR SURFACING.....	212
1601B	DEFINITION	212
1602B	MATERIALS FOR ASPHALT CONCRETE.....	213
1603B	GRADING REQUIREMENTS	214
1604B	REQUIREMENTS FOR ASPHALT CONCRETE.....	215
1605B	MIXING AND LAYING ASPHALT	216
1606B	COMPACTION	216
15.	SECTION 17 - CONCRETE WORKS.....	216
1703	MATERIALS FOR CONCRETE	216
1703	DESIGN OF CONCRETE MIXES	216
1704	THE DESIGN OF CONCRETE MIXES-I	217
1713	FINISHES ON UNFORMED SURFACES	217
1725	SURFACE FINISHES	217
1728	REINFORCEMENT FOR CONCRETE	217

1741	MEASUREMENT AND PAYMENT	217
17.	SECTION 20 - ROAD FURNITURE.....	219
2001	ROAD RESERVE BOUNDARY POSTS	219
2002	FENCING AND GATES	219
2003	EDGE MARKER POSTS	219
2004	PERMANENT ROAD SIGNS	219
2004B	EXISTING ROAD SIGNS	219
2005	ROAD MARKING	219
2005A	RAISED PAVEMENT MARKERS – ROAD STUDS.....	219
2006	GUARDRAILS.....	221
2007	KERBS.....	221
2008	KILOMETER MARKER POSTS	221
2009	RUMBLE STRIPS.....	221
2010	TREES	222
2012	SERVICE DUCTS	222
2013	ROAD HUMPS.....	222
2014	RAISED ZEBRA CROSSING.....	222
2015	DUCT MARKER POSTS	222
2016	CULVERT MARKER POSTS	223
2017	BOLLARDS	223
2018	PLOT BOUNDARY BEACONS	223
2019	CHANNEL BLOCKS.....	223
2021	MEASUREMENT AND PAYMENT	223
18.	SECTION 21 – MISCELLANEOUS BRIDGE WORKS.....	226
2103	MOVEMENT JOINTS AND SEALANTS	226
2106	SURFACING BRIDGES.....	226
19.	SECTION 22 -DAYWORKS.....	242
2202	MEASUREMENTS AND PAYMENT.....	268
21.	SECTION 25 - HIV/AIDS, GENDER ISSUES, SOCIAL ISSUES AND LOCAL PARTICIPATION	269
2501	SCOPE OF THIS SECTION	269
2502	INTERPRETATION AND DOCUMENTATION.....	269
2503	GENERAL REQUIREMENTS	269
2504	MEASUREMENT AND PAYMENT	272
22.	SECTION 26 – ROAD SAFETY CAMPAIGN.....	272
2601	SCOPE OF THIS SECTION	273
2602	GENERAL REQUIREMENTS	273

2603	MEASUREMENT AND PAYMENT	275
24.	SECTION 28-ENVIRONMENTAL MITIGATION	
	MEASURES	277
2801	MEASUREMENT AND PAYMENT	277

1. SECTION 1 – GENERAL

101 SPECIAL SPECIFICATIONS

Special specification is supplementary to the Standard Specifications and the two must be read in conjunction. In any case where there appears to be conflict between the two then the Special Specifications will take precedence.

In the absence of any definite provisions on any particular issue in the aforesaid Specifications, reference may be made to the latest codes and specifications of Design Manual for Roads and Bridges of the Ministry of Transport and communication of the Republic of Kenya, Kenya Bureau of Standards (KEBS), BS, ASTM, AASHTO and in that order. Where even these are silent, the construction and completion of the works shall conform to sound engineering practice as approved by the Engineer and in case of any dispute arising out of the interpretation of the above, the decision of the Engineer shall be final and binding on the Contractor.

Where reference is made in the Contract to specific standards codes to be met by the materials, plant, and other supplies to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards as on the date of the bid and codes/design manual in effect shall apply, unless otherwise expressly stated in the contract. Where such standards and codes/design manual are national, or relate to a particular country or region, other internationally recognized standards which ensure a substantially equal or higher performance than the standards and codes/design manual specified will be accepted subject to the Engineer's prior review and written approval. The difference between the standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Engineer at least 28 days prior to the date when the Contractor desires the Engineer's approval. In the event that the Engineer determines that such proposed deviations do not ensure substantially equal performance, the Contractor shall comply with the standards specified in the documents.

When the term "Period of Maintenance" has been used in the Standard Specifications, it shall be changed to "Defects Liability Period".

102 LOCATION OF CONTRACT

The four bridges to be repaired and maintained are Kithyoko Bridge, Nguutani Bridge, Kavenge Bridge and Kavaini Bridge along Garissa – Thika Road A3. They are steel girder bridges whose construction was completed in the 1970s.

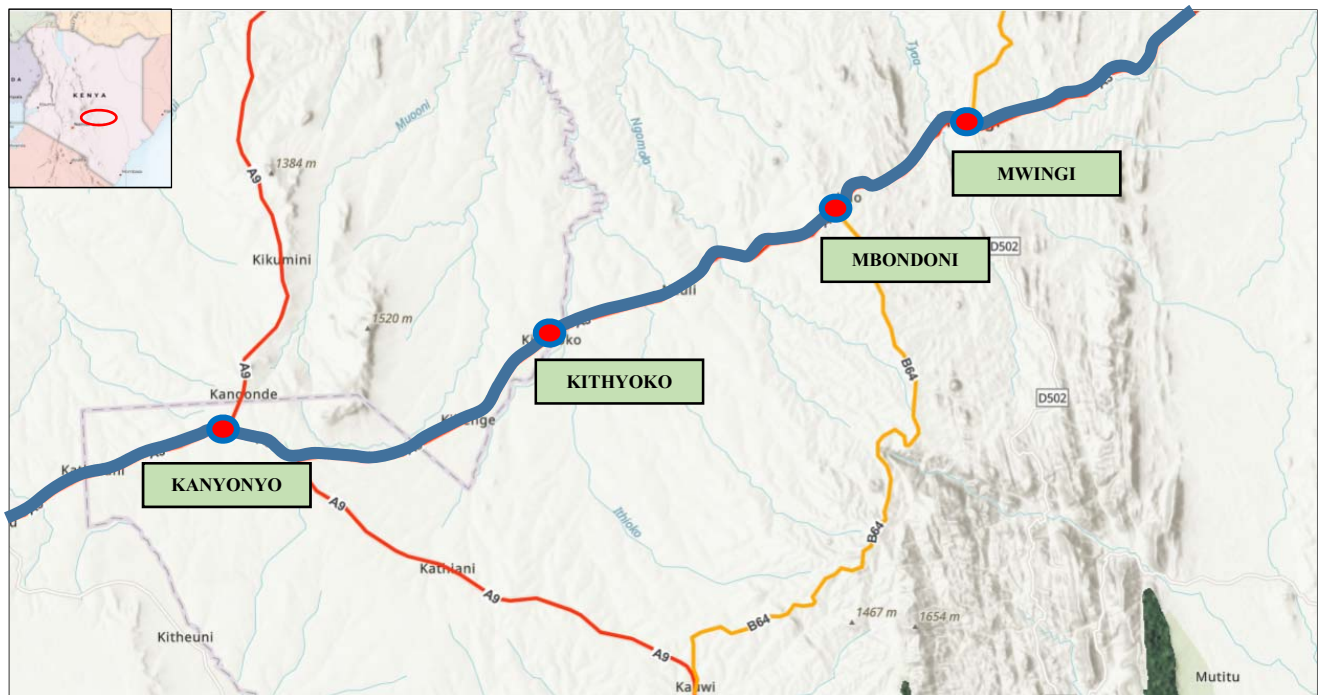
Kithyoko Bridge superstructure consists of five steel girders of 0.533 m depth, transferring the load from the superstructure to the abutments and piers through the bearings. The bridge spans a seasonal river with six spans: three spans measuring 10.5 m long and the other three (3) span measuring 13.5 m long. The bridge serves as a crossing over the seasonal river connecting the two county governments i.e. Machakos County and Kitui County.

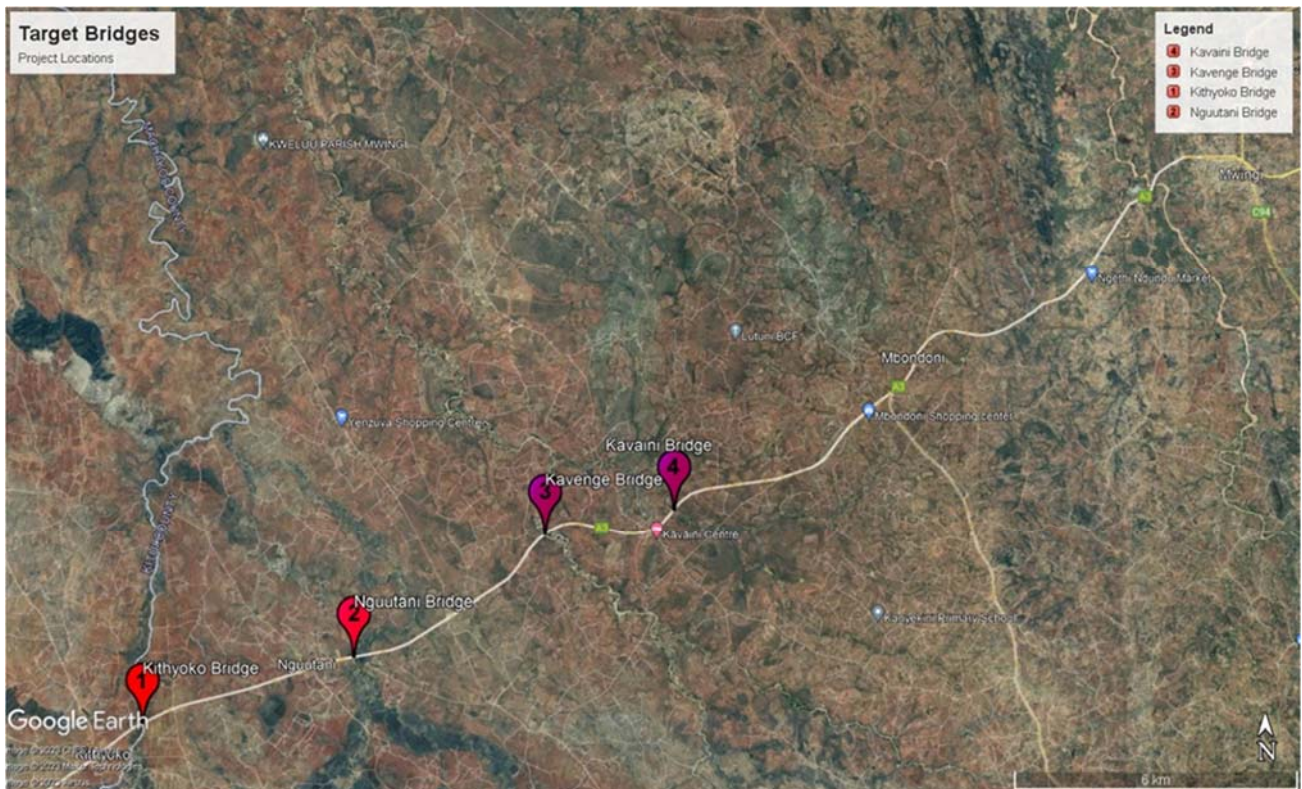
Nguutani Bridge superstructure consists of five steel girders of 0.533 m depth, transferring the load from the superstructure to the abutments and piers through the bearings. The bridge spans a seasonal river with two (2) spans: each span measuring 11.2 m long. The bridge serves as a crossing over the seasonal river that passes near Nguutani Center.

Kavenge Bridge superstructure consists of five steel girders, transferring the load from the superstructure to the abutments and piers through the bearings. The bridge spans a seasonal river with three (3) spans: the edge spans measure 9.1 and 9.2 m long while the middle span measures 15.7 m long. The steel girders of the end spans have a depth of 0.533 m while the steel girders at the middle span have a deeper depth of 0.903 m. The bridge serves as a crossing over the seasonal Tyaa River.

Kavaini Bridge superstructure consists of five steel girders of 0.533 m depth, transferring the load from the superstructure to the abutments and piers through the bearings. The bridge spans a seasonal river with two (2) spans: each span measuring 10.5 m long. The bridge serves as a crossing over the seasonal river that passes near Kavaini Center.

Location Map





102 EXTENT OF CONTRACT

The repair and maintenance works on the bridges include deck replacement at Kithyoko, Nguutani and Kavenge Bridges and deck strengthening at Kavaini Bridge.

Temporary diversions consisting of gravel roads and drifts will be constructed alongside the bridges within the right-of-way.

The works to be executed under the Contract consist of, but are not limited to, the following:

A. Preliminary Items and General Earthworks

1. Provision and maintenance of accommodation, office, laboratory, transport and equipment for the Engineer's Representative.
2. Site Clearance and setting out.

B. Bridge Repair Works

1. Cleaning of the carriageway;
2. Provision and setting up scaffolding for the repair works;
3. Removal of existing deck slab;
4. Sectional repair of deck slab at the joints;
5. Cleaning of girders and cross-beams;
6. Cleaning of the bridge seat areas for the abutments and piers;
7. Cleaning of bottom of the deck slab and crack injection of cracks on the deck slab;

8. Production of concrete mix to the required strength and quality control parameters;
9. Construction of a 220 mm thick, 8.6 m wide reinforced concrete deck slab;
10. Waterproofing on top of deck slab;
11. Carbon fiber sheet bonding on the bottom surface of the deck slab;
12. Extending drainage pipes;
13. Relocating drainage pipes above the cross beams;
14. Replace, and/or tightening of bolts;
15. Mobilizing and setting up equipment necessary for jacking up the girders;
16. Bearing replacement;
17. Painting / Zinganzation of the steel girders and cross-beams;
18. Dismantling and removal of scaffolding;
19. Road surface construction (Pavement and accessories);
20. Provision of slope protection works on approaches and around abutments;
21. River training of the river channel;
22. Any other ancillary operations to the main works;
23. Maintenance of works during the construction period;
24. Defect liability period according to specifications; and,
25. Any other activity not listed above in either category but deemed necessary by the Engineer, shall be subject to the Engineer's formal instructions and within the stipulated mode of payment.

C. Road Works

1. Construction and maintenance of Deviation and provision of passage of traffic through the works;
2. The Construction of the road shall be as follows:
 - a) Heavy grading with watering and compaction;
 - b) Provide and place gravel material on the diversion road;
 - c) Watering the diversion to keep dust down;
 - d) Excavations for drifts;
 - e) Provision and placement of rockfill for drifts;
 - f) Provision and placement of reinforcement for the drifts;
 - g) Provision and placement of concrete to drifts including formwork; and,
 - h) Provision of diversion signs and edge marker post on the drifts.

The works will also include any operation necessary for the safe and convenient passage of traffic at all times.

The Works detailed above are only indicative of the Scope of Works associated with this Contract and the Engineer may, where necessary, substitute some of the Works with others within the project area without substantially altering the overall Scope of the Works. Work shall be measured and paid using the relevant rates and prices in the Bill of Quantities.

The works will also include for any operations necessary for the safe and convenient passage of through and local traffic at all times

103 CONTRACT DRAWINGS

Contract drawings have been bound in a book of drawings accompanying these Contract Documents as a separate volume. Additional copies of these drawings that may be required by the Contractor can be obtained from the Engineer; in which case the Contractor will be required to reimburse the cost of producing such additional copies.

The Engineer may from time to time, in order to enable the satisfactory completion of the works, revise, amend or supersede any of these drawings. It shall be the Contractor's responsibility to construct all works in conformity with the latest revision, amendment or superseding drawings, provided that the Engineer has given to the Contractor in writing such reasonable prior notices of intention to revise, amend or supersede as the nature of the intended change requires, and the relevant drawings have been issued to the Contractor.

The changed drawings shall entitle the Contractor such reasonable additional payments as provided for in the Contract, including any abortive work carried out by the Contractor prior to notice of intent to undertake changes having been given.

The Contractor may be required to demolish, alter and/or correctly rebuild at his own expense any part of the Works not in conformity with the current drawings issued to him within a reasonable prior notice.

The drawings for the project are contained in the following:

1. BOOK OF DRAWINGS

Three types of drawings shall be distinguished: Contract drawings; Shop or Erection drawings and As-Constructed drawings as described here under:

(a) Contract Drawings

- i. Contract drawings are drawings that form part of the Contract Documents and are hereby referred to as Drawings. These are base or fundamental drawings that originate from the Engineer or his Representative and express the intention, general form, serviceability and strength of the final element, component, product or structure. They should be read together with the Specifications comprising Standard and Special Specifications.

- ii. Errors: The Contractor shall verify and be responsible for the correctness of all dimensions other than the principal controlling dimensions shown on the Drawings, and shall call to the attention of the Engineer any errors or discrepancies that may be discovered. The Contractor shall have no claim for damages that may result from following an error, except for an error in the principal controlling dimensions or material properties shown on the Drawings or listed in the specifications.
- iii. Principal Controlling Dimensions and Material Properties: Pre-stressing is precision engineering. The following shall be considered principal controlling dimensions and material properties. Any change requires pre-authorization by the Engineer.
 - Length of span (i.e., the horizontal distance between bearing centrelines, or other points of support).
 - Length, width and depth of the precast, pre-stressed or cast in place concrete unit.
 - Thickness of flanges and webs.
 - Elevations of pedestals, bridge seats, and other supports for precast, pre-stressed or Cast in Place (CIP) concrete units.
 - Jacking force.
 - Ultimate strength of pre-stressing steel.
 - Ultimate strength or grade of reinforcing bars.
 - Characteristic concrete compressive strength of concrete measured either as cylinder or cube strength.

(b) Shop Drawings

- i. Shop drawings show what is to be fabricated and the methodology of fabrication by the contractor. The drawings express the proposed process and methodology (i.e., the ways, means and how) of using his resources in order to achieve the output intended under the contract as expressed in the Contract Drawings.
- ii. The Contractor shall prepare complete and accurate shop drawings showing how each concrete unit or entire structure will be fabricated or constructed. These drawings shall be made as soon as possible after the contract award and shall be designated as shop drawings. Supporting documents are sometimes required as part of a shop drawing submittal. Supporting documents include any additional information required by the Engineer and intended to supplement the shop drawings, such as design calculations. When a shop drawing submittal includes calculations, both the drawings and the calculations shall be stamped and signed by a Professional Engineer licensed to practice in Kenya. Shop drawing submittals that are not complete, as determined by the Engineer may be returned without examination. The responsibility for checking and approving the shop drawings is the responsibility of the Engineer. The shop drawings are to be submitted by the contractor to the Engineer for examination and approval. Reasonable time allowed for pre-stress shop drawing review by the Engineer is 45 days.
-
- iii. The shop drawings shall include the following information: -
 - Fabrication Dimensions: The Contractor shall be responsible for modifying the dimensions of precast units to compensate for elastic shortening, shrinkage, grade correction, and other phenomena that make in-process fabricating dimensions different from those shown on the plans.

- All dimensions, layouts, and calculations shall be checked. Information /data relating to the following specific items will require to be submitted:
 - ✓ Lay out details and general cross-sectional details;
 - ✓ Bridge begins, end, and pier stations as needed.
 - ✓ Centre to centre of bearing dimensions, for all spans.
 - ✓ Details and locations of all other items to be embedded in the units, shall be clearly detailed.
 - ✓ Type and location of lifting device for all concrete units to be fabricated.
 - ✓ Details showing how the units will be lifted and/or rotated, how they will be stored in the fabrication yard, and all relevant transportation details, including how they will be placed on the truck.
 - ✓ The initial and final force variations between girders.
 - ✓ The assumed camber due to the beam dead load at transfer of force (without growth) as shown on the plans.
 - ✓ Bearing plate stresses and concrete stresses behind the bearing plates.
 - ✓ Whether one or two end stressing is used.
 - ✓ Shop drawings shall be integrated and show all reinforcing steel and hardware within each unit.
 - ✓ The orientation of the bearing plate, usually by providing offsets to a horizontal
 - ✓ Method(s) for the protection of the ducts from chloride contamination, dirt contamination, crushing, excessive bending, ultraviolet degradation, etc. during handling, storage and transportation (grout caps, etc.).
 - ✓ Splicing of steel plates
 - ✓ Details of method of piling

(c) Erection Drawings

- Erection drawings shall show the process of transportation, handling, erection and integration of separate structural elements and components into an integrated structure.
- If the precast elements that will be fabricated using the approved shop drawings are to be handled, lifted or transported thus exposing them to additional load are to be connected together in the field (segmental construction), Erection drawings will be required and will be submitted together with and at the same time with shop drawings.
- Supporting documents include any additional information required by Engineer and intended to supplement the installation drawings, such as design calculations, material test results, lifting and handling stress checks, segment deflections and construction load checks. Calculations required as supporting documents to the installation drawings shall be stamped, and signed by a licensed Professional Engineer, who has demonstrated experienced in composite steel bridge design and construction.

(d) As-Constructed Drawings

- a) Definition: As-Constructed drawings shall be drawings showing the final details of the

element, component or bridge as constructed.

- b) As part of preparation of As-constructed drawings, at the completion of each structure on the contract, the contractor shall submit to the Engineer one set of reduced prints of the corrected original tracings of all working drawings. Reduced prints of drawings that are common to more than one structural member is required to be submitted for each member. The first drawing of each reduced plan set shall contain an index. The index sheet shall be prepared specifically for the set of drawings and list sheet numbers and titles for each structure. Reduced prints for each structure shall be arranged in order of drawing numbers shown on the index.
- c) The Engineer shall review the drawings so prepared by the Contractor for accuracy and use them for prepare the As-Constructed drawings. The Drawings shall include and brief notes on construction methodology that may be considered useful for maintenance or monitoring. They may also include any special maintenance required or specified by the equipment manufacturers. On completion of the contract, the drawings prepared and filed in appropriate format shall be submitted to the Engineer as part of Project Closure documents for record.

104 PROGRAMME OF EXECUTION OF THE WORKS

Modify Clause 104 to read as follows:

The Contractor shall provide the works programme required under Clause 14 of Conditions of Contract within fourteen (14) days of receipt of the Engineer's order to commence work. The programme shall be in the form of a computerized critical path method, and shall be updated every two months to reflect all the circumstances affecting the progress of the works at that time. MS Project software or equivalent will be preferred.

The programme shall take into account all climatic and any other adverse conditions and ensure that the works are completed in the order and within the time specified.

The Contractor shall carry out the works in accordance with the programme agreed with the Engineer, but he shall in no manner be relieved by the Engineer's approval of the programme, to complete the works in the prescribed order and by the prescribed date. He shall continuously review his progress and make such amendments to his production rate as may be necessary to complete all of the works by the Contract Completion date.

105 ORDER OF EXECUTION OF WORKS

In addition to Section 105 of the Standard Specification, the Contractor shall carry out the Works such that a continuous and consecutive output of fully completed work is achieved.

106 SUBMISSION TO THE ENGINEER: WORKMANSHIP AND QUALITY CONTROL

The Contractor shall, not later than 4 weeks after the notice to commence the Works, submit a project specific Quality Management System, including the Work Method Statements and Quality Audit for major items of work, showing how all the Contractor's systems will ensure that all the works will conform to the Contract documents. The onus rests with the Contractor to produce work which conforms in quality and accuracy of detail to all the requirements of the Specifications and

Drawings, and the Contractor shall, at his/her own expense, institute a quality control system and provide experienced engineers, foremen, surveyors, materials technicians, other technicians and other technical staff, together with all transport, instruments and equipment, to ensure adequate supervision and positive control of the Works at all times. The Contractor shall provide chainmen and labourers as necessary for the Engineer to carry out checks on the Works.

The Contractor shall conduct tests or have them conducted continually on a regular basis, to check the properties of natural materials and processed natural materials and of products manufactured on the site, such as concrete and asphalt. The Contractor shall remain fully responsible for any defective material or equipment provided by him. Similarly, the quality of all elements of the Works shall be checked on a regular basis so as to ensure compliance with the specified requirements.

The intensity of control and of tests to be conducted by the Contractor in terms of these obligations shall be adequate to ensure that proper control is being exercised.

Where any natural materials or products made from natural materials are supplied, and upon completion of each element of the construction work, the Contractor shall test and check such materials, products and/or elements for compliance with the specified requirements and shall submit his results to the Engineer for approval. Such submission shall include all his measurements and test results and shall furnish adequate proof of compliance with the specified requirements.

No specific pay items are provided as compensation for the above obligations, including the provision of all samples delivered to the Engineer, the repair of places from which samples were taken, and the provision of the necessary personnel and testing apparatus and facilities, for which compensation shall be included in the bid rates of the Contractor for the various items of work to which these obligations apply.

The Contractor shall submit to the Engineer for examination, the results of all relevant tests, measurements and levels indicating compliance with the Specifications on completion of every part of the Work.

107 CERTIFICATE OF SUBSTANTIAL COMPLETION

The minimum length of road for which a certificate will be issued shall be the whole of the project road lengths comprised in the lot when substantially completed.

The restoration of borrow pits and quarries is subject to the restoration requirements of Section 6 of these Specifications.

108 METHOD OF CONSTRUCTION

The Engineer's normal working hours shall be 8 hours from Monday to Friday and 5 hours on Saturday with Sunday set aside for rest.

If the Contractor wishes to execute permanent works outside these hours, he shall meet any extra costs arising thereof in addition to giving a day's notice in writing.

109 NOTICE OF OPERATIONS

Add the following sub- Clause.

Notification Terms

It shall be the Contractor's responsibility to notify the Engineer when any item of works scheduled are completed and ready for approval, and the Contractor shall give sufficient notice to allow control test to be performed.

117 HEALTH, SAFETY, AND ACCIDENTS

Add to sub-clause 19.1 the following:

In addition to providing, equipping and maintaining adequate first aid stations throughout the works in accordance with the Laws of Kenya, the Contractor shall provide and maintain on site during the duration of the Contract, a fully equipped dispensary. This shall be with a qualified Clinical Officer / Nurse who shall offer the necessary medical advice on HIV and related diseases to the Engineer's and Contractor's Site staff. The Contractor shall allow for this in the rates and be responsible for all site welfare arrangements at his own cost.

119 USE OF EXPLOSIVES

Add to clause 119

Explosive and Blasting

The requirements of the Laws of Kenya governing explosives and other requirements and regulations of Government of Kenya and other authorities shall be complied with.

No explosives of any kind shall be used without prior written consent of the Engineer.

The Contractor shall be solely responsible for the provision, handling, and storage and transporting of all explosives, ancillary materials and all other items of related kind whatsoever required for blasting.

120 PROTECTION OF EXISTING WORKS AND SERVICES

a) The Contractor shall acquaint himself with the position of all existing services such as sewers, water drains, cables for electricity and telephone, lighting and telephone poles, water mains, etc., before commencing any excavation or other work likely to affect the existing services.

The cost of all plant, equipment and materials, labour, technical and professional staff, transport and the like necessary for determining the locations of existing services, including the making good of any damage caused to such services all to the satisfaction of the Engineer, shall be deemed to be included in the tender rates. No other payment shall be made for the costs of such operations or for the making good of damage caused thereby to the existing services.

b) The Contractor shall be held responsible for injury to existing structures, works or services and shall indemnify and keep indemnified the Employer against any claims in this respect (including consequential damages).

121 DIVERSION OF SERVICES

The Contractor shall acquaint himself with the location of all existing services such as telephone lines, electricity cables, water pipes, sewers etc., before execution of any works that may affect the services. The cost of determining the location of the existing services together with making good or repairing of any damage caused all to the satisfaction of the Engineer shall be included in the tender rates.

Subject to the agreement with the Engineer, the Contractor shall be responsible for removal of alteration and relocation of existing services.

The Contractor shall indemnify the Employer against claims originating from damage to existing services or works.

123 LIAISONS WITH GOVERNMENT AND POLICE OFFICIALS

The Contractor shall keep in close touch with the Police and the other Government officials of the area regarding their requirements in the control of traffic or other matters, and shall provide all assistance or facilities, which may be required by such officials in the execution of their duties.

124 LAND FOR ALL CAMPS SITES AND FOR THE CONTRACTOR'S OWN PURPOSES, INCLUDING TEMPORARY WORKS

Notwithstanding Clause 124 of the Standard Specification all requirements of land for temporary works and construction purposes shall be to the approval of the Engineer but the Contractor will make all necessary arrangements with the property owners concerned and pay all charges arising thereon. On or before completion of the Contract, the Contractor shall remove all temporary works and shall restore all such land to the condition in which it was immediately prior to the occupation thereof as far as is reasonable and practicable. No separate payment will be made to the Contractor on account of these items and the Contractor must make due allowance for them in his rates.

Notwithstanding Clause 120 of the Standard Specifications, the Contractor shall be required to appoint a competent surveyor who will liaise with the Engineer on matters related to the demarcation of the existing road reserve, site measurements, removal, and reinstatement of existing services.

126 MATERIALS AND MANUFACTURED GOODS

Notwithstanding the provisions of Clause 126 of the Standard Specification, the Contractor's attention is drawn to his obligations with regard to quality and delivery schedule of materials and goods obtained from suppliers. Should the Engineer at any time be dissatisfied with any goods and materials intended for use by the Contractor upon the Works, he shall be empowered to reject the goods and materials and shall order that others of acceptable quality replace them. Any more work that may consequently have to be redone and the costs of the new supplies shall be borne by the Contractor.

127 INFORMATION FROM EXPLANATORY BORING AND TEST PITS

Omit the content of Clause 127 and substitute the following Sub-Clauses: -

127.1 Factual Materials Report

The Factual Materials Report for this Contract does not form part of the Contract Documents. However, the Report will be made available for the Contractor's information only, and any conclusions on issues such as suitability of materials, location of borrow pits, material quantities etc., made by the Contractor on the basis of the Factual Materials Report, will be at his own risk.

127.2 Trial Sections

The Contractor shall allow in his programme for constructing trial sections and carrying out tests upon them as directed by the Engineer. Trials would normally be required at the start of each pavement layer and if changes of materials, method, or equipment deem it necessary, as directed by the Engineer. The time for completion of the Contract shall not be extended because of the time needed to construct trial sections and evaluate the tests on them.

At least fourteen days before the work of laying any pavement layer is commenced, the contractor shall construct trial sections of at least 100 m in length and to the full construction width and the specified pavement layer thickness. For each trial section, the Contractor shall use the materials, mix proportions, mixing, laying, compaction equipment and construction procedure that he proposes to use for the main work. The main work of laying the pavement layer shall not be commenced until this trial has been tested and approved by the Engineer.

No variation in the construction procedure, mix proportions, size, grading or source of any of the constituents shall be made without the agreement of the Engineer who may first require new trial sections to be carried out.

Trial sections, if found satisfactory, will be paid for under the rates in the Bill of Quantities for the appropriate items, as if the trial sections were part of the normal work. No separate payment will be made for trial sections and testing and the Contractor shall be deemed to have provided for this in his rates.

The Contractor shall make good, at his own expense; any trial sections that fail to meet the specified standards. The standards shall include, but not be limited to, material quality, layer thickness, levels and compaction.

128 STORAGE OF MATERIALS

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

129 TEST CERTIFICATES

When instructed by the Engineer the Contractor shall submit certificates of test from the suppliers of materials and goods required in connection with the works as the Engineer may require.

Such certificates shall certify that the materials or goods concerned have been tested in accordance with the requirements of the specifications and shall give the results of all the tests carried out. The

Contractor shall provide adequate means of identifying the materials and goods delivered to the site with the corresponding certificates.

130 PROGRESS PHOTOGRAPHS

Notwithstanding the provision of Clause 130 of the Standard Specifications, the Contractor shall not be responsible for taking of progress photographs. Progress Photographs shall be taken by the Engineer's Representative and relevant costs charged to the Contractor who will be reimbursed under Miscellaneous Accounts.

131 SIGNBOARDS

Delete paragraph 1 of item 131 of the Standard Specification and replace it with the following:

The Contractor shall provide and erect two (2) project signboards on the site as directed. The minimum dimensions of the boards shall be as shown in the Drawings and as directed by the Engineer. The boards shall be prepared primed and painted cream and lettered in black. The boards shall be of weatherproof construction and be able to withstand any wind conditions prevailing in the area.

132 MAIN OFFICE

The Contractor shall provide and maintain a 100m² mobile office at site with double roof, tropicalized with height not less than 2.25m for the duration of the Contract. This office shall be of weather-proof construction, provided with mosquito proof and burglar-proof windows and lockable doors and suitably insulated against heat and cold, all to the satisfaction of the Engineer. The office shall be sufficient to accommodate all the Resident Engineer's staff on site.

A telephone shall also be provided for the Resident Engineer's office for his exclusive use. The Contractor shall be responsible for paying all charges and fees related to the use of the telephone.

The offices shall be provided with day and night security guards and security lights, the cost of which shall be deemed to have been included in the rates for the offices.

The office for the Resident engineer shall be completely separate from that of the Contractor.

Latrines and washrooms graded to staff seniority, together with a drinkable water supply and waterborne sewage disposal shall be provided for the office. The Contractor shall also provide 24 hours a day security and electricity supply to the offices and shall allow for any water and electricity consumed and for any statutory charges associated.

The main office shall revert to the Contractor at the end of the project.

133 ENGINEERS OFFICE

The Contractor may be instructed by the Engineer under clause 58 of the General Conditions of Contract to make payments of general receipted accounts for such items as stationery, stores, furniture and equipment, claims and allowances for supervision personnel and any miscellaneous claims or the Engineer may direct the Contractor to purchase or pay for the above. The Contractor will, on provision of receipts, be paid under Bills of quantities No. 1.

The Contractor, when instructed, shall provide and install at the Engineer's office the Equipment specified below:

(a) Personal Computer (PC) 2 No.

The rate inserted for the PCs shall include for the provision of the UPS, a Printer and the software specified below for each PC.

1.	Processor & Core Logic	Core i7-7700 3.4GHz, 4 Cores
2.	System Memory	16 GB DDR4
3.	Storage Subsystem	1TB HDD
4.	Form Factor	Tower / Desktop
5.	Power System	220 – 240 V AC Power supply
6.	Display/Graphics	27" TFT Flat panel Color LCD, Same brand as CPU minimum Resolution 1024x768.
7.	Graphics Card	2 GB GDDR5 Dedicated
8.	Keyboard and Pointing Device	Enhanced keyboard & Optical Scroll mouse
9.	Audio	Stereo audio system full multimedia with speakers
10.	Communication interface	100/1000 Mbs Fast Ethernet NIC
11.	I/O interface ports	USB compatible keyboard, Serial Port, Parallel Port, USB Port, Ethernet, VGA Port
12.	Operating System	64-Bit MS Windows 10.
13.	Application Software	Microsoft Office 2016 or later.
14.	Anti-Virus	Latest Antivirus Version with media and License
15.	UPS	700VA UPS
16.	Warranty	1 year
17.	Brochure	Manufacture's Literature and Detailed Specifications (Be Attached)

(b) Laptop 2No.

The rate inserted for the Laptop shall include for the provision of a printer and software specified below for each laptop.

1.	Processor & Core Logic	Intel® Core™ i7-1165G7 (up to 4.7 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores)
2.	System Memory	16 GB DDR4-3200 MHz RAM
3.	Storage Subsystem	1 TB PCIe® NVMe™ M.2 SSD
4.	DVD Drive	None
5.	Power System	65 W AC power adapter: up to 11.5 hours
6.	Display/Graphics	17.3" diagonal, FHD (1920 x 1080), multitouch-enabled, IPS, edge-to-edge glass, micro-edge, Corning® Gorilla® Glass NBT™, 300 nits, 100% sRGB

7.	Audio & Webcam	PCI 3D audio system / Built in Microphone / HP Wide Vision 720p HD camera with camera shutter and integrated dual array digital microphones
8.	Communication interface	Intel® Wi-Fi 6 AX201 (2x2) and Bluetooth® 5 combo
9.	Graphics Card	Integrated: Intel® Iris® Xe Graphics
10.	I/O interface ports	USB/ HDMI Ports
11.	Operating System	Windows 11 Home
12.	Application Software	Latest Ms Office Suite
13.	Anti-Virus	Kaspersky Antivirus
14.	Accessories	Leather Carry Case and Wireless Mouse
15.	Battery Life	Min 10 hrs
16.	Warranty	One (1) Year

(c) Design Workstations

2No.

The rate inserted for the Laptop shall include for the provision of a printer and software specified below for each laptop.

Feature	Description
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Pre-installed (Windows)	Windows 10 Pro 64
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A. Processors

Intel Xeon W-10885M Processor	2.4 GHz base frequency, up to 5.3 GHz with Intel Turbo Boost Technology 16 MB L3 cache and 8 cores Supports Intel vPro technology Intel UHD Graphics
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Intel Core i9-10885H Processor	2.4 GHz base frequency, up to 5.3 GHz with Intel Turbo Boost Technology 16 MB L3 cache and 8 cores Supports Intel vPro technology Intel UHD Graphics
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Chipset	Intel WM490
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B. Memory

Standard	System runs at 2933 MT/s Supports dual-channel memory Memory soldered down and not upgradeable
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Maximum 32 GB non-ECC SDRAM

C. Graphics

Integrated	Intel UHD Graphics. Supports up to 3 displays including the integrated display Supports HD decode, DirectX 12, and Intel Quick Sync Video
Discrete	NVIDIA Quadro RTX 5000 supporting Max-Q Design (16 GB GDDR6 dedicated)
Supports	Up to 4 displays through discrete graphics and dock NVIDIA Surround Technology for NVIDIA GeForce Graphics HD decode, DirectX 11, DirectX 12 HDMI 1.4, HDCP 2.3 via DisplayPort up to 4K at 60 Hz and via HDMI up to 4K at 30 Hz (for external display supported resolutions)

D. Display

Feature	Description
Display panels (optional)	39.62 cm (15.6 in) diagonal 4K UHD (3840 x 2160) UWVA eDP and PSR Brightview 100% DCI-P3, 400 nits OLED VESA DisplayHDR 500 True Black Certified panel with Corning Gorilla Glass 6 touchscreen
Supported display resolutions	Supports resolutions up to 4K at 30 Hz via HDMI v1.4b Supports resolutions up to 4K at 60 Hz via DisplayPort

E. Storage/drives

Feature	Description
Primary M.2 Solid State Drive storage	2 TB PCIe Gen 3 x4 NVMe TLC SSD

F. Ports/slots

Feature	Description
Ports	(2) USB Type-C port with Thunderbolt 3 support (1) USB 3.1 Gen 1 port (charging) (1) miniDP 1.4 connector

Feature	Description
	(1) Headphone/microphone combo jack (1) AC power input port
Slot	(1) SD 4.0 Media card reader Supports SD, SDHC, and SDXC

G. Audio/multimedia

Feature	Description
Audio	Audio by Bang & Olufsen HP World Facing Microphone with dual-array digital microphone Quad speakers (2 tweeters and 2 woofers)
Camera	720p HD with Temporal Noise Reduction webcam with IR

H. Networking/communication

Feature	Description
Wireless LAN (WLAN)	Intel Wi-Fi 6 AX201 (2x2) and Bluetooth 5 combo, vPro Intel Wi-Fi 6 AX201 (2x2) and Bluetooth 5 combo, non-vPro

I. Software/security

Feature	Description
BIOS	HP BIOSphere Gen6 (available on select platforms) Sure Start Gen6 DriveLock/Automatic DriveLock BIOS Update via Network Power On Authentication Master Boot Record Security Secure Erase (methods outlined in the National Institute of Standards and Technology Special Publication 800-88) Pre-boot Authentication Absolute Persistence Module
Security	Windows Defender (opt in and internet connection required for updates) For Windows 10, Trusted Platform Module (TPM) 2.0 (Infineon SLB9670)

Feature	Description
---------	-------------

Common Criteria EAL4+ Certified

J. Power

Feature	Description
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Primary battery Long Life 6-cell, 83 Wh Li-ion
Supports fast charging

Battery life Up to 18 hours

K. Weight/dimensions

Specification	Description
---------------	-------------

Weight Starting at 1.80 kg (3.97 lb)

Dimensions (W x D x H) **Touch**
35.38 x 23.47 x 1.75 cm (13.93 x 9.24 x 0.69 in)
Non-touch
35.38 x 23.47 x 1.77 cm (13.93 x 9.24 x 0.70 in)

(d) Laser jet Printer - 1No. (To be included with every PC/Laptop)

- | | | |
|-----|----------------------------|--|
| | Print | |
| 1. | Speed Colour | Up to 30ppm Colour Print |
| 2. | Double Sided Printing | Automatic Double-Sided Printing |
| 3. | Printer Resolution | 600 x 600 dpi Print |
| | Scan | |
| 4. | Scanner Optical Resolution | 300 x 300 dpi Scan |
| 5. | Scan Facility Present | Yes |
| 6. | Scanner Features | Scan to e-mail; Scan to network folder |
| 7. | Scanner Type | Colour Flatbed |
| | Copy | |
| 8. | Copier Resolution | 600 x 600 dpi Copy |
| 9. | Copier Functions | Multiple copies Up to 99 |
| | Fax | |
| 10. | Fax Facility Present | Yes |
| | Interfaces | |
| 11. | Interface Type(s) | USB & Network |
| 12. | LCD Screen | 8.89cm Colour Touchscreen |
| 13. | Network Interface | 10/100/1000 Base-TX Network |
| 14. | Network Ready | Yes |

15.	USB Port	Yes
System Specification		
16.	Processor	800MHz Processor
17.	Memory (Maximum)	256MB RAM
Compatibility		
18.	Operating Systems Supported	Windows & Mac Compatible
Media Handling		
19.	Paper Trays	3
20.	Paper Handling Input 1	100 Sheet MPT Tray
21.	Paper Handling Input 2	250 Sheet Input Tray
22.	Paper Handling Input 3	50 Sheet ADF
23.	Automatic Document Feeder	50 Sheet
24.	Media Supported	Paper envelopes, labels,
Physical/Dimensions		
25.	Colour Printer	Yes, Colour
26.	Technology	Multifunction Laser Printer
27.	Dimensions	515mm (W) x 500mm (D) x 538mm (H)- Weight 40.8kg
28.	Power Consumption	605W (Max) / 52W (Standby) / 8.1W (Saving)
29.	Product Type	A4 Laser Printer
30.	Voltage/ Power/ Frequency	240VAC / 60Hz
Software		
31.	Printer Languages	HP PCL 6, HP PCL 5c
32.	Software Included	Windows Installer and HP PCL 6 driver, Mac Installer.
33.	USB Cable	To be included
Warranty		
34.	Warranty	1 Year warranty

Software

Microsoft Office 2016 or later with licence

Antivirus: McAfee Virus Scan Professional (Latest Version)

AUTODESK 2021

(f) Mobile Phones - 4No.

Specifications

<u>Technology</u>	<u>GSM / CDMA / HSPA / EVDO / LTE / 5G</u>
<u>Dimensions</u>	163.4 x 78.1 x 8.9 mm (6.43 x 3.07 x 0.35 in)
<u>Weight</u>	234 g (8.25 oz)
<u>Build</u>	Glass front (Gorilla Glass Victus 2), glass back (Gorilla Glass Victus 2), aluminum frame
<u>SIM</u>	Nano-SIM and eSIM or Dual SIM (2 Nano-SIMs and eSIM, dual stand-by)
	IP68 dust/water resistant (up to 1.5m for 30 min) Armor aluminum frame with tougher drop and scratch resistance (advertised)

<u>Type</u>	Stylus (Bluetooth integration, accelerometer, gyro) Dynamic AMOLED 2X, 120Hz, HDR10+, 1200 nits (HBM), 1750 nits (peak)
<u>Size</u>	6.8 inches, 114.7 cm ² (~89.9% screen-to-body ratio)
<u>Resolution</u>	1440 x 3088 pixels, 19.3:9 ratio (~500 ppi density)
<u>Protection</u>	Corning Gorilla Glass Victus 2
<u>OS</u>	Always-on display Android 13, One UI 5.1
<u>Chipset</u>	Qualcomm SM8550-AC Snapdragon 8 Gen 2 (4 nm)
<u>CPU</u>	Octa-core (1x3.36 GHz Cortex-X3 & 2x2.8 GHz Cortex-A715 & 2x2.8 GHz Cortex-A710 & 3x2.0 GHz Cortex-A510)
<u>GPU</u>	Adreno 740
<u>Card slot</u>	No
<u>Internal</u>	512GB 12GB RAM
<u>Quad</u>	UFS 4.0 200 MP, f/1.7, 24mm (wide), 1/1.3", 0.6µm, multi-directional PDAF, Laser AF, OIS 10 MP, f/4.9, 230mm (periscope telephoto), 1/3.52", 1.12µm, Dual Pixel PDAF, OIS, 10x optical zoom 10 MP, f/2.4, 70mm (telephoto), 1/3.52", 1.12µm, Dual Pixel PDAF, OIS, 3x optical zoom 12 MP, f/2.2, 13mm, 120° (ultrawide), 1/2.55", 1.4µm, Dual Pixel PDAF, Super Steady video
<u>Features</u>	LED flash, auto-HDR, panorama
<u>Video</u>	8K@24/30fps, 4K@30/60fps, 1080p@30/60/240fps, 1080p@960fps, HDR10+, stereo sound rec., gyro-EIS
<u>Single</u>	12 MP, f/2.2, 26mm (wide), Dual Pixel PDAF
<u>Features</u>	Dual video call, Auto-HDR, HDR10+
<u>Video</u>	4K@30/60fps, 1080p@30fps
<u>Loudspeaker</u>	Yes, with stereo speakers
<u>3.5mm jack</u>	No
<u>WLAN</u>	32-bit/384kHz audio Tuned by AKG Wi-Fi 802.11 a/b/g/n/ac/6e, tri-band, Wi-Fi Direct
<u>Bluetooth</u>	5.3, A2DP, LE
<u>Positioning</u>	GPS, GLONASS, BDS, GALILEO
<u>NFC</u>	Yes
<u>Radio</u>	No
<u>USB</u>	USB Type-C 3.2, OTG

<u>Sensors</u>	Fingerprint (under display, ultrasonic), accelerometer, gyro, proximity, compass, barometer
<u>Type</u>	Li-Ion 5000 mAh, non-removable
<u>Charging</u>	45W wired, PD3.0, 65% in 30 min (advertised) 15W wireless (Qi/PMA) 4.5W reverse wireless
<u>Colors</u>	Phantom Black, Green, Cream, Graphite, Sky Blue, Red,
<u>SAR</u>	1.12 W/kg (head) 0.92 W/kg (body)
<u>SAR EU</u>	0.96 W/kg (head) 1.40 W/kg (body)
<u>Performance</u>	AnTuTu: 1241531 (v9) GeekBench: 4927 (v5.1) GFXBench: 67fps (ES 3.1 onscreen)
<u>Display</u>	<u>Contrast ratio: Infinite (nominal)</u>
<u>Camera</u>	Photo / Video
<u>Loudspeaker</u>	<u>-25.6 LUFS (Very good)</u>
<u>Battery life</u>	<u>Endurance rating 126h</u>

Prior to purchase of the computers, laptops, mobile phones and printers, the Contractor shall submit the specifications of the same to the Engineer for approval. The Personal Computers, Laptops, printers and Photocopying Machine shall revert to the Employer at the end of the Contract. The Contractor shall be paid for these items under appropriate bill items in the BoQ.

LIST OF FURNITURE & EQUIPMENT FOR ENGINEER'S OFFICE

ITEM	DESCRIPTION	No.
1	Executive office desk	1
2	Executive office chair	1
3	Conference table 10-seater with chairs	1
4	Standard office desk 3x2 lockable drawers	1
5	Standard office chairs	1
6	Office desks 3x1 lockable drawers	7
7	Office chairs	12
8	Office desks 3x1 drawers	2
10	Filing cabinets 4 drawers	2
11	Curtains/Blinds	As applicable
12	Office cupboard	1
13	Standing Water Dispenser (Hot & Cold)	1
14	Dust bins	3
15	Stapling machine (ofrex) and pins	10
16	Paper punch	10
17	Scientific calculator	5
18	Fully equipped first Aid Kit	2

19	Electric heater fans	2
20	Wall clocks battery powered	2
21	Filing trays	7
22	Waste paper baskets	4
23	Electric or gas cooker with 4 plates and oven	1
24	Refrigerator with freezer capacity 180 litres	1
25	Digital Microwave - 26 Litres - 900W	1
26	Paper Shredder	2

All furniture and equipment bought under the Contract shall revert to the Employer. Payment for provision of the office including the furniture shall be paid against the appropriate bill items in the BoQ.

134 ENGINEER'S LABORATORY AND SURVEY EQUIPMENT

The Contractor may be instructed by the Engineer under the said Clause to make payments of receipted accounts for such items as testing of materials in an approved laboratory, purchase of survey equipment or as directed by the Engineer.

Any delays to the Contractor or the Contractor's activities caused by the Engineer being unable to perform survey work, field or laboratory tests due to the Contractor's failure to supply the said equipment or make such payments shall be deemed to have been caused entirely by the Contractor's own actions, and any consequences of such delays shall be interpreted as such.

The payment to comply with this requirement is provided in the Bill of Quantities and ownership of all equipment shall revert to the Employer after the completion of the Works.

Failure by the Contractor to supply the equipment or make such instructed payments shall make him responsible to bear all costs that may be incurred as a result of the Engineer's staff using alternative means of communication, including delays in supervision and approval of Works by the Engineer.

137 ATTENDANCE UPON THE ENGINEER AND HIS STAFF

The Contractor shall pay wages (including all overtime) and house all attendant staff to fulfil the requirements of Clause 137 of the Standard Specification. The number of staff required for these duties shall be about:

- (1 No.) Assistant Engineer
 - i. Holds a Degree in Civil Engineering or its equivalent from an institution recognized by EBK.
 - ii. Registered Graduate Civil Engineer with EBK.
 - iii. Has over 3 years Post-Registration Experience in Roads.
- (1 No.) Surveyor
 - i. Holds a Degree in Survey or its equivalent
 - ii. Registered as a Graduate Member with the Institute of Survey of Kenya
 - iii. Has over 3 Years of Practical Experience in Roads.
- (1 No.) Lab Technician
 - i. Holds a Diploma in Civil or its equivalent
 - ii. Has over 5 Years of Practical Experience in Roads.
- (1 No.) Lab Attendant
 - iii. Holds a Diploma in Civil or its equivalent
 - iv. Has over 2 Years of Practical Experience in Roads.

- (1 No.) Inspector
 - i. Holds a Diploma in Civil Engineering - Highways Category.
 - ii. Has over 3 Years Post Graduation Practical Experience in Roads.
- (1 No.) Office Administrator
 - i. Holds a Bachelor's Degree in Business Administration (Human Resource Management) or its equivalent.
- (1 No.) Office Assistants
 - i. Has O-Level Certificate or its equivalent.
 - ii. Trained on data keeping and/or computer applications.
- (1 No.) Chainmen.
 - i. Has over 1 year of practical experience in roads survey
- (3 No.) Casual laborers.

And any other staff as may be deemed necessary by the Engineer, including the Employer's Project Implementation Team. They shall be reimbursed under the **item 1.14** of the Bill of Quantities.

In addition to the above listed staff, the Employer will attach under training or internship / Industrial attachment additional number of Engineers, Technicians and other Staff.

These staff shall be:

- (2No.) Trainee Engineer
- (2No.) Intern Engineer (Projects)
- (2No.) Intern Inspectors (Projects)
- (16No.) Attaché (Projects)

And any other staff as may be deemed necessary by the Engineer. These staff shall be paid a stipend as shall be directed by the Engineer and the Contractor shall be reimbursed under **Item 1.20** of the Bill of Quantities.

138 VEHICLES AND DRIVERS FOR THE ENGINEER AND HIS STAFF AND METHOD OF PAYMENT

The Contractor shall when instructed to do so provide and maintain in good working condition for the exclusive use of the Employer's Representative and his appointed assistants throughout the contract:

- a) Three (3) brand new turbo charged diesel propelled four-wheel drive Double Cabin pick-up of minimum engine capacity of 3200cc fitted with all accessories as (a) above.

The pickups shall be fitted with fibre glass covering as directed and approved by the Engineer's Representative. A 5 door utility station wagon of similar engine spec to the double cabin pick-up may be acceptable in place of up to three (3No.) Double Cabin pick-ups.

All the pickups shall be fitted with fibre grass covering to the approval of the Engineer.

The Contractor shall insure comprehensively the vehicles for any licensed drivers and shall provide competent drivers during normal working hours and whenever required by the Engineer.

Should any vehicle supplied not be in road worthy condition, the Contractor shall provide an acceptable equivalent replacement vehicle until such time as the original vehicle is repaired to the

satisfaction of the Engineer and returned for use.

Payment for the vehicles (up to 4,000Km.), shall be by vehicle months. Payment for mileage above 4,000Km shall be made at a rate per Kilometer. These payments shall be inclusive of all fuels, lubricants, servicing, insurance, maintenance, drivers and repairs. The rate shall include any overtime the drivers might be due or any other allowances in addition to the normal working hours. Payment shall be made under appropriate items in the Bills of Quantities.

The vehicles shall revert to the Contractor at the end of the contract.

139 RECEIPTED ACCOUNTS

The Contractor may be instructed by the Employer's representative or his appointed assistants to make payments of general miscellaneous accounts for such items as stationery, stores and equipment and miscellaneous supervision personnel and claims or the Employer's representative may direct the Contractor to purchase or pay for the above. The Contractor will be paid on a prime cost basis.

140 HOUSING ACCOMMODATION FOR THE RESIDENT ENGINEER AND HIS STAFF, OFFICE AND LABORATORY INCLUDING FURNITURE

140.1 HOUSING AND ACCOMMODATION FOR THE ENGINEER'S SENIOR STAFF

The Contractor shall provide, rent or otherwise as agreed with the Engineer, equip, furnish and maintain 1 No. type I and 2 No. type II houses for the Engineer's senior staff subject to the Engineer's approval.

The Engineer's senior staff housing shall be separate from the Contractors' staff housing and shall be sited and constructed to the satisfaction of the Engineer. The houses shall be constructed with pre-fabricated material subject to approval of the Engineer and the design and construction shall be approved by the Engineer. The walls shall be made of timber. All materials used shall be new, strong, durable and weather-proof. Ceilings and floor must be properly insulated against heat with approved insulation material the floor shall have a smooth level finish. All windows shall be glass paned, able to be opened and with mosquito gauze. The building materials shall be termite proofed and painted inside and outside with two coats of paint/varnish all to the approval of the Engineer.

The ceilings and verandas shall be lined with ceiling boards. All doors are to be fitted with mortise locks, which must be heavy duty on external doors. All windows shall be fitted with burglar bars.

The roof cladding shall be with G.I. corrugated sheets or equivalent material. The lounge, bedroom, bathroom, toilet and kitchen floor will have cement mortar finish. The workbenches in the kitchen shall have approved cover. All the sanitary ware shall be vitreous china of approved quality. All houses are to be provided with a fire extinguisher and fire axe. Fire axes are to be secured to the outside of the buildings. All storerooms shall be fitted with at least three substantial shelves, and kitchens shall be fitted with shelves, drawers and cupboards as instructed.

The Contractor shall provide new furniture, equipment and fittings as listed herein below. The Contractor shall obtain approval of the Engineer for the type and quality of the furniture, fittings and equipment before ordering. All houses shall be provided with a piped supply of drinkable water, electricity, gas and kerosene for the consumption of the Engineer and his staff and the Contractor shall provide all necessary waterborne sanitation and disposal systems to the satisfaction of the Engineer.

The Contractor shall pay for water, electricity, gas and kerosene consumed, and for the statutory charges associated therewith.

The Contractor shall be responsible for rubbish disposal by providing outside bins and daily collection to a central area location to the satisfaction of the Engineer.

Type II house shall be erected separately. A barbed wire topped chain link wire fence 2 metres high with a chain and padlock lockable gate shall be provided around the general perimeter of the type I and II houses.

Each type II house shall be provided with day and night watchmen and security lights, the cost of which shall be deemed to have been included in the rates for the houses.

140.2 HOUSING ACCOMMODATION FOR ENGINEER'S JUNIOR STAFF

The Contractor shall provide, rent or otherwise as agreed with the Engineer, equip, furnish

140.3 LIST OF FURNITURE FOR ENGINEER'S STAFF HOUSES

Each house shall be provided with new furniture, equipment and fittings to the approval of the Engineer as listed below:

	Type I & II	Type III	Type IV
Double Bed (5x 6) with “Slumberland” Mattress	1	0	0
Single Bed (3x 6) with “Slumberland” Mattress	2	3	2
Dressing Table with mirror and stool	1	0	0
Chest of 5 No. drawers with mirror	2	2	1
Wardrobe (movable)	3	2	1
Resident Table	4	3	2
Bedroom chair	3	2	1
600mm x 450mm high medicine cabinet with mirror	1	1	0
Bathroom stool	1	0	0
Towel Rail	1	1	1
Dining Table (2m x 1m approx.)	1	1	1
Dining chairs	6	5	4
Side Board	1	1	1
3 - Piece lounge chairs	1	1	0
Armchair with cushions	3	2	1
Coffee table 40 x 45cm high	1	1	0
Occasional tables, 70 x 70 x 45cm high	2	1	0
Book case (2m long with 3 shelves)	1	1	0
Writing Desk with chair	1	1	1
Kitchen shelves (per sq. m)	2	1	1
Kitchen table (2m x 0.8m approx.)	1	1	0
Kitchen chair	4	3	1

All the houses and furniture mentioned above shall revert to the Contractor after the completion of the contract. Payments shall be made under the relevant provisions under the Bills of Quantities.

142 ENVIRONMENTAL PROTECTION

The Contractor shall comply with the Statutory Regulations in force in Kenya regarding Environmental protection and waste disposal, and shall liaise with the National Environmental Management Agency (NEMA).

Within four (4) weeks after receipt of the order to commence work, the Contractor shall prepare and submit a specific Environmental Management Plan for the project and his operations relating to the approved Environmental Impact Assessment. The Environmental Management Plan shall outline potential environmental hazards and risks, and provide an action plan to deal with the hazards, minimize the risks, and mitigate adverse environmental impacts, and include a general decommissioning plan covering all relevant aspects of the project. The Environmental Management Plan shall identify monitoring indicators and reporting requirements.

The Contractor shall be required to keep daily reports detailing all ongoing monitoring and surveillance activities and submit monthly environmental progress reports to the Engineer. The Contractor shall keep permanent records of all environmental activities, noncompliance events such as but not limited to oil spills, remedial action taken, photographs and shall allow access to these records for the Engineer and NEMA Inspectors. The Contractor shall comply with any lawful instructions by NEMA Inspectors and shall act on these without delay.

The Contractor shall ensure as far as reasonably practicable and to the satisfaction of the Engineer; that the impact of the construction on the environment shall be kept to a minimum and that appropriate measures are taken to mitigate any adverse effects during the construction.

- (a) The Contractor shall exercise the utmost care to preserve the natural landscape and shall conduct his construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Except where clearing is required for permanent works, all trees, native shrubbery, and vegetation shall be preserved and protected from damage by the Contractor's construction operations and equipment. All unnecessary destruction, scarring, damage or defacing resulting from the Contractor's operations shall be repaired, replanted, reseeded or otherwise corrected as directed by the Engineer, and at the Contractor's expense.
- (b) The Contractor shall ensure that measures are in place to control soil erosion and water pollution, by making use of berms, dykes, silt fences, brush barriers, dams, sediment basins, filter mats, netting, gravel, mulches, grasses, slope drains, contour banks, and other erosion control devices and methods. Temporary erosion control provisions shall be coordinated with permanent erosion control features to assure economical, effective and continuous measures throughout the period of the works. The Contractor's attention is drawn to the requirements of Clause 502, in that works need to be progressively finished so that permanent vegetation can establish quickly to mitigate soil erosion and erosion of drains.
- (c) The Contractor shall provide all the labour, equipment, materials, and means required and shall carry out proper and efficient measures wherever and as often as necessary to minimise the dust nuisance.
- (d) The Contractor shall comply with all applicable Kenyan laws, orders and regulations concerning the prevention, control and abatement of excessive noise. Blasting, use of jackhammers, pile driving, rock crushing, or any other activities producing high-intensity impact noise may be performed at night only if approved the Engineer.

- (e) Immediately after extraction of materials, all borrows pits shall be backfilled and reinstated to the satisfaction of the Engineer. In particular, borrow pits near the project road shall be backfilled in such a way that no water collects in them.
- (f) Spilling of bitumen, fuel, oil and other pollutants shall be reported, documented and cleaned up to the full satisfaction of the Engineer
- (g) The Contractor's attention is drawn to the requirements of the Standard Specification with regard to the environment and in particular to the following clauses:
 - Clause 115: Construction Generally
 - Clause 116: Protection from Water
 - Clause 136: Removal of Camps
 - Clause 605: Safety and Public Health Requirements
 - Clause 607: Site Clearance and Removal of Topsoil and Overburden
- (h) Where directed, the Contractor may be required to desilt and clean rivers and/or watercourses to ensure unimpeded flow.
- (i) Payment in respect of this Item 142 is included as a PC Sum in the Bill of Quantities. Payment of this sum will be by equal monthly installments over the period of the Contract excluding the Period of Maintenance. The total sum of the installments shall not exceed the sum, allowed and payment of the monthly installments will only be made for that month if the Engineer is satisfied that the Contractor has fully complied with the requirements of Item 142, including his reporting obligations. Payment items for environmental protection during the maintenance period have been included in section 28.

Payment for 142 (h) (as shown above) will be paid for as day work and as directed by the Engineer.

2. SECTION 2 – MATERIALS AND TESTING OF MATERIALS

202 TESTING BY THE CONTRACTOR

Add the following:

202.1 Contractor's Testing

The provision of the Engineer's laboratory and testing equipment, as specified in Section 1 of this Special Specification, does not relieve the Contractor of his obligation to provide laboratory and testing equipment and execute his own testing, in conformity with the specified requirements in the Standard Specification.

204 SIEVES

In the standard sieve series, delete the size of the greater sieve “75”mm and replace by a “100” mm size.

205 SOILS AND GRAVEL

Whenever in the Contract Documents, a minimum California Bearing Ratio (CBR) is specified, the CBR of the material shall be determined at the specified degree of compaction.

- a) After four days soaking in the case of neat materials and,
- b) After seven days curing plus seven days soaking in the case of cement/lime improved materials.

207 In addition to the requirements of clause 207 of the standard specifications, Ordinary and Rapid setting Portland cement shall be sampled and tested in accordance with, and shall comply with the latest equivalent revised standards.

211 BITUMINOUS BINDERS

a) Requirements

Straight run bitumen in addition to the requirements of the Standard Specification the ash content of penetration grade bitumen shall not exceed 0.5% by weight.

b) Types of Bitumen

Prime coat shall be type MC70 unless otherwise stated. Tack coat shall be K1-70 emulsion while binder for asphalt concrete shall be 60/70 pen grade bitumen

214 PRESTRESSING STEEL

Delete BS 2691, BS 3617, and BS 4757 in paragraph 1 and replace with BS 5896-2012

224 TRIAL SECTIONS

The Contractor shall allow in his programme for the construction of trial sections and carrying out tests upon them as directed by the Engineer. The time of completion of the contract shall not be extended because of the time taken to carry out tests and evaluate trial sections.

No variation in the construction procedure, mix proportions, spray or spread rates, size, grading or source of any constituents shall be made without the approval of the Engineer.

226 FREQUENCY OF TESTING

Add the following:

226.1 General Acceptance Criteria for Test Results

Conventional statistical techniques shall be used alongside the above said criteria (where applicable).

227 MEASUREMENT AND PAYMENT

No additional measurement and payment will be made for testing of materials, trials, etc., in conformity with the standard specification.

228 WORKMANSHIP AND QUALITY CONTROL

The Contractor shall, not later than 4 weeks after the notice to commence the Works, submit a project specific Quality Management System, including the Work Method Statements and Quality Audit for major items of work, showing how all the Contractor's systems will ensure that all the works will conform to the Contract documents. The onus rests with the Contractor to produce work which conforms in quality and accuracy of detail to all the requirements of the Specifications and Drawings, and the Contractor shall, at his own expense, institute a quality control system and provide experienced engineers, foremen, surveyors, materials technicians, other technicians and other technical staff, together with all transport, instruments and equipment, to ensure adequate supervision and positive control of the Works at all times. The Contractor shall provide chainmen and labourers as necessary for the Engineer to carry out checks on the Works.

The Contractor shall conduct tests or have them conducted continually on a regular basis, to check the properties of natural materials and processed natural materials and of products manufactured on the site, such as concrete and asphalt. The Contractor shall remain fully responsible for any defective material or equipment provided by him. Similarly, the quality of all elements of the Works shall be checked on a regular basis so as to ensure compliance with the specified requirements.

The intensity of control and of tests to be conducted by the Contractor in terms of these obligations shall be adequate to ensure that proper control is being exercised.

Where any natural materials or products made from natural materials are supplied, and upon completion of each element of the construction work, the Contractor shall test and check such materials, products and/or elements for compliance with the specified requirements and shall submit his results to the Engineer for approval. Such submission shall include all his measurements and test results and shall furnish adequate proof of compliance with the specified requirements.

No specific pay items are provided as compensation for the above obligations, including the provision of all samples delivered to the Engineer, the repair of places from which samples were taken, and the provision of the necessary personnel and testing apparatus and facilities, for which compensation shall be included in the bid rates of the Contractor for the various items of work to which these obligations apply.

The Contractor shall submit to the Engineer for examination, the results of all relevant tests, measurements and levels indicating compliance with the Specifications on completion of every part of the Work.

3. SECTION 3 - SETTING OUT AND TOLERANCES

301SETTING OUT

Add the following to (a) General

If the traverse points to be used for the setting out are close to the existing carriageway and interfere with construction works, then the Contractor shall relocate them to a location where they will not be disturbed. The co-ordinates and heights of all traverse points so located shall be listed and provided to the Engineer for checking and/or approval. The Contractor shall also monument the new centreline every 200m along straight and all salient points along curves by a pin in the concrete beacon before commencement of any works.

The reference points to define the road reserve shall have 12 mm diameter steel pins embedded in concrete, 200 mm long with 25 mm exposed to the air, sticking out from its top surface. This pin shall be co-ordinated and heighted and the result of the same shall be provided to the Engineer for approval. The cost of these works shall be included in the Contractor's unit rates for other items, as no separate payment item has been provided in the Bill of Quantities.

Commencement of the Works shall not be permitted until this basic survey data has been provided and approved by the Engineer for at least 5 km of the road.

Add the following to (b) Detailed Setting Out

Reference pegs shall be 50 mm by 50 mm in section 600 mm long driven 400 mm firmly into the ground and painted white above the ground. The offset from centerline shall be indicated by a small nail 20 mm to 25 mm long with its head driven flush with the top of the peg. Chainages, offset and reference elevation shall be clearly indicated on the sides of the pegs to the satisfaction of the Engineer.

After cutting of benches and prior to commencement of earthworks or subgrade works, the Contractor shall take cross-sections again and submit the copy of the same to the Engineer for agreement. These cross-sections shall when agreed be used as the basis of measurement for all subsequent layers, unless otherwise stated.

302TOLERANCES

Add the following:

Pavement Widths

For Pavement widths for subbase, base and binder course, the allowable tolerances shall be -0 to +50 mm.

(k) Pipe Culverts

The maximum deviation from the specified line of a drainage pipe shall be: -

Horizontal - 20 mm in 3.0 m

Vertical - 30 mm in 10.0 m

305AS BUILT DRAWINGS AND MAINTENANCE MANUALS

Prior to the issue of a Taking Over Certificate the Contractor shall provide three (3) electronic copies of as built drawings, and where appropriate, maintenance manuals showing the Works as constructed, and details of the correct operation and maintenance of ancillary Works. No separate payment shall be made for this requirement, and costs for compliance shall be deemed to be included in the Contractor's general rates and prices.

4. SECTION 4 - SITE CLEARANCE AND TOP SOIL STRIPPING

401 SITE CLEARANCE

The Contractor's attention is drawn to the requirements of Clause 142 regarding preservation of existing trees and native shrubbery and vegetation, and environmental requirements generally.

Site clearance is to be confined within the road reserve, and site clearance is not required over the existing road. The remaining area required for construction purposes, including sides of existing embankments and cuttings shall be cleared as instructed by the Engineer. Generally, light clearance shall be done on areas covered by grass and light thickets while heavy clearance shall cover sections in dense bush.

Site clearance of areas necessary for the execution of the contract, outside the road reserve, and for quarries, borrow pits, stockpiles, spoil tips, haul roads and deviation roads, will be subject to the approval of the Engineer, but shall be the responsibility of the Contractor, and no separate payment will be made.

402 REMOVAL OF TOPSOIL

Topsoil shall include removal of up to 200mm depth of any unsuitable material as directed by the Engineer.

403 REMOVAL OF STRUCTURES, FENCES AND OBSTRUCTIONS

Items have been included in the Bill of Quantities for the removal of existing pipes, inlet and outlet structures for pipe and box culverts and existing concrete structures.

An item has been included in the Bill of Quantities for the removal of existing guardrail, transporting and stockpiling as directed by the Engineer.

When instructed by the Engineer, the Contractor shall demolish or remove other additional structures or obstructions.

Measurement and payment for removal of obstructions and structures shall be made against the quantities provided in Bill No.4 of the Bill of Quantities.

5. SECTION 5 –EARTHWORKS

501SCOPE OF SECTION

The scope of this section includes all earthworks associated with the Contract, including roadside amenities, service roads, walkways and any widenings

503 CLASSIFICATION OF MATERIAL

Add the following to (a) Hard material:

Hard materials include materials which require drilling and blasting to enable removal.

Add the following to (b) Soft material:

Unsuitable materials include:

- (i) All material containing more than 5% by weight of organic matter (such as topsoil, material from swamps, mud, logs, stumps and other perishable material)
- (ii) All material with a swell of more than 3%.
- (iii) All clay of plasticity index exceeding 45 or of liquid limit exceeding 70.
- (iv) All material having moisture content greater than 105% of optimum moisture content (AASHTO T99)

504PREPARATION PRIOR TO FORMING EMBANKMENT

Add the following at the end:

In cuttings, the contractor shall excavate to a level that would accommodate the 350mm subgrade and the existing ground below this MUST be processed and compacted in accordance with clause 504 of the standard specifications.

Where benching is required to existing pavement to accommodate earthworks, subgrade or subbase for widening the road, the rate for compaction of existing ground shall be deemed to cover this activity.

Excavation in the pavement of the existing road shall be kept dry. In the event of water penetrating the underlying layer, construction of the subsequent layers shall be postponed until the underlying layers are dry enough to accommodate the construction plant without deforming or otherwise showing distress.

Step construction shall be carried out per layer at the joint where excavating both vertically and perpendicular to the direction of the travel. The step shall be 500mm perpendicular to the direction of the travel and 150mm vertical unless otherwise instructed by the Engineer.

Special care shall be taken when compacting the new material at the joint ensuring that specified density is achieved.

505 CONSTRUCTION OF EMBANKMENTS

Only material approved by the Engineer shall be used in embankments. Soft fill material shall comply with the following requirements:

- Organic matter less than 5% by weight
- CBR of not less than 22.5% for carriageway and Walkways measured after 4-day soak on a laboratory mix compacted to a dry density of 95% (AASHTO T 99)
- Swell less than 1% on the laboratory mixed sample

Subgrade is defined on the Drawings, and subgrade material shall comply with the requirements of Clause 505 except that the CBR shall have a value of not less than 22.5% measured after a four (4) day soak on a laboratory mix compacted to a dry density of 95% MDD (AASHTO T180)

Improved subgrade layer is defined on the Drawings and shall comply with the following requirements:

- CBR of not less than 22.5% measured after 4day soak on a laboratory mix compacted to a dry density of 95% (AASHTO T 180)
- Plasticity Index less than 20%
- Swell less than 1% on the laboratory mix sample.
- Placed in two layers of 175mm thick

Subgrade shall mean the upper 350mm of earthworks, either in-situ or in fill and subgrade shall be provided as part of the earthwork operation, and payment shall be made as fill.

No extra payment will be made for haulage of suitable material from borrow pits as the overhaul costs shall be deemed to have been factored in the rates inserted in the Bills of Quantities

508 COMPACTION OF EARTHWORKS

At pipe culverts, all fill above ground level around the culverts shall be compacted to density of 97% MDD (AASHTO T180) up to the level of the top of the pipes or top of the surround(s), if any and for a width equal to the internal diameter of the pipe on either side of the pipe(s) or surround(s) as applicable.

At locations adjacent to structures (up to 100m away from structure), all fill above ground level up to the underside of the subgrade shall be compacted to density of 95% MDD (AASHTO T180). In case of fill around box culverts this should be carried out for the full width of the fill and for a length bounded by the vertical plane passing through the ends of the wingwalls

Notwithstanding the provision of clause 503 of the standard Specification, Compaction of subgrade material (i.e. material immediately below formation) in cut areas shall not be carried out by the contractor in areas where the formation is formed in hard material, unless specific instructions to the contrary are issued by the Engineer

Where improved sub-grade material shall be required, the material shall have a CBR greater than 14% and this shall be compacted and finished to the same standards and tolerances as those required for normal subgrade and clauses in the specifications applying to normal subgrade shall also apply.

509MASS-HAUL DIAGRAM

Delete Clause 509 entirely and substitute “No Mass-Haul diagram has been provided with the Documents. The Contractor shall be responsible for locating suitable materials for constructing earthworks along the alignment and elsewhere and shall include in his rates for fill, spoil and for the cost of haulage”.

510SPOIL MATERIAL

The Contractor’s attention is drawn to the requirements of Section 6 of this Specification.

Where possible, spoil material is to be utilised in the backfill and restoration of borrow pits and quarry areas.

511BORROW PITS

Replace the first two paragraphs by the following:

Fill material which is required in addition to that provided by excavation shall be obtained from borrow pits to be located and provided by the Contractor and approved by the Engineer.

514TOPSOILING AND GRASSING

Topsoiling and grassing shall be to all areas instructed by the Engineer. Topsoiling and grassing of spoil, borrow, stockpile and quarry areas, including payment thereof, shall be in accordance with Section 6 of these Specifications.

515SIDE DRAINS

Whenever excavation works in side drains constitutes a separate operation from the bulk earthworks, such excavation shall be classified as catchwater drains under Section 8 of the Specifications

517MEASUREMENT AND PAYMENT

Notwithstanding the provisions of clause 517 of the standard specifications, the rate for compaction of fill in soft material shall allow for the requirements of clause 508 of the special specification and no extra payment shall be made for compaction around pipe culverts (97% MDD AASHTO T180)

Quantities for embankment widening shall be measured using the final compacted volume of fill material over the existing embankment after removal of topsoil. Payment for fill for widening shall be made under Item 5.01 of the Bill of Quantities. No payment shall be made to the Contractor for any additional earthworks resulting from his construction methods, or for working space for his construction plant and equipment, or for complying with the requirements of Clause 504. The Contractor shall include the cost of benching in his rates and prices.

The rate for cut to spoil shall also allow for cutting to spoil in any waterlogged areas.

No separate payment shall be made for overhaul, and the cost of haulage shall be included in the Contractor's rates and prices for earthworks.

The rates in the Bill of Quantities shall also include for earthworks associated with roadside amenities, service roads, walkways and any widenings

6. SECTION 6 - QUARRIES, BORROW PITS, STOCKPILES AND SPOIL AREAS

603 GENERAL

Notwithstanding any indications to the contrary in the Standard specification the Engineer will not make available to the Contractor any land for, nor has identified any specific areas for, quarries, borrow pits, stockpiles and spoil areas, and for access thereto.

The Contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications, and for the procurement, winning, haulage to site of these materials and all costs involved therein. Similarly, the Contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works, the Contractor may utilize these subject to the approval of the Engineer.

Quarries, borrow pits, stockpile and spoil areas shall be progressively restored as the works progress once their use is no longer required.

No additional payment will be made to the Contractor to cover costs arising from the requirements for this Section and the Contractor must include these costs in the rates inserted into the Bills of Quantities.

605 SAFETY AND PUBLIC HEALTH REQUIREMENT

Add the following to Clause 605:

When working the material sites, the Contractor shall time and arrange his works in such a way that at no time is the public safety endangered in any way.

607 SITE CLEARANCE AND REMOVAL OF TOPSOIL AND OVERBURDEN

Add the following to Clause 607:

Faces of quarries being higher than 4 metres shall be shaped to 1:10 out of the face. All quarries and borrow pits shall be permanently fenced with 5 strand barbed wire which shall be located 5 metres off the edge of the face. After reinstatement, the bottom of a quarry shall be covered with 0.20 m of soil and 0.15 m of topsoil.

611 OBTAINING OF BORROW MATERIALS

(a) Borrow Pit Locations

Borrow materials shall be located and obtained by the Contractor. Borrow materials shall comply with the requirements of the appropriate Specifications according to the use for which the material is intended.

The Contractor shall search for and test all possible sources of borrow material including any possible sources so designated by the Engineer, within an economic distance of the location where the borrow material is to be utilized.

The Contractor shall excavate the necessary trial holes, take such samples and perform such tests as are deemed necessary by the Engineer. The Contractor shall submit all the results to the Engineer in sufficient detail to satisfy him that the quality and quantity of material available in the proposed borrow area are acceptable for the intended use, all at the Contractor's expense. The Contractor shall propose the use of those borrow pits which will be most economic to the Employer.

Approval of borrow pits or borrow areas shall apply only to those portions of the pit or area from which acceptable materials can be obtained or produced. The Contractor shall conduct his operations in any approved pit or borrow area or portions thereof so as to produce acceptable material.

Any approval given by the Engineer shall not relieve the Contractor of the responsibility of ensuring that material obtained from a borrow pit or area complies in all respects with the specification for the material.

The Contractor shall plan his exploitation of borrow pits in such a manner that the various materials excavated can be selected and either loaded directly for use or pushed to stockpile in a borrow area for later loading. When this is not feasible for reasons beyond the Contractor's control, material to be reserved for later use shall be loaded, transported and temporarily stockpiled as ordered by the Engineer at locations outside the borrow area indicated by him and such temporary stockpiling shall be measured and paid for as Dayworks. No material reserved for a specific purpose shall be used for other purposes without the written approval of the Engineer.

612 OPENING AND WORKING OF BORROW PITS

(a) General

Notwithstanding any indications to the contrary in the Standard specification the Engineer will not make available to the Contractor any land for quarries, borrow pits, stockpiles and spoil areas, except for those areas in road reserves specifically approved by him

The contractor will be entirely responsible for locating suitable sources of materials complying with the Standard and Special Specifications, and for the procurement, Wining, haulage to site of these materials and all costs involved therein. Similarly, the contractor will be responsible for the provision and costs involved in providing suitable areas for stockpiling materials and spoil dumps. Should there be suitable sites for spoil dumps or stockpiles within the road reserve forming the site of the works the Contractor may utilise these subject to the approval of the Engineer

No additional payment will be made to the Contractor to cover costs arising from the requirements for this Clause and the Contractor must include these costs in the rates inserted into the Bills of Quantities

(b) Clearing and Grubbing, Topsoil and Overburden

The Contractor's rate for borrowed material must include for clearing and grubbing and the removal of topsoil and overburden. No separate payment will be made for this work.

(c) Excavation of Borrow Material

Where any borrow pit contains different types of materials, in separate layers which require to be mixed in order to produce a suitable product, the materials shall be excavated over

the full depth of approved face in one operation without separation of the different types of material.

The Contractor shall exercise all reasonable care so as to avoid contamination of approved borrow material by the inclusion of clayey or otherwise unsuitable material from the floor of the borrow pit, from overburden, from unsuitable layers or from areas beyond the approved limits of the borrow area. During loading hard oversize material which will not break down during processing on the road shall be excluded as far as is practicable.

During the course of borrow operations and especially when excavating near the floor and outer boundaries of borrow areas, the Contractor shall plan his operations so as to reduce as far as possible the amount of earthmoving that will be necessary for the reinstating of borrow pits. Indiscriminate excavation without due regard for the desired final shape of the borrow pit will not be permitted.

The material in borrow pits shall be blasted or ripped and/or excavated in a manner that will ensure the effective breaking down of the material in the borrow pit before it is loaded. Rippable material which tends to break into large blocks shall be cross ripped.

(d) Quality Control at Borrow Pit

The Contractor shall be responsible for controlling his operations at every borrow pit where material is being excavated, to ensure compliance with the requirements of Sub-section (b) above.

He shall carry out sufficient tests on the material being excavated from the borrow pit in order to satisfy himself that the quality of the material will comply with the specified requirements for the particular layer for which it will be used.

(e) Protection of Borrow Pit

Borrow pits shall be continuously protected against the ingress of surface water and the Contractor shall construct such temporary banks as may be required to divert surface water and as far as possible his operations shall be planned in such a way that the borrow pit is self-draining. Where this is not possible, borrow pits shall be dewatered by pumping. The Contractor shall be solely responsible for keeping borrow areas dry and ensuring that borrow material is sufficiently dry when required for use.

613 REINSTATEMENT OF BORROW AREAS

On completion of his operations in a borrow area, the Contractor shall reinstate the entire area so as to blend with the surrounding area and to permit the re-establishment of vegetation. For this purpose, the borrow area shall be shaped to even contours. All material in and around the borrow area, whether spoil from road building operations, excess stock-piled material, oversize material left in the borrow pit, material resulting from clearing and grubbing operations and excess overburden, shall be used or disposed off as directed by the Engineer. Material not capable of supporting vegetation shall be buried and used in shaping the borrow area and subsequently covered with soft material. All available soft material shall be spread evenly to the thickness directed and where sufficient material is not available for this purpose to cover the entire area, the remaining portions shall be scarified along the contours so as to avoid undue erosion.

All haul roads shall be obliterated and the surface scarified, earth banks constructed to prevent erosion and all damaged fences and other structures reinstated.

The shaping and reinstatement of the borrow pit shall be done in such a way that the borrow pit will be properly drained whenever practicable and where required, the Contractor shall place earth banks to divert any surface water away from the borrow area.

The reinstatement of any borrow pit shall be to the entire satisfaction of the Engineer and the Contractor shall submit to the Engineer a signed certificate from the landowner stating that he is fully satisfied with the reinstatement of any borrow area.

614 DISPOSAL OF BORROW MATERIAL

The Contractor shall not have the right to use material obtained from borrow pits for any purpose other than for the execution of this Contract. He shall not dispose off any borrow material whether processed or not either by sale or donation to any person without the written authority of the Employer.

615 MEASUREMENT AND PAYMENT

Clause 610 of the Standard Specification shall apply.

7. SECTION 7 - EXCAVATION AND FILLING FOR STRUCTURES

703EXCAVATION OF FOUNDATIONS FOR STRUCTURES

Unless otherwise instructed by the Engineer, all excavated surfaces in material other than hard material, on which foundations for structures shall be placed, shall be compacted to 97% MDD (AASHTO T180) immediately before structures are constructed.

Paragraph 4, last line: - Replace "95%" with "97%" and "T99" with "T180".

Add the following:

707BACKFILLING FOR STRUCTURES

All backfilling material shall be selected backfill complying with the requirements for a natural subbase material given in Clause 1203. Unless otherwise instructed by the Engineer, all backfilling material shall be compacted to a minimum of 97% MDD (AASHTO T180).

Porous filter material shall be clean, uniform, sand or crushed aggregate with a d₅₀ between 0.4mm and 1.2mm and less than 5% particles finer than 75micron sieve. The d₁₀₀ must be lower than 5mm

709EXCAVATIONS FOR RIVER TRAINING AND NEW WATER COURSES

Add the following:

Payments for river training and establishment of new watercourses shall only be made where such work constitute permanent works. Works done for road deviation or other temporary works shall not qualify for payment.

710STONE PITCHING

Stone pitching to drains, inlets and outlets of culverts, to embankments and around structure shall consist of sound unweathered rock approved by the Engineer. The stone as dressed shall be roughly cubical in shape with minimum dimensions of 150 x 150mm for normal thickness of stone pitching. Cement mortar Grouting will be done for all stone pitching areas and the top line of the stone pitching should be grouted/sealed with concrete class 15/20. The cement shall be mixed with sand in the ratio of 1:3 by volume to form the grout.

The surface to receive the pitching shall be compacted and trimmed to slope and the stone laid, interlocked and rammed into the material to give an even finished surface. Soil erosion is rampant along the project location and this can be minimized by ensuring that proper protection works is carried out along the drains using stone pitching. Most of the sections shall be stone pitched especially areas where we have steep slopes to minimize undermining of the road by rain water or as may be instructed by the Engineer.

In areas where stone pitching has been damaged, the Contractor shall identify such areas and notify the Engineer for his agreement of the extent of the Works required and his approval and instructions to proceed with the Works. Stone Pitching Repair and

reconstruction shall be carried out in accordance with Clause 710 of the Standard Specifications.

711 GABIONS

Where instructed by the Engineer the Contractor will install gabions as protection works to washout areas or bridge Piers and or Abutments. Gabions shall be constructed in accordance with Clause 711 of the Standard Specification

In cases where existing gabions have been damaged, the Contractor shall identify them and notify the Engineer for his agreement of the extent of the Work required and his approval and instructions to proceed with the Works

The Works shall involve removal of the damaged gabions / rocks, excavation to the correct levels and grades as directed by the Engineer, and in accordance with Clause 711 of the Standard Specifications and reconstruction with new gabions and other necessary materials as necessary. The damaged gabions shall be recovered and transported to the nearest Sub-County offices

Definitions

Gabion Mesh: A cage made of wire that is filled with rock to provided protection.

Binder Wire: A thin wire that is used to connect two or more objects.

Filter Fabric: A geotextile material placed on the ground to protect the gabion from damaged.

MDD: Maximum Dry Density.

Applicable Standards

British Standards BS 443, 1052.
BS EN 30320

Materials

a) Rock fill

Broken hard and durable rock of 150mm minimum dimension and 300mm maximum dimension.

b) Gabion Mesh

The maximum mesh size shall be 60mm × 80mm. All wire shall be to BS 1052 having tensile strength of not less than 40kg/mm². Galvanizing shall comply with the requirements of BS 443

c) Filter Fabric Sheet

The geotextile filter fabric shall be polymer sheet of woven polypropylene of minimum sheet or non woven. The fabric shall be inert to chemicals commonly encountered in sea water and natural soil conditions. The fabric sheet shall comply to the requirements of BS EN 30320.

d) Binder wire

Shall comply with the requirements of BS 1052 i.e., shall have a diameter of 2.2mm and tensile strength of not less than 40kg/mm². Galvanizing shall comply with requirements of BS 443.

e) **Backfill Material**

Shall be obtained from the material excavated in forming the excavation and in the event of there being an insufficient excavated material then selected backfill shall be have a CBR of at least 5% measured after 4-day soak on laboratory mix compacted to 95% MDD.

Order Of Works

The contractor shall excavate and trim to the specified level and shape the scoured area in accordance with the provided drawings or as instructed by the Engineer. The surface upon which gabions are to be laid shall be compacted to minimum dry density of 95% MDD.

A filter fabric sheet shall be spread tightly and pegged with material approved by the Engineer in accordance with the manufacturer's instructions. The filter fabric shall be placed with a minimum 300mm overlap unless otherwise instructed by the Engineer. The contractor shall ensure that the filter fabric is not damaged during the construction and any damage or torn fabric shall be replaced at the contractor's expense. The filter fabric shall not be left exposed to sunlight for more than 21 days.

Gabion mattress shall be laid with broken bond throughout to avoid continuous joints both horizontally and vertical. Gabions shall be hand packed with broken rock. The sides shall be packed first in the form of a wall using the largest pieces with the majority placed as headers with broken joints to present a neat outside face. The interior of the gabion shall be hand packed with smaller pieces and the top layer shall be finished off with larger pieces. The whole interior and top layers shall be packed tight and hammered into place.

The joint of the gabion shall be stitched together with the binder wire, with at least one stitch per 50mm and each of the wire shall be fixed with at least two turns upon itself.

Unless otherwise instructed by the Engineer, the existing soil shall be backfilled, compacted against the sides of the gabions and extend to the limits of excavation or to natural ground. On completion of gabion construction, the exposed joints shall be painted with thick bitumen or grouted with mortar to the approval of the Engineer to discourage vandalism and damage.

Traffic

The contractor shall provide appropriate warning signs and traffic control measures as directed by the Engineer.

Safety Precautions and Public Health Requirements

The contractor shall provide all the workers with the right personal protective equipment and also ensure that the work area is properly cordoned off.

Tolerances

The contractor shall comply with the provisions of Section 3 "SETTING OUT AND TOLERANCES" of Standard Specifications for Road and Bridge Construction and "Applicable Standards" of this specification.

Measurement and Payment

i) Excavation for gabions

Unit: m³

The excavation for gabions shall be measured by the cubic meter, calculated as the product of the net plan area of the gabion to be excavated and the average depth of the excavation. The rate for excavation for gabions shall include for the cost for excavation to any depth, compaction of the surfaces to receive the gabions, backfilling with the excavated or borrowed material or removing the excavated material to spoil if surplus to requirements and complying with the requirements of this specification.

ii) Gabion Mesh

Unit: m²

Gabion mattress shall be measured by the square meter calculated as the net area of material required to construct the gabions.

The rate for gabion mattress shall include for the cost of providing and fixing the mesh and the cost of complying with the requirements of this specification.

iii) Rockfill to Gabion

Unit: m³

Rockfill to gabions shall be measure by the cubic meter calculated as the volume of the gabions instructed to be placed.

The rate for rockfill for gabions shall include for the cost of providing, hauling and placing the rock and the cost of complying with requirements of this specification.

iv) Grouting with mortar

Unit: m²

Grouting of the gabion covered by clause 3306 of this specification shall be measured by the square meter of the area instructed by the Engineer.

The rate for grouting the gabions shall include providing the aggregate, cement, wetting the surface to be grouted and complying with requirements of this specification.

712RIP-RAP PROTECTION WORK

Add the following at the end:

Quarry waste or similar approved material shall be used to backfill scoured and eroded side, outfall and cut-off drain. The material shall be compacted to form a flat or curved surface preparatory to stone pitching of drainage channels, existing and new scour checks as directed by the Engineer

The surface to receive the pitching shall be compacted and trimmed to slope and the stone hand laid, interlocked and rammed into the material to give an even finished surface. The interstices of the Pitching shall be rammed with in-situ material. The in-situ material immediately behind the pitching shall be compacted to minimum density of 95% MDD compaction (AASHTO T180)

714BACKFILL BELOW STRUCTURES

All backfilling material shall be selected backfill complying with the requirements for a natural subbase material given in Clause 1203. Unless otherwise instructed by the Engineer, all backfilling material shall be compacted to a minimum of 97% MDD (AASHTO T180).

8. SECTION 8 - CULVERT AND DRAINAGE WORKS

801SCOPE OF SECTION

Amend as follows:

The operations specified in this section apply to the installation of drainage works and reinstatement and improvement of the same.

In addition, this Section covers: -

- Installation of 600 mm, 900 mm or 1200 mm diameter pipe culverts using the balloon casting technology or precast pipes rings.
- Desilting and cleaning of existing pipes and outfall drains to make them free flowing.

804EXCAVATION FOR CULVERTS AND DRAINAGE WORKS

The Standard Specifications are amended as follows:

- (a) In paragraph 6, line 3, and in paragraph 7, line 5 and in paragraph 11, line 6, replace "95% MDD (AASHTO T99)" with "97% MDD (AASHTO T180)".
- (b) Removal of Existing Pipe Culverts

Where instructed by the Engineer, the Contractor shall excavate and remove existing culvert pipes and the void left after removal of culvert pipes shall be widened as necessary to accommodate new concrete bedding, pipe and haunching.

The void left by removal of pipes and end-structures shall be carefully preserved in order to accommodate replacement with 600 mm, 900 mm or 1200 mm diameter pipe culverts as directed by the Engineer.

Regarding backfill, reference is made to Clause 812.

- (c) Excavation for Culverts and Drainage Works

The Contractor shall carry out all excavations for new culverts and drainage works to the lines, levels, inclinations, and dimensions shown on the Drawings or as instructed by the Engineer.

805EXCAVATION IN HARD MATERIAL

In the Standard Specifications, Sub-clauses 805(a) and 805 (b) delete "'95% MDD (AASHTO T99)" and insert "97% MDD (AASHTO T180)".

In sub-clause 809(a), paragraph 1, line 1, substitute "95% MDD (AASHTO T99)" with "97% MDD (AASHTO T180)".

In sub-clause 809(c), paragraph 2, line 4, between the words "compacted" and "and shaped" insert the words "to 97% MDD (AASHTO T180)".

Hard material is material, which can be excavated only after blasting with explosives, or barring and wedging or the use of a mechanical breaker fitted with a rock point in good condition and operated correctly. Boulders of more than 0.2m³ occurring in soft material shall be classified as hard material.

809BEDDING AND LAYING OF PIPE CULVERTS

In sub-clause 809(a), paragraph 1, line 1, substitute "95%" with "100%".

Amend sub-clause 809(b), paragraph 1 as follows:

Where pipes are laid on a concrete bed the pipes shall be bedded on class 15/20 concrete at least 50mm thick, and extending the full width and length of the pipe barrel.

In sub-clause 809(c), paragraph 2, line 4, between the words "compacted" and "and shaped" insert the words "to 97% MDD (AASHTO T180)".

Add the following Sub-Clause 809(d):

Bedding, Laying and Surround for Concrete Pipe Culverts Cast In-Situ

In addition to the requirements of the Standard Specification, where the inflatable balloon method of casting culverts in-situ is used, thorough pre-construction trials shall be carried out and the necessary adjustments made to ensure that: -

- (i) Line and grade of the culverts is achievable
- (ii) The balloons and the pressure gauge/machine are in good working conditions
- (iii) The inner concrete barrel surface immediately in contact with the inflated balloon form shall achieve class F3 finish.

Besides this, the following amendments shall be made; -

- (a) Where inflatable balloons are used, the surround shall be 200mm.
- (b) Concrete surround shall be "class 20/20".

- (c) BRC A193 mesh will be provided within the surround and bed as provided for in the drawings or as instructed by the engineer

The Contractor may propose an alternative method of casting culverts in-situ, which shall be subject to the approval of the Engineer. Culverts shall be constructed to conform with dimensions shown on the drawings.

Measurement and payment for culverts cast in-situ by use of balloon method or any other approved method shall be made per linear meter under the existing bill items. The rates inserted shall allow for compaction of the bottom of excavation to 100% MDD (AASHTO T.99) and the BRC mesh used.

810 JOINTING CONCRETE PIPES

Amend as follows:

The concrete pipes for the culverts shall have ogee joints and will be jointed by 1:2 cement/sand mortar and provided with fillets on the outside as described in clause 810 of the Standard Specification.

Payment shall be included in the relevant item under Bill of Quantity No. 8.

811 CONCRETE BEDS, SURROUNDS AND HAUNCHES

Amend the Standard Specification line 1 of the second paragraph, to read as follows:

All concrete for beds shall be of class 15/20 whilst concrete for surrounds and haunches shall be of class 20/20 for cross drain culverts, complying with Section 17 of this Specification formed to the dimensions shown on the drawings or as instructed by the Engineer

812 BACKFILLING OVER PIPE CULVERTS

In the Standard Specifications, clause 812

Delete paragraph 6 "for pipe culverts depth of 150mm", entirely.

Wherever the expression "dry density of 95% MDD (AASHTO T. 99)" occurs delete and replace with "dry density of 97% MDD (AASHTO T180)".

The rates entered for laying of pipe culverts shall allow for backfilling to pipe culverts and compacting to 97% MDD (AASHTO T180) and these works shall **not** be measured and paid for separately.

812.1 FILTER FABRIC FOR BACKFILLING BEHIND STRUCTURES, DRAINS AND REVETMENT WORKS

Where filter fabric is specified, it shall be durable non-woven geotextiles or synthetic fibres, unaffected by soil acidity, soil alkalinity and bacteria. The fabric shall be made by an approved, reputable manufacturer and shall have a mass and strength at least equal to the following criteria:

Usage	Mass g/m²	Wide Strip Tensile Strength kN/m²	Mullen Burst Strength kPa
Under and For Drainage Material	180	Mean 12/12	2160
Behind bridges, Box culverts, Under Gabions, Gabion Mattresses or Grouted Rip –Rap	250	Mean 18/18	3040
Under Rip-Rap and Rockfill	300	Mean 21/21	4200

The mesh size of the fabric shall be sufficient to effectively retain the material on which it is placed but shall not be greater than 150 microns.

The fabric shall be installed in accordance with the manufacturer's instructions. The fabric shall be placed on levelled ground, with sharp rocks and other objects which are likely to damage the fabric being removed and all pits and depressions being backfilled and compacted.

The fabric shall be overlapped by a minimum of 300 mm and stitched at joints in such a manner that the strength of the joints is at least 50 per cent of the strength of the fabric.

Rip-rap or gabions or other materials, as applicable, shall be placed carefully on the filter fabric in such a way as to avoid damage to the fabric. In any event construction procedures shall ensure no damage to the filter fabric or impairment of its design function. Should the filter fabric be damaged, it shall be replaced, including removal of the overlay material, in a manner approved by the Engineer.

No mechanical plant shall traffic over filter fabric unless a minimum thickness of 200 mm of fill material has been placed over the fabric.

813 PRECAST CONCRETE OPEN CHANNELS

Add the following to the Standard Specification clause 813:

813.1 Half Round Open Channels

These shall be provided as directed by the Engineer and in compliance with sections 813 and 820 of the Standard Specification.

Payment shall be according to Bill of Quantity No.8.

813.2 Invert Block Open Channels

These shall be provided as directed by the Engineer and in compliance with sections 813 and 820 of the standard specifications.

Where directed by the Engineer, the Contractor shall excavate in any material provide and place concrete for the bedding, backfill and remove surplus material to spoil, provide, lay and joint precast concrete invert blocks, side slabs, slotted drains and gulley chambers.

Precast concrete invert block side drains and gulley chambers shall comply with the requirements of BS 340, and shall be laid in accordance with the drawings.

Precast concrete invert block drains and side slabs shall be formed of concrete of the class specified and to the dimensions shown on the drawing. Drains shall not normally be laid to a radius of a curvature less than 10 times the bed width or a diameter of the drain.

Invert block drains shall be constructed in the positions and to the levels and dimensions shown on the drawings or as directed by the Engineer. The earth sides to such channels shall be neatly finished to a slope of 1: 1 or such other slope as the Engineer may direct. Invert block drains and side slabs shall be laid on 100 mm thick compacted approved gravel material and neatly jointed with mortar consisting of 1:3 cement: sand by volume.

813.3 Invert Block drain

Where instructed, the Contractor shall excavate, compact the excavated bed to 97% MDD AASHTO (T180), backfill as necessary with selected material compacted to 97% MDD AASHTO (T180) lay and joint invert block drains of 300mm diameter with two side slabs.

814 SUBSOIL DRAINS

Add the following:

In the event of excavation for repairs exposing local seepage, springs or high water table, the Engineer may instruct the provision of counter fort or French drains.

These drains shall consist of a trench excavated to the alignment, width, depth and gradient instructed by the Engineer and backfilled with approved compacted clean hard crushed rock as specified in Clause 814 of the Standard Specification. Where these drains lie within the carriageway, the carriageway shall be reinstated with compacted graded crushed stone or stabilised gravel and surfaced with hot asphalt or a surface dressing as instructed by the Engineer.

Payment will be made in accordance with Clause 820 of the Standard Specification.

814.1 Filter Fabric to Sub-Soil Drains

A filter fabric shall be placed under, around and over rock fill of the sub-soil drains. The provisions and placing of the fabric shall be in accordance with Clause 814 of the Standard Specification and Clause 822 of the Special Specification. Payment shall be in square metre of the fabric used.

817 MITRE DRAINS, CUT-OFF DRAINS, CATCHWATER DRAINS, SIDE DRAINS, CULVERT OUTFALL DRAINS AND EARTH DAMS

Add the following Sub-Clauses:

817.1 Cleaning Existing Drains

In areas of existing side drains, mitre or outfall drains where such are blocked, the Engineer shall instruct the Contractor to clean and clear the drains to free flowing condition.

The work shall consist of:

- (a) Stripping and removal of any extraneous material to spoil including vegetation and roots in the drains to the satisfaction of the engineer.
- (b) Spreading of any spoil to the satisfaction of the Engineer.
- (c) Shaping the drains to free flowing condition as directed by the Engineer.

No extra payment will be made for cleaning of existing drains, and the costs shall be included in other Bill items.

817.2 Channels

The Engineer may instruct that the Contractor provides open channels in place of existing sub drains where the latter may be damaged or in any other place. The rates entered by the Contractor in the Bill of Quantities must include for removal and disposal of any sub drain material, excavation to line and level, backfilling and compaction as directed by the Engineer.

The channels shall be constructed of precast class 20/20 concrete of minimum 80 mm thickness and lengths or widths not exceeding 1000 mm. Joints shall be at least 15 mm wide filled with 1:2 cement sand mortar.

817.3 Spoil Material

The Contractor shall be responsible for removal from site of all materials excavated in the course of undertaking works in this section of the specifications, unless suitable for re-use, and deposit of the material in a spoil dump to be approved by the Engineer.

819 CLEANING AND MAINTENANCE

Add the following:

819.1 Desilting of Pipe Culverts

Where instructed, the Contractor shall desilt the existing pipe culverts by removing all the material from the pipe to make them clean and free flowing.

No separate payment will be made for such work and provision should be included in the rates.

820 MEASUREMENT AND PAYMENT

(a)

(b) Add Sub-Clause 823(r): -

(c)

(d) Item : Concrete for balloon cast pipes/culverts

(e) cast in-situ

(f) Unit : m³

(g)

(h) The rate for concrete for each size of culvert instructed shall include for the surround and for the bedding as instructed including the A193 BRC mesh and shuttering, calculated from the dimensions given in the drawings or as directed by the Engineer.

(i)

The rate shall also include for the cost of providing and placing the concrete and complying with the requirements of Clauses 809, 810, 814, 819 and 1713 of the Standard Specification.

No extra payment shall be made for provision of inflatable forms/balloons and other requirements for casting culverts in-situ and the Contractor shall be deemed to have provided for these in his rates and prices.

(j) Add Sub-Clause 823(s): -

(k)

(l) Item : Invert Block Drain

(m) Unit : m

The payment for the invert block drain shall include the cost of the bottom drain and two side slabs and shall be measured in a linear metre.

(n) Add Sub-Clause 823(t): -

(o)

- (p) Item : Geotextile
- (q) Unit : m²

The payment for the geotextile shall be in square metres and shall include the cost of providing and placing as per the specifications or as instructed by the engineer

9. SECTION 9 – PASSAGE OF TRAFFIC

901TRAFFIC CONTROL AND DEVIATIONS

a) Programme for the Control of Traffic

Following the award of the contract, the Contractor shall submit to the Engineer a detailed Traffic Control Plan. Such plan shall be approved by the Engineer, and where necessary, by the appropriate statutory authority, before the Contractor commences work. The plan shall but is not limited to, the method of protection of the public and give details of the duration and hours of operation, location, type and numbers of traffic safety devices, barricades, warning signs, flag men equipped with two way radios and the like. The Traffic Control Plan shall be in accordance with and complimentary to the Programme of Works submitted under Clause 104

During the preparation of this Traffic Control Plan, the Contractor shall take into consideration the following;

- i) The Contractor shall conduct his operations in such a manner that no greater length or amount of work is undertaken than he can efficiently carry out having due regard to the rights and conveniences of the public and the requirements of this Section.
- ii) If the Contractor proposes a road closure, he shall provide an alternative routing of the traffic, which must be approved by the Engineer.
- iii) No revisions shall be made to the Traffic Control Plan without the prior written approval of the Engineer and the Contractor shall allow fourteen (14) days for the Engineer to review any request for revision of the Traffic Control Plan.
- iv) The Traffic Control Plan shall conform in all respects with the requirements of this Specification.

b) Penalty to comply with the requirements of Section 9

The failure or refusal to comply on part of the Contractor and or maintain the deviation, improve and maintain the existing road ahead of the works at the proper time, or to take the necessary actions for the safety and convenience of the public traffic as required by the statutory authorities, or as instructed by the Engineer, shall be sufficient cause for the Employer to apply a deduction of KES. One Hundred and Fifty Thousand (150,000) per day from any monies due to the Contractor, until all provisions prescribed have been complied with to the satisfaction of the Engineer.

c) Contractor's inspection of the site

The Contractor should allow for the costs of complying with the requirements of this clause in his rates. The Contractor will be deemed to have inspected the site and satisfied himself to the adequacy of his bid for these works and no additional payments will be made to the Contractor for any expenditure on traffic control or the provision of deviations. The

Employer shall not be liable for inadequate prior investigations of this nature by the Contractor.

(d) Standard of Construction works

The standard of all works carried out under this Section shall comply with the requirements of the appropriate sections of these Specifications

903 MAINTENANCE OF EXISTING ROAD

The Employer shall hand-over the existing road to the contractor at the commencement of the Contract. The Contractor shall be responsible for all repairs and maintenance during the duration of the Contract. Where the existing road is gravel, the Contractor shall maintain it with suitable approved gravel of properties detailed in 904 (c) below.

Where the existing road is paved, the contractor shall maintain it by repairing the potholes and edge breaks asphalt concrete. The work shall include, but not limited to, excavating and trimming around the pothole or edge break and removing deleterious material

The Contractor shall regularly inspect the road and carry out such repairs and maintenance to the satisfaction of the Engineer. If at any time, the Engineer draws the Contractor's attention to a road section which requires maintenance, the contractor shall promptly repair the section. The contractor shall be legally responsible for any accident or damage attributable to his failure to maintain the road.

904 CONSTRUCTION OF DEVIATIONS

a) General

In addition to requirement of this clause, the maximum length of deviation road shall be restricted to 2Kms at any given time unless otherwise instructed. The Contractor shall construct and complete deviations to the satisfaction of the Engineer before commencing any permanent work on the existing road. Also during these works the contractor is supposed to provide a detour of adequate pipe culverts for pedestrian and traffic crossing where there is bridge works.

Contractor will be allowed to open further 2Km of the deviation road only when 80% of the permanent work has been completed on first one and he will not be allowed to open further 2Km till he has completed first 4Km of the road and has it opened to traffic

Where the old road exists near the main road, the Contractor shall use this road as deviation road.

b) Geometry

The carriageway width of the deviations shall not be less than 6.5m wide and suitable for 2-way lorry traffic unless otherwise specified.

c) Construction

Unless otherwise instructed gravel wearing course for the deviation shall be 150mm compacted thickness. The materials shall have a minimum CBR of 20% at "97% MDD (AASHTO T180)", Plasticity Index of less than 15% and grading class 1 as per section

10 of the Standard Specification. The Contractor shall allow in his rate for removal of any unsuitable material before placing of gravel wearing course, as this will not be paid for separately.

In addition to provision of this clause, Contractor is required to sprinkle water at least 4 times a day at the rate of 1 - 1.4 litres/m² in regular interval to minimize the effects of dust. Latest sprinkling time shall be one hour before the sunset.

906PASSAGE OF TRAFFIC THROUGH THE WORKS

The Contractor shall arrange for passage of traffic through the works during construction whenever it is not practicable to make deviations. The contractor shall be reimbursed in accordance with the standard specifications.

Any damage caused by passing traffic through the works shall be made good at the contractor's own cost.

907SIGNS, BARRIERS AND LIGHTS

The Contractor shall provide signs, barriers and lights as shown in the drawings at the locations where the traffic is being carried off the existing road to the deviation and back again to existing road.

The Contractor shall provide ramps and carry out any other measures as instructed by the Engineer to safely carry traffic from the road to deviation.

Contrary to what has been specified in this clause the road signs provided shall be fully reflectorized and in conformity with clause 9.1 of the "Manual for Traffic Signs in Kenya Part II".

909ASSISTANCE TO PUBLIC

In addition to provision of clause 909, the Contractor shall maintain close liaison with the relevant authorities to clear any broken down or accident vehicles from the deviations and the main road, in order to maintain smooth and safe flow of the traffic.

912MEASUREMENT AND PAYMENT

(a) Passage of traffic through the works

Payment shall be made on Lump Sum basis.

(b) Maintenance of existing road

The Contractor will be paid by the cubic metre of compacted gravel used to maintain existing road.

(c) Construct Deviation

(i) Road Deviation

The Contractor shall be paid only 50% of the rate for this when he completes deviation road to the satisfaction of the Engineer. The balance shall be paid in

equal monthly installments over the contract period, as he satisfactorily maintains the deviation (as per clause 904 and 905 above) when it is in operation.

(ii) Deviation using Pipe Culverts

The Contractor shall be paid only 50% of the rate for this when he completes deviation to the satisfaction of the Engineer. The balance shall be paid in equal monthly installments over the contract period, as he satisfactorily maintains the deviation when it is in operation. The Contractor shall be paid full amount when the bridge under construction will be in use.

(d) Assistance to Public

The Contractor will be deemed to have included cost of this item in other items and no separate payment shall be made.

10. SECTION 15 - BITUMINOUS SURFACE TREATMENTS

PART A – GENERAL

1501A BITUMINOUS SURFACE TREATMENT

Quality control, workmanship and equipment shall be to current international best practice. Bituminous surface treatments shall be carefully designed by the Contractor, taking into account traffic volumes, surface conditions and requirements for specific locations.

Application rates of the bitumen spray will be approved by the Engineer prior to any trial sections of the work, but the under listed is anticipated and can be used for guidance purpose:

a) Bitumen Spray Rates

- 1.1 - 1.3 l/m² for the single seal to main carriageway
- 1.1 - 1.3 l/m² for the single seal to shoulders and junctions.

1504A HEATING OF BITUMINOUS BINDER

Bitumen 80/100 shall be sprayed in the range of 170°C – 180°C and the maximum heating temperature is 190°C. Bituminous binder shall not be kept within spraying temperature range for periods exceeding 1 hour.

1505A ADHESION AGENT

For all surface dressing, an approved adhesion agent shall be added to the binder, unless otherwise instructed by the Engineer. Adhesion agent shall be added to, and well mixed with, the binder immediately before each spray run.

1506A CONSTRUCTION LIMITATIONS

No bituminous spray shall be applied to a surface with a road temperature of less than 25°C for surface dressing, and 15°C for prime coat, or with adverse weather conditions threatening. A minimum period of 6 weeks shall elapse between the placement of asphalt and the application thereon of bituminous surface dressing.

PART B - PRIME COAT

1502B MATERIALS FOR PRIME COAT AND TACK COAT

- i) The binder for prime coat shall be MC-70 and shall be applied over the full width of the surface of the course to receive the first layer of bituminous material.
- ii) The binder for the tack coat shall be 80/100 cut back penetration grade bitumen. A tack coat shall be applied over the full width of the surface of each bituminous material to receive a further bituminous layer. A tack coat shall also be applied to any prime coat, which has lost its adhesive properties due to contamination or long exposure or weathering before receiving the bituminous layer. Such an application shall be made without additional expense to the Employer unless it is required due to reasons outside the Contractor's control.

1504B SPRAYING OF PRIME COAT AND TACK COAT

Application rates of the bituminous prime coat shall be designed by the Contractor to take into account surface condition of the surface to be primed, expected traffic conditions, blinding, and the time duration before the subsequent bituminous treatment is applied

The rate of spray of bituminous prime coat refers to the gross volume of the cut-back bitumen, that is to say the volume of the bitumen plus dilutant.

- iii) The rate of application of prime coat shall be 0.3 to 0.8 litres/m². The exact quantity to be applied may be varied within these limits to suit field conditions and will be determined from trials by the Engineer.
- iv) The rate of application of the tack coat on bituminous surfaces shall be 0.3 to 0.8 litres/m². The exact quantity to be applied may be varied within these limits to suit field conditions and will be determined from trials by the Contractor and approved by the Engineer.

1506B TOLERANCES

Tolerance shall be +5% of the rate ordered. Work records are to be kept on a daily basis, with details recorded and calculated at the end of each distributor run. The Contractor shall prepare and use a suitable record sheet, which records details of weather and road temperature conditions, length and width of each run, binder dipping before and after each run of the distributor, calculation of actual application rate, under or overspray, and spray outside tolerance. Actual application rates shall be calculated immediately after each run, so that the operation of the distributor can be adjusted to ensure subsequent application rates are within tolerance.

11. SECTION 16 - BITUMINOUS MIX BASES, BINDER COURSES AND WEARING COURSES

This section is divided into the following parts: -

Part A General

Part B Asphalt Concrete for Surfacing

All Bituminous mixes works shall be done in accordance with the standard specifications.

PART A – GENERAL

1603A CONSTRUCTION PLANT

(d) Compaction plant

To achieve specified densities it is expected that vibrating rollers will be required. To achieve satisfactory results it is essential that thorough preconstruction trials be carried out to ensure that the vibrating rollers are set up at the optimum amplitude and frequency for the material being laid, that they do not break down aggregate particles and that the optimum compaction temperatures are established to allow compaction without creating ripple effects or other distortions of the surfacing.

1606A SITE TRIALS

Delete the second paragraph and insert the following:

“The trials shall be carried out to: -

- a) Test materials designed in the laboratory so that a workable mix, which satisfies the specification requirements, can be selected.
- b) To enable the Contractor to demonstrate the suitability of his mixing and compaction equipment to provide and compact the material to the specified density and to confirm that the other specified requirements of the completed asphalt pavement layer can be achieved.”

Renumber paragraph 5 from “(v) –(vi)” to read “(v)-(viii)”

1607A MIXING OF AGGREGATES AND BITUMEN

Delete the second and third paragraphs, then add the following:

The aggregates, minus the filler, prepared as specified above, shall be accurately weighed and conveyed into the mixer in proportionate amounts of each aggregate size

required to meet the Job-Mix Formula. The required amount of bitumen for each batch shall be introduced into the mixer. In batch mixing, the bitumen shall be added after the aggregates have been introduced into the mixer and mixed for 5 to 10 seconds. The filler shall be added after the bitumen and mixing shall continue after addition of the filler for at least the time recommended by the plant manufacturer, or as much extra time as is necessary to obtain a homogeneous mixture, but for no longer.

Aggregate and bitumen shall each be heated to enter the mixing chamber at temperatures selected within the range 150 to 170°C. The temperature of the stone at entry to the mixing chamber shall not be more than 15°C higher than that of the bitumen; the temperature of the bitumen shall be such that on entry to the mixer its kinematic viscosity is in the range 150 – 300 centistokes. The temperature of the aggregate and bitumen at entry into the mixing chamber shall be chosen within the above limits and having regard to the prevailing air temperature and haulage distance to ensure that the temperature of the mix is between 135°C and 165°C when it is laid and not less than 120°C when rolling is commenced. If excessive displacement occurs under the roller the minimum rolling temperature may be reduced at the sole discretion of the Engineer.

The volume of the aggregate and bitumen shall not be so great as to extend above the tips of the mixer blades when the blades are in vertical position. All overheated and carbonised mixtures, which foam or show indication of moisture, will be rejected. When moisture is detected in the finished mixture, all aggregates in the bins shall be removed and returned to the stockpiles.

1608A TRANSPORTING THE MIXTURE

Delete entire clause and insert the following:

The mix shall be transported from the mixing plant to the spreader in trucks having tight, clean, smooth beds, which have been treated to prevent adhesion of the mixture to the truck bodies. Gasoline, kerosene, diesel fuel or other solvents shall not be used for this purpose. Loads shall be covered by waterproof canvas or metal sheets during wet weather. Vehicles shall be insulated when the air temperature and/or length of haul make this necessary to maintain the temperature between the specified limits. Any loads wetted excessively by rain will be rejected. Hauling over freshly laid material will not be permitted.

1609A LAYING THE MIXTURE

Add the following

Mixtures that have a temperature of less than 135°C when dumped into the spreader, will be rejected. The spreader shall be adjusted and the speed regulated so that the surface of the course will be smooth and the course of such depth that, when compacted,

it will conform to the cross-section shown on the Drawings. Lanes shall be parallel to the road centreline.

Add the following:

All joints shall present the same texture, density and smoothness as other areas of the surfacing. The joints between old and new lanes or sections shall be carefully formed in such manner as to ensure a continuous bond between the old and new pavement. All contact surfaces at cold joints, joints with manholes, pits, etc. shall be coated with a thin, uniform coat of MC70 or other medium curing bitumen.

1610A COMPACTION

Add the following:

Tests for conformity with the smoothness and levels specified shall be made by the Contractor immediately after initial compaction and any deviations in excess of the specified tolerances shall be corrected by loosening the hot surface with rakes and removing or adding material as necessary before continuing the rolling. The speed of the rollers shall not exceed 5 km/h and shall at all times be slow enough to avoid displacement of the hot mixture. Any displacement of the mixture occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once by loosening the surface with rakes and re-rolling. Rolling of the surfacing shall be continued until all roller marks are eliminated and the required density is obtained.

The rollers shall not be permitted to stand on surfacing which has not been fully compacted. Precautions shall be taken to prevent the dropping of oil, grease, gasoline, or other foreign matter on any layer. The Contractor shall provide competent workmen who are capable of performing all work incidental to the correction of all surfacing irregularities.

After final rolling, no vehicular traffic of any kind shall be permitted for at least 24 hours.

1611A FINISHING, JOINTS AND EDGES

Add the following:

Construction joints in the various pavement layers shall be staggered by at least the following distances:

- (a) Joints in binder course relative to joints in wearing course: 500mm
- (b) Joints in DBM base relative to joints in wearing course: 400mm

The Contractor shall produce a plan showing the position of all pavement construction joints for approval by the Engineer before pavement construction commences.

Transverse joints in DBM base, binder and wearing course shall be staggered by at least 500mm. The roller shall pass over the unprotected end of the freshly laid mixture only when laying of the surfacing is to be discontinued for such length of time as to permit the mixture to become cold. Otherwise 500mm at the end of the lane shall be left uncompacted.

Cold transverse joints shall be cut back to expose an even, vertical surface for the full compacted thickness of the course and painted with medium curing cutback bitumen as specified above. The fresh mixture shall be raked uniformly against the joint, and carefully compacted to ensure a good bond with the cold material.

The Contractor shall adjust any kerbs, gulley pots and chambers in accordance with final finished road level before laying the final wearing course.

1614A TOLERANCES

Add the following at the end of the second paragraph:

Passing sieves between 1.0 mm and 0.075 mm sieves	± 3% (by total weight of dry aggregate including mineral filler)
Passing 0.075 mm sieve	± 2% (by total weight of dry aggregate including mineral filler)

1616A MEASUREMENT AND PAYMENT FOR ROAD REINFORCEMENT

Item: Geogrid reinforcement netting
Unit: square metres (m²)

The rate shall include for supplying, cutting, place in accordance with the manufacturer's specification, a geotextile reinforcement on the existing surfacing or new surface before laying the dense bitumen macadam or other overlay material. The rate shall include for tacking the material, with tack coat if required and any clout nails.

PART B - ASPHALT CONCRETE FOR SURFACING

1601B DEFINITION

The Asphalt concrete shall be SUPERPAVE (SUPERior PERforming Asphalt PAVement). Modifications to the Standard Specification have been made below to correspond with SHRP SUPERPAVE system recommendations on the design of Hot Mix Asphalt (HMA).

The design of hot mixes shall be in accordance with the procedure detailed in Overseas Road Note 19- “A guide to the design of hot mix asphalt in tropical and subtropical countries” and MS2 – “Asphalt Mix Design Methods, 7th Edition by Asphalt Institute”. The Contractor shall provide copies of ORN 19 and MS2 to the Engineer at the start of the Project. The salient features with reference to Standard Specification are summarized below

1602B MATERIALS FOR ASPHALT CONCRETE

a) Penetration Grade Bitumen

Delete Sub-Section (a) and replace with:

The bitumen shall be penetration grade, and shall meet the requirements of Table 4.3 in ORN 19 as summarized below

TEST		Test Method (ASTM)	Pen 40/50	Pen 60/70	Pen 80/100
Based on original bitumen penetration					
at 25 ⁰ C		D5	40-50	60-70	80-100
Softening point (°C)		D36	49-59	46-56	42-51
Flash point (°C)	Min	D92	232	232	219
Solubility in trichloroethylene (%)	Min	D 2042	99	99	99
TFOT heating for 5 hr at 163 ⁰ C		D 1754			
a) Loss by mass (%)	Max		0.5	0.5	0.5
b) Penetration (% of original)	Min	D5	58	54	50
c) Ductility at 25 ⁰ C	Min	D 113	-	50	75

b) Aggregate

The coarse aggregate shall be entirely crushed rock from a source which is known to give high values of stability (>9kN) in the Marshall test. Crushed river gravel shall not be used. Aggregates shall meet the requirements given in Table 16B-1(b) below (Extracted from ORN 19, Table 4.1)

Table 16 B-1(b) Requirements of Aggregate

Property	Test	Property
Cleanliness	Sand equivalent for 4.75mm fraction ¹	> 40
	Plasticity index for materials passing 0.425mm sieve ²	<4
	Linear shrinkage for materials passing 0.425mm sieve, %	<2
Particle shape	Flakiness Index (FI) ³	<25
Strength	Aggregate Crushing Value, (ACV) ⁴	< 25
	Aggregate Impact Value, (AIV) ⁴	<25

	10% FACT (dry) kN ⁴	> 160
	Los Angeles Abrasion, (LAA) ⁵	<30
Abrasion	Aggregate Abrasion Value ⁴	< 14
Soundness ⁷ 5cycles % loss	Sodium Sulphate Soundness (SSS) Coarse aggregate	<10
	Sodium Sulphate Soundness (SSS) Fine aggregate	<16
	Magnesium Sulphate Soundness (MSS) Coarse aggregate	<15
	Magnesium Sulphate Soundness (MSS) Fine aggregate	<20
Polishing	Polished Stone Value	>57
Water absorption	Water absorption , % ⁶	<2
Bitumen affinity	Immersion Mechanical Test: Index of retained Marshall stability ,% ⁸	>75
	Static Immersion Test, % coating retained ⁹	>95
	Retained Indirect Tensile Strength % at 7% VIM ¹⁰	>79

1. AASHTO T176
2. British Standard 1377: Part 2
3. British Standard 812: Part 105
4. British Standard 812: Part 110 to 114
5. ASTM C131 and C 535
6. British Standard 812: Part 2
7. AASHTO T104
8. D Whiteoak (1990)
9. AASHTO T 182
10. AASHTO T 283

Fine aggregate (passing a 6.3mm sieve) shall consist of entirely crushed rock produced from stone having a Los Angeles Abrasion of not more than 40%

Aggregates for bituminous mixes shall be stored in single size in separate bins or on areas covered with tightly laid wood planks, sheet metal, hard compacted gravel, concrete or other hard and clean surfaces. The surface shall be self-draining, and in such a manner that will preclude the inclusion of foreign material. Aggregates of different grades and sizes and from different sources shall be stored in separate piles, and if these piles are close together they shall be separated by bulk heads

1603B GRADING REQUIREMENTS

The grading of the mixture of coarse and fine aggregate shall be as per the particle size distribution for SUPERPAVE Gradation Requirements detailed under table 6.3 of MS2 or table 5.2 of ORN 19

For better workability of asphalt concrete designed to refusal density and for laying thickness of 50mm, the Maximum Aggregate Size (MAS) shall be limited to 19mm

The Contractor shall investigate number of gradings so that a workable mix, which also retains a minimum of 3% voids at refusal density, is identified. Restricted Zone boundaries shown under table 3.3 of MS2 shall be used as guidance towards identifying a such a grading

1604B REQUIREMENTS FOR ASPHALT CONCRETE

The mixture shall comply with the requirements given in table 6.5, MS2. Adopt 20-year ESAL (in millions) as 4.9

In addition, under Marshall Mix Design Criteria, the mixture shall comply with the requirements given in table 7.2, MS2

The proportion, by weight of total mixture, of bitumen shall be 4.5 - 6.0 % for 19mm MAS. This shall be termed the nominal binder content. The binder content of the working mix will be instructed by the Engineer following laboratory and site trials.

In order to determine the suitability of a coarse aggregate source, a Marshall test programme shall be carried out. It will be advantageous to use crushed rock, which is known from past experience to give good results

Having established the suitability of the aggregate source several gradings shall be tested in the laboratory, including that used for the Marshall test. The blended grading shall include coarse, intermediate and fine grading that pass below the restricted zone, which shall increase the degree of interlock. For each mix, samples shall be made up to a range of bitumen contents at reducing interval of 0.25% from the nominal binder content and compacted using a gyratory compactor. Compaction to refusal shall be by vibratory hammer in accordance with the procedure described in BS 598 (Part 104: 1989), to establish relationships between bitumen content and VIM at refusal density for all the gradings

It should first be confirmed that compaction on one face of the sample gives the same refusal density as when the same compaction cycle is applied to both faces of the same sample. The procedure, which gives the highest density, must be used and shall be submitted to the Engineer for approval

From the above bitumen content - VIM @ refusal density relationship, it shall be possible to identify a bitumen content which corresponds to VIM of 3% for each grading.

To determine the workability of the mix, compaction trials should be undertaken in these gradings with designed binder content @ 3% VIM. It is advisable to establish two or more gradings for compaction trials

The compaction trials will identify a workable mix which can be made to a bitumen content which gives 3% VIM at refusal density and meeting the SUPERPAVE mixture requirements. The mixes identified in compaction trials should be manufactured to the laboratory design bitumen content and to two other bitumen contents. Cores will be cut to determine the density of the compacted material, this core will then be reheated to 145+/-5⁰C in the appropriate mould and compacted to refusal using the vibrating hammer. To be acceptable the cores cut from the compaction trial must have a density equivalent to at least 95% of refusal density

The results of all the mix design options, laboratory and site trials for the adopted mix and the Contractor's recommendations are to be submitted to the Engineer for approval

1605B MIXING AND LAYING ASPHALT

The temperature of the bitumen and aggregates when mixed shall be 110+/-3⁰C above the softening point (Ring and Ball) of the bitumen

Compaction should commence as soon as the mix can support the roller without undue displacement of material and with the temperature of the mix >120⁰C, and completed before the temperature of the mix falls below 90⁰C.

1606B COMPACTION

Rolling shall be continued until compaction of the completed layer attains a minimum mean value of 95% of refusal density (no value less than 93%) and until the voids measured in the compacted layer are within the specified range as appropriate.

12. SECTION 17 - CONCRETE WORKS

1703 MATERIALS FOR CONCRETE

All materials shall comply with the requirements of section 1703 of the standard specifications.

Cement for all concrete works shall be CEM I, 42.5N Portland Cement manufactured to KS EAS 18-1: 2001 - Part 1, KS 1725: 2001 standards

1703 DESIGN OF CONCRETE MIXES

The following classes of concrete shall be designed and mix proportions approved for use as follows:

Class 15/20 for all blinding to structures and precast pipe culvert beds and surrounds

Class 25/20 for all culvert headwalls, wingwalls, aprons, toewalls, and bridge members; abutments, piers and deck

1704 THE DESIGN OF CONCRETE MIXES-I

In table 17-1, insert the following rows:

Class of concrete	Nominal strength	Maximum nominal size of aggregate	Maximum water/cement ratio		Trial mixes target mean strength (clause 1704(c)) N/mm ²	Early work test cubes (clause 1704)	Average of any group of 4 cubes N/mm ²
			A	B			
45/20	45	20	0.45	0.43		38.3	52.5

1704 DESIGN OF CONCRETE MIXES

CONCRETE CLASS 20,30 & 45

The following specification is adopted for the substructure:

- i. Abutments and Piers-Class 30/20
- ii. Bored concrete piles – Class 30/20
- iii. Walkway on bridge Deck-Class 20/20

The following are the specifications for materials selected for prestressed concrete.

- i. Concrete for Girder-45N/mm²

Specifications for construction materials and quality control shall be in accordance with the standard specifications.

1713 FINISHES ON UNFORMED SURFACES

All unformed surfaces shall be finished to class UF 3 Finish in accordance with the standard specifications

1725 SURFACE FINISHES

All surfaces shall be finished to class F3 finish in accordance with the standard specifications.

1728 REINFORCEMENT FOR CONCRETE

All reinforcement to concrete shall be hot rolled high yield deformed bars complying with BS 4449 and steel mesh fabric to BS 4483

1741 MEASUREMENT AND PAYMENT

a) Item: Concrete

Amend clause 1741 (a) (iv) of standard specifications to read “class UF 3 finish”

b) Item: formwork for formed surface finishes

Amend the following to Clause 1741 (e) of the Standard Specification:

Unit m² of formwork shall cover inclined formwork of all slopes and angles.

13. SECTION 20 - ROAD FURNITURE

2001 ROAD RESERVE BOUNDARY POSTS

Road reserve boundary posts shall be provided, with reference points, in compliance with Standard Specification Clause 2001.

2002 FENCING AND GATES

Add the following:

“Construction material for gates shall be steel. Fencing shall be constituted of wood permanent posts and six strand wire.”

2003 EDGE MARKER POSTS

Edge marker posts shall be provided as directed by the Engineer and in compliance with Standard Specification Clause 2003.

2004 PERMANENT ROAD SIGNS

Permanent Road Signs shall be provided as directed by the Engineer and in compliance with the requirements of the "Manual for Traffic Signs in Kenya - Part II" and Standard Specification Clause 2004.

2004B EXISTING ROAD SIGNS

Where directed by the Engineer, the Contractor shall take down road signs including all posts, nuts, bolts and fittings, and remove and dispose of the concrete foundation and backfill the post holes.

Measurement and payment for taking down road signs shall be made by the number of signs of any type and size taken down, cleaned and delivered as directed.

2005 ROAD MARKING

Road marking paints shall be hot applied thermoplastic materials as specified in clause 219 of the Standard Specifications

2005A RAISED PAVEMENT MARKERS – ROAD STUDS

MATERIAL

Road studs are moulded of Acrylonitrile Butadiene Styrene (ABS) conforming to ASTM Specification D1788 – 68, Class 5-2-2 shell filled with inert, thermosetting compound and filler. The lens portion of the marker is of optical menthyl methacrylic.

CONSTRUCTION

The Road Stud shall be constructed of high impact ABS containing a multi-biconvex glass lens reflector system. It shall be of monolithic construction, and not less than 98.5mm². The height of the marker shall not exceed 17mm and the underside shall contain a non-honeycomb base (flat).

REQUIREMENTS

The markers shall conform to the following requirements:

- a) **Colour**
Shall be white, yellow or red as specified and the Retro – reflectance values should conform to the testing procedures of ASTM E 809.
- b) **Impact Resistance**
The marker shall not crack or break when tested using a 1000gram weight from a height of 1 metre. (ASTM D 2444) or BS 3900 Part E3.
- c) **Resistance to Water Penetration**
There shall be no water penetration behind the lens after submerged in a water bath at 70 + 50oF for 10 minutes. And it should still meet the reflectance Requirement as stipulated by BS 998.
- d) **Heat Resistance**
Shall comply with the initial brightness as per BS 873 Part IV of 1978
- e) **Night Visibility**
The marker shall be bright as per BS 873 Part IV of 1978
- f) **Compression Resistance**
There shall be no cracking sound at a pressure lower than 25 tones as per BS 873 Part IV of 1978.
- g) **Corrosion Resistance**
After immersing a sample of Road stud in a solution containing 30g/l of sodium chloride for thirty (30) days, there shall not be any signs of corrosion, (BS 998).

Note: These markers are intended for application directly to pavement surfaces and are compatible with raised pavement markers. These adhesives should be of high quality and tested for conformance to customer requirements.

ADHESIVES

- i) They shall be of Resin Type - Epoxy of 2 different components Part 1 and 2 i.e. Adhesive and Reactor without any volatile solvents in both.
- ii) Pot life: not less than 20 minutes at 20°C
- iii) Rotational cure time: between 20 and 30 minutes at 20°C
- iv) Hard cure: Between 40 and 60 minutes at 20°C

APPLICATION INSTRUCTION

Preparation of Pavements

Make sure that the road surface is absolutely dry and free of oil and grease.

Mixing of Adhesive

Pour component B into the container of component A. Stir mixture by hand with a wooden or metal stick until uniform Grey Tint without a striate is obtained.

Installation

Pour the mixture on to the underside of the road stud. Then place the road stud firmly on the road surface. Adhesive should stand out for about 5mm to 10mm over the edges of the stud.

Protection from the Traffic

Protect studs from traffic for 2 hours until the adhesive has properly hardened. Try by touching the adhesive.

NUMBER OF STUDS NEEDED FOR LABORATORY TESTS

In order to approve a particular type of road stud, 4 sample road studs of each colour shall be submitted.

2006 GUARDRAILS

All materials for guardrails shall comply with the requirements of AASHTO M180-98. Guardrail posts and spacer blocks shall be galvanized UNP steel profiles 120 x 55x7mm or of the type and size shown on the drawings, with posts driven vertically at least 1.2m into the shoulder as directed by the Engineer.

Beams for guardrails shall be "Armco Flexbeam" or similar obtained from a manufacturer approved by the Engineer.

Reflective plates shall be galvanized V-type shape, manufactured from 1.5mm thick mild steel plate, with the outer surfaces coated with engineering grade retro-reflective material. Holes for fixing shall be drilled before the plates are galvanized.

2007 KERBS

a) Vertical Joints

Vertical joints between adjacent Kerbs shall not be greater than 5 mm in width and shall be filled with a mortar consisting of 1:3 cement: sand by volume.

b) Transition between flush and raised kerbs

The transition between flush and raised kerbs (e.g. at bus bays) shall be termed as ramped kerbs. The transition between flush and raised kerbs shall occur within a length of 2.0m.

2008 KILOMETER MARKER POSTS

Kilometre marker posts shall be provided as directed by the Engineer and in compliance with Standard Specification Clause 2008.

2009 RUMBLE STRIPS

The Contractor shall provide, place, trim, shape and compact to line and level asphaltic concrete rumble strips on the finished shoulders as directed by the Engineer.

Asphaltic concrete rumble strip sets to the full width of the carriageway and shoulders shall also be placed as warning strips to speed humps at the preselected locations marked on the Drawings to the satisfaction of the Engineer.

2010 TREES

Trees will be planted according to the advice given by the District Forest Officer or if not available, from an alternative source approved by the Engineer. The rate shall allow for transportation to site, planting as directed by the Engineer, watering during the first dry season after the planting, and protection until the end of the Maintenance Period.

2012 SERVICE DUCTS

Service ducts shall be provided in locations as directed by the Engineer. Ducts shall be heavy duty PVC spigot and socket pipe of 3mm minimum wall thickness. Minimum cover to the top of the pipe from formation level shall be 0.6m. Pipes shall be bedded and surrounded by a 100mm minimum thickness of compacted fine granular material of 10mm maximum size. The remainder of the trench shall be backfilled with selected backfill material of subbase quality up to the top of formation level.

Measurement and payment shall be by the metre of pipe installed, and shall include all excavation, spoil, bedding and surround, backfill, transport, supply, bed, lay of PVC pipe complete with 2mm galvanised draw wire, and end sealing caps and end markers.

2013 ROAD HUMPS

Where shown on the drawings or directed by the Engineer, the Contractor shall provide, place, trim, shape and compact to line and level road humps.

Road humps shall be constructed in asphaltic concrete or concrete class 20/10 to the dimensions shown on the drawings or as directed by the Engineer.

Road humps should be painted with white thermoplastic paint of 45° diagonal strips as shown on the drawings.

2014 RAISED ZEBRA CROSSING

Where shown on the drawings or as directed by the Engineer, the Contractor shall provide, place, trim, shape and compact to line and level flat-topped zebra crossing as detailed on the drawings.

2015 DUCT MARKER POSTS

Duct markers shall be installed by the Contractor at each end of the services ducts provided under clause 2015. The duct marker shall be located immediately beyond the outer edge of the shoulder or footpath and as close to the line of the duct as physical constraints permit. Where several ducts are laid side by side, only one duct marker post will be necessary. The duct marker posts shall be constructed as shown on the Drawings and shall be clearly and durably marked on the side facing away from the road. The marker post shall be inscribed "X ducts" where X is the number of ducts laid in the group marked by the marker post.

2016 CULVERT MARKER POSTS

Culvert markers shall be installed by the Contractor at each end of culverts constructed along the project road. The culvert marker shall be located immediately beyond the outer edge of the shoulder or footpath and as close to the line of the culvert as physical constraints permit. Where several culverts are laid side by side, only one culvert marker post will be necessary at each end of the culverts. The culvert marker posts shall be constructed as shown on the Drawings and shall be clearly and durably marked on the side facing away from the road. The marker post shall be inscribed “X culverts” where X is the number of culverts laid in the group marked by the marker post.

2017 BOLLARDS

Where shown on the Drawings or instructed by the Engineer, the Contractor shall construct permanent bollards. The bollards shall be precast using a class of concrete as shown on the drawings.

2018 PLOT BOUNDARY BEACONS

Where shown on the Drawings or instructed by the Engineer, the Contractor shall construct plot boundary beacons. The plot boundary beacons shall be 1.2m long reinforced concrete post with 150x150mm cross-section founded on 450x450x350 mass concrete as shown on the drawings.

2019 CHANNEL BLOCKS

The Contractor shall provide, lay and joint 125mm x125 and 125mm x 250mm channel blocks to roads, footpaths and shoulders as shown on the Drawings or as instructed by the Engineer.

2021 MEASUREMENT AND PAYMENT

Item: Reflective road studs

Unit: No

Road studs shall be measured by the number instructed and installed. The rate shall include for the cost of provision and transport of all materials, preparation of the road surface, application of adhesives and full compliance with the manufacturer's instructions.

Item: Road humps

Unit: m

Road humps shall be measured by the length installed. The rate shall include for provision, installation and compaction to the satisfaction of the Engineer and removal of surplus material.

Item: Flat topped zebra crossing

Unit: No

Flat topped zebra crossings shall be measured by the number instructed and installed. The rate shall include for all materials, labour and equipment, and all measures required in the construction of the crossing, in accordance with the drawings.

Item: Service ducts

Unit: m

Service ducts shall be measured by the metre as the length of duct installed as per the Engineer's instructions. The rate shall include for providing all materials, excavation, installation of PVC ducts, backfilling to the formation level, compaction, all in accordance with clause 2015.

Item: Duct Marker Post

Unit: No

Duct marker posts shall be measured by the number instructed and installed. The rate shall include for provision and installation of posts, all excavation and backfill, compaction to the satisfaction of the Engineer.

Item: Culvert marker post

Unit: No

Culvert marker posts shall be measured by the number instructed and installed. The rate shall include for provision and installation of posts, all excavation and backfill, compaction to the satisfaction of the Engineer.

Item: Bollards:

Unit: No

Bollards shall be measured by the number instructed and installed. The rate shall include for provision and installation of bollards, all excavation and backfill, compaction to the satisfaction of the Engineer.

Item: Plot boundary beacons

Unit: No

Plot boundary beacons shall be measured by the number instructed and installed. The rate shall include provision, transport of materials, excavation, erection of beacons and backfill, compaction to the satisfaction of the Engineer.

Item: Channel blocks

Unit: m

Channel blocks shall be measured by the length installed, in accordance with the drawings, or as instructed by the Engineer. The unit rate shall include for all excavation (including in hard materials) provision and placing of backing and bedding concrete, cutting of blocks as necessary, and placing of channel blocks to the line and level shown on the drawings or as instructed by the Engineer.

14. SECTION 21 – MISCELLANEOUS BRIDGE WORKS

2103 MOVEMENT JOINTS AND SEALANTS

Insert the following paragraph after last paragraph

‘The movement joint to be an expansion joint in accordance with the drawings or similar approved by the engineer’

2106 SURFACING BRIDGES

Insert the following paragraph after last paragraph

‘the bridge deck shall be finished with 50mm asphaltic concrete in line and grades shown in the drawings.’

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

MASONRY SLOPE PROTECTION REPAIR

Scope of Section

This section covers all removal of damage protection, compacting of gravel filling and patching masonry. All repair work shall be performed strictly in accordance with the Engineer's instruction, the drawing and specification.

General

The construction work of slope patching shall be performed strictly in accordance with the drawings and the Engineer's instructions.

Definitions

Slope protection around the abutment is often damaged due to inadequate compaction of slope embankment, strong stream flow and insufficient flood drains. Although visible damage to the slope protection may be limited, voids may have formed already under the protection due to the base failure. A large section of the slope protection, including the damaged portion, should be removed for purposes of patching repair.

Applicable Standards

All materials required for the slope protection shall be in accordance with the provisions of the relevant clauses of Standard Specifications for Road and Bridge Construction.

Materials

Required material

- Masonry materials to specifications
- Crushed Stone

These materials shall be of a type approved by the Engineer and in accordance with the provisions of the relevant clauses of this specification and Standard Specifications for Road and Bridge Construction.

Order of Works

The damaged stone masonry at limited areas shall be immediately repaired before condition worsens. The damaged area is replaced by installation of new stone masonry according to alignment and dimensions as shown in the drawings.

All unsound, imperfect or loose stones and mortar joint, panel, etc. shall be removed. The substrata shall then be compacted as preparation of the base. The slope line shall be carefully prepared at the same level as also shown in the drawings.

Stones shall be laid in full bed of mortar, with joints completely filled with mortar and shove into place. If necessary to move or shift unit already laid, remove the setting mortar, then clean and apply new fresh mortar for final placement. Coursing and mortar

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

MASONRY SLOPE PROTECTION REPAIR

joints must be done as directed by the Engineer. Stone must be laid and anchors must be installed in accordance with the drawings.

Where new stone masonry is placed to the existing masonry wall, joints shall be partially or completely set. Exposed surface of the existing stone masonry shall be cleaned with wire brush and lightly moisten so as to attain best possible bonding with the new work.

Curing shall be carried out for seven (7) days on the repaired section.

Traffic

The contractor shall comply with the provisions of “Section 9, Passage of Traffic” of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Safety Precautions and Public Health Requirements

By-laws of the Local and National Authority regarding public health and safety

The Contractor shall comply with the By-laws of the Local and National Authority regarding public health and safety in respect of the operation of fast setting mortar for continued deck slab or spoil areas, and in the absence of, or in addition to such By-laws, shall comply with the following conditions: -

- (a) All areas being worked shall be drained and kept drained. Where borrow areas will not drain naturally, it shall be kept pumped dry while being used.
- (b) The Contractor shall confine his operations solely to the areas provided and shall demarcate the boundary of the area and erect temporary or permanent fencing as instructed by the Engineer.
- (c) Where the height of any face exceeds 1 meter, the Contractor shall provide, erect and maintain at his own expense stockproof fencing and gates to prevent unauthorized access to the top of the working face.
- (d) On completion of work temporary fences and all temporary structures shall be demolished and removed, all pits filled in and drained and the site topsoiled and left neat and tidy.

Provision of Personal Protective Equipment's

The Contractor shall provide protective equipment such as helmets, safety harness, masks, goggles, gloves, and safety footwear for workers, the Engineer's staff and permitted visitors at hazardous sites. At the hazardous sites, workers, Engineer's staff and permitted visitors shall not enter any workplaces without appropriate protective

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

MASONRY SLOPE PROTECTION REPAIR

clothing. The Contractor, at his own cost, shall provide adequate numbers of helmets, protective clothing and equipment to his Workforce, the staff of the Engineer and permitted visitors.

Traffic management

The contractor shall comply with the provisions of “Section 9, Passage of Traffic” of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Tolerance

The contractor shall comply with the provisions of Section 3 “SETTING OUT AND TOLERANCES” of Standard Specifications for Road and Bridge Construction and “Applicable Standards” of this specification.

Measurement and Payment

Item: Slope patching

Unit: m²

The method of measurement for slope patching shall be by the square meters of the surface area instructed by the Engineer.

Slope patching works will be paid for at a unit price per square meter, complete in place, which shall include all materials, containers, equipment, tools, labour, service advisor and work incidentals for the works. Any indirect cost item shall not be paid separately. This shall be deemed included in the square meter price.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

TOUCH UP PAINTING

Scope of Section

This section covers all preparation of the steel surface and touch up painting. All repair work shall be performed strictly in accordance with the Engineer's instruction, the drawing and specification.

General

Touch-up painting is done to prevent corrosion. This work only covers painting to small areas where hand and power tool preparation is the only feasible method. Large areas, where sand blast cleaning can be justified, should be painted in accordance with the repainting procedure as described in major maintenance repairs.

Definitions

Work under this item shall consist of field touch-up painting on steel at localized areas. This work also includes containment, surface preparation, and collection and storage of all paint debris.

Touch-up painting is done to prevent corrosion. This work only covers painting to small areas where hand and power tool preparation is the only feasible method. Large areas, where sand blast cleaning can be justified, should be painted in accordance with the repainting procedure as described in major maintenance repairs.

Applicable Standards

The special anti-corrosion paint used for touch-up coating shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification: -

ASTM D7234, BS EN ISO 4624:2016	Adhesive test
ASTM C190, BS 3900	Elongation
ASTM D6943, BS 3900	Saltwater test

The material shall be approved by the Engineer through mill certificate of the supplier.

The aluminium paint shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification: -

ASTM-D1730, BS 3900-F20: 2004	Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting
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Materials

i. Required material

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

TOUCH UP PAINTING

- Aluminium Paint (locally available)
- Thinner
- Special Anti-corrosion Paint

The contractor shall comply with the provisions of “217 Paints for Structures in MATERIALS AND TESTING OF MATERIALS and 1911 PAINTING in STRUCTURAL STEELWORK” of Standard Specifications for Road and Bridge Construction.

These materials shall be of a type approved by the Engineer and in accordance with the provisions of the relevant clauses of this specification and Standard Specifications for Road and Bridge Construction.

Order of Works

(1) Scaffoldings

Scaffolding should be installed at the side of the structure prior to repainting. When steel pipe scaffoldings are used, its assembling sequences shall comply with manufacture’s manual.

If sand blasting is required, steel girder shall be covered with plastic sheet to avoid pollution impact to surrounding soil and water. The contractor shall furnish and install necessary protective devices at the site of the cleaning and surface preparation to ensure complete protection of public and properties adjacent to the blast cleaning abrasives. The type, quantity, and placement of protection must be submitted for Engineer’s approval, before cleaning and painting operations commence. The contractor shall have sufficient reserved quantity of protective devices, and shall be prepared to install same, allowing for unexpected variations in wind and other contingencies. Surface preparation shall not proceed unless the required protective devices are in place.

(2) Preparation of steel surfaces

As first step, the steel bridge shall be washed with fresh water. All adhering rust, scale, dirt, grease or other foreign material shall be removed using a disc grinder or steel wire brush, depending on required surface preparation.

(3) Painting

Paint shall be applied on the steel surface using paint brush and paint roller, to ensure smooth and flat surface. It should be strictly executed to keep a continuous, uniform film of specified thickness. Paint consists of one layer of primer and two layers of aluminum paint.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

TOUCH UP PAINTING

(4) Checking of paint thickness

The applied coating film thickness shall be measured using Paint/Coating thickness meter.

(5) Historical Record Marking

The Painting Historical Record shall be marked on web plate, near the bearing

Traffic

The contractor shall comply with the provisions of “section 9, Passage of Traffic” of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Safety Precautions and Public Health Requirements

By-laws of the Local and National Authority regarding public health and safety

The Contractor shall comply with the By-laws of the Local and National Authority regarding public health and safety in respect of the operation of fast setting mortar for continued deck slab or spoil areas, and in the absence of, or in addition to such By-laws, shall comply with the following conditions: -

- (a) All areas being worked shall be drained and kept drained. Where borrow areas will not drain naturally, it shall be kept pumped dry while being used.
- (b) The Contractor shall confine his operations solely to the areas provided and shall demarcate the boundary of the area and erect temporary or permanent fencing as instructed by the Engineer.
- (c) Where the height of any face exceeds 1 meter, the Contractor shall provide, erect and maintain at his own expense stockproof fencing and gates to prevent unauthorized access to the top of the working face.
- (d) On completion of work temporary fences and all temporary structures shall be demolished and removed, all pits filled in and drained and the site topsoiled and left neat and tidy.

Ensure workers are in proper PPE (Personal Protective Equipment)

The Contractor shall provide protective equipment such as helmets, safety harness, masks, goggles, gloves, and safety footwear for workers, the Engineer's staff and permitted visitors at hazardous sites. At the hazardous sites, workers, Engineer's staff and permitted visitors shall not enter any workplaces without appropriate protective clothing. The Contractor, at

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

TOUCH UP PAINTING

his own cost, shall provide adequate numbers of helmets, protective clothing and equipment to his Workforce, the staff of the Engineer and permitted visitors.

Ensure work area is properly cordoned off

Fence (Plastic) shall be placed as shown on the plans or as directed to define the limits of the work area beyond which no access is allowed to the surrounding wetlands or vegetation to be protected.

Provide traffic warning signs

The contractor shall comply with the provisions of “section 9, Passage of Traffic” of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Tolerance

The contractor shall comply with the provisions of Section 3 “SETTING OUT AND TOLERANCES” of Standard Specifications for Road and Bridge Construction and “Applicable Standards” of this specification.

Measurement and Payment

Item: Touch up painting

Unit: m²

This work will be measured for payment by the actual area in square meters of steel surfaces cleaned, painted and accepted.

This work will be paid based on a unit price per square meter for "Field Touch-up Painting", complete in place, which shall include all materials, containers, equipment, tools, labor, services of the technical service advisor, and work incidental for the touch up painting of the structure. There will be no direct payment for the cost of storage or hauling of the paint and other materials to and from the bridge or bridges to be painted, or for the containment, collection, and storage of hazardous or contaminated materials within the work areas. The cost thereof shall be deemed included in the price per square meter.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

TIGHTENING / RETIGHTENING OF BOLT

Scope of Section

This section covers all removal of bolt, surface preparation, fastening bolt, quality control of bolt fastening, surface preparation and painting. All repair work shall be performed strictly in accordance with the Engineer's instruction, the drawing and specification.

General

Deterioration of bolts used in in-situ joints of steel bridges affects the load-bearing capacity of the joints and may cause the bolts to fall down the girders.

Definitions

This refers to replacing or retightening of missing or loosened bolt connection for steel girders in the field during maintenance inspection.

Applicable Standards

The high-tension bolt shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification: -

ASTM A325 (AASHTO M164), BS 4395-1	High Strength Heavy Hex Structural Bolts
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Materials

i. Required material

- Bolts and nuts
- Paint

These materials shall be of a type approved by the Engineer and in accordance with the provisions of the relevant clauses of this specification.

Order of Works

(1) Finishing surface preparation

After fastening all the bolts, grease or other oil material shall be removed using solvent material. New bolt shall be covered with grease to control rotation friction.

(2) Painting

If touch up painting of the finally fastened bolt is necessary to refer to the section on repainting, for Aluminium Paint (Repainting) and Anti-corrosion Paint, respectively, for the required appropriate paint material.

Traffic

The contractor shall comply with the provisions of "Section 9, Passage of Traffic" of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

TIGHTENING / RETIGHTENING OF BOLT

Safety Precautions and Public Health Requirements

By-laws of the Local and National Authority regarding public health and safety

The Contractor shall comply with the By-laws of the Local and National Authority regarding public health and safety in respect of the operation of fast setting mortar for continued deck slab or spoil areas, and in the absence of, or in addition to such By-laws, shall comply with the following conditions: -

- (a) All areas being worked shall be drained and kept drained. Where borrow areas will not drain naturally, it shall be kept pumped dry while being used.
- (b) The Contractor shall confine his operations solely to the areas provided and shall demarcate the boundary of the area and erect temporary or permanent fencing as instructed by the Engineer.
- (c) Where the height of any face exceeds 1 meter, the Contractor shall provide, erect and maintain at his own expense stockproof fencing and gates to prevent unauthorized access to the top of the working face.
- (d) On completion of work temporary fences and all temporary structures shall be demolished and removed, all pits filled in and drained and the site topsoiled and left neat and tidy.

Provision of Personal Protective Equipment's

The Contractor shall provide protective equipment such as helmets, safety harness, masks, goggles, gloves, and safety footwear for workers, the Engineer's staff and permitted visitors at hazardous sites. At the hazardous sites, workers, Engineer's staff and permitted visitors shall not enter any workplaces without appropriate protective clothing. The Contractor, at his own cost, shall provide adequate numbers of helmets, protective clothing and equipment to his Workforce, the staff of the Engineer and permitted visitors.

Traffic management

The contractor shall comply with the provisions of "Section 9, Passage of Traffic" of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Tolerance

The contractor shall comply with the provisions of Section 3 "SETTING OUT AND TOLERANCES" of Standard Specifications for Road and Bridge Construction and "Applicable Standards" of this specification.

Measurement and Payment

Item: Tightening / retightening bolt

Unit: Number

The quantity of bolts shall be measured by the number of bolts, checked and approved by the Engineer.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

TIGHTENING / RETIGHTENING OF BOLT

The quantities, measured as prescribed above, shall be paid for at a contract until price for several pay items which shall include full compensation for furnishing, preparing, fabricating, transporting, placing and assembly.

SPECIFICATION FOR BRIDGE MAINTENANCE & REPAIR

JOINT SEALING

Scope of Section

This section covers all dismantle existing damaged joint sealant, chipping surface concrete, repair of the damaged concrete surface, backing rod installation, priming prior to pouring the joint sealant, pouring and curing of the joint sealant. All repair work shall be performed strictly in accordance with the Engineer's instruction, the drawing and specification.

General

This specification covers the standards the material, order of works and application requirements for a joint sealing that is a simple general purpose expansion device for bridges.

Definitions

The quality of expansion joints is vital to the behavior of the bridges and its durability.

Expansion joints need to be maintained by waterproofing and ensuring resistance to leakage. This most common joint sealant is easily damaged with repeated traffic load and aging.

Applicable Standards

The primer material shall be in accordance with the provisions of the relevant clauses in this Specification: -

BS 6213

The backing rod material shall be in accordance with the provisions of relevant clauses in this Specification or as specified by the Engineer: -

BS 6213

The epoxy-based joint sealant material shall be in accordance with the provisions of the relevant clauses of the following British Standard or equivalent ASTM Specification: -

ASTM D792, BS EN 1504-5	Specific Gravity
ASTM D695M, BS EN 1504-5	Compressive Strength
ASTM D790M, BS EN 1504-5	Flexural Strength
ASTM D1002, BS EN 1504-5	Tensile Shear Bond Strength
ASTM D 7234, BS EN 1504-5	Bond Strength to Concrete (Dry/Wet)

Materials

- i. Required material
 - Primer
 - Backing Rod
 - Joint Sealant

SPECIFICATION FOR BRIDGE MAINTENANCE & REPAIR

JOINT SEALING

These materials shall be of a type approved by the Engineer and in accordance with the provisions of the relevant clauses of this specification and Standard Specifications for Road and Bridge Construction.

Order of Works

(1) Concrete Surface Preparation

The joint surface/substrate must be clean, sound and homogeneous, free from oils, grease, dust and loose or friable particles. The bond strength is directly dependent on the substrate condition, so it is especially important that any weaker layer or cement laitance be removed completely so that the sealant can bond directly to sound concrete. Weak, loose, or foreign material between the sealant and substrate will cause a failure point. The joint surface should be checked e.g. with a clean cloth on the surface, which should come away clean and free of dust or contaminants. It is important that this condition is achieved for the entire surface where the sealant will adhere, taking into consideration the sealant recess.

Cleaning of the concrete surface to be done by blowing high pressure air free from oil and water.

(2) Fixing of Backer Rods

The joint sealant should adhere to only two sides of the joint in order to perform properly. To allow extension and compression, the bottom surface of the sealant must be free to deform. If the bottom of sealant adheres, this can cause the sealant to rupture in order to deform. Backer rods or bond breaker tapes are used to prevent adhesion to the bottom of the joint and limit the sealant depth.

Closed-cell polyethylene backing rods shall be used. If the joint is not deep enough to allow space for a backer rod, a bond breaking tape (e.g. polyethylene) shall then be used. To provide sufficient backpressure during sealant application, the backing rod should be sized 25% larger than the joint width. Sizing differs among backing rod types; refer to the manufacturer recommendations.

To prevent leakage of sealant during application, backing must be tight.

(3) Primer Application

The primer shall be applied after the backing is inserted.

The primer is applied by hand using a clean brush. For primer and application method, the following points apply:

- Apply the primer according to the application rate as per the manufacturer's specifications. This is basically applying the primer as thin as possible, while still completely covering the joint bonding surface.

SPECIFICATION FOR BRIDGE MAINTENANCE & REPAIR

JOINT SEALING

- Applying too much primer can cause failure within the primer.
- The primer must be allowed to flash off at least the minimum flash off time given by the manufacturer, but no more than the maximum prior to joint sealant application. Any surfaces primed but not sealed within maximum flash off time must be re-cleaned and re-primed before joint sealant application.

(4) Sealant Mixing and Application

If premixing is required, the joint sealant products shall be premixed as per the manufacturer's specifications until a uniformly colored mix is achieved.

After mixing, the sealant shall be applied into the joint manually by using an open container or directly out of the metal pail with a spout to pour the sealant into the joint leaving a recess that will avoid wheel contact with the top surface of the sealant.

(5) Sealant Curing

The sealant shall be cured as per the manufacturer's recommendations and shall be opened to traffic once it has hardened to 100% of the sealant's final hardness.

Traffic

The contractor shall comply with the provisions of "Section 9, Passage of Traffic" of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Safety Precautions and Public Health Requirements

By-laws of the Local and National Authority regarding public health and safety

The Contractor shall comply with the By-laws of the Local and National Authority regarding public health and safety in respect of the operation of fast setting mortar for continued deck slab or spoil areas, and in the absence of, or in addition to such By-laws, shall comply with the following conditions: -

- (a) All areas being worked shall be drained and kept drained. Where borrow areas will not drain naturally, it shall be kept pumped dry while being used.
- (b) The Contractor shall confine his operations solely to the areas provided and shall demarcate the boundary of the area and erect temporary or permanent fencing as instructed by the Engineer.
- (c) Where the height of any face exceeds 1 meter, the Contractor shall provide, erect and maintain at his own expense stockproof fencing and gates to prevent

SPECIFICATION FOR BRIDGE MAINTENANCE & REPAIR

JOINT SEALING

unauthorized access to the top of the working face.

(d) On completion of work temporary fences and all temporary structures shall be demolished and removed, all pits filled in and drained and the site topsoiled and left neat and tidy.

Provision of Personal Protective Equipment's

The Contractor shall provide protective equipment such as helmets, safety harness, masks, goggles, gloves, and safety footwear for workers, the Engineer's staff and permitted visitors at hazardous sites. At the hazardous sites, workers, Engineer's staff and permitted visitors shall not enter any workplaces without appropriate protective clothing. The Contractor, at his own cost, shall provide adequate numbers of helmets, protective clothing and equipment to his Workforce, the staff of the Engineer and permitted visitors.

Bituminous surface treatments and surface dressing

The Contractor shall take every precaution to avoid fire or health hazards. He shall always ensure that: -

- Bitumen is heated only to the temperature required for the particular application;
- Hot bitumen never comes in contact with water;
- Suitable protective clothing and gloves are used when handling hot bitumen; and dust is reduced to a minimum;
- Great care is required when using rapid-curing cut-back, because of the highly flammable nature of the solvent.

Tolerance

The contractor shall comply with the provisions of Section 3 "SETTING OUT AND TOLERANCES" of Standard Specifications for Road and Bridge Construction and "Applicable Standards" of this specification.

Measurement and Payment

Item: Joint Sealing

Unit: m

Joint sealing shall be measured by the linear meter of the joint length defined by the Engineer.

The rate for joint sealing shall include for the cost of all labor, materials, tools, equipment, and other incidental expenses, and for executing the works. The

SPECIFICATION FOR BRIDGE MAINTENANCE & REPAIR

JOINT SEALING

associated works shall be deemed included in the price per linear meter.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EXTEND DRAINAGE PIPES (Boards)

Scope of Section

This section covers all preparation of the extend drainage pipes (Boards). All work shall be performed strictly in accordance with the Engineer's instruction, the drawing and specification.

General

Extend drainage pipes (Boards) are done to prevent corrosion for cross beams. This work only covers fabrication, processing, painting or hot-dip galvanising of steel, transportation and installation of drainage equipment.

Definitions

Extend drainage boards are fixed on the slab to prevent water/moisture from the drainage pipes from splashing onto the steel girders and cross-beams.

Applicable Standards

The extend drainage pipes (Boards) shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification: -

BS 8301	Drain pipes
BS 6087	Flexible joints
BS 437	Flexible rubber ring joint

The material shall be approved by the Engineer through mill certificate of the supplier.

Materials

Materials for drainage pipes (Boards) shall conform to grey cast iron, rigid polyvinyl chloride pipe, carbon steel pipes and other relevant standards.

(1) Product inspection

For products used in drainage pipes, a product inspection record sheet shall be submitted to the Engineers.

(2) Rust Proofing

- 1) The rust proof coating shall be in accordance with the relevant standards and Engineer's instruction.
- 2) The amount of hot dip galvanisation shall conform to the relevant standard (Hot dip galvanisation) and Engineer's instruction.

Order of Works

Drainage pipes (Boards) shall be installed in accordance with the design drawings or as directed by the Engineers, and shall be constructed to a smooth and uniform gradient.

The joints of drainage pipes shall be carefully constructed so as to prevent leakage.

Traffic

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EXTEND DRAINAGE PIPES (Boards)

The contractor shall comply with the provisions of “section 9, Passage of Traffic” of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Safety Precautions and Public Health Requirements

By-laws of the Local and National Authority regarding public health and safety

The Contractor shall comply with the By-laws of the Local and National Authority regarding public health and safety in respect of the operation of fast setting mortar for continued deck slab or spoil areas, and in the absence of, or in addition to such By-laws, shall comply with the following conditions: -

- (a) All areas being worked shall be drained and kept drained. Where borrow areas will not drain naturally, it shall be kept pumped dry while being used.
- (b) The Contractor shall confine his operations solely to the areas provided and shall demarcate the boundary of the area and erect temporary or permanent fencing as instructed by the Engineer.
- (c) Where the height of any face exceeds 1 meter, the Contractor shall provide, erect and maintain at his own expense stockproof fencing and gates to prevent unauthorized access to the top of the working face.
- (d) On completion of work temporary fences and all temporary structures shall be demolished and removed, all latrine pits filled in and drained and the site topsoiled and left neat and tidy.

Ensure workers are in proper PPE (Personal Protective Equipment)

The Contractor shall provide protective equipment such as helmets, safety harness, masks, goggles, gloves, and safety footwear for workers, the Engineer’s staff and permitted visitors at hazardous sites. At the hazardous sites, workers, Engineer’s staff and permitted visitors shall not enter any workplaces without appropriate protective clothing. The Contractor, at his own cost, shall provide adequate numbers of helmets, protective clothing and equipment to his Workforce, the staff of the Engineer and permitted visitors.

Ensure work area is properly cordoned off

Fence (Plastic) shall be placed as shown on the plans or as directed to define the limits of the work area beyond which no access is allowed to the surrounding wetlands or vegetation to be protected.

Provide traffic warning signs

The contractor shall comply with the provisions of “section 9, Passage of Traffic” of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Tolerance

The contractor shall comply with the provisions of Section 3 “SETTING OUT AND TOLERANCES” of Standard Specifications for Road and Bridge Construction and “Applicable Standards” of this specification.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EXTEND DRAINAGE PIPES (Boards)

Measurement and Payment

Item: Extend Drainage Pipes (Boards)

Unit: No.

This work will be measured for payment by the actual number of drainage pipes extended and accepted.

This work will be paid based on a unit price per number for "Extend Drainage Pipes (Boards)", complete in place, which shall include all materials, containers, equipment, tools, labour, services of the technical service advisor, and work incidental for the extend drainage pipes (Boards) of the structure. There will be no direct payment for the cost of storage or hauling and other materials to and from the bridge or bridges for the containment, collection, and storage of hazardous or contaminated materials within the work areas. The cost thereof shall be deemed included in the price per number.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EXTEND DRAINAGE PIPES (Boards)

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

RELOCATING DRAINAGE PIPES

Scope of Section

This section covers all preparation of the relocating drainage pipes. All repair work shall be performed strictly in accordance with the Engineer's instruction, the drawing and specification.

General

Relocating drainage pipes refers to the removal of damaged drainage pipes and the fabrication and installation of new drainage pipes with the appropriate standard.

Definitions

Relocation of the drainage pipes that are draining directly on the steel members below the deck slab and to bridge seat areas is required.

Applicable Standards

The new drainage pipes shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification:

-

BS 8301	Drain pipes
BS 6087	Flexible joints
BS 437	Flexible rubber ring joint

The material shall be approved by the Engineer through mill certificate of the supplier.

Materials

(1) Type, materials and product inspection of new drainage pipes

The type, materials and product inspection of the drainage pipes shall be as per the relevant drawings and Engineer's Instruction.

(2) Corrosion protection of new drainage pipes

Corrosion protection painting shall be in accordance with the appropriate regulations and the Engineer's Instruction.

The amount of hot dip galvanising on steel shall be in accordance with the appropriate specified quantities and the Engineer's instructions.

Order of Works

(1) Removal of existing drainage pipes

When dismantling and removing drainage devices that have interfered with the drainage function due to damage or ageing, they must be removed accurately and carefully so as not to damage the device's mounting.

(2) Waste disposal

Waste disposal shall be in accordance with the appropriate standards and the Engineer's instruction.

(3) New drainage pipes

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EXTEND DRAINAGE PIPES (Boards)

The new drainage pipes shall be correctly installed to prevent leakage, etc., in accordance with the drawings and the Engineer's instructions.

Traffic

The contractor shall comply with the provisions of "section 9, Passage of Traffic" of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Safety Precautions and Public Health Requirements

By-laws of the Local and National Authority regarding public health and safety

The Contractor shall comply with the By-laws of the Local and National Authority regarding public health and safety in respect of the operation of fast setting mortar for continued deck slab or spoil areas, and in the absence of, or in addition to such By-laws, shall comply with the following conditions: -

- (a) All areas being worked shall be drained and kept drained. Where borrow areas will not drain naturally, it shall be kept pumped dry while being used.
- (b) The Contractor shall confine his operations solely to the areas provided and shall demarcate the boundary of the area and erect temporary or permanent fencing as instructed by the Engineer.
- (c) Where the height of any face exceeds 1 meter, the Contractor shall provide, erect and maintain at his own expense stockproof fencing and gates to prevent unauthorized access to the top of the working face.
- (d) On completion of work temporary fences and all temporary structures shall be demolished and removed, all latrine pits filled in and drained and the site topsoiled and left neat and tidy.

Ensure workers are in proper PPE (Personal Protective Equipment)

The Contractor shall provide protective equipment such as helmets, safety harness, masks, goggles, gloves, and safety footwear for workers, the Engineer's staff and permitted visitors at hazardous sites. At the hazardous sites, workers, Engineer's staff and permitted visitors shall not enter any workplaces without appropriate protective clothing. The Contractor, at his own cost, shall provide adequate numbers of helmets, protective clothing and equipment to his Workforce, the staff of the Engineer and permitted visitors.

Ensure work area is properly cordoned off

Fence (Plastic) shall be placed as shown on the plans or as directed to define the limits of the work area beyond which no access is allowed to the surrounding wetlands or vegetation to be protected.

Provide traffic warning signs

The contractor shall comply with the provisions of "section 9, Passage of Traffic" of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Tolerance

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EXTEND DRAINAGE PIPES (Boards)

The contractor shall comply with the provisions of Section 3 “SETTING OUT AND TOLERANCES” of Standard Specifications for Road and Bridge Construction and “Applicable Standards” of this specification.

Measurement and Payment

Item: Relocating drainage pipes

Unit: Number

This work will be measured for payment by the actual number of relocated drainage pipes.

This work will be paid based on a unit price per number for "Relocating Drainage Pipes", complete in place, which shall include all materials, containers, equipment, tools, labour, services of the technical service advisor, and work incidental for the relocating drainage pipes of the structure. There will be no direct payment for the cost of storage or hauling of the pipes and other materials to and from the bridge or bridges or for the containment, collection, and storage of hazardous or contaminated materials within the work areas. The cost thereof shall be deemed included in the price per number.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

CLEANING

Scope of Section

This section deals with cleaning of all components of a bridge. The components include;

- ❖ Decks, sidewalks, kerbs, gutters and the exterior surfaces of sidewalks or kerbs.
- ❖ Railings and truss members including the bottom chord.
- ❖ All associated drainage structures, including scuppers, drain troughs, drain pipes and weepholes.
- ❖ The approaches to the bridge and all associated bridge elements for a distance of a hundred metres, as measured from the abutment joint, including approach guardrails.
- ❖ Expansion joints and deck joints including troughs and seals. Sealed and unsealed joints may require different treatment schedules.
- ❖ The entire abutment and superstructure. The abutment includes bearings, backwall, breast wall, wingwalls and the abutment seat. The superstructure consists of the main girders, deck slab, cross beams, lateral bracings, diaphragms, etc. The outside surface and inside surfaces in case of a box girder.
- ❖ The Pier includes column, pier caps and seat, and bearings.
- ❖ The concrete slope protection.

General

All accumulated foreign materials shall be removed from bridge sidewalks, bridge decks, top of curbs, beam flanges, gusset plates, abutment bridge seats, top of pier, truss joints, deck drain systems, and other locations specified and as directed by the Engineer, prior to cleaning with water pressure. Removal shall be performed using hand brooms, hand shovels, scrapers, vacuum cleaners or other methods acceptable to the Engineer.

The removed materials shall be collected and disposed at an approved waste area in accordance with waste management guidelines. These materials SHALL NOT be disposed into the river or on dry land portions below the bridge.

Regardless of the equipment or method chosen, the bridge components shall not be damaged in any way by the cleaning operation. Any damage caused by the Contractor's operations shall be promptly repaired at his expense.

Definitions

Deck: A structural member that directly supports the road users and transmit the loads to the girders.

Railing: A structure designed to prevent road users from falling off the bridge.

Superstructure: The bridge structure that receives and supports traffic loads and in turn transfers those loads to the substructure.

Substructure: The bridge structure that supports the superstructure and transfer the loads to the ground.

Abutment: Earth retaining structure that supports the superstructure. It forms part of the substructure.

Applicable Standards

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

CLEANING

The cleaning process shall be in accordance with BS 8221-1.

Materials

a. Water

The Contractor shall supply all materials necessary to complete the Work.

Water to be used for cleaning of the bridge components shall be clean and free from sediments, salt contaminants, chemicals, grease, oil and other substances which are harmful to the bridge components.

The contractor shall obtain necessary approvals of the source of water to be used for cleaning. Engineer's approval shall be taken on the source and quality of water. All necessary tests shall be performed on water samples at laboratories to be specified by the Engineer, and test certificates shall be provided as required.

Order of Works

The contractor shall set up proper traffic control.

The Contractor shall remove from the bridge deck, median, curb and sidewalks, all accumulated dirt and debris and dispose of it prior to washing. Removal of accumulated material shall be performed using hand brooms, hand shovels, scrapers, vacuum cleaners or other methods acceptable to the Engineer, moving the debris toward the ends of the bridge, to keep it from entering the river.

The contractor shall then wash the bridge components using water pressure machine and broom. Starting with the top most components going downwards or as instructed by the Engineer. When washing the deck, the drains on the bridge deck shall be blocked so that the water that has blasted the dirt and debris can be directed off the ends of the bridge, into the roadside vegetation. That way, the water used to wash the bridge is filtered by the earth.

When washing overpass structures, the Contractor shall ensure that dirt or debris is not deposited on vehicles or pedestrians passing below.

For box girders, cleaning of the foreign materials should be done with an industrial vacuum. Mop or pressure wash the inside the girder to remove all traces of organic matter. If using pressure washing, the Contractor shall contain and remove all wash water and dispose of it per regulation. Standing wash water shall be removed. Spray all newly cleared surfaces with a disinfectant approved by the Engineer.

Traffic

The road shall be kept open to traffic but controlled for the safety of the workers. The contractor shall provide to the Engineer a detailed program for traffic control for approval.

Safety Precautions and Public Health Requirements

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

CLEANING

The Contractor shall provide adequate protection against worker inhalation of dust from his/her washing operations. In case of box girder, an air blower and an air duct should be used to provide clean air to the workers.

Run off from flushing needs to be controlled to prevent property and environmental damage. All bridge components shall be clean free from any dirt, debris, dust or any form of discoloration caused by stains.

Tolerance

Unless otherwise directed, values given in this specification are minimum values and workmanship shall only be considered as satisfactory if is at least equal that specified in this specification.

Measurement and Payment

i) Cleaning

Unit: m²

The unit for cleaning shall be square meter shall be measured as the sum of all areas of components cleaned as specified in this specification.

The rate for cleaning shall include for the supply of water including full compensation of any required permits and approvals, cleaning and washing all surfaces identified in this specification, disposal of dirt and debris, and all labour, materials, equipment, tools and compliance with the requirements of this specification.

In cases where a roadway lane closure is necessary to clean an overhead structure, traffic accommodation for the lane closure shall be deemed to be paid in the provided rate of cleaning.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

PATCHING

Scope of Section

This section covers all removing of loose debris, furnishing formwork, coating bonding agent or setting nail, patching cement mortar and curing. All repair work shall be performed strictly in accordance with the Engineer's instruction, the drawing and specification.

General

Deteriorated or damaged concrete must be removed and restored. Restoration is primarily performed to restore the cover function of the cross section after treatment with corroded rebar.

The restoration material is required to be integrated with the existing concrete and must have the same coefficient of thermal expansion as the concrete, sufficient adhesion after curing, and low shrinkage during curing.

Definitions

Patch repair is performed to restore small areas where sound concrete is damaged by spalling, scaling, honeycombing and impact.

This method of repair requires none or minimum formwork and the patch thickness is limited to a maximum of 100mm depth of hollow surface.

There are two types of patching, Type A is for defects without exposed rebars while Type B is applied to surfaces with exposed rebars.

Depending on the type of patching, location and extent of damage, the patching repairs may be composed of either Portland cement mortars (cheap treatment with Portland cement mortar may cause hidden severe damage in the future) or polymer cement mortar.

Applicable Standards

Portland Cement Mortar shall be in accordance with the provisions of the relevant clauses of Standard Specifications for Road and Bridge Construction. The strength test for Portland cement mortar shall be based on ASTM C780.

The polymer cement mortar (PCM) shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification: -

ASTM C39, BS 6319-2	Compressive Strength
ASTM D7234, BS 6319-4	Bonding Strength to Concrete
ASTM C39, BS 6319	Bleeding Rate

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

PATCHING

The material shall be approved by the Engineer through mill certificate of the supplier.

The epoxy bonding agent to concrete surface shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification: -

ASTM D695M, BS EN 1504-5	Compressive Strength
ASTM D790M, BS EN 1504-5	Flexural Strength
ASTM D638M, BS EN 1504-5	Tensile Strength
ASTM D1002, BS EN 1504-5	Tensile Shear Bond to Steel
ASTM C882, BS EN 1504-5	Slant Shear Bond to Mortar
ASTM D7234, BS EN 1504-5	Bond Strength of Cured Concrete to Fresh Concrete

The material shall be approved by the Engineer through mill certificate of the supplier.

Materials

i. Required material

- Portland Cement Mortar
 - Pre-mixed and pre-bagged Portland Cement Mortar
 - Water
 - Concrete Nail
 - Bonding agent to concrete (Epoxy Bonding)
- Polymer Cement Mortar (PCM)
 - PCM powder
 - PCM Emulsion
 - Concrete Nail
 - Bonding Agent to Concrete (Epoxy Bonding)

These materials shall be of a type approved by the Engineer and in accordance with the provisions of the relevant clauses of this specification and Standard Specifications for Road and Bridge Construction.

Order of Works

(6) Removal of Damaged Concrete

Concrete within marked out areas shall be removed using light mechanical breakers or hammer and chisel. Cut the exposed reinforcement and determine the soundness of the concrete substrate to the satisfaction of the Engineer, without breaking the concrete behind the reinforcement.

(7) Preparation of Concrete Surface

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

PATCHING

All concrete surfaces that are to receive repair mortar shall be prepared by mechanical scrubbing to remove loose materials, surface laitance, organic contaminants and moss, and then coated by bonding primer. Utmost care shall be taken to ensure that vibration from the method of preparation does not cause delamination of adjacent render or concrete.

(8) Additional Concrete Breakout

Where the breakout indicates that the exposed reinforcement is further corroded or the surrounding concrete is not sound, the Contractor shall be informed and an enlarged area shall be agreed to be broken to the satisfaction of the Engineer.

The Contractor shall test the concrete for depth of carbonation at the reinforcement depth at his own expense. The depth of breakout in clearly defined areas can be increased based on written instructions from the Engineer, in order to remove all carbonated concrete. The additional concrete breakout shall not extend to more than 20 mm behind the bottom layer main reinforcement. During breakout, utmost care shall be undertaken to minimize damage to existing reinforcement.

(9) Additional or Replacement Rebar

The Contractor shall report to the Engineer any rebar which has 10% or more section loss as a result of corrosion. Additional or replacement rebar shall be provided as instructed by the Engineer. Replacement rebar shall be cleaned to the same standard as the existing rebar. This replacement rebar shall be lapped on the side of the existing bars and be spot welded on one side. It shall be fixed along its length at suitable intervals to prevent sagging. The corroded rebars shall be cleaned and be applied with zinc rich primer to prevent further corrosion. The Contractor shall obtain Engineer's approval for the rebar coating prior to proceeding with repair mortar application.

(10) Method of Placing Mortar

The repair mortar shall be mixed using equipment (normally a force action mixer) of a type approved by the Engineer. The mixing liquid shall be added to the dry components and thoroughly mixed to achieve a uniform consistency, unless otherwise approved by the Engineer. The mortar shall then be applied to the bonding agent using hand packing and trowel to the satisfaction of the Engineer. The textured finish of the final repair mortar layer shall match the finish on the existing interior surface.

The repair mortar application shall be built up to the original surface profile in layers not exceeding 20 mm and the final layer shall not exceed 15 mm, unless otherwise recommended by the manufacturer and approved by the Engineer. The Engineer may approve repair mortar application thickness of up to 50 mm for lightweight mortars, provided the repair mortar manufacturer can furnish a technical data to justify a layer thickness of greater than 20 mm.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

PATCHING

(11) Curing

Curing of the repair mortar shall be in accordance with the polymer modified additive manufacturer's instructions. Where curing agents are specified by the manufacturer, they shall be applied immediately after the surfaces have been scarified for the next repair mortar layer or troweled to a finish.

Traffic

The contractor shall comply with the provisions of "Section 9, Passage of Traffic" of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Safety Precautions and Public Health Requirements

By-laws of the Local and National Authority regarding public health and safety

The Contractor shall comply with the By-laws of the Local and National Authority regarding public health and safety in respect of the operation of fast setting mortar for continued deck slab or spoil areas, and in the absence of, or in addition to such By-laws, shall comply with the following conditions: -

- (a) All areas being worked shall be drained and kept drained. Where borrow areas will not drain naturally, it shall be kept pumped dry while being used.
- (b) The Contractor shall confine his operations solely to the areas provided and shall demarcate the boundary of the area and erect temporary or permanent fencing as instructed by the Engineer.
- (c) Where the height of any face exceeds 1 meter, the Contractor shall provide, erect and maintain at his own expense stockproof fencing and gates to prevent unauthorized access to the top of the working face.
- (d) On completion of work temporary fences and all temporary structures shall be demolished and removed, all pits filled in and drained and the site topsoiled and left neat and tidy.

Ensure workers are in proper PPE (Personal Protective Equipment)

The Contractor shall provide protective equipment such as helmets, safety harness, masks, goggles, gloves, and safety footwear for workers, the Engineer's staff and permitted visitors at hazardous sites. At the hazardous sites, workers, Engineer's staff and permitted visitors shall not enter any workplaces without appropriate protective clothing. The Contractor, at his own cost, shall provide adequate numbers of helmets,

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

PATCHING

protective clothing and equipment to his Workforce, the staff of the Engineer and permitted visitors.

Ensure work area is properly cordoned off

Fence (Plastic) shall be placed as shown on the plans or as directed to define the limits of the work area beyond which no access is allowed to the surrounding wetlands or vegetation to be protected.

Provide appropriate warning signs

The contractor shall comply with the provisions of “Section 9, Passage of Traffic” of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Tolerance

The contractor shall comply with the provisions of Section 3 “SETTING OUT AND TOLERANCES” of Standard Specifications for Road and Bridge Construction and “Applicable Standards” of this specification.

Measurement and Payment

Item: Patching

Unit: m³

The Engineer shall measure the area prepared for patching by the cubic meter, after the designated thickness of surface has been removed. The measured pay quantity shall include the marked areas and delaminated concrete identified by the Engineer.

The price and payment per square meter of patching shall include full compensation for the removal of deteriorated concrete, surface cleaning and preparation, furnishing and placing of all materials, labour, equipment, tools, as well as construction and removal of formworks and other temporary works necessary to complete the patching works.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EPOXY INJECTION

ITEM 8

Scope of Section

This section covers all cleaning cracks, adhesion of pipe fitting, sealing of cracks at the surface, fitting of injection, injection of epoxy, curing of injection material and performance test. All repair work shall be performed strictly in accordance with the Engineer's instruction, the drawing and specification.

General

Crack repair shall be performed as needed, and crack injection shall take into account crack size, crack width variation, and other conditions.

Resin-based (epoxy resin) materials can be injected into cracks to the finest detail, but when injected into cracks in a wet condition, the adhesion of some materials is significantly reduced compared to dry conditions.

Crack repair work must be carefully applied to ensure that it functions well. In addition, the repaired material shall be sufficiently cured and shall not be applied under construction conditions that may cause a reduction in strength.

Definitions

This is an economical method of repairing non-moving cracks in concrete structures and is capable of restoring the concrete to its pre-cracked strength.

Applicable Standards

The epoxy resin shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification: -

ASTM D2393, BS EN 1504-5	Viscosity
BS EN 1504-5	Pot life (60 minutes)
ASTM D792, BS EN 1504-5	Specific Gravity
ASTM D695, BS EN 1504-5	Compressive Strength
ASTM D 695M, BS EN 1504-5	Modulus of Elasticity
ASTM D790M, BS EN 1504-5	Flexural Strength
ASTM D 1002, BS EN 1504-5	Tensile Shear Bond Strength
ASTM D 7234, BS EN 1504-5	Bond Strength to Concrete (Dry/Wet)

The material shall be approved by the Engineer through mill certificate of the supplier.

The epoxy-based sealant material (putty) shall be in accordance with the provisions of the relevant clauses of the following British Standard, KS or equivalent ASTM Specification: -

ASTM D792, BS EN 1504-5	Specific Gravity
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SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EPOXY INJECTION

ITEM 8

ASTM D695M, BS EN 1504-5	Compressive Strength
ASTM D790M, BS EN 1504-5	Flexural Strength
ASTM D1002, BS EN 1504-5	Tensile Shear Bond Strength
ASTM D 7234, BS EN 1504-5	Bond Strength to Concrete (Dry/Wet)

The material shall be approved by the Engineer through mill certificate of the supplier.

Materials

i. Required material

- Epoxy Resin
- Sealant
- Injection Port

These materials shall be of a type approved by the Engineer and in accordance with the provisions of the relevant clauses of this specification.

Order of Works

(1) Preparation of Concrete

The intention of this work is to fill and seal these cracks, particularly those found on concrete bridges. The extent of the cracks shall be indicated by the Contractor and shown on drawings. The detail of the quantities shall be marked out on the concrete elements, and agreed with the designated Engineer prior to proceeding. The Engineer may adjust the extent of the work as the project proceeds, based on actual conditions.

Loose or spalled concrete, grease, traces of paints, oil or other contaminants shall be marked out and removed using wire brushes, grinding wheels or power brush as cleaning devices.

All cracks shall be thoroughly cleaned using clean, oil-free compressed air. Both the concrete surface and the cracks shall be allowed to dry thoroughly before commencing the epoxy injection.

(2) Adhesion of Pipe Fitting

The pipe fittings shall be fixed at intervals along the length of each crack. The distance between each fitting shall be as shown on the drawings, considering the width and depth of crack, for approval of the Engineer. The surface sealant shall be moisture tolerant putty with good adhesion to concrete. This is supplied in two components namely, the base resin and the hardener. These are weighed according to the specified mix proportions of the manufacturer. Mixed process is continued until a uniform paste is obtained.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EPOXY INJECTION

ITEM 8

The mixed surface sealant shall be applied to the metal base of each pipe fitting. They shall be pressed firmly into place and held until secured. In this way, all the fittings shall be fixed along the length of the crack. The surface of the cracks between the fittings shall be sealed with a band of surface sealant, measuring 50 mm wide and 2 to 3 mm thick. A complete seal shall be made around the metal bases of each pipe fitting. The prepared cracks shall be allowed to cure for at least 12 hours.

(3) Epoxy Injection

Each crack shall be treated in a single, continuous operation. Sufficient materials shall therefore be readily available prior to the commencement of work. The preparation, mixing and application of the materials shall be undertaken in strict compliance with the manufacturer's recommendations, approved by the Engineer. Before the works commence, the Contractor should ensure that all necessary tools and equipment are on site.

The materials shall not be used when the ambient temperature is below or at 5°C or on a falling thermometer, or is above 35°C, without the Engineer's approval. The injection resin shall be of a pre-packed type and only its complete set will be allowed for use. No part packs or on-site batching will be allowed under any circumstances.

In all operations of storage, mixing and application, the Contractor shall comply with the health and safety standards of the Engineer and the relevant governing rules and regulations.

(4) Curing

The epoxy system shall be allowed to cure undisturbed for twenty-four (24) hours. The pipe fittings and bands of surface sealant shall then be removed. Any damaged areas shall be made good to the satisfaction of the Engineer.

(5) Performance Test

Low Frequency Pulse Velocity Ultrasonic Inspection will be determined if the epoxy resin has penetrated the full depth of the crack. If incomplete penetration is revealed by inspection, such conditions shall be reworked at the Contractor's expense.

Traffic

The contractor shall comply with the provisions of "Section 9, Passage of Traffic" of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Safety Precautions and Public Health Requirements

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EPOXY INJECTION

ITEM 8

By-laws of the Local and National Authority regarding public health and safety

The Contractor shall comply with the By-laws of the Local and National Authority regarding public health and safety in respect of the operation of epoxy injection or spoil areas, and in the absence of, or in addition to such By-laws, shall comply with the following conditions: -

- (a) All areas being worked shall be drained and kept drained. Where borrow areas will not drain naturally, it shall be kept pumped dry while being used.
- (b) The Contractor shall confine his operations solely to the areas provided and shall demarcate the boundary of the area and erect temporary or permanent fencing as instructed by the Engineer.
- (c) Where the height of any face exceeds 1 meter, the Contractor shall provide, erect and maintain at his own expense stockproof fencing and gates to prevent unauthorized access to the top of the working face.
- (d) On completion of work temporary fences and all temporary structures shall be demolished and removed, all pits filled in and drained and the site topsoiled and left neat and tidy.

The Contractor shall comply with the following conditions: -

In Application of the Epoxy:

- 1. Wear long sleeved tops and long trousers;
- 2. Wear shoes and socks since epoxy will drip onto feet;
- 3. Wear disposable vinyl gloves;
- 4. Tape over the joint between the gloves and the sleeve if necessary;
- 5. Take care not to rub the wrist with the dirty fingers of the other hand when removing gloves;
- 6. Wash any splashes with warm soapy water as soon as possible; and,
- 7. Never use solvents.

When sanding:

- 1. Never use solvents;
- 2. Wear long sleeved tops and long trousers and consider wearing coveralls;

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EPOXY INJECTION

ITEM 8

3. Wear shoes and socks;
4. Wear a dust mask;
5. Wear a hood or hat and scarf;
6. Wear gloves;
7. Reduce the area of exposed skin to a minimum;
8. Wash dust off skin and hair as soon as convenient; and,
9. Wash clothing after each exposure.

Maintaining a Clean Work Environment

- Maintain a clean workshop to avoid incidental contact with the epoxy resin. If you have epoxy residue on your gloves, don't touch door handles, light switches, or epoxy containers because you'll probably touch them again when you're not wearing gloves.
- Clean up epoxy spills with a scraper, collecting as much material as possible. Follow up with paper towels.
- Contain large spills with sand, clay, or other inert, absorbent material. DO NOT use sawdust or other fine cellulose materials to absorb hardeners. You may reclaim uncontaminated resin or hardener for use.
- Clean up resin or mix epoxy with acetone, lacquer thinner, or alcohol. Follow all safety warnings on solvent containers.
- DO NOT dispose of hardeners in the trash containing sawdust or other fine cellulose materials—they can spontaneously combust.
- Clean hardener residue with warm, soapy water.
- Pots of curing epoxy can get hot enough to emit hazardous fumes and ignite combustible materials nearby. Place pots of mixed epoxy in a safe and ventilated area, away from works and combustible materials.
- Dispose of the solid epoxy mass only after it has completely cured and cooled

Tolerance

The contractor shall comply with the provisions of Section 3 "SETTING OUT AND TOLERANCES" of Standard Specifications for Road and Bridge Construction and "Applicable Standards" of this specification.

Measurement and Payment

Item: Epoxy injection

Unit: m

Measurement shall be in linear meter (m).

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

EPOXY INJECTION

ITEM 8

Payment shall include full compensation for the removal of deteriorated concrete, surface cleaning and preparation, furnishing and placing of all materials, labour, equipment, tools, as well as construction and removal of formworks and other temporary works necessary to complete the epoxy injection.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

CARBON FIBER SHEET BONDING TO DECK SLAB ITEM 11

Scope of Section

This section covers all preparation of concrete, application of primer, adjustment of unevenness with putty, application of epoxy resin for undercoat, installation of longitudinal layer carbon fibre sheet, installation of transversal layer carbon fibre sheet, squeezing out of entrapped air and surface protection. All repair work shall be performed strictly in accordance with the Engineer's instruction, the drawing and specification.

General

The carbon fibre-sheet bonding is a method of restoring or improving the load-bearing capacity of concrete slabs by bonding fibre sheets mainly to the surfaces subjected to tensile and oblique tensile stresses and integrating them with the existing slabs. This method is applied to flexural and shear reinforcement of concrete bridges.

Definitions

Carbon fibre sheet for reinforced concrete repairs and strengthening systems consists of a combination of carbon fibre reinforcing material and adhesive resin such as epoxies and other materials.

Applicable Standards

The carbon fibre sheet shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification: -

BS 7658-1	Carbon fiber weight
ASTM D3039, BS ISO 14127:2006	Tensile Strength
ASTM D3039, BS ISO 14127:2006	Overlap Tensile Strength
ASTM D7234, BS EN 1504-5	Bond Strength to Concrete (Dry/Wet)

The material shall be approved by the Engineer through mill certificate of the supplier.

The epoxy adhesive shall be in accordance with the provisions of the relevant clauses of the following British Standard, Kenya Bureau of standards or equivalent ASTM Specification: -

ASTM D2393, BS EN 1504-5	Viscosity
ASTM D695M, BS EN 1504-5	Modulus of Elasticity
ASTM C882, BS EN 1504-5	Slant Shear Bond to Concrete
ASTM D7234, BS EN 1504-5	Bond Strength to Concrete (Dry/Wet)

The material shall be approved by the Engineer through mill certificate of the supplier.

Materials

i. Required material

- Carbon Fiber Products

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

CARBON FIBER SHEET BONDING TO DECK SLAB ITEM 11

- Carbon fiber sheet (Recommended Strap Type)
- Epoxy Materials
 - Epoxy primer
 - Epoxy putty
 - Epoxy resin adhesive

These materials shall be of a type approved by the Engineer and in accordance with the provisions of the relevant clauses of this specification.

Order of Works

A. Surface Preparation

All concrete surfaces shall be clean, sound and free from surface moisture. Crack sealing or water proofing shall be provided prior to concrete surface restoration. If water leaks through cracks on concrete surface to be covered with CFS, surface preparation and application of the CFS shall be in accordance with the approved manufacturer's specifications. Both the Contractor and the manufacturer's technical representative must verify suitability of any changes to the application methods proposed by the Engineer. Cracks larger than 0.3 mm shall be injected with epoxy using a system/method approved by the Engineer. Section loss shall be repaired with cement mortar using a system/method approved by the Engineer.

B. Material Handling

The carbon fiber components shall be delivered in an original, unopened (except carbon fabric or strips) containers clearly marked with the manufacturer's name, product identification, and batch numbers. Storage and handling of the various related products shall be in conformance with manufacturer's recommendations and instructions.

C. Prime Coat

Contact surface shall be dry before coating with primer. The primer should be formulated and compatible to the carbon fiber material and should not be applied when raining, storming or air is misty or when condition remains unsatisfactory in the opinion of the Engineer.

Application rate shall be such as to ensure complete saturation of the contact surface. Primer should be cured between 2 to 3 hours before proceeding to the next step.

D. Putty Application

This work involves application of epoxy putty onto the primer coated concrete surface, using trowel or spatula, to smoothen the surface. The putty is applied when the primer is already tack-free. The application method is as follows:

- Mix 2 parts of epoxy putty until the mixture is homogenized.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

CARBON FIBER SHEET BONDING TO DECK SLAB ITEM 11

- Apply the putty to smoothen the surface. Allowable unevenness after putty application is 1 mm/m.

E. Application of Epoxy Resin for Undercoat

Prior to undercoating epoxy resin adhesive, ambient temperature at the work site shall be checked to confirm the curing conditions for applying the resin. The Contractor shall check and confirm that the primer and putty have become tack-free and that no clay and dust exist on the concrete surface prior to Engineer's inspection. If there is a time interval of longer than 3 days after the primer and putty application, the coated surface should be roughened with sandpaper and cleaned before the resin application.

The contact surface condition shall be tack-free and application shall not be done when raining, storming, air is misty, or when in the opinion of the Engineer, conditions are unsatisfactory to carry on with the work.

F. CFS Application (Longitudinal Direction)

The standard length of carbon sheet will be cut to 4 to 6 m. If standard cut length is exceeded, wrinkles will appear and installation becomes more difficult. The CFS shall be applied as per the following:

- Stick the CFS in the longitudinal direction with a reasonable lapse of 20 to 30 minutes after the epoxy resin application.
- Press the CFS using a roller (plastic roller is preferred) starting from the center towards the edge to squeeze out entrapped air before the epoxy resin sets.
- When lapping of two CFS is required, a lap length of not less than 20 cm shall be provided.

The specified normal curing time is only for reference purposes. The actual curing period should be determined in consideration of the ambient temperature and manufacturer's recommendation in the work site, subject to Engineer's approval.

G. Over Coating Resin Application

Mixing and application procedure for the over coat shall be similar to that of the under-coating resin. The standard quantity of over-coating resin is 0.2 kg/m². The actual quantity should be determined in consideration with ambient temperature and manufacturer's recommendation in the work site, subject to Engineer's approval.

H. CFS Application (Transversal Direction)

After all longitudinal layer CFS application, the transversal layer CFS is applied at right angles to each other in same manner as the longitudinal direction.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

CARBON FIBER SHEET BONDING TO DECK SLAB ITEM 11

(9) Quality Control and Inspection

The Contractor shall conduct a quality control program that includes, but not limited to, the following:

- Inspection of all materials to ensure conformity with contract requirements, and that all materials are new and undamaged.
- Inspection of all surface preparation carried out prior to CFS application.
- Inspection of work in progress to ensure work is being done in accordance with Specifications, and approved manufacturer's instructions.
- Inspection of all work completed including verification of all repairs for debonding, and correction of any defective work.
- After allowing at least 24 hours for initial resin saturate to cure, the Contractor shall perform a visual and acoustic tap test inspection of the layered surface. All voids, bubbles and delamination shall be repaired in accordance with manufacturer's recommendations. The Contractor shall conduct adhesion testing of the fully cured CFS and assembly using direct pull-off tests, at locations determined by the Engineer. Failure at the bond line at tensile stress below 14kgf/cm² (200 psi) shall be cause for rejecting the repair works. A minimum of two pull-off tests per system (span) shall be performed. The test shall be completed prior to the application of the protective top coat on the CFS.

Traffic

The contractor shall comply with the provisions of "Section 9, Passage of Traffic" of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Safety Precautions and Public Health Requirements

Ensure workers are in proper PPE (Personal Protective Equipment)

The Contractor shall provide protective equipment such as helmets, safety harness, masks, goggles, gloves, and safety footwear for workers, the Engineer's staff and permitted visitors at hazardous sites. At the hazardous sites, workers, Engineer's staff and permitted visitors shall not enter any workplaces without appropriate protective clothing. The Contractor, at his own cost, shall provide adequate numbers of helmets, protective clothing and equipment to his Workforce, the staff of the Engineer and permitted visitors.

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

CARBON FIBER SHEET BONDING TO DECK SLAB ITEM 11

Workers need to protect themselves from hazards with specific protective equipment when working on site. This includes odour masks, shoes that are suitable for use on ladders and protective eyewear designed to block airborne particles and flying pieces of plaster.

Required to ensure all workers can complete their jobs safely without impacting anyone else around them. Different tasks being completed mean different risks to those on site, so as there will be a bigger range of health and safety issues at play.

Cordon the site by use of appropriate barricade equipment

Fence (Plastic) shall be placed as shown on the plans or as directed to define the limits of the work area beyond which no access is allowed to the surrounding wetlands or vegetation to be protected.

Working at height

Often these repairs are conducted at height. It is important that stability is crucial in order to work safely and minimize risk, safe scaffolding must be put in place and stable working platforms where tools and equipment being used at height can be safely kept.

Implement traffic safety regulations as per the traffic management plan

The contractor shall comply with the provisions of “Section 9, Passage of Traffic” of Standard Specifications for Road and Bridge Construction with regard to the construction and maintenance of access road to work areas and with regard to traffic operations thereon.

Risk Assessment and Mitigation

All sites where these works are being done should undergo a full risk assessment as well as identifying who will be responsible for the safety and wellbeing of the workers during the repair execution. This person should also be in a position to keep themselves up-to-date with new information regarding hazards or materials as the work progresses and update others to keep everyone on site safe.

Tolerance

The contractor shall comply with the provisions of Section 3 “SETTING OUT AND TOLERANCES” of Standard Specifications for Road and Bridge Construction and “Applicable Standards” of this specification.

Measurement and Payment

Item: Carbon fibre sheet bonding to deck slab

Unit: Carbon fibre sheet: m²

SPECIFICATIONS FOR BRIDGE MAINTENANCE & REPAIR

CARBON FIBER SHEET BONDING TO DECK SLAB ITEM 11

The total area of deck slab under repair shall be measured per square meter. The carbon fibre sheet performed shall be measured in accordance with plans and specifications. The basis of measurement shall consider the total area to be covered by carbon fibre sheet in square meter. All other necessary measurements shall be carried out in accordance with the applicable standards.

The quantity of work measured shall be paid at a contract unit price and shall generally cover full compensation for all materials, equipment, supervision, related services necessary for strengthening the concrete as detailed in plans and specifications. Any other items of work not covered in this shall be determined by the Engineer i.e., engineering design and technical services including contractor's submittals required in the specifications.

15. SECTION 22 -DAYWORKS

2202 MEASUREMENTS AND PAYMENT

Add after the first paragraph of Clause (a) Plant:

Where items of major equipment listed in the schedule of Dayworks are specified by type (e.g. concrete mixer etc.) the power rating of such items of equipment to be provided by the Contractor shall not be lower than the power ratings of such equipment, manufactured within the last two years prior to the date of Tender. Any item of major plant employed upon Dayworks which has a power rating lower than specified shall be paid for at rates lower than those in the schedule of Dayworks. The reduction in the rate payable shall be in proportion to the reduction in power rating below that specified.

16. SECTION 25 - HIV/AIDS, GENDER ISSUES, SOCIAL ISSUES AND LOCAL PARTICIPATION

2501 SCOPE OF THIS SECTION

This specification sets out the Contractor's obligations with regard to on-site HIV/AIDS awareness campaign and preventive measures which are to be instituted.

2502 INTERPRETATION AND DOCUMENTATION

The following documents shall inter-alia be read in conjunction with this Specification;

- The Instructions to Bidders
- The Conditions of Contract
- The Drawings

2503 GENERAL REQUIREMENTS

a) HIV/AIDS Awareness Campaign

The Contractor shall institute an HIV/AIDS awareness campaign amongst his workers for the duration of the contract. As part of the campaign the Contractor will be required to display AIDS awareness posters in all buildings frequented by workers employed on the contract, where such buildings fall under the control of the Contractor. In addition, the Contractor will put at least ten HIV/AIDS awareness posters in the vehicles that are regularly used on site. The posters shall be printed on gloss paper and shall be at least A1 size on buildings and A3 size, or other approved size, on vehicles. The message on the posters shall be supplied by the Employer through the Engineer before the posters are printed.

AIDS awareness shall also be included in the orientation process of all workers employed on the contract.

b) AIDS Prevention Campaign

The Contractor shall institute an HIV/AIDS prevention campaign amongst his workers for the duration of the contract. As part of the campaign the Contractor will be required to make condoms available to workers. The condoms shall be from an approved manufacturer. The Contractor shall make available at least 4,000 condoms every month through dispensing machines or other approved method of distribution. The Contractor shall at all times keep the site adequately supplied with condoms.

c) HIV/AIDS Training Introduction

HIV/AIDS is having a significant and increasing impact in Kenya. Statistics show a prevalence of 10-15% along some of the major roads in the country. Interventions that stimulate the movement of people increase both the exposure to the HIV virus and the spread of the virus. Road construction has been identified as one such intervention. MOR policy is to integrate HIV/AIDS awareness and prevention into all road construction and rehabilitation programmes. This is in accordance with the Third National Strategic Plan (2000-5) for HIV/AIDS prevention and control as approved by the Government of

Kenya, International Bank for Reconstruction and Development (IBRD) and many other organizations.

It is a contractual requirement to carry out HIV/AIDS awareness and prevention activities during the construction period as provided in this specification.

Objective

The objective is to reduce the risk of exposure to and spread of the HIV virus in the area of the construction. The target group will be local labourers and their supervisors employed by the works Contractors. The wider community will benefit indirectly through their normal day-to-day interaction with the target group.

Scope of Activities

Activities for HIV/AIDS awareness and prevention will be broad-based targeting both individuals and groups. They may consist of:

- (i) Information posters in public places both on and offsite (eating houses, bars, guest houses, vehicles etc.)
- (ii) Availability of socially marketed condoms.
- (iii) Peer educators (reference people) drawn from the local labour and educated in HIV/AIDS issues for discussions with colleagues (estimate 1 per 100 employees).
- (iv) Small focus group discussions and information covering key issues
- (v) Theatre groups and video presentations
- (vi) Promotional events (such as sports to encourage openness and discussion of HIV/AIDS issues
- (vii) Promotional billboards to raise awareness of the integration of construction and HIV/AIDS activities
- (viii) Inclusion of HIV/AIDS activities at site meetings with the Provincial/District committees and other representatives
- (ix) Availability of promotional material such as t-shirts, caps bumper stickers, key rings etc.

The scope of activities may be tailored as required to meet the perceived needs and priorities of the labourers, determined by participatory approaches to ensure they are appropriate desired and have a public health impact. The scale and frequency of activities may also be adjusted to suit requirements of the target group. Education will cover:

- preventive behaviours including partner reduction, condom use, awareness and importance of treatment of Sexually Transmitted Infections (STIs);
- skills including negotiating safer sex, correct condom use, purchase without embarrassment; and
- referral to local health centres and available services.

Tasks to support the above activities will be to:

1. Establish the status and focus of all current and planned HIV/AIDS activities in the area to ensure complementarity and determine potential involvement in project activities.
2. Carry out a brief review of regional activities combining road construction with HIV/AIDS campaigns to determine options, best practice key issues, constraints, etc.
3. Review of Information, Education and Communication (IEC) materials available and their relevance to road construction, making recommendations for future development of IEC materials.
4. Provide education and training for site personnel, supervisors and peer educators for the scope of activities as above.
5. Provide supervision for peer educators to ensure sustained quality of education. Incentives for their continual work may be small promotional items such as t-shirts, caps, etc.
6. Provide mechanisms for the social marketing of condoms and distribution of materials.
7. Monitor activities regularly to assess effectiveness and impact. This should include an initial, interim and final assessment of basic Knowledge, Attitude and Practices (KAP) taking account of existing data sources and recognising the limitations due to the short time frame to show behaviour change. The KAP will be supported by qualitative information from focus group discussions.

Collaboration

HIV/AIDS activities are co-ordinated nationally by the National Aids Control Council (NACC). MoR, in consultation with NACC and the Ministry of Health (MoH), will co-ordinate with the provincial, district and local representatives. Representatives of local health authorities will be invited to attend training and communication activities.

Activities on the construction site will be linked as far as possible with on-going HIV/AIDS awareness and prevention in the area. This will ensure complementarity of approaches, reinforcing education and minimising duplication. In addition, these links will ensure that the target group will have access to continued information after the end of the construction period.

Contractor Responsibilities

The Contractor will employ and designate a qualified HIV/AIDS expert to be approved by the Engineer, who will work closely with the Client, MoR and other implementing agencies to support the HIV/AIDS awareness and prevention activities. This will ensure maximum effectiveness and integration with construction activities. Specific, but not exclusive, issues to be addressed by the Contractor are:

- a) Scheduling of appropriate timing and duration for the implementation of HIV/AIDS activities as part of work plan for labourers and supervisors. Designated rest times such as lunch breaks and pay days should be excluded.
- b) Identification of suitable individuals for education from recruitment records for education with the implementing organisation.
- c) Provision of suitable sites for communication activities and for condom distribution.
- d) Monitoring the implementation of peer educational activities.

- e) Provision of necessary support to the implementing organisation.

The Contractor shall be actively involved in the liaison and coordination associated with the provision and implementation of the HIV/AIDS awareness and education program.

Inputs

An organisation experienced in the provision of HIV/AIDS awareness and prevention activities will be selected as a Sub-Contractor to provide the above scope of activities on behalf of the main Contractor.

Reporting

The implementing organisation will produce the following reports to be submitted to the Contractor, Consultants, MoR and NACC:

- Monthly progress briefs for inclusion in site meetings.
- Quarterly reports detailing activities carried out, issues, follow up, etc.
- Review report of activities in the road construction sector,
- Review report of existing IEC materials with recommendations for development of materials specifically for the road sector.
- Final report detailing the methodology and activities carried out under this project including lessons learnt, impact, liaison with the Contractor and other parties, etc.

In addition, a report with the recommended approach for integration of HIV/AIDS awareness and prevention activities in the road construction sector will be produced. This will be a synthesis of project activities including contractual approaches, communication activities, availability of materials, liaison with existing organisations, etc. It will be developed with all parties involved in the construction activities to ensure the wide range of views and experiences is gained.

The final report and recommended approach will be presented to MoR, NACC and other interested organisations including private sector, funding agencies and NGO's.

Timing

Activities shall commence at the start of the construction period and continue throughout the thirty (30) months to ensure a sustained impact. Reporting and dissemination activities shall continue for three months after the project is completed to ensure integration into current practice.

2504 MEASUREMENT AND PAYMENT

Section I of the Bill of Quantities contains a prime cost sum for the provision of a HIV/AIDS awareness campaign, plus a percentage for the Contractor's liaison and coordination, overheads and profit associated with the provision and implementation of this campaign.

17. SECTION 26 – ROAD SAFETY CAMPAIGN

2601 SCOPE OF THIS SECTION

This specification sets out the Contractor's obligations with regard to on-site road safety campaign which is to be conducted during the construction period. The aim of this road safety campaign is to achieve safe road use in the project area.

Indeed, an improved roadway complete with paved surface will undoubtedly encourage more vehicular traffic and will allow vehicles to travel at higher average speeds. This will increase the possibility for accidents between vehicles, and with non-motorized traffic such as cyclists, pedestrians and both domestic and wild animals.

Although the improved road will be wider in certain areas and dangerous curves will be straightened, thus making it safer to travel at higher speeds, there is still likelihood of collisions between vehicles and with vehicles and bicycles, pedestrians, and livestock (and wildlife).

Due to poor road conditions over the years, people, animals, NMTs, and particularly children are unaware of the danger of a fast approaching vehicle and may cross the road in front of it. This impact is likely to be serious during daytime hours when traffic is heavier and when drivers are able to move faster.

Thus the Contractor shall conduct a road safety campaign in order to increase the awareness of the dangers of the road among the communities living alongside the project road, and the Consultant's workers.

2602 GENERAL REQUIREMENTS

(a) Road safety prevention campaign

The Contractor shall institute a road safety campaign amongst his workers, and the communities living alongside the road, for the duration of the contract. . As part of the campaign the Contractor will be required to display road safety posters in all buildings frequented by workers employed on the contract, where such buildings fall under the control of the Contractor, and in all schools and public buildings within the road project area. In addition, at least three (3) of the Contractor's vehicles, regularly used on site shall display road safety posters. The posters shall be printed on gross paper and shall be at least A1 size on buildings and A3 size, or other approved size on vehicles. The message on the posters shall be supplied by the Employer through the Engineer before the posters are printed.

(b) Road safety training

- Objective

The objective of the road safety campaign is to reduce the risk of exposure to road accidents in the area of the road. The target groups will be the public alongside the road, especially the children in schools and the chiefs of the village, but also local labourers and their supervisors employed by the works contractors. The wider community will benefit indirectly through their normal day-to-day interaction with the target groups.

- **Scope of activities**

Activities for road safety awareness will be broad-based targeting both individuals and groups. They may consist of:

- (i) Information posters in public places both on and offsite (eating houses, bars, guest houses, etc.) and on contractor's vehicles,
- (ii) Peer educators (reference people) drawn from the local labour, and from the local communities, and educated in road safety issues for discussions with colleagues or the local community members,
- (iii) Small focus group discussions and information covering key issues,
- (iv) Theatre groups and video presentations,
- (v) Promotional events (such as football matches) to encourage openness and discussion of road safety issues,
- (vi) Promotional bill boards to raise awareness of the integration of construction and road safety activities,
- (vii) Availability of promotional materials such as T-shirts, caps, bumper stickers, key rings, etc.

The scope of activities may be tailored as required to meet the perceived needs and priorities of the local communities and the workers, determined by participatory approaches to ensure they are appropriate, desired and have a public impact. The scale and frequency of activities may also be adjusted to suit requirements of the target groups. Education will cover:

preventive behaviours including safe road crossing, walking on shoulders and not on the road;

referral to local information centres and services available.

Tasks to support the above activities will be to:

1. Establish the status and focus of all current and planned road safety campaign activities in the area to ensure complementarity and determine potential involvement in project activities.
2. Carry out a brief review of regional activities combining road construction with road safety campaigns to determine options, best practice key issues, constraints, etc.
3. Review of Information, Education and Communication (IEC) materials available and their relevance to road construction, making recommendations for future development of IEC materials.
4. Provide education and training for site personnel, supervisors, local community members, and peer educators for the scope of activities as above.
5. Provide supervision for peer educators to ensure sustained quality of education. Incentives for their continual work may be small promotional items such as T-shirts, caps, etc.
6. Monitor activities regularly to assess their effectiveness and impact. This should include an initial, interim and final assessment of basic knowledge, attitude and practices (KAP) taking account of existing data sources and recognising the limitations due to the short time frame to show behaviour change. The KAP will be supported by qualitative information from focus group discussions.

- **Contractor's Responsibilities**

The Contractor will designate a qualified road safety expert, to be approved by the Engineer, who will work closely with the Client, MOR and other implementing agencies to support the road safety campaign activities. This will ensure maximum effectiveness and integration with construction activities. Specific but not exclusive issues to be addressed by the Contractor are:

- Scheduling of appropriate timing and duration for the implementation of the road safety campaign as part the workplan.
- Identification of suitable individuals for education from recruitment records with the implementing organization and from within the local communities.
- Provision of suitable sites for communication activities.
- Monitoring of the implementation of peer educator activities.
- Provision of support as necessary to the implementing organization and local communities.

Inputs

An organisation experienced in the provision of road safety campaigns will be selected as a subcontractor to provide the above scope of activities on behalf of the main Contractor.

Reporting

The implementing organisation will produce the following reports to be submitted to the Contractor, the Engineer, and the Employer:

- monthly progress briefs for inclusion in site meetings.
- quarterly reports detailing activities carried out, issues, follow ups, etc.
- a review report of activities in the road construction sector,
- a review report of existing IEC materials with recommendations for development of materials specifically for the road sector.
- a final report detailing the methodology and activities carried out under this project including lessons learnt, impact, liaison with the Contractor and other parties, etc.

Timing

Activities shall commence at the start of the construction period and continue through out the Contract duration to ensure a sustained impact. Reporting and dissemination activities shall continue for three months after the project is completed to ensure integration into current practice.

2603 MEASUREMENT AND PAYMENT

The payment for items in this clause shall include full compensation for all work associated with the provision of road safety campaign related services as specified.

Item: Instituting a Road Safety Awareness Campaign

Unit: months

The unit of measurement shall be the calendar month or part thereof, measured over the duration of the campaign. The tendered rate shall include full compensation for equipment, labour and material required for the provision of the service.

Item: Instituting an Accident Prevention Campaign

Unit: months

The unit of measurement shall be the calendar month or part thereof, measured over the duration of the campaign. The tendered rate shall include full compensation for equipment, labour and material required for the provision of the service.

Item: Road Safety Training

Unit: Provisional Sum

Compensation for road safety specialists for the implementation of the Training element of Clause 26 03 (b)

Any amount required under this item will be approved by the Engineer, prior to expenditure. Handling costs and profit in respect of this sub-item will be paid as a percentage (%) of the Provisional Sum expended.

18. SECTION 28-ENVIRONMENTAL MITIGATION MEASURES

2801 MEASUREMENT AND PAYMENT

28.01 Item: Allowance for the implementation of the Environmental and Social Management Plan (ESMP) during construction.

Unit: PC Sum

28.02 Item: Extra over item 28.01 for Contractor's profit and overheads.

Unit: %.

28.03 Item: Allowance for the implementation of the Environmental and Social Management Plan (ESMP) after construction.

Unit: PC Sum

28.04 Item: Extra over item 28.03 for Contractor's profit and overheads.

Unit: %.

The PC Sums shall include for all cost in connection with implementation of the Environmental Social and Management Plan during and after construction as required.

The contractor shall price a percentage of the sum allowed to cover for his overheads and profit.

SECTION IX – DRAWINGS

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

- 1. *Kithyoko Bridge 1 - 4***
- 2. *Nguutani Bridge 1 - 4***
- 3. *Kavenge Bridge 1 - 4***
- 4. *Kavaini Bridge 1 - 4***

PART 3 – CONDITIONS OF CONTRACT AND CONTRACT FORMS

**SECTION X
CONDITIONS**

CONDITIONS OF CONTRACT, PART I -GENERAL

SECTION X CONDITIONS OF CONTRACT PART I: GENERAL CONDITIONS OF CONTRACT

The Conditions of Contract Part 1 – General Conditions shall be those forming Part 1 of the Conditions of Contract for works of Civil engineering construction Fourth Edition 1987, reprinted in 1992 with further amendments, prepared by the Federation Internationale des Ingenieurs Conseils (FIDIC)

Copies of the FIDIC Conditions of Contract can be obtained from:

FIDIC Secretariat

P.O. Box 86

1000 Lausanne 12

Switzerland

Fax: 41 21 653 5432

Telephone: 41 21 653 5003

**SECTION XI: CONDITIONS OF CONTRACT, PART II - CONDITIONS
OF PARTICULAR APPLICATION**

SECTION XI: CONDITIONS OF CONTRACT PART II: (CONDITIONS OF PARTICULAR APPLICATION)

The following Conditions of Particular Application shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The Particular Condition is preceded by the corresponding clause number of the General Conditions to which it relates.

TABLE OF CONTENTS

SUBCLAUSE 1.1 – DEFINITIONS.....	286
SUBCLAUSE 2.1 - ENGINEER’S DUTIES AND AUTHORITY.....	286
SUBCLAUSE 5.1 - LANGUAGE AND LAW	287
SUBCLAUSE 5.2 – PRIORITY OF CONTRACT DOCUMENTS.....	287
SUBCLAUSE 8.2 - SITE OPERATIONS AND METHOD OF CONSTRUCTION	287
SUBCLAUSE 10.1 - PERFORMANCE SECURITY.....	287
SUBCLAUSE 10.2 - VALIDITY OF PERFORMANCE SECURITY	288
SUB CLAUSE 10. 3 - CLAIMS UNDER PERFORMANCE SECURITY	288
SUBCLAUSE 10. 4 - COST OF PERFORMANCE SECURITY	288
SUB CLAUSE 11. 1 - INSPECTION OF SITE	288
SUBCLAUSE 11.2 - ACCESS TO DATA.....	288
SUBCLAUSE 14.1 PROGRAM TO BE SUBMITTED	289
SUBCLAUSE 14.2- REVISED PROGRAMME	290
SUBCLAUSE 14.3- CASHFLOW ESTIMATE	290
SUBCLAUSE 15.1- CONTRACTOR’S SUPERINTENDENCE.....	290
‘SUBCLAUSE 15.2- LANGUAGE ABILITY AND QUALIFICATIONS OF CONTRACTOR’S AUTHORISED AGENT.....	290
SUBCLAUSE 16.2- ENGINEER AT LIBERTY TO OBJECT	291
SUBCLAUSE 16.3- QUALIFICATION AND LANGUAGE ABILITY OF SUPERINTENDING STAFF	291
SUBCLAUSE 16.4 – EMPLOYMENT OF LOCAL PERSONNEL	291

SUBCLAUSE 19.1- SAFETY, SECURITY AND PROTECTION OF THE ENVIRONMENT	291
SUBCLAUSE 20.4 - EMPLOYERS RISKS	292
SUBCLAUSE 21.1 - INSURANCE OF WORKS AND CONTRACTOR ‘S EQUIPMENT	293
SUBCLAUSE 21.2 – SCOPE OF COVER.....	293
SUBCLAUSE 21.4 - EXCLUSIONS.....	293
SUBCLAUSE 23.2 – MINIMUM AMOUNT OF INSURANCE	294
SUBCLAUSE 25.1 – EVIDENCE AND TERMS	294
SUBCLAUSE 25.5 – INSURANCE NOTICES	294
SUBCLAUSE 25.6 – NOTIFICATION TO INSURERS.....	294
SUBCLAUSE 28.2 – ROYALTIES.....	294
SUBCLAUSE 29.1 – INTERFERENCE WITH TRAFFIC	294
SUBCLAUSE 29.2 – REINSTATEMENT AND COMPENSATION FOR DAMAGES TO PERSONS AND PROPERTY	295
SUBCLAUSE 34.2 – CONDITIONS OF EMPLOYMENT OF LABOUR.....	295
SUBCLAUSE 34.3 – FAIR WAGES	295
SUBCLAUSE 34.4 – BREACH OF FAIR WAGES CLAUSE.....	296
SUBCLAUSE 34.5 – RECRUITMENT OF UNSKILLED LABOUR	296
SUBCLAUSE 34.6 – COMPENSATION FOR INJURY	296
SUBCLAUSE 34.7 – LABOUR STANDARDS.....	296
SUBCLAUSE 35.2 – RECORDS OF SAFETY AND HEALTH	297
SUBCLAUSE 35.3 – REPORTING OF ACCIDENTS.....	297
SUBCLAUSE 41.1 – COMMENCEMENT OF WORKS.....	297
SUBCLAUSE 43.1 – TIME FOR COMPLETION	297
SUBCLAUSE 44.1 – EXTENSION OF TIME FOR COMPLETION	297
SUBCLAUSE 45.1 – RESTRICTION ON WORKING HOURS	297
SUBCLAUSE 47.2 – REDUCTION OF LIQUIDATED DAMAGES.....	298
SUBCLAUSE 49.1 – DEFECTS LIABILITY PERIOD	298

SUBCLAUSE 49.2 – COMPLETION OF OUTSTANDING WORK AND REMEDYING DEFECTS.....	298
SUBCLAUSE 51.1 – VARIATIONS.....	299
SUBCLAUSE 52.1 – VALUATION AND VARIATIONS	299
SUBCLAUSE 52.4 – VARIATIONS EXCEEDING 25 PERCENT	299
SUBCLAUSE 52.4 – DAYWORKS	299
SUBCLAUSE 54.1 – CONTRACTOR’S EQUIPMENT, TEMPORARY WORKS AND MATERIALS :.....	299
SUBCLAUSE 55.2 – OMMISIONS OF QUANTITIES	300
SUBCLAUSE 58.4 – PROVISIONAL ITEMS.....	300
SUBCLAUSE 60.1 – MONTHLY STATEMENT.....	300
SUBCLAUSE 60.2 INTERIM PAYMENT CERTIFICATE	300
SUBCLAUSE 60.3 – PAYMENT OF RETENTION MONEY	301
SUBCLAUSE 60.4– CORRECTION OF CERTIFICATES	301
SUBCLAUSE 60.5– STATEMENT AT COMPLETION.....	301
SUBCLAUSE 60.6 – FINAL STATEMENT.....	302
SUBCLAUSE 60.7– DISCHARGE.....	302
SUBCLAUSE 60.8 – FINAL PAYMENT CERTIFICATE.....	302
SUBCLAUSE 60.9– CESSATION OF EMPLOYERS LIABILITY	302
SUBCLAUSE 60.10 – TIME FOR PAYMENT.....	303
SUBCLAUSE 60.11 – CURRENCY OF PAYMENT	303
SUBCLAUSE 60.12 – ADVANCE PAYMENT.....	303
SUBCLAUSE 63.1	304
SUBCLAUSE 67.1 – ENGINEER’S DECISION	304
SUBCLAUSE 67.2 – AMICABLE SETTLEMENT.....	305
SUBCLAUSE 67.3 – ADJUDICATION	305
SUB CLAUSE 67.3 – ARBITRATION	306
SUBCLAUSE 68.2 – NOTICES TO EMPLOYER AND ENGINEER	306

SUBCLAUSE 68.4	306
CLAUSE 69 – DEFAULT OF EMPLOYER	307
CLAUSE 70 – CHANGES IN COST AND LEGISLATION	307
CLAUSE 72 – RATES OF EXCHANGE COST	309
CLAUSE 73 – BRIBERY AND COLLUSION	309
CLAUSE 74 – CONTRACT CONFIDENTIAL	310
CONDITIONS OF CONTRACT PART II (CONDITIONS OF PARTICULAR APPLICATION)	

SUBCLAUSE 1.1 – DEFINITIONS

Amend this sub-clause as follows:

- (i) The “Employer” is the Kenya National Highways Authority, represented by the Director General - Kenya national Highways Authority.

The “Employer’s Representative” is the Director (Highway Design & Safety)

- (ii) The “Engineer” is the Deputy Director (Structures) - Kenya National Highways Authority.

(b) (i) Insert in line 2 after the Bills of Quantities”, the following, “the rates entered by the Contractor (whether or not such rate be employed in computation of the Contract Price),”

Amend subparagraph (b) (v) of Sub-Clause 1.1 by adding the following words at the end:

The word “Tender” is synonymous with “bid” and the word “Appendix to Tender” with “Appendix to Bid” and the word “Tender documents” with “bidding documents”.

Add the following at the end of this sub-clause:

- (h) (i) “Materials” means materials and other things intended to form or forming part of the Permanent Works.

SUBCLAUSE 2.1 - ENGINEER’S DUTIES AND AUTHORITY.

With reference to Sub-Clause 2.1 (b), the following shall also apply: The Engineer shall obtain the specific approval of the Employer before taking any of the following actions specified in Part 1:

- (a) Consenting to the subletting of any part of the works under Clause 4;
- (b) Certifying additional cost determined under Clause 12;
- (c) Determining an extension of time under Clause 44;
- (d) Issuing a variation under Clause 51;
- (e) Fixing rates or prices under Clause 52

(f) The works specified under this Contract shall be executed, supervised and evaluated in accordance to the Contract Supervision and Evaluation Manual developed by the Ministry of Roads – Version 2012

SUBCLAUSE 5.1 - LANGUAGE AND LAW

The Contract document shall be drawn up in the ENGLISH LANGUAGE. Communication between the Contractor and the Engineer's Representative shall be in this given language.

The Laws applicable to this Contract shall be the Laws of the Republic of Kenya.

SUBCLAUSE 5.2 – PRIORITY OF CONTRACT DOCUMENTS

Delete the documents listed 1-6 and substitute:

- (1) The Contract Agreement (if completed)
- (2) The Letter of Acceptance;
- (3) The Bid and Appendix to Bid;
- (4) The Conditions of Contract Part II;
- (5) The Conditions of Contract Part I;
- (6) The Special Specifications;
- (7) The Standard Specification for Road and Bridge Construction, 1986;
- (8) Road Maintenance Manual, May 2010 Edition and Performance Based Contract Manuals.
- (9) The Drawings;
- (10) The priced Bills of Quantities
- (11) Other documents as listed in the Appendix to form of Bid

SUBCLAUSE 8.2 - SITE OPERATIONS AND METHOD OF CONSTRUCTION

Add the following to last paragraph of sub clause 8.2

The Contract may be terminated if the Contractor is unable to take full responsibility for the adequacy, stability and safety of all Site operations and methods of construction.

SUBCLAUSE 10.1 - PERFORMANCE SECURITY

Replace the text of Sub-clause 10.1 with the following:

“The Contractor shall provide security for his proper performance of the Contract within 14 days after receipt of the Letter of Acceptance. The Performance Security shall be in the form of a bank guarantee as stipulated by the Employer in the Appendix to Bid. The Performance Security shall be issued by a bank incorporated in Kenya. The Contractor shall notify the Engineer when providing the Performance Security to the Employer.

“Without limitation to the provisions of the preceding paragraph, whenever the Employer determines an addition to the Contract Price as a result of a change in cost, the Contractor, at the Engineers written request, shall promptly increase the value of the Performance Security by an equal percentage.

SUBCLAUSE 10.2 - VALIDITY OF PERFORMANCE SECURITY

The Performance Security shall be valid until a date 28 days after the date of issue of the Defects Liability Certificate. The security shall be returned to the Contractor within 14 days of expiration.

Add the following to the last paragraph of sub clause 10.2

The Resident Engineer shall provide a 28 days' Notice to the Contractor informing him of the early expiry of his Performance Security. Upon receipt of such a Notice the Contractor shall before lapse of 14 days extend the Performance security and provide evidence of such an extension to the Resident Engineer. Failure by the contractor to renew his performance Security 7 days to its expiry the Resident Engineer will Request the Engineer to redeem it. Such a request shall be handled immediately and the performance security recovered.

SUB CLAUSE 10.3 - CLAIMS UNDER PERFORMANCE SECURITY

Delete the entire sub-clause 10.3 and insert the following paragraph

The Employer shall be at liberty to claim part or the entire performance Security without informing or notifying the Contractor provided that the conditions necessitating the claim are contractual.

Add new sub clause 10.4

SUBCLAUSE 10.4 - COST OF PERFORMANCE SECURITY

The cost of complying with the requirements of this clause shall be borne by the Contractor.'

SUB CLAUSE 11.1 - INSPECTION OF SITE

In line 17 after "affect his Tender" add

"and the Contractor shall be deemed to have based his BID on all the aforementioned"

Delete the last paragraph completely and replace with the following:

"The Employer in no way guarantees completeness nor accuracy of the soil, materials, subsurface and hydrological information made available to the Contractor at the time of bidding or at any other time during the period of the Contract, and the Contractor shall be responsible for ascertaining for himself all information as aforesaid for the execution of works and his BID shall be deemed to have been priced accordingly.

Add a new sub clause; 11.2 as follows;

SUBCLAUSE 11.2 - ACCESS TO DATA

Data made available by the Employer in accordance with Clause 11.1 shall be deemed to include data listed elsewhere in the Contract as open for inspection at the address stipulated in the Appendix to Bid.'

Add a new sub clause; 14.1 as follows;

SUBCLAUSE 14.1 PROGRAM TO BE SUBMITTED

The time within which the program shall be submitted shall be as specified in the Appendix to the Form of Bid.

This detailed program shall be based upon the program submitted by the Contractor as part of his BID, where this was required, and shall in no material manner deviate from the said program.

The program shall be in the form of a Critical Path Method Network (CPM Network) showing the order of procedure and a description of the construction methods and arrangements by which the Contractor proposes to carry out the Works. It should also be supplemented by a time –bar chart of the same program. The program shall be coordinated with climatic, groundwater and other conditions to provide for completion of the works in the order and by the time specified. The program shall be revised at three-month intervals and should include a chart of the principle quantities of work forecast for execution monthly.

The Contractor shall submit to the Engineer not later than the day or date mentioned in the Appendix to the Form of Bid, a general description of his proposed arrangements and methods for the execution of the Works, including temporary offices, buildings, access roads, construction plant and its intended production output, working shift arrangements, labour strength, skilled and unskilled, supervision arrangements, power supply arrangements, supply of materials including a materials utilization program, stone crushing, aggregate production and storage, cement handling, concrete mixing and handling, methods of excavation, dealing with water, testing methods and facilities.

During the execution of the works, the Contractor shall submit to the Engineer full and detailed particulars of any proposed amendments to the arrangements and methods submitted in accordance with the foregoing.

If details of the Contractors proposals for Temporary Works are required by the Engineer for his own information the Contractor shall submit such details within fourteen days of being requested to do so.

The Resident Engineer may at his discretion provide to the Contractor a Format of submitting the Program of Works to comply with the Cash-flow projections and budgets assigned to the project

The various operations pertaining to the works shall be carried out in such a progressive sequence as will achieve a continuous and consecutive output of fully completed roadworks inclusive of all bridge works and culverts within the time limits specified in the Contract. Generally, the Contractor shall start at one end of the road and progress continuously towards the other without leaving any isolated section or sections of uncompleted road provided always that the site of the works has been acquired in its entirety and the encumbrances and services thereon removed.

The Contractor shall allow in his programme all published Kenya public holidays including but not limited to the following per calendar year during which the Contractor shall not be permitted to work.

- New Year's Eve (31st December)
- New Year's Day (1st January)
- Good Friday
- Easter Monday

- Labour day (1st May)
- Madaraka Day (1st June)
- Idd Ul Fitr
- Huduma Day (10th October)
- Mashujaa Day (20th October)
- Jamhuri day (12th December)
- Christmas Day (25th December)
- Boxing day (26th December)

The Contractor shall also allow per calendar year for a further 2 unspecified public holidays which may be announced by the Government of Kenya with no prior notification upon which he shall not be permitted to work.

SUBCLAUSE 14.2- REVISED PROGRAMME

Add at the end of the first paragraph;

‘Failure by the Contractor to submit the Revised Work Program in the prescribed format and within the stipulated period shall be considered a violation of his contractual obligations and a Notice for Termination shall be issued to the Contractor.’

SUBCLAUSE 14.3- CASHFLOW ESTIMATE

The time within which the detailed cash flow estimate shall be submitted shall be as specified in the Appendix to the Form of Bid.

SUBCLAUSE 15.1- CONTRACTOR’S SUPERINTENDENCE

Add the following at the end of the first paragraph of sub-clause 15.1:

“The Contractor shall, within Fourteen (14) days of receipt of the Engineer’s order to commence the works inform the Engineer in writing the name of the Contractor’s Representative and the anticipated date of his arrival on site. The Contractor shall also submit a specimen signature of his proposed Site Agent /Manager who **SHALL** be the only signatory to payment of certificates/Monthly statements from the Contractor.”

Add the following Sub-clause 15.2

‘SUBCLAUSE 15.2- LANGUAGE ABILITY AND QUALIFICATIONS OF CONTRACTOR’S AUTHORISED AGENT

Unless otherwise stated in the tender document, the Contractor’s Agent or Representative on the site shall have be a Registered Professional Engineer by the Engineers Board of Kenya and have a Degree in Civil Engineering and shall be able to read and write English fluently.

The Contractor’s Agent or Representative shall have at least 10 years relevant experience as a Site Agent.

SUBCLAUSE 16.2- ENGINEER AT LIBERTY TO OBJECT

Add the following sentence at the end of sub-Clause 16.2

“by a competent substitute approved by the Engineer and at the Contractors own expense.”

Add the following Sub-Clauses 16.3 and 16.4:

SUBCLAUSE 16.3- QUALIFICATION AND LANGUAGE ABILITY OF SUPERINTENDING STAFF

Unless otherwise stated in the Tender document, the Contractor’s superintending staff shall meet the following minimum qualifications:

Should have a working knowledge of English or Kiswahili. Should any of the superintending staff not be able to meet this condition, the Contractor shall propose to the Engineer arrangements for provision of a sufficient number of interpreters of approved qualifications. The Engineer, at his discretion, may amend, approve or reject such arrangements or reject deployment of superintending staff not meeting the language requirements. The Engineer may at any time during the duration of the Contract amend any approved arrangements made for interpreters, which shall be implemented at the Contractors expense.

The key staff listed below must have academic qualifications from government-recognised institutions or equivalent institutions of the levels set out in Section 5, Part 6.

- Site Agent /Road Manager

Qualifications as above shall be subject to verification and approval on site by the Engineer or his representative on site before commencement of the said works.’

SUBCLAUSE 16.4 – EMPLOYMENT OF LOCAL PERSONNEL

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour with appropriate qualifications and experience who are Kenya citizens.

SUBCLAUSE 19.1- SAFETY, SECURITY AND PROTECTION OF THE ENVIRONMENT

Add Sub-Clause-paragraph (d) of Sub-Clause 19.1 as follows:

Notwithstanding the Contractor’s obligation under Sub-Clause-paragraph (a), (b) and 9(c) of Sub-Clause 19.1 of the Conditions of Contract, the Contractor shall observe the following measures with a view to reducing or elimination adverse environmental effects by the site works:

- (i) All quarries and borrow pits shall be filled and landscaped to their original state after extraction of construction material
- (ii) Soil erosion due to surface runoff or water from culverts or other drainage structures should be avoided by putting in place proper erosion control measures that shall include, but are not limited to grassing and planting if trees
- (iii) Long traffic diversion roads shall be avoided so as to minimize the effect of dust on the surrounding environment. In any case all diversions shall be kept damp and dust free

- (iv) Spillage of oils, fuels and lubricants shall be avoided and if spilt, shall be collected and disposed off in such a way as not to adversely affect the environment
- (v) Rock blasting near settlement areas shall be properly coordinated with the relevant officers of the Government so as to minimize noise pollution and community interference.

- **Traffic Management Plan**

- i. The Contractor should identify, evaluate and monitor potential traffic and road safety risks to workers and road users throughout the Contract life cycle and develop measures and plans to address them.
- ii. The Contractor shall install and maintain standard approved traffic warning signs, directional signs, secure the working areas and deploy flagmen at active construction sites.
- iii. The Contractor shall assess each phase of the works, monitor incidents and accidents indicating the mitigation measures undertaken and prepare monthly reports to be submitted to the Resident Engineer.
- iv. The Contractor shall factor the cost of implementation of the Road Safety Plan in the rates for the Works.

Add the following at the tail end of sub clause 19.1

Failure by the Contractor to implement the measures under approved safety plan shall be deemed to be a violation of the Contractor's Obligations under the Contract and shall be grounds for charging a penalty of up to **KES 50,000.00** per day for non-compliance. The penalties will be as shown below:

	SAFETY REQUIREMENT	AMOUNT OF PENALTIES PER DAY (KSh.)
1.	Personal Protective Equipment	10,000.00
2.	Approved Signage e.g. warning signs etc.	15,000.00
3.	Construction site delineation and passage of traffic through works	15,000.00
4.	Safety for passage of traffic at Night	10,000.00

SUBCLAUSE 20.4 - EMPLOYERS RISKS

Delete Sub-Clause (h) and substitute with the following;

- (h) Any operation of the forces of nature (insofar as it occurs on site) which an experienced contractor:
 - (i) could not have reasonably foreseen, or
 - (ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures:
 - (A) prevent loss or damage to physical property from occurring by taking appropriate measures or
 - (B) insure against such loss or damage

SUBCLAUSE 21.1 - INSURANCE OF WORKS AND CONTRACTOR 'S EQUIPMENT

Delete the first sentence of this Clause and replace with the following:

“prior to commencement of the Works the Contractor shall, without limiting his or the Employer’s obligations and responsibilities under Clause 20, insure to the satisfaction of the Employer:”

Add the following words at the end of Sub-paragraph (a) and immediately before the last word of Sub-paragraph (b) of Sub-Clause 21.1:

“It being understood that such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred”

SUBCLAUSE 21.2 – SCOPE OF COVER

Amend sub-paragraph (a) of Sub-Clause 21.2 as follows:

Delete words “from the start of work at the site” and substitute the words “from the first working day after the Commencement Date”

Add the following as Sub-Clause (c) under Sub-Clause-Clause 21.2

(c) It shall be the responsibility of the Contractor to notify the insurance company of any change in the nature and extent of the Works and to ensure the adequacy of the insurance coverage at all times during the period of the Contract.

Add the following paragraph to sub clause 21.2

The Contractor shall be expected to insure all road assets from damage and to pursue the insurance companies as and when damages to these assets occur. In addition, the Contractor is expected to furnish the Engineer with a copy of Insurance Policy of WIBA at the commencement of works.

SUBCLAUSE 21.4 - EXCLUSIONS

Amend Sub-Clause 21.4 to read as follows:

“There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by the risks listed under Sub-Clause 20.4 sub-paragraph (a) (i) to(iv) of the Conditions of Particular Application.”

SUBCLAUSE 23.2 – MINIMUM AMOUNT OF INSURANCE

Add the following at the end of this Clause:

“.. with no limits to the number of occurrences”.

SUBCLAUSE 25.1 – EVIDENCE AND TERMS

Amend Sub-Clause OF INSURANCE 25.1 as follows:

Insert the words “as soon as practicable after the respective insurances have been taken out but, in any case,” before the words “prior to the start of work at the site”

Add the following Sub-Clauses 25.5, 25.6

SUBCLAUSE 25.5 – INSURANCE NOTICES

Each policy of insurance effected by the Contractor for purposes of the Contract shall include a provision to the effect that the Insurer shall have a duty to give notice in writing to the Contractor and Employer of the date when a premium becomes payable. This shall not be more than thirty (30) days before that date and the policy shall remain in force until thirty (30) days after the giving of such notice.

SUBCLAUSE 25.6 – NOTIFICATION TO INSURERS

It shall be the responsibility of the Contractor to notify insurers under any of the insurance referred to in the preceding clauses 21, 23 and 24 on any matter or event, which by the terms of such insurance are required to be so notified. The Contractor shall indemnify and keep indemnified the Employer against all losses, claims, demands, proceedings, costs, charges and expenses whatsoever arising out of or in consequence of any default by the Contractor in complying with the requirements of this Sub-Clause whether as a result of avoidance of such insurance or otherwise.

SUBCLAUSE 28.2 – ROYALTIES

Add at the end of this Sub-Clause the following sentence:

“The Contractor shall also be liable for all payments or compensation if any that are levied in connection with the dumping of part or all of any such material.”

Add the following as last paragraph of sub clause 28.2

The Contractor shall be solely responsible for any Cess and any other fees that the County/Region May levy on materials, goods or transportation within the Region.

SUBCLAUSE 29.1 – INTERFERENCE WITH TRAFFIC

Supplement Sub-Clause 29.1 by adding the following sentence at the end:

“The Contractor will be permitted to use existing public roads for access to the site. The Contractor shall pay vehicle license tax and road maintenance duty in accordance with relevant regulations and shall obtain any necessary permits or licenses from relevant authorities for transporting his equipment.”

Add the following sub clause 29.2:

SUBCLAUSE 29.2 – REINSTATEMENT AND COMPENSATION FOR DAMAGES TO PERSONS AND PROPERTY

The Contractor shall reinstate all properties whether public or private which are damaged in consequence of the construction and, maintenance of the works to a condition as specified and at least equal to that prevailing before his first entry on them.

If in the opinion of the Engineer the Contractor shall have failed to take reasonable and prompt action to discharge his obligations in the matter of reinstatement, the Engineer will inform the Contractor in writing of his opinion, in which circumstances the Employer reserves the right to employ others to do the necessary work of reinstatement and to deduct the cost thereof from any money due or which shall become due to the Contractor.

The Contractor shall refer to the Employer without delay all claims which may be considered to fall within the provisions of Clause 22.1.

Add the following Sub-Clause 34.2 to 34.8

SUBCLAUSE 34.2 – CONDITIONS OF EMPLOYMENT OF LABOUR

The Contractor shall be responsible for making all arrangements for and shall bear all costs relating to recruitment, obtaining of all necessary visas, permits or other official permission for movements of staff and labour.

SUBCLAUSE 34.3 – FAIR WAGES

The Contractor shall, in respect of all persons employed anywhere by him in the execution of the Contract, and further in respect of all persons employed by him otherwise than in the execution of the Contract in every factory, Workshop or place occupied or used by him for the execution of the Contract, observe and fulfil the following conditions:

(a) The Contractor shall pay rates of wages, observe hours of labour and provide conditions of labour, housing, amenities and facilities not less favourable than those required by the latest Regulation of Wages (Building and Construction Industry) Order as of the time of bid submission, and subsequent amendments thereto, or in any wage scales, hours of work or conditions agreed by the Ministry of Labour or other Government Department in consultation with the appropriate wage fixing authority and generally recognized by other employees in the district whose general circumstances in the trade or industry in which the Contractor is engaged are similar.

(b) In the absence of any rates of wages, hours or conditions of labour so established the Contractor shall pay rates of wages and observe hours and conditions of labour which are not less favourable

than the general level of wages, hours and conditions observed by other Employers whose general circumstances in the trade or industry in which the Contractor is engaged are similar.

(c) Where the absence of established rates of wages, hours and conditions of labour or the dissimilarity of the general circumstances in the trade or industry in which the Contractor is engaged prevent the Contractor from observing rates of wages, hours and conditions of labour ascertained under sub-paragraph (a) and (b) above the Contractor in fixing the rates of wages, hours and conditions of labour of his employees shall be guided by the advice of the Labour Department.

(d) The Contractor shall recognize the freedom of his employees to be members of trade unions.

(e) The Contractor shall maintain records in English of the time worked by, and the wages paid to, his employees. The Contractor shall furnish to the Engineer or Employer, if called upon to do so, such particulars of the rates, wages and conditions of labour as the Employer or Engineer may direct.

(f) The Contractor shall at all times during the continuance of the contract display, for the information of his employees in every factory, workshop or place occupied or used by him for the execution of the Contract, a copy of this clause together with a notice setting out the general rates of wages, hours and conditions of labour of his employees.

(g) The Contractor shall be responsible for the observance of this clause by sub-Contractors employed in the execution of the works.

SUBCLAUSE 34.4 – BREACH OF FAIR WAGES CLAUSE

Any Contractor or Sub-Contractor who is found to be in breach of Fair Wages Clause shall cease to be approved as a Contractor or Sub-Contractor for such period as the Permanent Secretary for the Ministry of Transport and Infrastructure may determine.

Should a claim be made to the Employer alleging the Contractor's default in payment of Fair Wages of any workman employed on the Contract and if proof thereof satisfactory to the Employer is furnished by the Labour Authority, the Employer may, failing payment by the Contractor, pay the claims out of any monies due or which may become due to the Contractor under the Contract.

SUBCLAUSE 34.5 – RECRUITMENT OF UNSKILLED LABOUR

Any additional unskilled labour which is required by the Contractor for the works and which is not in his employ at the time of the acceptance of the BID shall be recruited by the Contractor from the Labour Exchange or Exchange or Exchanges nearest to the site or sites of the work.

SUBCLAUSE 34.6 – COMPENSATION FOR INJURY

The Contractor shall in accordance with the Workmen's Compensation Act of the Laws of Kenya and any other regulations in force from time to time pay compensation for loss or damage suffered in consequence of any accident or injury or disease resulting from his work to any workman or other person in the employment of the Contractor or any Subcontractor.

SUBCLAUSE 34.7 – LABOUR STANDARDS

(a) The Contractor shall comply with the existing local labour laws, regulations and labour standards

(b) The Contractor shall formulate and enforce an adequate safety program with respect to all work under his contract, whether performed by the Contractor or subcontractor. The Contractor has assurance from the Employer of cooperation where the implementation of these safety measures requires joint cooperation.

(c) Upon written request of the Employer the Contractor shall remove or replace any of his employees employed under this Contract.

Add the following Sub-Clause 35.2 and 35.3.

SUBCLAUSE 35.2 – RECORDS OF SAFETY AND HEALTH

The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.

SUBCLAUSE 35.3 – REPORTING OF ACCIDENTS

The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means. The Contractor shall also notify the relevant authority whenever the Laws of Kenya require such a report.

SUBCLAUSE 41.1 – COMMENCEMENT OF WORKS

Amend Sub-Clause 41.1 as follows:

Delete the words “as soon as is reasonably possible” in the first sentence and replace with “within the period stated in the Appendix to Bid”.

SUBCLAUSE 43.1 – TIME FOR COMPLETION

Amend Sub-Clause 43.1 as follows:

Delete the words “within the time” to “such extended time” and substitute “by the date or dates stated or implied in Clause 14 of these Conditions of Particular Application.

SUBCLAUSE 44.1 – EXTENSION OF TIME FOR COMPLETION

Add at the end of Sub-Clause 44.1 the following:

“Neither rains falling within the rainy seasons as occurs in Kenya nor floods caused by such rains shall be deemed exceptional weather conditions such as may fairly entitle the Contractor to an extension of time for the completion of the work.”

SUBCLAUSE 45.1 – RESTRICTION ON WORKING HOURS

Add at the end of Sub-Clause 45.1 the following:

“If the Contractor requests permission to work by night as well as by day, then if the Engineer shall grant such permission the Contractor shall not be entitled to any additional payments for so doing.

All such work at night shall be carried out without unreasonable noise or other disturbance and the Contractor shall indemnify the Employer from and against any liability for damages on account of noise or other disturbance created while or in carrying out night work and from and against all claims, demands, proceedings, costs, charges and expenses whatsoever in regard or in relation to such liability.

“In addition, the Contractor will be required to provide, for any work carried out at night or recognized days of rest, adequate lighting and other facilities so that the work is carried out safely and properly.

“In the event of the Engineer granting permission to the Contractor to work double or rotary shifts or on Sundays, the Contractor shall be required to meet any additional costs to the Employer in the administration and supervision of the Contract arising from the granting of this permission.”

SUBCLAUSE 47.2 – REDUCTION OF LIQUIDATED DAMAGES

Add the following paragraphs at the end of this Sub-Clause:

“There shall be no reduction in the amount of liquidated damages in the event that a part or a section of the Works within the Contract is certified as completed before the whole of the Works comprising that Contract.

The Employer shall pay no bonus for early completion of the Works to the Contractor.

The sum stated in the Appendix to Bid as liquidated damages shall be increased by a sum equivalent to any additional amount payable by the Employer to the Contractor under clause 70.1 in respect of an increase in costs in such a period that would not have been incurred by the Contractor if the works had been completed by the due date for completion prescribed by Clause 43.”

Add following as last paragraph of sub clause 47.2

The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies due or to become due to the Contractor, and after the limit of deduction prescribed in the Appendix to tender is reached, the Contract shall be considered due for Termination.

SUBCLAUSE 49.1 – DEFECTS LIABILITY PERIOD

Defect’s liability period shall start for Instructed works immediately the works are certified as Complete by the Engineer. The period of Defects liability shall be prescribed in the Appendix to the Contract.

SUBCLAUSE 49.2 – COMPLETION OF OUTSTANDING WORK AND REMEDYING DEFECTS

Add as last paragraph to sub clause 49.2

At the time of End of Defects Liability Inspection, no defect arising from the permanent works existing shall be acceptable for taking over. The Inspection team shall verify and satisfy themselves that all the outstanding works and defects arising out of the works have been attended to sufficiently.

SUBCLAUSE 51.1 – VARIATIONS

Add the following at the end of the last paragraph

No such variations in any way shall contravene the requirements of Public Procurement and Disposal Act of 2015 and the amendments thereof.

SUBCLAUSE 52.1 – VALUATION AND VARIATIONS

Add new Clause 52.2(c) as follows

No change in the unit rates or prices quoted shall be considered for items included in the schedule of Dayworks rates, or Provisional Sums and items, or for any item in the BOQ.

Add new clause 52.4 as follows

SUBCLAUSE 52.4 – VARIATIONS EXCEEDING 25 PERCENT

Subject to requirements of Public Procurement and Disposal Act of 2015 and the amendments thereof, variations above 25 percent critical to the proper function of the completed works and without which part or whole of already specified work in the bill of quantities cannot be adequately executed may constitute ground for Contract termination by either parties.

In which case, the Engineer shall give 28-day notice to the Contractor with a copy to the Employer of such occurrence. The Contract shall terminate at the expiry of the notice.

SUBCLAUSE 52.4 – DAYWORKS

Add the following at the end of Sub-Clause 52.4:

The work so ordered shall immediately become part of the works under the contract. The Contractor shall, as soon as practicable after receiving the Dayworks order from the Engineer undertake the necessary steps for due execution such work. Prior to commencement of any work to be done on a Dayworks basis, the Contractor shall give an advance notice to the Engineer stating the exact time of such commencement.

SUBCLAUSE 54.1 – CONTRACTOR’S EQUIPMENT, TEMPORARY WORKS AND MATERIALS:

Exclusive use for the works

Amend Sub-Clause 54.1 as follows:

Line 5: add “written” between “the” and “consent”.

Delete Sub-Clauses 54.2 and 54.5.

Add the following sentence

The Contractor shall be at liberty to deliver and withdraw equipment as and when needed for the undertaking of works under this contract according to the equipment deployment schedule and work program approved. If particular equipment is required and the contractor is unable at the required

time to avail the said equipment, the contractor shall be expected to notify the Engineer of the possible reasons and adjustments made to such delays. No Provisions shall be made for any claims on Idle Equipment.

SUBCLAUSE 55.2 – OMMISIONS OF QUANTITIES

Items of Works described in the Bills of Quantities for which no rate or price has been entered in the Contract shall be considered as included in other rates and prices in the Contract and will not be paid for separately by the Employer.

Add the following Sub-Clause 58.4:

SUBCLAUSE 58.4 – PROVISIONAL ITEMS

Provisional items shall be read as Provisional Sums and shall be operated as such in accordance with Sub-Clauses 58.1 to 58.3.

Clause 60 of the General Conditions is deleted and substituted with the following: -

SUBCLAUSE 60.1 – MONTHLY STATEMENT

The Contractor shall submit a statement to the Engineer at the end of each month, in a tabulated form approved by the Engineer, showing the amounts to which, the Contractor considers himself to be entitled. The statement shall include the following items, as applicable;

- the value of the Permanent Work executed up to the end of previous month
- any amount to be withheld under retention provisions of Sub-clause 60.3
- any other sum to which the Contractor may be entitled under the Contract

If the Engineer disagrees with or cannot verify any part of the statement, the Contractor shall submit such further information as the Engineer may reasonably require and shall make such changes and corrections in the statement as may be directed by the Engineer. In cases where there is difference in opinion as to the value of any item, the Engineer's view shall prevail.

SUBCLAUSE 60.2 INTERIM PAYMENT CERTIFICATE

The Contractor shall forward to the Engineer an Interim Payment Certificate based on the statement as corrected above and, should it be necessary in the Engineers opinion, shall promptly make any further amendments and corrections to the Interim Payment Certificate.

The Engineer shall not unreasonably withhold certifying an Interim Payment Certificate and in case of likely delay in establishing the value of an item, such item may be set aside and the remainder certified for payment.

Within 45 days after receipt of the Interim Payment Certificate and subject to the Contractor having made such further amendments and corrections as the Engineer may require, the Engineer will forward to the Employer the certified Interim Payment Certificate.

Provided that the Engineer shall not be bound to certify any payment under this Clause if the net amount thereof, after all retentions and deductions, would be less than the minimum amount of Interim Payment Certificate's stated in the Appendix to Form of Bid. However in such a case, the uncertified amount will be added to the next interim payment, and the cumulative unpaid certified amount will be compared to the minimum amount of interim payment.

SUBCLAUSE 60.3 – PAYMENT OF RETENTION MONEY

A retention amounting to the percentage stipulated in the Appendix to Bid shall be made by the Engineer in the first and following Interim Payment Certificates until the amount retained shall reach the "Limit of Retention Money" named in the Appendix to Form of BID.

Upon the issue of the Taking-Over Certificate, with respect to the whole of the works one half of the retention money shall become due and shall be paid to the Contractor when the Engineer shall certify in writing that the last section of the whole works has been substantially completed.

Upon expiration of the Defects Liability Period for the works, the other half of the Retention Money shall be certified by the Engineer for payment to the Contractor.

Provided that in the event of different Defects Liability Periods being applicable to different Sections of the Permanent Works pursuant to Clause 48, the expression "expiration of the Defects Liability Period " shall, for the purpose of this sub-clause, be deemed to mean the expiration of the latest of such periods.

Provided also that if at such time, there remain to be executed by the Contractor any work instructed, pursuant to Clause 49 and 50, in respect of the works, the Engineer shall be entitled to withhold certification until completion of any such work or so much of the balance of the Retention money as shall in the opinion of the Engineer, represents the cost of the remaining work to be executed.

SUBCLAUSE 60.4– CORRECTION OF CERTIFICATES

The Engineer may in any Interim Payment Certificate make any correction or modification to any previous Interim Payment Certificate signed by him and shall have authority, if any work is not being carried out to his satisfaction to omit or reduce the value of such work in any Interim Payment Certificate.

SUBCLAUSE 60.5– STATEMENT AT COMPLETION

Not later than 84 days after the issue of the Taking-Over Certificate in respect of the whole of the works, the Contractor shall submit to the Engineer a statement at completion showing in detail, in a form approved by the Engineer;

The final value of all work done in accordance with the Contract up to the date stated in such Taking-Over Certificate.

Any further sums which the Contractor considers to be due; and

An estimate of amounts that the Contractor considers will become due to him under the Contract.

Estimate amounts shall be shown separately in the Statement at Completion. The Contractor shall amend and correct the Statement as directed by the Engineer and submit a Certificate at Completion to be processed as in Sub-Clause 60.2.

SUBCLAUSE 60.6 – FINAL STATEMENT

Not later than 56 days after the issue of the Defects Liability Certificate pursuant to Sub-Clause 62.1, the Contractor shall submit to the Engineer for consideration a draft final statement with supporting documents showing in detail, in the form approved by the Engineer;

The final value of all work done in accordance with the Contract;

Any further sums which the Contractor considers to be due to him.

If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require and shall make such changes in the draft as may be required.

SUBCLAUSE 60.7– DISCHARGE

Upon submission of the Final Statement, the Contractor shall give to the Employer, with a copy to the Engineer, a written discharge confirming that the total of the Final statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the Contract. Provided that such discharge shall become effective only after payment under the Final Payment Certificate issued pursuant to Sub-Clause 60.8 has been made and the Performance Security referred to in Sub-Clause 10.1 has been returned to the Contractor.

SUBCLAUSE 60.8 – FINAL PAYMENT CERTIFICATE

Upon acceptance of the Final Statement as given in Sub-Clause 60.6, the Engineer shall prepare a Final Payment Certificate which shall be delivered to the Contractor's authorized agent or representative for his signature. The Final Payment Certificate shall state:

The final value of all work done in accordance with the Contract;

After giving credit to the Employer for all amounts previously paid by the Employer, the balance, if any, due from the Employer to the Contractor or the Contractor to the Employer.

Final Certificate shall be issued for any sum due to the Contractor even if such is less than the sum named in the Appendix to the Form of BID.

SUBCLAUSE 60.9– CESSATION OF EMPLOYERS LIABILITY

unless the Contractor notifies the Engineer of his objection to the Final Certificate within fourteen days of delivery thereof, he shall be deemed to have agreed that he accepts the total Contract Price as set out in the Final Certificate as full settlement for all Work Done under the Contract including any variations and omissions thereof but excluding any variations and claims previously made in writing.

SUBCLAUSE 60.10 – TIME FOR PAYMENT

The amount due to the Contractor under any Interim Payment Certificate or Final Payment Certificate issued pursuant to this Clause or to any other term of the Contract, shall, subject to Clause 47, be paid by the Employer to the Contractor as follows:

- (i) In the case of Interim Payment Certificate, within the time stated in the Appendix to Form of Bid, after the Engineer has signed the Interim Payment Certificate.
- (i) In the case of the Final Payment Certificate pursuant to Sub clause 60.8, within the time stated in the Appendix to Form of Bid, after the Engineer has signed the Final Payment Certificate.
- (ii) In the event of the failure of the Employer to make payment within the times stated, the Employer shall make payment to the Contractor of simple interest at a rate equal to two percentage points above the average Base Lending Rate of three leading banks namely Kenya Commercial Bank, Standard Chartered Bank and Barclays Bank for the time being or as shall be the case from the time to time obtained from the Central Bank of Kenya. The provisions of this sub clause are without prejudice to the Contractor's entitlements under Clause 69 or otherwise.

SUBCLAUSE 60.11 – CURRENCY OF PAYMENT

The Contract Price shall be designated in Kenyan Currency.

All work performed by the Contractor under the Contract shall be valued in Kenya Shillings using the rates and prices entered in the Bills of Quantities together with such other increases to the Contract Price, except for variation of price payments in accordance with Clause 70.1.

SUBCLAUSE 60.12 – ADVANCE PAYMENT

- (a) “At the request of the Contractor, The Employer **MAY** make an interest free advance payment to the contractor for the cost of mobilization in respect of the Works, in a lump sum of any amount not exceeding ten (10) percent of the Contract Price named in the Letter of Acceptance and Letter of Award. Non-Payment or delayed payment of the Advance shall not be a cause for any claim whatsoever. The Contractor is expected to have adequate financial resources to mobilise and execute the works with due diligence without the advance payment being made. Payment of such advance amount will be due under a separate certification by the Engineer after:
 - (i) Provision by the Contractor of the Performance Security in accordance with Clause 10 of the Conditions of Contract, and
 - (ii) Provision by the Contractor of a Bank Guarantee which shall remain effective until the advance payment has been completely repaid by the Contractor out of current earnings under the Contract and certified accordingly by the Engineer.
- (b) A form of Bank guarantee acceptable to the Employer is included in the Tender Documents. The advance payment shall be used by the Contractor exclusively for mobilization expenditures, in connection with the works. The advance payment shall not be subject to retention money.
- (c) The advance payment shall be repaid with percentage reductions from the monthly interim payments certified by the Engineer. The reimbursement of the lump sum advance payment shall be made by deductions from the interim payments and where applicable from the balance owing to the contractor. Reimbursement shall begin when the amount of the sums

due under the Contract reaches 20% of the original contract sum. It shall have been completed by the time 80% of the contract sum is reached.

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

$$RI = A(x-X) / (80\%-20\%)$$

Where:

RI = the amount to be reimbursed.

A = the amount of the advance which has been granted.

x = the amount of proposed cumulative payments as a percentage of the original amount of the contract. This figure will exceed 20% but not 80%.

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

With each reimbursement the guarantee will be reduced accordingly.

SUBCLAUSE 63.1

Add the following to last paragraph of sub clause 63.1

...is unable to take full responsibility for the adequacy, stability and safety of all Site operations and methods of construction as stipulated in sub clause 8.2 of the conditions of contract.

- a) Fails to comply with Sub clause 10.1 and 10.2 of the Conditions of Contract
- b) Fails to comply with Sub Clause 14.2 and Sub Clause 14.3 of the Conditions of Contract and Appendix to Form of Bid.
- c) Fails to observe the safety as stipulated in Sub clause 19.1 and amendments therein.
- d) Fails to Conform to Service levels as detailed in the Appendix to Form of Bid and as required in sub clause 13.1.
- e) Incurs the maximum amount of Liquidated damages as stated in the Appendix to Form of Bid or the liquidated damages amount, exceeds the performance security then the contract would be automatically Terminated.
- f) Has not completed the works despite the lapse of the Contract Period as stated in the Appendix to form of Bid

SUBCLAUSE 67.1 – ENGINEER’S DECISION

Delete the entire sub clause 67.1 and add the following;

“If a dispute of any kind whatsoever arises between the Employer and the Contractor in any connection with, or arising out of, the Contract or the execution of the works, whether during the execution of the works or after their completion and whether before or after repudiation or other termination of the Contract including any dispute as to any opinion, instruction, determination, certificate or valuation of the Engineer, the matter in dispute shall, in the first place, be referred in writing to the Engineer, with a copy to the other party. Such reference shall state it is made pursuant

to this clause. No later than 28 (twenty-eight) day after the day on which he received such reference the Engineer shall give notice of his decision to the Employer and the Contractor. Such decision shall state it is made pursuant to this clause.

Unless the Contract has already been repudiated or terminated, the Contractor shall, in every case, continue to proceed with the works with all due diligence and the Contractor and the Employer shall give effect forthwith to every such decision of the Engineer unless and until the same shall be revised, as hereinafter provided, in an Amicable Settlement, Adjudicator's or Arbitrator's award.

If either the Employer or the Contractor be dissatisfied with the any decision of the Engineer, or if the Engineer fails to give notice of his decision on or before the 28th (twenty eighth) after the day on which he received the reference, then either the Employer or the Contractor may, on or before the 28th (twenty eighth) day after the day the day on which he received notice of such decision, or on or before the 28th (twenty eighth) day after the day the day on which the said period of 28 days expired, as the case may be, give notice to the other party, with a copy for information to the Engineer, of his intention to commence Adjudication, as hereinafter provided, as to the matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence Adjudication, as hereinafter provided, as to such dispute; no adjudication in respect thereof may be commenced unless such notice is given.

If the Engineer has given notice of his decision as to a matter in dispute to the Employer and the Contractor and no notice of intention to commence adjudication as to such dispute has been given by either the Employer or the Contractor on or before the twenty eighth day after the day on which the parties received notice as to such decision from the Engineer, the said decision shall become final and binding upon the Employer and the Contractor. “

SUBCLAUSE 67.2 – AMICABLE SETTLEMENT

Delete the entire sub clause 67.2 and add the following;

“Where notice to of intention to commence adjudication as to a dispute has been in accordance with sub clause 67.1, the parties shall attempt to settle such dispute in amicably before the commencement of Adjudication; provided that, unless the parties otherwise agree, Adjudication may be commenced on or after the 14th (fourteenth) day after the day on which notice of intention to commence adjudication of such dispute was given, even if an attempt at amicable settlement thereto has been made.”

SUBCLAUSE 67.3 – ADJUDICATION

Delete the entire sub clause 67.3 and add the following;

“The Adjudicator shall be appointed by the Chartered Institute of Arbitrators (Kenya) unless the appointment is agreed by the parties within 7 (seven) days of the notice to adjudication.

The adjudication process shall be conducted according to the Laws of Kenya and the Rules of the Chartered Institute of Arbitrators (Kenya).”

SUB CLAUSE 67.3 – ARBITRATION

Delete the entire sub clause 67.3 and add the following;

“Any dispute in respect of which:

The decision, if any, of the Adjudicator has not become final and binding pursuant to sub clause 67.1, and Amicable settlement has not been reached within the period stated in sub clause 67.2, shall be finally settled, under the Laws of Kenya and the Arbitration Rules of the Chartered Institute of Arbitrators (Kenya Branch) by one or more arbitrators appointed by the Chartered Institute of Arbitrators (Kenya Branch).

Neither party shall be limited in the in the proceedings before such arbitrator/s to the evidence or arguments put before the Adjudicator for the purpose of obtaining his said decision pursuant to sub clause 67.1.

Arbitration may be commenced prior to or after completion of the works, provided that the obligations of the Employer, the Engineer and the Contractor shall not be altered by reason of the arbitration being conducted during the progress of the works.

SUBCLAUSE 68.2 – NOTICES TO EMPLOYER AND ENGINEER

Delete in Sub-Clause 68.2 the words "nominated for that purpose in Part II of these conditions".

a. The Employer’s address is:

The Director General,
Kenya National Highways Authority (KeNHA),
Barabara Plaza, Off Airport South Road, Opp. KCAA,
P.O. Box 49712 - 00100
NAIROBI

b. The Employer’s Representative’s address is:

Director (Highway Design & Safety),
Kenya National Highways Authority (KeNHA),
Barabara Plaza, Off Airport South Road, Opp. KCAA,
P.O. Box 49712 - 00100
NAIROBI

c. The Engineer’s address is:

Deputy Director (Structures),
Kenya National Highways Authority (KeNHA),
Barabara Plaza, Off Airport South Road, Opp. KCAA,
P.O. Box 49712 - 00100
NAIROBI

SUBCLAUSE 68.4

All letters and notices from the Contractor to the Employer and/Engineer must be signed by the Managing Director or the person given written power of Attorney.

In addition to the usual postal office contacts the tenderer is required to provide official email address to be used to communicate urgent letters requiring timely responses from the tenderer like tender addendum (addenda), award letter or any other deemed urgent from the Employer requiring timely preparation and reply.

The Contractors address is

Name :
P.O Box :
City/Town :
Email :
Telephone :

CLAUSE 69 – DEFAULT OF EMPLOYER

Delete Sub-Clause 69.1 (c)

In Sub-Clause 69.4 add at the end of first paragraph the following “the period of such suspension shall be as agreed upon by both parties and in any case not more than six (6) months”.

In Subclause 69.4 of General Conditions of Contract Part I, insert at the end -----“The amounts of such costs which shall be added to the Contract Price shall exclude any cost due to idle time for equipment, plant and labour.”

CLAUSE 70 – CHANGES IN COST AND LEGISLATION

Sub-Clause 70.1 - Price Adjustment

The amounts payable to the Contractor, in various currencies pursuant to Sub-Clause 60.1, shall be adjusted in respect of the rise or fall in the cost of labour, Contractor’s Equipment, Plant, materials, and other inputs to the Works, by applying to such amounts the formulae prescribed in this clause.

SUB-CLAUSE 70.2 - OTHER CHANGES IN COST

To the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the provisions of this or other clauses in the Contract, the unit rates and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other rise or fall of costs.

SUB-CLAUSE 70.3 - ADJUSTMENT FORMULAE

The adjustment to the Interim Payment Certificates in respect of changes in cost and legislation shall be determined from separate formulae for each of the currencies of payment and each of the types of construction work to be performed and Plant to be supplied. The formulae will be of the following general type:

$$pn = A + b \frac{Ln}{Lo} + c \frac{Mn}{Mo} + d \frac{En}{Eo} + etc.$$

Where:

pn is a price adjustment factor to be applied to the amount in each specific currency for the payment of the work carried out in the subject month, determined in accordance with Paragraph 60.1 (d), and with Paragraphs 60.1 (e) and (f), where such variations and day work are not otherwise subject to adjustment;

A is a constant, specified in the Appendix to Bid, representing the nonadjustable portion in contractual payments;

b, c, d, etc., are weightings or coefficients representing the estimated proportion of each cost element (labour, materials, equipment usage, etc.) in the Works or sections thereof, net of Provisional Sums, as specified in the Appendix to Bid; the sum of **A, b, c, d**, etc., shall be one;

Ln, Mn, En, etc., are the current cost indices or reference prices of the cost elements in the specific currency of origin for month “**n**,” determined pursuant to Sub-Clause 70.5, applicable to each cost element; and **Lo, Mo, Eo**, etc., are the base cost indices or reference prices corresponding to the above cost elements at the date specified in Sub-Clause 70.5.

If a price adjustment factor is applied to payments made in a currency other than the currency of the source of the index for a particular indexed input, a correction factor **Zo/Zn** will be applied to the respective component factor of **pn** for the formula of the relevant currency. **Zo** is the number of units of currency of the country of the index, equivalent to one unit of the currency of payment on the date of the base index, and **Zn** is the corresponding number of such currency units on the date of the current index.

SUB-CLAUSE 70.4 - SOURCES OF INDICES AND WEIGHTINGS

The sources of indices shall be those listed in the Appendix to Bid, as approved by the Engineer. Indices shall be appropriate for their purpose and shall relate to the Contractor’s proposed source of supply of inputs on the basis of which his Contract Price and expected foreign currency requirements shall have been computed. As the proposed basis for price adjustment, the Contractor shall have submitted with his bid the tabulation of Weightings and Source of Indices in the Appendix to Bid, which shall be subject to approval by the Engineer.

SUB-CLAUSE 70.5 - BASE, CURRENT, AND PROVISIONAL INDICES

The base cost indices or prices shall be those prevailing on the day 28 days prior to the latest date for submission of bids. Current indices or prices shall be those prevailing on the day 28 days prior to the last day of the period to which a particular Interim Payment Certificate is related. If at any time the current indices are not available, provisional indices as determined by the Engineer will be used, subject to subsequent correction of the amounts paid to the Contractor when the current indices become available.

SUB-CLAUSE 70.6 - ADJUSTMENT AFTER COMPLETION

If the Contractor fails to complete the Works within the time for completion prescribed under Clause 43, adjustment of prices thereafter until the date of completion of the Works shall be made using either the indices or prices relating to the prescribed time for completion, or the current indices or prices, whichever is more favourable to the Employer, provided that if an extension of time is granted pursuant to Clause 44, the above provision shall apply only to adjustments made after the expiry of such extension of time.

SUB-CLAUSE 70.7 - WEIGHTINGS

The weightings for each of the factors of cost given in the Appendix to Bid shall be adjusted if, in the opinion of the Engineer, they have been rendered unreasonable, unbalanced, or inapplicable as a result of varied or additional work already executed or instructed under Clause 51 or for any other reason.

Sub-Clause 70.8 - Subsequent Legislation

If, after the date 28 days prior to the latest date for submission of bids for the Contract, there occur in the country in which the Works are being or are to be executed changes to any National or State Statute, Ordinance, Decree, or other Law or any regulation or

by-law of any local or other duly constituted authority, or the introduction of any such State Statute, Ordinance, Decree, Law, regulation, or by-law that causes additional or reduced cost to the Contractor, other than under the preceding sub-clauses of this clause, in the execution of the Contract, such additional or reduced cost shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be added to or deducted from the Contract Price and the Engineer shall notify the Contractor accordingly, with a copy to the Employer. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same shall already have taken into account in the indexing of any inputs to the Price Adjustment Formulae in accordance with the provisions of Sub-Clauses 70.1 to 70.7.

CLAUSE 72 – RATES OF EXCHANGE COST

Delete clause 72 in its entirety and substitute the following:

The currency of BID and payment is Kenya Shillings and rates of exchange requirements are not applicable.

CLAUSE 73 – BRIBERY AND COLLUSION

Add new Clause 73.1 as follows:

“The Contractor shall not:

(a) Offer or give or agree to give to any person in the service of the Government of Kenya any gift or consideration or any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract to which the Government of Kenya is a party or for showing or forbearing to show favour or disfavour to any person in relation to this or any other contract for the Government of Kenya.

(b) Enter into this or any other contract with the Government of Kenya in connection with which commission has been paid or agreed to be paid by or on his behalf or to his knowledge, unless before the contract is made particulars of any such commission and of the terms and conditions of any agreement for the payment thereof have been disclosed in writing to the Employer.

Any breach of this condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) or the commission of any offence by the Contractor or by anyone employed by him or acting on his behalf in relation to this or any other contract to which the Government of Kenya is a party shall entitle the Employer to determine the Contract (See Condition 63 hereof) and/ or to recover from the Contractor the amount or value of any such gift, consideration or commission.

Any dispute or difference of opinion arising in respect of either the interpretation, effect or application of this condition or of the amount recoverable hereunder by the Employer from the Contractor shall be decided by the Employer, whose decision shall be final and conclusive.

CLAUSE 74 – CONTRACT CONFIDENTIAL

Add new sub-Clause 74.1 under clause 74 as follows:

The Contractor shall treat the details of this Contract as Private and Confidential and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere (save in so far as may be necessary for the purpose thereof) without the previous consent in writing of the Government. If any dispute arises as to the necessity of any publication or disclosures for the purposes of this Contract the same shall be referred to the decision of the Engineer mentioned in the said Conditions of Contract whose award shall be final

SECTION XII - CONTRACT FORMS

TABLE OF FORMS

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

FORM No. 2 - NOTIFICATION OF AWARD - LETTER OF ACCEPTANCE

FORM No. 3 - CONTRACT AGREEMENT

FORM No. 4 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee]

FORM No. 5 - ADVANCE PAYMENT SECURITY

FORM No. 6 - RETENTION MONEY SECURITY

FORM No. 7 - BENEFICIAL OWNERSHIP DISCLOSURE FORM

FORM NO. I - NOTIFICATION OF INTENTION TO AWARD

[This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender.]
[Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form]

FORMAT

For the attention of Tenderer's Authorized Representative

Name: *[insert Authorized Representative's name]* Address: *[insert Authorized Representative's Address]* Telephones: *[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 Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

Date of Transmission:

This Notification is sent by: *[email]* on *[date]* (local time)

Procuring Entity: *[insert the name of the Procuring entity]*

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

Country: Kenya, County _____ *(if the Procuring Entity is from a County)*

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:

- a) Request a debriefing in relation the evaluation of your Tender, and/or
- b) Submit a Procurement-related Complaint in relation to the decision to award the contract.

1. The successful Tenderer

Name: *[insert name of successful Tenderer]* Address: *[insert address of the successful Tenderer]*

Contract price: *[insert contract price of the successful Tender]*

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

	Name of Tenderer	Tender price	Evaluated Tender price	Comments (if any)
1				
2				
3				
4				
5				
6				
7				
Etc.				

1. 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 Tender. 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 Tenderer, contact details; and address the request for debriefing as follows:

Attention: *[insert full name of person, if applicable]* **Title/position:** *[insert title/position]* **Procuring Entity:** *[insert name of Procuring Entity]* **Email address:** *[insert email address]*

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.

2. 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 Tenderer, contact details; and address the Procurement- related Complaint as follows:

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

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

Procuring Entity: *[insert name of Procuring Entity]*

Email address: *[insert email address]*

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.

In summary, there are four essential requirements:

- a) You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tendering process, and is the recipient of a Notification of Intention to Award.
- b) The complaint can only challenge the decision to award the contract.
- c) You must submit the complaint within the period stated above.
- d) You must include, in your complaint, all of the information necessary to support your case.
- e) The application must be accompanied by the fees set out in the Procurement Regulations, which

shall not be refundable (information available from the Public Procurement Authority at www.ppoa.go.ke).

3. Standstill Period

- a) **DEADLINE:** The Standstill Period is due to end at midnight on [*insert date*] (local time).
- i) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.
 - ii) 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

Procuring Entity: _____

Name _____

Title and Position _____

Signature _____

Date _____

FORM NO. 2 - NOTIFICATION OF AWARD

Letter of Acceptance

[letter head paper of the Procuring Entity]

[date]

FORMAT

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

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

You are requested to furnish the Performance Security within 30 days in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section X, Contract Forms, of the tender document.

We attach a copy of the Contract for your

Authorized Signature:

Name and Title of

Signatory: Name of

Agency:

Attachment: Contract Agreement

FORM NO. 3 – CONTRACT AGREEMENT

THIS AGREEMENT made the _____ day of _____, _____, between _____ of _____ (hereinafter “the Procuring Entity”), of the one part, and _____ of _____ (herein after “the Contractor”), of the other part:

WHEREAS the Procuring Entity desires that the Works known as _____ should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Works and the remedying of any defects therein, The Procuring Entity and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - a) The Letter of Acceptance
 - b) The Letter of Tender
 - c) The addenda Nos _____ (if any)
 - d) The Particular Conditions
 - e) The General Conditions;
 - f) The Specification
 - g) The Drawings; and
 - h) The completed Schedules and any other documents forming part of the contract.
3. In consideration of the payments to be made by the Procuring Entity to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Procuring Entity to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Procuring Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Kenya on the day, month and year specified above.

Signed by _____

_____(for the Procuring Entity)

Signed by _____

_____(for the Contractor)

FORM NO. 4 - PERFORMANCE SECURITY

– (Unconditional Demand Bank Guarantee)

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: _____ *[insert name and Address of Procuring*

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

PERFORMANCE GUARANTEE No.: _____

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

1. We have been informed that _____ (herein after called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (herein after called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.
3. At the request of the Applicant, we as Guarantor, here by irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of (),¹ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.
4. This guarantee shall expire, no later than the Day of 2...², and any demand for payment under it must be received by us at this office indicated above on or before that date.
5. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

[Name of Authorized Official, signature(s) and seals/stamps]

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

¹*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(cies) of the Contract or a freely convertible currency acceptable to the Beneficiary.*

²*Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Procuring Entity might consider adding the following text to the form, at the end of the pen ultimate 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."*

FORM NO. 5 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee] *[Guarantor letterhead or SWIFT*

identifier code] *[Guarantor letterhead or SWIFT identifier code]*

Beneficiary: _____ *[Insert name and Address of Procuring*

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

ADVANCE PAYMENT GUARANTEE No.: _____ *[Insert guarantee reference number]*

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

1. We have been informed that _____ (herein after called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (herein after called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ () is to be made against an advance payment guarantee.
3. At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ ()¹ upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
 - a) Has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
 - b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.
4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Applicant on its account number _____ at _____
5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the 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 _____ day of _____, 20____, ² whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.
6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

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

¹ *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 Procuring Entity.*

² *Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the*

event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Procuring Entity 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.”

FORM NO. 6 - RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ [Insert name and Address of
Procuring Entity] **Date:** _____ [Insert date of issue]

ADVANCE PAYMENT GUARANTEE No.: _____
[Insert guarantee reference number]

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

1. We have been informed that _____ [insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture] (herein after called" the Contractor") has entered into Contract No. _____ [insert reference number of the contract] dated _____ with the Beneficiary, for the execution of _____ [insert name of contract and brief description of Works] (herein after called" the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of [insert the second half of the Retention Money] is to be made against a Retention Money guarantee.
3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of [insert amount in figures] ([insert amount in words _____])¹ upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.
4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number _____ at _____ [insert name and address of Applicant's bank].
5. This guarantee shall expire no later than the..... Day of....., 2...², and any demand for payment under it must be received by us at the office indicated above on or before that date.
6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

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

FORM NO. 7 - BENEFICIAL OWNERSHIP DISCLOSURE FORM**(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022)****INSTRUCTIONS TO TENDERERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM**

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer pursuant to Regulation 13 (2A) and 13 (6) of the Companies (Beneficial Ownership Information) Regulations, 2020. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the legal person (tenderer) or arrangements or a natural person on whose behalf a transaction is

Tender Reference No.: _____ [insert identification no] Name of the Tender Title/Description: _____ [insert name of the assignment] to: _____ [insert complete name of Procuring Entity]

In response to the requirement in your notification of award dated _____ [insert date of notification of award] to furnish additional information on beneficial ownership: _____ [select one option as applicable and delete the options that are not applicable]

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

Details of beneficial ownership

	Details of all Beneficial Owners		% of shares a person holds in the company Directly or indirectly	% of voting rights a person holds in the company	Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer (Yes / No)	Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)
1.	Full Name		Directly----- ----- % of shares	Directly.....% of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No----	1. Exercises significant influence or control over the Company body of the Company (tenderer)
	National identity card number or Passport number					
	Personal Identification Number (where applicable)		Indirectly--- ----- % of shares	Indirectly----- % of voting rights		
	Nationality					

	Details of all Beneficial Owners		% of shares a person holds in the company Directly or indirectly	% of voting rights a person holds in the company	Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer (Yes / No)	Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)
	Date of birth [dd/mm/yyyy]				2. Is this right held directly or indirectly?:	Yes -----No-- --
	Postal address				Direct.....	2. Is this influence or control exercised directly or indirectly?
	Residential address				Indirect.....	Direct.....
	Telephone number					Indirect..... ...
	Email address					
	Occupation or profession					
2.	Full Name		Directly----- ----- % of shares	Directly.....% of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No----	1. Exercises significant influence or control over the Company body of the Company (tenderer)
	National identity card number or Passport number				2. Is this right held directly or indirectly?:	Yes -----No-- ---
	Personal Identification Number (where applicable)		Indirectly---- ----- % of shares	Indirectly----- % of voting rights	Direct.....	2. Is this influence or control exercised directly or indirectly?
	Nationality(ies)				Indirect.....	
	Date of birth [dd/mm/yyyy]					
	Postal address					
	Residential address					
	Telephone number					
	Email address					
	Occupation or profession					

	Details of all Beneficial Owners		% of shares a person holds in the company Directly or indirectly	% of voting rights a person holds in the company	Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer (Yes / No)	Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)
						Direct..... Indirect..... ...
3. e.t .c						

ii) Am fully aware that beneficial ownership information above shall be reported to the Public Procurement Regulatory Authority together with other details in relation to contract awards and shall be maintained in the Government Portal, published and made publicly available pursuant to Regulation 13(5) of the Companies (Beneficial Ownership Information) Regulations, 2020.(Notwithstanding this paragraph Personally Identifiable Information in line with the Data Protection Act shall not be published or made public). *Note that Personally Identifiable Information (PII) is defined as any information that can be used to distinguish one person from another and can be used to deanonymize previously anonymous data. This information includes National identity card number or Passport number, Personal Identification Number, Date of birth, Residential address, email address and Telephone number.*

iii) In determining who meets the threshold of who a beneficial owner is, the Tenderer must consider a natural person who in relation to the company:

- (a) holds at least ten percent of the issued shares in the company either directly or indirectly;
- (b) exercises at least ten percent of the voting rights in the company either directly or indirectly;
- (c) holds a right, directly or indirectly, to appoint or remove a director of the company; or
- (d) exercises significant influence or control, directly or indirectly, over the company.

iv)What is stated to herein above is true to the best of my knowledge, information and belief.

Name of the Tenderer:[insert complete name of the Tenderer]_____*

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

Designation of the person signing the Tender: [insert complete title of the person signing the Tender]

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

Date this [insert date of signing] day of..... [Insert month], [insert year]

Bidder's Official Stamp

SUPERVISION CHECKLIST

Supervision Check List																															
Project Name:		MAINTENANCE STRUCTURES ALONG THIKA – GARISSA (A3) ROAD																				Date		Signatures							
1. This check list is for Resident Engineer to check Contractor's work execution process.																				The Engineer's Representative (Project Engineer)											
2. Fill in date of checking as (day/month), mark as indicated in Filling Example, and state remarks.																															
3. Put this check list in the Monthly Progress Report.																				Resident Engineer											
Item		Check Point		before		During execution										after		Remarks													
				Date		Date		Date		Date		Date		Date		Date		Reason for unsatisfactory performance (Site diary No.)													
				/		/		/		/		/		/		/		Corrective order by authority (Date)													
																		Excellent point to be specified													
1		Execution system in general		1-1		Works Execution Programme (including its revised version if any) is submitted before the																									

