



**Kenya National Highways Authority**

**Quality Highways, Better Connections**

**TENDER NO. KeNHA/R5/162/2021**

**PERFORMANCE BASED CONTRACT FOR THE MAINTENANCE OF NAIROBI – THIKA  
HIGHWAY (NAIROBI – RUIRU) A2S ROAD  
(A11)**

**DECEMBER, 2021**

**DIRECTOR ROAD ASSET AND CORRIDOR  
MANAGEMENT  
KENYA NATIONAL HIGHWAYS  
AUTHORITY  
P.O. BOX 49712 - 00100  
NAIROBI**

**DIRECTOR GENERAL  
KENYA NATIONAL HIGHWAYS  
AUTHORITY  
P.O. BOX 49712 - 00100  
NAIROBI**

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## **SECTION I - INVITATION FOR TENDERS**

## SECTION 1: INVITATION TO TENDER

### TENDER NO. KeNHA/R5/162/2021 – PERFORMANCE BASED CONTRACT FOR THE MAINTENANCE OF NAIROBI – THIKA HIGHWAY (NAIROBI – RUIRU) A2S 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** for the **PERFORMANCE BASED CONTRACT FOR THE MAINTENANCE OF NAIROBI – THIKA HIGHWAY (NAIROBI – RUIRU) A2S 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. Bidders shall **sequentially serialise** all pages of each tender submitted
6. A copy of PBC Certificate for at least one of the Directors.

#### 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. Eligibility
  - a. 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.
  - b. Director (s) and Bidders who have been awarded Tenders in this **Financial Year (1st and 2<sup>nd</sup> Quarter Tender Notice) (FY 2021-2022)** are not eligible to bid for this Tender Notice.
  - c. Director (s) bidding under different companies for the same tender shall be disqualified
  - d. Director (s) bidding under different companies should not participate in more than **Two (2)** tenders

- e. Only those bidders registered in the Category as indicated in the tender document shall bid for the respective 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.

**Note:**

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 **mandatory pre-tender site visits** as specified in the 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 MUST Bring along the following:**

1. **Original ID/Passport and a Copy**
2. **Original Diploma/H. Dip./Degree Certificate and a Copy**
3. **Original and Copy of Registration Certificate/ or proof of current subscription by EBK/KETRB**
4. **Original Introductory letter bearing the Company letterhead and an Official Stamp authorizing them to represent the company in the SPECIFIC pre-tender site visit/Pre Tender Conference. The letter shall be duly signed by the Director of the company. Photocopies or any other media shall not be accepted.**

The copies of ID, Academic Certificate, Professional Registration certificate and introductory letters shall be retained by the Procuring Entity's Team 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 (PPIP). Clarifications and Questions may be sent to [procurement@kenha.co.ke](mailto:procurement@kenha.co.ke) as indicated in the Tender Notice.

**NOTE:**

**Every bidder shall make their own arrangements to familiarize themselves with the site conditions and the Road and its features.**

Interested eligible candidates may obtain further information and inspect tender documents from the **Procurement Office, Kenya National Highways Authority, KeNHA Nairobi Region, Ministry of Works Offices, Machakos Road** 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](http://www.kenha.co.ke) or PPIP portal: [www.tenders.go.ke](http://www.tenders.go.ke) free of charge. Bidders are encouraged to download tender documents to minimise physical visits to the respective **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 – Nairobi Region,  
Kenya National Highways Authority,  
Ministry of Public Works Offices,  
P. O. Box 200 – 00507,  
NAIROBI, KENYA  
Or**

Deposited in the Tender Box at the reception area, **KeNHA Nairobi Region, Ministry of Works Offices, Machakos Road** so as to be received on or before **the Date and Time as indicated in the Tender Notice**.

**All interested bidders are required to continually check the Kenya National Highways Authority website: [www.kenha.co.ke](http://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 Nairobi Regional Office Board Room**.

**Deputy Director, Supply Chain Management**

**For: DIRECTOR GENERAL**

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## **PART 1 – TENDERING PROCEDURES**

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## **SECTION II - INSTRUCTIONS TO TENDERERS**

## **SECTION 2 - INSTRUCTIONS TO TENDERERS**

### **A. GENERAL**

#### **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. The Works and Services under the Performance- based Contract will cover the Roads indicated in the TDS and will consist of:
- a) Maintenance Services or “Services” consisting of all interventions on the Roads which are to be carried out by the contractor in order to achieve and keep the Road performance stand defined by the Service Level included in Section VII, Specifications for Works and Services of this tendering document, and all activities related to the management and evaluation of the road network under contract;
  - b) Rehabilitation Works, when requested in the TDS for the sections of the Road(s) indicated in the TDS, consisting of specific types of civil works described in the Specifications;
  - c) Improvement Works, when requested in the TDS, consisting of a set of specific interventions indicated in the Specifications to add new characteristics to the Roads in response to existing or new traffic and safety or other considerations;
  - d) Works consisting of activities needed to reinstate the Roads and reconstruct their structure or their right of way which has been damaged as a result of natural phenomena with imponderable consequences, such as strong storms, flooding, and earthquakes.

#### **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.ke/oremailcomplaints@ppra.go.ke](http://www.ppra.go.ke/oremailcomplaints@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](http://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](http://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.
- 24.2 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.
- 35.3 The subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works unless their specialized parts of the Works were previously designated 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.

### **35 Margin of Preference and Reservations**

- 35.1 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.
- 35.2 A margin of preference shall not be allowed unless it is specified so in the TDS.
- 35.3 Contracts procured on basis of international competitive tendering shall not be subject to reservations exclusive to specific groups as provided in ITT 36.5.



- 35.4 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.
- 35.5 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.

### **36 Evaluation of Tenders**

- 36.1 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.
- 36.2 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**

### SECTION 3 - TENDER DATA SHEET

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.

<b>A. General</b>	
	<p>The reference number of the Invitation to Tender is: <b><u>KeNHA/R5/162/2021</u></b></p> <p>The Procuring Entity is: <b><u>Kenya National Highways Authority (KeNHA)</u></b></p> <p>The name of the ITT is: <b><u>Not Applicable</u></b></p> <p>The number and identification of lots (contracts) comprising this ITT T is: <b><u>Not Applicable</u></b></p> <p>The Roads are: <b><u>Town Arterial Roads and Pangani - Ruiru</u></b></p> <p>Rehabilitation Works <b><u>are</u></b> required.</p> <p>The sections of the Road(s) subject to Rehabilitation Works are: <b><u>Arterial connectors (Forest Road from Museum Overpass on Uhuru Highway to Pangani overpass, Murang'a Road from Khoja Roundabout to Pangani Overpass, University way, Kipande road through Globe R/A and Limuru road from University R/A on Uhuru Highway) and Pangani Overpass to Ruiru.</u></b></p> <p>Improvement Works <b><u>are</u></b> required.</p>
<b>ITT 4.1</b>	Maximum number of members in the JV shall be: <b><i>Two (2)</i></b>
<b>ITT4.10</b>	Citizen contractors are encouraged to source locally manufactured items/materials and locally assembled machines, equipment, vehicles, labour etc.
<b>ITT4.11</b>	<p>The Tenderer will require to register with _____</p> <p>whose contact addressed are:</p> <p><b><i>Not Applicable</i></b></p>
<b>B. Contents of Tender Document</b>	
<b>ITT 8.1</b>	There shall be a mandatory pre-tender site visits as specified in the detailed tender notice
<b>ITT 8.2</b>	<p>The Tenderer will submit any questions in writing, to reach the Procuring Entity _____</p> <p>not later than <b><i>7 days to the submission date</i></b></p>
<b>ITT 8.4</b>	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender will be published is <b><u><a href="http://www.kenha.co.ke">www.kenha.co.ke</a></u></b>



ITT9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: <i>As indicated in the tender notice</i>
<b>C. Preparation of Tenders</b>	
ITP 13.1 (h)	The Tenderer shall submit the following additional documents in its Tender: <i>As indicated in the <u>Qualification Criteria</u></i>
ITT 15	<i>[The following provision should be included and the required corresponding information inserted <u>only</u> if alternative Tenders will be considered. Otherwise omit.]</i> Alternative Tenders <u>shall not be permitted.</u>
ITT 15.2	Alternative times for reaching the required Service Levels and for the completion of the Rehabilitation and/or Improvement Works <u>will not be</u> permitted.
ITT 15.4	Alternative technical solutions for the Rehabilitation and/or Improvement Works shall be permitted for the following parts of the Works: <u>Not Applicable</u>
ITT 16.5	The prices quoted by the Tenderer shall be: <u>fixed</u> ; consequently, the Tenderer is not required to furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data.
ITT 17.1	The currency(ies) of the Tender and the payment currency(ies) shall be in <b>Kenya Shillings</b>
ITT 20.1	The Tender validity period shall be <u>140days</u> from the specified date of opening as indicated in the invitation to Tender
ITT 32.3 (a)	The Tender price shall be adjusted by the following factor(s): <u>Not Applicable</u> <i>[The local currency portion of the Contract price shall be adjusted by a factor reflecting local inflation during the period of extension, and the foreign currency portion of the Contract price shall be adjusted by a factor reflecting the international inflation (in the country of the foreign currency) during the period of extension.]</i>
ITT 21.1	A Tender Security of the amount specified in the Appendix to form of Bid _____ <u>shall be</u> required.
ITT 21.2 (iv)	Other types of acceptable securities: <u>Not Applicable</u>
ITT 21.7	<i>[The following provision should be included and the required corresponding information inserted <u>only</u> if a Tender Security is not required under provision ITT 21.7 and the Procuring Entity wishes to declare the Tenderer ineligible for a period of time should the Tenderer perform any of the actions mentioned in provision ITT 21. 7 (a) or (b), Otherwise omit.]</i>



	If the Tenderer performs any of the actions prescribed in ITT 19.9 (a) or (b), the Procuring Entity will declare the Tenderer ineligible to be awarded contracts by the Procuring Entity for a period of <u>two (2)</u> years.
ITT 22.1	In addition to the original of the Tender, the number of copies is: <u>NONE</u>
ITT 22.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: <u>Certificate of Independent Tender Determination Part B of Form of Tender</u>

#### D. Submission and Opening of Tenders

ITT 24.1	(A) For <u>Tender submission purposes</u> only, the Procuring Entity's address is: As indicated in the <b>Invitation to Tender</b>  Tenders <b>shall not be submitted</b> electronically.
ITT 27.1	The Tender opening shall take place at: <u>As indicated in the invitation to Tender</u>  The electronic Tender opening procedures shall be: <b>Not applicable</b>
ITT 27.6	The Form of Tender and priced Bills of Quantities <u>shall be</u> initialed by representatives of the Procuring Entity attending Tender opening. If initialization is required, it shall be conducted as follows: <ul style="list-style-type: none"> <li>• <b><i>By all members of the Tender opening committee</i></b></li> <li>• <b><i>In the pages they shall deem appropriate</i></b></li> </ul>

#### E. Evaluation and Comparison of Tenders

ITT 32.3	The adjustment shall be based on average price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
ITT 35.1	The Procuring Entity <b>does not intend</b> to execute any specific elements of the Works by subcontractors selected/nominated by the Procuring Entity.
ITT 35.2	The <b>maximum</b> volume of works that can be subcontracted is <b>40%</b> of the total contract price.
ITT 35.3	The sub contractor's qualifications <b>shall not</b> be used by the Tenderer to qualify for the Works.
ITT 36.2	A margin of domestic preference <b>shall</b> apply. <b><i>[If a margin of preference applies, the application methodology shall be defined in the Evaluation and Qualification Criteria]</i></b>
ITT 37.2 (d)	Additional requirements apply. These are detailed in the evaluation criteria in the Evaluation and Qualification Criteria.

<b>ITT 37.5</b>	The combined price for the Rehabilitation and Improvement Works may not exceed the following threshold: <u><b>NOT APPLICABLE</b></u> %of the total contract price excluding provisional sums .
<b>ITT 39</b>	Abnormally low Tenders shall be treated as per the procedure outlined in Section IV, Evaluation and Qualification Criteria
<b>ITT 40</b>	Abnormally high Tenders shall be treated as per the procedure outlined in Section IV, Evaluation and Qualification Criteria
<b>ITT 41</b>	Unbalanced or Front loaded Tenders shall be treated as per the procedure outlined in Section IV, Evaluation and Qualification Criteria
<b>ITT42.2</b>	Where prequalification has not taken place, the Procuring Entity <b><i>shall not</i></b> permit that specific experience for parts of the Works and Service may be met by Specialized Subcontractors.
<b>ITT 48.1</b>	Contract negotiations with the best evaluated tenderer will be held at: <b><i>(Not Applicable)</i></b>
<b>ITT 53.1</b>	<p>The procedures for making a Procurement-related Complaint are available from the PPRA website <a href="mailto:info@ppra.go.ke">info@ppra.go.ke</a> or <a href="mailto:complaints@ppra.go.ke">complaints @ppra.go.ke</a>. 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: <b><i>Director General</i></b></p> <p>Procuring Entity: <b><i>Kenya National Highways Authority (KeNHA)</i></b></p> <p>Email address: <b><i>dg@kenha.co.ke</i></b></p> <p>In summary, a Procurement-related Complaint may challenge any of the following:</p> <ul style="list-style-type: none"> <li>(i) the terms of the Tender Documents; and</li> <li>(ii) the Procuring Entity's decision to award the contract.</li> </ul>

## **SECTION IV - EVALUATION AND QUALIFICATION CRITERIA**

## SECTION IV - EVALUATION AND QUALIFICATION CRITERIA

### 1. General Provisions

1.1 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. Any error in determining the exchange rates in the Tender may be corrected by the Procuring Entity.

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

#### Evaluation and contract award Criteria

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

### 2. Preliminary examination for Determination of Responsiveness

The Procuring Entity will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other requirements in the ITT, and that the tender is complete and meets all the requirements of “Part 2 – Works and Services 'Requirements”, including checking for tenders with unacceptable errors, abnormally low tenders, abnormally high tenders and tenders that are front loaded. The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides very clear guide on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will be considered unresponsive 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. Assessment of adequacy of Technical Proposal with Requirements (if Applicable)

The Procuring Entity will evaluate the Technical Proposals of all unresponsive tenders using the following criteria, sub-criteria, and point system for the evaluation of the Technical Proposals:

- i) History of non-performance
- ii) Financial capability
- iii) General and specific experience
- iv) Key personnel
- v) Contractors Plant and Equipment
- vi) Adequacy and quality of the proposed methodology, and work plan in responding to the schedule of Requirements:

Total points for the five criteria: 100points. The minimum technical score (St) required to pass is: 75points.

Tenderers who score less than the required pass will be automatically disqualified. Tenderers who pass the technical evaluation will be evaluated further.

#### **4. 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:  
.....NA.....
- ii) Alternative Technical Solutions for specified parts of the Works, if permitted under ITT 13.4, will be evaluated as follows:  
.....NA.....
- iii) Other Criteria; if permitted under ITT 35.2 (e): .....  
NA.....

#### **5. Multiple Contracts**

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

##### **OPTION 1**

- i) If a tenderer wins only one Lot, the tenderer will be awarded a contract for that Lot, provided the tenderer meets the Eligibility and Qualification Criteria for that Lot.
- ii) If a tenderer wins more than one Lot, the tender will be awarded contracts for all won Lots, provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the Lots. The tenderer will be awarded the combination of Lots for which the tenderer qualifies and the others will be considered for award to second lowest the tenderers.

##### **OPTION 2**

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

## **6. Alternative Tenders (ITT 13.1)**

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

The Procuring Entity shall consider Tenders offered for alternatives as specified in Part 2– Works and Services' 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.

## **7. Margin of Preference**

- 7.1 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%).
- 7.2 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 contractor or group of Contractors qualifies for a margin of preference.
- 7.3 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 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%).
- 7.4 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 B and 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.

## **8. 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 prequalification 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.

## QUALIFICATION CRITERIA

Item No.	Qualification Subject	Qualification Requirement	Document Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
<b>A. PRELIMINARY EVALUATION</b>				
1.	Nationality	Nationality in accordance with ITT 4.5	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 5.1	Forms ELI - 1.4	
3.	Conflict of Interest	No conflicts of interest in accordance with ITT 4.3	Form of Tender	
4.	<b>PPRA</b> Eligibility	Not having been declared ineligible by the PPRA as described in ITT 4.6	Form of Tender - <b>Form SD 1</b>	
5.	State-owned Enterprise	Meets conditions of ITT 4.7	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 4.8.	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 criteria established in 3.1 and assuming that all pending litigation will NOT be resolved against the Tenderer.	Form CON - 1	
9.	Litigation History	No consistent history of court/arbitral award decisions against the Tenderer for the last three (3) years.	Form CON - 1	
10.	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	Form CON - 2	

Item No.	Qualification Subject	Qualification Requirement	Document Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
		at minimum		
11	Certificate of tenderer's visit to site	<ul style="list-style-type: none"> <li>Attend Pre-Tender Site Visits as per TDS, ITT 7.1</li> <li>Bidders to sign attendance register</li> <li>Certificate must be signed by the Employer's representative</li> <li>Bidders to send Technical Persons for the Site Visit – Min Qualifications – Diploma in Civil Engineering</li> </ul>	Form CON - 3	
12	Tender Security	Tender Security document	Form in the Prescribed Format	
13	Priced Bill of Quantities	<ul style="list-style-type: none"> <li>Fill all rates, prices and amounts,</li> <li>NO Alterations of the Quantities accepted,</li> <li>All bidders own Corrections must be Countersigned</li> </ul> NO ERRORS noted in the Bills of Quantities	Bills of Quantity in the Prescribed Format	
14	Annual Practicing License with the National Construction Authority	Proof of registration with the National Construction Authority in Class 1 as Roads/Bridges Contractor	Copy of Current NCA Practicing License	
15	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 4.15.	<b>Provide Valid Tax Compliance Certificate</b>	
16	PBC Certificate	Bidders Bidding for PBC Tenders, at least one of the Directors of the bidding company MUST have been trained in Performance Based Road Maintenance as a Contractor (PBC) by Kenya Institute of Highways and	Copy of PBC Certificate	



Item No.	Qualification Subject	Qualification Requirement	Document Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
		Building Technology (KIHBT) or any other Accredited Institution Registered in Kenya		
17	Serialization of the Bid	<p>Bidders shall sequentially serialize all pages of each tender submitted.</p> <p>Any written Pages or document attached or inserted Documents <b>MUST</b> be sequentially serialized.</p>	The Serialization MUST be numerically sequential starting from Numeric 1.	
18	Completeness of tender document	<p>The person or persons signing the bid <b>shall</b> initial all pages of the bid where entries have been made.</p> <p>Bidders shall own all alterations made to the tender document.</p> <p>Bidders shall duly fill all relevant forms/schedules provided for in the document that requires entries</p>	<p>All pages with entries (Typed or hand written) must be initialed.</p> <p>Any alterations made in the tender document must be countersigned.</p> <p>All relevant Forms/ Schedules shall be duly filled including it being signed, dated, and stamped</p>	
<b>B. TECHNICAL EVALUATION</b>				
1.	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"> <li>Termination Letter</li> <li>Liquidated Damages</li> </ul>	<p>Form CON-1</p> <p><b><i>If a bidder fails to disclose, shall be disqualified</i></b></p> <p><b><i>Reference to be made to procuring Authority's records</i></b></p> <p><b><i>A bidder (Company and/or Director(s)) with any history of non-performance losses 10 marks</i></b></p>	10 Marks

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
2.	Financial Capabilities	<p>(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 <b>3 years</b> 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).</p> <p>(ii) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of</p>	<p>Form FIN - 3.1, with attachments</p> <p><b>Attachments include:</b></p> <p><b>i. Audited accounts</b></p> <p><b>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.</b></p> <p><b>The Financial ratio Form to be signed by the Auditor registered with ICPAK and one of the Directors</b></p> <ul style="list-style-type: none"> <li><b>Financial Ratios</b></li> </ul> <p>Computation shall be made for the following Ratios and marks awarded to each of the ratios:</p> <ul style="list-style-type: none"> <li>-Working Capital</li> <li>- Debt to Equity Ratio</li> <li>- Current ratio</li> <li>- Operating Cash Flow ratio</li> </ul> <ul style="list-style-type: none"> <li><b>Line of Credit</b></li> <li><b>Bank statements</b></li> </ul> <p><b>Etc.</b></p>	<p>10 Marks</p> <p>1 Mark</p> <p>4 Marks</p> <p>4 Marks</p>

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
		<p>any contractual advance payment) sufficient to meet the construction cash flow requirements estimated at a minimum of 10% of Engineer's Estimate for the subject contract(s) net of the Tenderer's other commitments.</p> <p>The Tenderers shall also demonstrate, to the satisfaction of the Procuring Entity, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.</p>		
3.	Average Annual Construction Turnover	<p>Minimum average annual construction turnover of Kenya Shillings <b>&gt;750 Million [Above Seven Hundred and Fifty Million]</b>, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last <b>3-year</b> years, divided by <b>3 years</b></p>	<p>Form FIN - 3.2</p> <p><b>Attachments include Financial Statements</b></p>	1 Marks
4.	Ongoing Works	Value of outstanding works shall not be more than the Engineer's Estimate	<p>Form FIN - 3.4</p> <p>If the outstanding Works is more than the Engineer's Estimate of this bid, the bidder loses</p>	2marks
5.	General Construction Experience	Experience under construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor, substantially completed in the last <b>[5 years]</b> prior to the applications submission deadline.	<p>Form EXP -4.1</p> <p><b>Attach Letters of Award and Certificates</b></p>	<p>3 Marks</p> <p>(1 Mark for each General Construction project)</p>

Item No.	Qualification Subject	Qualification Requirement	Document Completed/provided To Tenderer by	For Procuring Entity's Use (Qualification met or Not Met)
6.	Specific Construction & Contract Management Experience	<p>Participation in contract (s) of a similar nature with minimum cumulative value of &gt; <b>KSh.1.5 Billion [Above One Billion, Five Hundred Million]</b> as filled in Form EXP 4.2(a) that have been satisfactorily and substantially completed by the bidder, as a prime contractor, joint venture member, management contractor or sub-contractor in the last [5 years] prior to the applications submission deadline.</p> <p>The similarity shall be based on the physical size, complexity, methods/technology or other characteristics</p>	<p>Form EXP 4.2(a)&amp;(b)</p> <p><b>Provide Letters of Award and Completion Certificates</b></p> <p><b>For subcontracted works, the bidder should provide the following;</b></p> <ul style="list-style-type: none"> <li>• <b>Award letter of the main contractor</b></li> <li>• <b>Award letter of the subcontract.</b></li> <li>• <b>Completion letter of the subcontract.</b></li> <li>• <b>Subcontract approval from the Engineer/supervision Authority</b></li> </ul>	10 Marks
7.	Contractor's Representative and Key Personnel	<p>Curriculum Vitae (CVs) of the Proposed Key Staff must be presented in the provided format and duly signed by the proposed individual.</p> <p>Copies of certificates and Annual Practicing Licenses (for Engineers) and Academic Certificates for all staff is mandatory;</p>	Schedule F (Form PER. 1 and PER. 2)	10 Marks

Item No.	Qualification Subject	Qualification Requirement	Document Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)																										
		<table><tr><td rowspan="6">Site Agent / Road Manager</td><td rowspan="2">Certification</td><td>PBC Certificate from KIHBIT or other recognized institution</td><td>2</td></tr><tr><td>Current EBK License</td><td>2</td></tr><tr><td rowspan="2">Qualifications</td><td>1. Degree</td><td>1</td></tr><tr><td>2. Current / Valid Registration by EBK</td><td></td></tr><tr><td rowspan="2">Experience</td><td>Above 5 years</td><td>1</td></tr><tr><td>0-5 years</td><td>0</td></tr><tr><td rowspan="3">Engineer</td><td rowspan="2">Qualifications</td><td>1. Degree</td><td>2</td></tr><tr><td>2. Current / Valid Registration by EBK</td><td></td></tr><tr><td rowspan="2">Experience</td><td>Above 5 years</td><td>2</td></tr><tr><td>0-5 years</td><td>0</td></tr></table>	Site Agent / Road Manager	Certification	PBC Certificate from KIHBIT or other recognized institution	2	Current EBK License	2	Qualifications	1. Degree	1	2. Current / Valid Registration by EBK		Experience	Above 5 years	1	0-5 years	0	Engineer	Qualifications	1. Degree	2	2. Current / Valid Registration by EBK		Experience	Above 5 years	2	0-5 years	0	
Site Agent / Road Manager	Certification	PBC Certificate from KIHBIT or other recognized institution			2																									
		Current EBK License		2																										
	Qualifications	1. Degree		1																										
		2. Current / Valid Registration by EBK																												
	Experience	Above 5 years		1																										
		0-5 years	0																											
Engineer	Qualifications	1. Degree	2																											
		2. Current / Valid Registration by EBK																												
	Experience	Above 5 years	2																											
0-5 years		0																												
8.	Contractors key equipment	<ul style="list-style-type: none"><li>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</li><li>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.</li></ul>	Schedule D of Technical Proposal	35 Marks																										

Item No.	Qualification Subject	Qualification Requirement	Document Completed/provided by Tenderer	To be by	For Procuring Entity's Use (Qualification met or Not Met)			
9.		Main Scope of Works of this Tender	Main Equipment	Quantity (No) (Minimum)	Marks (Score)			
					Owned	Hired/leased		
					Grader	1	3	1.5
					Drum roller (Minimum 10 Tons)	1	6	3
					Excavator or Backhoe or Wheel loader	1	4	2
					Bitumen Distributor	1	4	2
					Pneumatic roller	1	6	3
					Chips Spreader	1	4	2
					Pick Up	1	2	1
					Truck (Minimum Capacity 3 Tons)	1	2	1
					Tippers (Cumulative Capacity 28 Tons)	2	4	2
					Total			35
10.	Proposed methodology	Adequacy and quality of the proposed methodology	a) Technical approach and methodology		3 Marks			
			<ul style="list-style-type: none"><li>Provide a detailed Work Methodology<ul style="list-style-type: none"><li>a) Procedure on execution of activities as outlined in the BoQs</li><li>b) Allocation of machinery/labour in execution the activities</li><li>c) Procedures in quality control of the activities described in BoQs</li></ul></li><li>Provide a Methodology on safety during the construction period<ul style="list-style-type: none"><li>a) Personal protective equipment</li><li>b) Signages</li><li>c) Delineation of</li></ul></li></ul>					
					2 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>construction and passage of traffic</p> <p>d) Passage of traffic at night</p> <ul style="list-style-type: none"> <li>• Provide a specific Quality management plan</li> <li>a) Contractor to establish objectives</li> <li>b) Contractor to provide processes/procedures to execute the contract</li> <li>c) Bidders to describe resources allocation in the execution of the contract</li> <li>d) Bidders to demonstrate control of non-conformities</li> <li>e) Bidders to identify the potential risks and their mitigation strategies in the execution of the contract.</li> </ul>	2 Marks
			<p>b) Work plan/ Program of Works (PoW)</p> <ul style="list-style-type: none"> <li>• PoW Resourced with Equipment-Min. allocation pursuant to the Schedule E of Technical Proposal - – To be submitted in A3 Size Paper well legible Fonts</li> </ul>	4 Marks
			<ul style="list-style-type: none"> <li>• PoW captures Monthly outputs for each activity</li> </ul>	2 Marks
			<ul style="list-style-type: none"> <li>• PoW details BoQ Quantities, Units and Rates</li> </ul>	2 Marks
			<ul style="list-style-type: none"> <li>• PoW is superimposed with Cashflow Projections as detailed in Schedule A of the technical proposal</li> </ul>	2 Marks
			<p>c) Site Organization and staffing (Schedule B of Technical proposal)</p>	3 Marks

Item No.	Qualification Subject	Qualification Requirement	Document Completed/provided by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
11.	Knowledge Transfer [When transfer of knowledge is a particularly important component of the assignment, the following sub-criteria may be provided]	Transfer of knowledge (training) program (relevance of approach and methodology)	a) Relevance of training program [Not Applicable] b) Training approach and methodology [Not Applicable] c) Qualifications of experts and trainers [Not Applicable]	

***Tenderers who score less than the required pass (75%) will be automatically disqualified. Tenderers who pass the technical evaluation will be evaluated further.***

### **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 (***See Schedule G, Part I&II on Derivation of Rates***).

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 may verify the documents provided by the bidder with the issuing authority.



**Appendix to Qualification Criteria**

ITEM	DESCRIPTION			POINT SCORE SCALE
1	HISTORY OF NON-PERFORMANCE			Max 10
	History of Non-Performance			0 or 10
2	FINANCIAL CAPACITY			Max 10
	Audited Statements			0-1
	Computation of Financial Ratios			0-4
	Working capital to be at least 10% of the EE			0-4
	Turnover			0-1
3	EXPERIENCE			Max 15
	General Experience			0-3
	Specific experience in related works			0-10
	Workload Analysis			0-2
	KEY PERSONNEL			Max 10
	Site Agent / Road Manager	Certification	PBC Certificate from KIHBIT or other recognized institution	2
			Current EBK License	2
		Qualification	1. Degree	1
			2. Current / Valid Registration by EBK	
		Relevant experience	Above 5 years	1
			0-5 years	0
	Engineer	Qualifications	1. Degree	2
			2.Current / Valid Registration by EBK	
		Experience	Above 5 years	2
			0-5 years	0
5	PLANT AND EQUIPMENT			Max 35
	Relevant Equipment (As Detailed in Schedule D)	Owned (Max 35marks)		0-35
		100% Leased (Max 17.5 marks)		0-17.5
6	PROGRAM OF WORKS AND WORK METHODOLOGY			Max 20
6a	Work Methodology	Provided a detailed Work Methodology		0-3
		Provided a Methodology on safety during the construction period		0-2

ITEM	DESCRIPTION		POINT SCORE SCALE
		Provided a specific Quality management plan	0-2
6b	Program of Works	PoW Resourced with Equipment-Min. allocation pursuant to the Schedule E of Technical Proposal - – To be submitted in A3 Size Paper well legible Fonts	0-4
		PoW captures Monthly outputs for each activity	0-2
		PoW details BoQ Quantities, Units and Rates	0-2
		PoW is superimposed with Cash flow Projections as detailed in Schedule A of the technical proposal	0-2
7	<b>Organization and staffing</b> (Schedule B of Technical proposal) Equivalent of Site Base facilities		0-3
	<b>TOTAL</b>		<b>MAX 100</b>

## **SECTION V - TENDERING FORMS**

## **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

APPENDIX TO FORM OF TENDER

### **3. CONTRACTUAL FORMS**

FORM CON – 1

FORM CON – 2

FORM CON – 3

### **4. FINANCIAL FORMS**

FORM FIN- 3 .1

FORM FIN- 3.2

FORM FIN- 3.3

### **5. TECHNICAL EXPERIENCE**

FORM EXP - 4.1

FORM EXP - 4.2 (A)

FORM EXP - 4.2 (B)

### **6. 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

FORM PER -1

FORM PER -2

SCHEDULE G. Schedule of Materials; -Basic Prices

### **7. FORM OF TENDER SECURITY - DEMAND GUARANTEE**

### **8. FORM OF TENDER SECURITY (TENDER BOND)**

### **9. FORM OF TENDER-SECURING DECLARATION**

## TENDERER'S QUALIFICATION FORMS

### FORM ELI-1.1- TENDERER INFORMATION FORM

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

## FORM ELI- 1.2- TENDERER JV INFORMATION

Tenderer's JV Information Form

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

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

Tender No. \_\_\_\_\_

Tender title: \_\_\_\_\_

Tenderer's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of:  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
<b>A</b>	<b>Local Labour</b>			
1				
2				
3				
4				
5				
<b>B</b>	<b>Sub contracts from Local sources</b>			
1				
2				
3				
4				
5				
<b>C</b>	<b>Local materials</b>			
1				
2				
3				
4				
5				
<b>D</b>	<b>Use of Local Plant and Equipment</b>			
1				
2				
3				
4				
5				
<b>E</b>	<b>Add any other items</b>			
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
<b>A</b>	<b>Materials</b>		
1			
2			
3			
4			
5			
6			
<b>B</b>	<b>Equipment</b>		
1			
2			
3			
4			
5			
<b>C</b>	<b>Labour</b>		
1			
2			
3			
4			
5			
6			
	TOTAL COST LOCAL CONTENT		
	PERCENTAGE OF CONTRACT PRICE		

## 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: *[insert date (as day, month and year) of Tender submission]*

Invitation to Tender No.: *[insert identification]* 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:  
*[Tender Number and Name]*
- 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 [NOT APPLICABLE].
- 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](http://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: \*[insert complete name of person signing the Tender]

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

Title of the person signing the Tender: [insert complete title of the person signing the Tender] Signature of the person named above: [insert signature of person whose name and capacity are shown above] Date signed [insert date of signing] day of [insert month], [insert year]

Name \_\_\_\_\_

In the capacity of \_\_\_\_\_

Signed

\_\_\_\_\_

Duly authorized to sign the Tender for and on behalf of \_M/s \_\_\_\_\_

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	KeNHA/R5/162/2021
3	Date and Time of Tender Opening	As indicated in the Tender Notice
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 8. Telephone Number
6	Current Trade License Registration Number and Expiring date	
	Name, Country/County 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 Entity regarding this tendering process		
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document.		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.		

f) Certification

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

Full Name\_\_\_\_\_

Title or Designation\_\_\_\_\_

\_\_\_\_\_  
(Signature) (Date)



## B. CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying Letter of Tender to the KENYA NATIONAL HIGHWAYS

AUTHORITY for: \_\_\_\_\_ [Name of tender]

\_\_\_\_\_ [Tender number]

in response to the request for tenders made by: \_\_\_\_\_ [Name of Tenderer]

do hereby make the following statements that I certify to be true and complete in every respect:

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

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

Name and 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  
..... (*insert name of the Company*) who is a Bidder in respect of Tender  
No.....for.....(*insert tender  
title/description*) for..... (*insert name of the Procuring entity*) and duly  
authorized and competent to make this statement.
2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in  
procurement proceeding under Part IV of the Act.
3. THAT what is deponed to herein above is true to the best of my knowledge, information and belief.

.....  
(Title)

.....  
(Signature)

.....  
(Date)

Bidder Official Stamp

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

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

1. THAT I am the Chief Executive/Managing Director/Principal Officer/Director of.....  
..... (insert name of the Company) who is a Bidder in respect of Tender No.  
..... for ..... (*insert tender title/description*) for ..... (*insert name of the Procuring entity*) and duly authorized and competent to make this statement.
2. THAT the aforesaid Bidder, its servants and/or agents /subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of ..... (*insert name of the Procuring entity*) which is the procuring entity.
3. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered any inducement to any member of the Board, Management, Staff and/or employees and/or agents of..... (*name of the procuring entity*).
4. THAT the aforesaid Bidder will not engage/has not engaged in any corrosive practice with other bidders participating in the subject tender
5. THAT what is deponed to herein above is true to the best of my knowledge information and belief.

.....  
(Title)

.....  
(Signature)

.....  
(Date)

Bidder's Official Stamp

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

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

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

Name of Authorized signatory.....

Sign.....

Position.....

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

E-mail.....

Name of the

Firm/Company.....

Date.....

*(Company Seal/ Rubber Stamp where applicable)*

Witness

Name.....

Sign.....

Date.....

## APPENDIX TO FORM OF TENDER

(This appendix forms part of the bid)

CONDITIONS OF CONTRACT	CLAUSE	AMOUNT/DESCRIPTION
Bid Security (Bank Guarantee Only)		Kshs. 750,000.00
Amount of Performance Security (Unconditional Bank Guarantee)	10.1	5% of Tender Sum in the form of Unconditional Bank Guarantee
Non-Conformity to Service Levels	13.1	Compliance Deductions of 30% or more for three (3) consecutive months
Program to be submitted	14.1	Not later than Fourteen (14) days after issuance of Order to Commence in the format Prescribed in the Tender Document
Cash flow estimate to be submitted	14.3	Not later than Fourteen (14) days after issuance of Order to Commence
Penalty for not implementing approved Safety Plan.	19.1	Up to Kshs. 50, 000.00 per day
Minimum amount of Contractor's All risk Insurance	23.2	Contract Price
Period for commencement, from Engineer's order to commence	41.1	14 days
Time for completion of Instructed works	43.1	Twenty-four (24) months
Contract Period	43.1	Thirty-six (36) months
Defects Liability period for Works	49.1	Twelve (12) months
Period of Contract Validity	60	From contract signing up to the date of settlement of the agreed final statement issued pursuant to clause 60.6.
Advance Payment	60.12	The Employer <b>MAY</b> pay up to a maximum of 10% of <b>Contract Sum</b> subject to availability of funds.
Advance Payment Security	60.12	Full amount of the advance in the form of Unconditional Bank Guarantee (Insurance bonds shall not be accepted)
Amount of liquidated damages	47.1	0.1% of Contract Price per day
Limit of liquidated damages	47.1	6% of Contract Price
Damages for not attending to excavated potholes within 48 hours of excavation	47.1(b)	KShs. 50, 000 per month per pothole
Percentage of Retention	60.3	5% of Interim Payment Certificate
Limit of Retention Money	60.3	5% of Contract Price
Minimum amount of interim certificates	60.2	Monthly PBC Amount
Time within which payment to be made after Interim Payment Certificate signed by Engineer	60.10	90 days
Time within which payment to be made after Final Payment Certificate signed by Engineer	60.10	90 days
Appointer of Adjudicator	67.3	The Chartered Institute of Arbitrators (Kenya)

CONDITIONS OF CONTRACT	CLAUSE	AMOUNT/DESCRIPTION
Notice to Employer and Engineer	68.2	The Employers address is: The Director General, Kenya National Highways Authority (KeNHA), P.O. Box 49712 - 00100 <u>NAIROBI</u>
	68.4	The Engineer's address is: The Director, Road Asset & Corridor Management Kenya National Highways Authority (KeNHA), P.O. Box 49712 - 00100 <u>NAIROBI</u>  <b>The Contractor address is:</b>  Name.....  P.O Box.....  City/Town.....  Email.....  Telephone.....

**Signature of Tenderer..... Date .....**

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

Tenderer's Name: \_\_\_\_\_

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

JV Member's Name \_\_\_\_\_

Tender No. \_\_\_\_\_

Tender 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:	
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)

## 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: CERTIFICATE OF BIDDER’S VISIT TO SITE**

This is to certify that

[*Name/s*].....

.....

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

.....

.....

Participated in the organised inspection visit of the site of the works for the

**PERFORMANCE BASED CONTRACT FOR THE MAINTENANCE OF NAIROBI –  
THIKA HIGHWAY (NAIROBI – RUIRU) A2S ROAD**

held on.....day of.....20.....

Signed.....

(Employer’s Representative)

.....

.....

(Name of Employer’s Representative)

.....

(Designation)

NOTE: This form is to be completed at the time of the organized site visit.

## FORM FIN – 3.1: FINANCIAL SITUATION AND PERFORMANCE

### PART 1

Tenderer's Name: \_\_\_\_\_

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

JV Member's Name \_\_\_\_\_

Tender No. \_\_\_\_\_

Tender title: \_\_\_\_\_

#### 1. Financial data

Type of Financial information (Kenya Shillings)	Historic information for previous <u>3</u> years, (amount in Millions (KSh.))		
	2018	2019	2020
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 ( <i>demonstrated by bank statements</i> )	

## 3. Financial documents

The Tenderer and its parties shall provide copies of financial statements for the last **three (3)** 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 **three (3) years** required above; and complying with the requirements.

## PART 2

### Detailed Financial Situation Evaluation

No.	Description	Auditors Assessment 2018	Auditors Assessment 2019	Auditors Assessment 2020	Evaluation Score Award Criteria
1.	Financial Ratios				Max score=4 Marks
a.	<b>Current Ratio=</b> <b><u>Current Assets</u></b> <b>Current Liabilities</b>				Current Ratio more than 1 = 1 marks
b.	<b>Debt to Equity Ratio</b> <b>=</b> <b><u>Total Liabilities</u></b> <b>Total Equity</b>				Equity Capital Ratio less than 1 = 1 Marks
c.	<b>Working Capital =</b> <b>Current Assets-</b> <b>Current Liabilities</b>				Positive Working Capital = 1 marks
d.	<b>Operating Cash Flow</b> <b>Ratio =</b> <b>Cash Flow from</b> <b><u>Operations</u></b> <b>Current Liabilities</b>				Operating Cash- flow more than 1 = 1 marks
2.	<b>Working Capital in Ksh. ....</b>				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:**

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

**Ratios attested by the Company Director:**

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

## FORM FIN – 3.2: AVERAGE ANNUAL CONSTRUCTION TURNOVER

Tenderer's Name: \_\_\_\_\_

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

JV Member's Name \_\_\_\_\_

Tender No. \_\_\_\_\_

Tender title: \_\_\_\_\_

Annual turnover data (construction only)			
Year	Amount Currency [insert amount and indicate currency]	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 [KSh./month]

**FORM EXP - 4.1: GENERAL CONSTRUCTION EXPERIENCE**

Tenderer's Name: \_\_\_\_\_

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

JV Member's Name \_\_\_\_\_

Tender No. \_\_\_\_\_

Tender 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 \_\_\_\_\_

Tender No. \_\_\_\_\_

Tender 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): \_\_\_\_\_

Tender No. \_\_\_\_\_

Tender title: \_\_\_\_\_

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: \_\_\_\_\_

	<b>Information</b>			
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

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 Cashflow
1-6				
7-12				
13-18				
19-24				
25-30				
31-36				
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
  - i. ORANOGRAM
  - ii. SITE ORGANIZATION LAYOUTS
  - iii. SITE LOCATION MAP
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/Criteria

Equipment information and current status for equipment leased from Government Agencies may be omitted.

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

Countersignature of authorized representative of the Tenderer:

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

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

## Form PER -2

### Resume and Declaration – Key Personnel *(Resume to be provided in this format)*

**Name of Tenderer**

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

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

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): \_\_\_\_\_

**SCHEDULE G****PART I. SCHEDULE OF MATERIALS; -BASIC PRICES**

ITEM NO	DESCRIPTION	NAME OF SUPPLIER	COUNTRY OF ORIGIN	UNIT	SOURCE OF INDICES	BASE Price
						KSHS.
1.	Cut-back Bitumen MC 30 in bulk			Litre		
2.	Cut-back Bitumen MC 30 in drums			Litre		
3.	Cut-back Bitumen MC 70 in bulk			Litre		
4..	Cut-back Bitumen MC 70 in drums			Litre		
5.	Bitumen 80/100 in bulk			Litre		
6.	Bitumen 80/100 in drums			Litre		
7.	80/100 pen grade bitumen modified with 3% SBS in bulk			Litre		
8.	80/100 pen grade bitumen modified with 3% SBS in drums			Litre		
9.	Bitumen Emulsion K1-60 in bulk			Litre		
10.	Bitumen Emulsion K1-60 in drums			Litre		
11.	Petrol, Regular Grade			Litre		
12.	Petrol, Premium/ super Grade			Litre		
13.	Automotive Diesel Fuel			Litre		
14.	Industrial Diesel Oil			Litre		
15.	Industrial Fuel Oil			Litre		
16.	Kerosene Fuel			Litre		
17.	Cement			Tonne		
18.	Flex beam Guardrail			Metre		
19.	Gabion Mesh			M <sup>2</sup>		
20.	Reinforcing Steel			Tonne		
21.	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.
- Only sources of indices that publish data to the public and are freely accessible to the Employer shall be used. Reference prices are not acceptable as sources of indices.
- Sources of indices must be supported by copies of relevant published data
- Base values and dates must be supported by copies of relevant published data

## PART II. SHEDULE OF RATES DERIVATION

(For use during Tender Evaluation)

<b>Form for Detailed Breakdown of Cost Comparison</b>																																																																																												
<b>Bill item No.</b>																																																																																												
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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 TENDER SECURITY - DEMAND GUARANTEE

Beneficiary: \_\_\_\_\_

Invitation to Tender No: \_\_\_\_\_

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

TENDER GUARANTEE No.: \_\_\_\_\_

Guarantor: \_\_\_\_\_

We have been informed that \_\_\_\_\_ (herein after called "the Applicant") has submitted or will submit to the Beneficiary its Tender (hereinafter called "the Tender") for the execution of under Invitation to Tender No. \_\_\_\_ ("the ITT").

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

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

- a) Has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Form of Tender ("the Tender Validity Period"), or any extension there to be provided by the Applicant; or
- b) Having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension there to be provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to Tenderers ("ITT") of the Beneficiary's Tendering document.

This guarantee will expire:

- a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the performance Security and, issued to the Beneficiary in relation to such contract agreement; or
- b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) twenty-eight days after the end of the Tender Validity Period.

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

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

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## **PART 2 – WORKS REQUIREMENTS**

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## **SECTION VI - SPECIFICATIONS**

## SECTION VI-A: PERFORMANCE SPECIFICATIONS

### Performance based Routine Maintenance Services

#### 1. Introduction on Service Level Categories

##### Levels of Category

Based on the study of current service levels applied by the road authorities, four (4) standard service level categories Cover road network in Kenya. The principal factors considered in the selection of service levels are road type and traffic volume. However, specific road characteristics, such as climatic conditions, road function and terrain, may also be considered. Two service levels (High and Standard) are for paved roads and another two service levels (High and Standard) for un-paved roads.

The Service Levels should be selected from Table 1.1 according Annual Average Daily Traffic Volume (AADT).

**Table 1.1. Service Level Categories Adopted**

Road Type	Paved		Unpaved	
Service Level Category	High	Standard	High	Standard
Annual Average Daily Traffic volume	More than 20,000 Vpd	Less than 20,000 Vpd	More than 500 Vpd	Less than 500 Vpd

Note: vpd – vehicles per day

Note that Table 1.1 shows indicative traffic volume of service level category. The Road Authority need to define service level based not only on traffic but also on road class, climate and road complexity.

#### 1.1. Service Criteria

Selection of Standard Service Level Category is made based on the road type (Paved or Unpaved), the traffic volume, as well as road conditions assessment.

The Table 1.2 below shows the list of service criteria under each Service Category and Service Scope.

**Table 1.2 List of Service Criteria**

Service Category	Service Scope	Elements-Paved Road	Elements-Unpaved Road
Road Usability	Passability	Pavement	Pavement
Road User Comfort	Smooth and Safe Traffic	Pavement	Pavement
		Shoulder	Shoulder
		Median	Footpath
		Footpath/cycle way	
		Footbridge	
	Visibility	Sight Distance	Sight Distance Availability
		Street Lighting	

	Traffic information	Signage	Signage
		Roadworks Advance	Roadworks Advance Warning
		Road Marking	Signs
Road Durability	Drainage Capability	Side Drains.	Side Drains. MitresDrains Cut off
		Side Drains ,Mitre Drains, Cut off Drains (unlined)	
		Culverts and Drifts	Culverts and Drifts
		Scour Checks, Gabions and other erosion Protection Structures	Scour Checks, Gabions and other erosion Protection Structures
		Manholes and Gulley	
	Vegetation Control	Vegetation Free Zone	Vegetation Free Zone
		Inner Vegetation Zone	Inner Vegetation Zone
		Overhanging branches	Overhanging branches
	Maintenance of Other Structures	Concrete Structures	Concrete Structures
		Steel Structures	Steel Structures
		Bridge Expansion Joints	Bridge Expansion Joints
		Guard Rail/Pedestrial	Guard Rail/Pedestrial Rail
		Riverbeds	Riverbeds
	Slope Stability	Embarkment Slopes	Embarkment Slopes
		Slopes in Cuts	Slopes in Cuts

## 1.2 Description of the Road

The Road is in Nairobi and Kiambu county.

It commences at Museum hill interchange and traverses a rolling terrain for.32 km to ends at Ruiru

The Road has the following major physical features.

- a)Paved main road with distance of 22.km. Average carriage way width of 21m.
- b)Paved service road with distance of 22km. Average carriage way width of 14m.
- c)Paved feeder road with distance of 10km. Average carriage way width of 14m.
- d)Number, total length, and Average width of bridges Refer to Appendix B of this Specification. (ARICS FY 2020-2021)
- e)Drainage system including approximate 71,600m of sided drains and 10,152m of culverts.
- f) Major structures are Bridges (Overpasses and Overpasses), Box culverts, and Footbridges

As a general reference on the Road, the information shown below is provided to the Contractor. The Employer provides this information to the best of his knowledge, but does not guarantee its correctness, and the Contractor may not make any claim based on potential errors or omissions in the information provided.

[Provide information which may be useful to the tenderer for the preparation of his tenderer, such as:

- Traffic volumes for each road section
- Traffic composition
- Rain fall quantities and patterns
- Technical information of each road, such as original design, previous works executed, etc.
- Any maintenance history that is available
- Other information as available.

## **2. Works and Services to be provided**

### **2.1 Works**

The Works are what the Contract requires the Contractor to construct, install, and turnover to the Employer, as covered under Rehabilitation Works, Improvement Works and Emergency Works.

#### **2.1.1 Rehabilitation Works (Instructed Works)**

Rehabilitation Works are a set of measurable inputs to be executed by the Contractor during the Initial Mobilization Period to allow the Road to achieve the performance standards required under the contract. Rehabilitation Works shall be carried out by the Contractor in accordance with the Bill of Quantities. Rehabilitation Works will be paid for as measured items in accordance with the unit rates in the Bill of Quantities.

The major scope of the instructed works comprises the following but not limited to;

- General: Office Administration and Overheads.
- Top soil stripping at selected sections.
- Earthworks.
- Protection works: Provision of gabion boxes and stone pitching at critical sections at Githurai and Globe Roundabout as directed by the Engineer.
- Drainage works: Provision of subsoil drains at high water table areas, and access culverts (900mm dia) at proposed exits along the project road as instructed by the Engineer.
- Passage of traffic along the project road.
- Spot improvement on shoulders at selected sections of the project road as directed by the Engineer.
- Base repairs with hand packed stone or cement stabilized GCS/gravel for base as directed by the Engineer.
- Surfacing and regulation with asphalt concrete Type 1 at bus stops, bell mouth accesses, and base repair at selected sections.
- Laying of DBM including spraying of tack coat at base repair areas.

- Branding of structures along the project road including footbridges, underpasses, and overpasses
- Provision of Road Marking.
- Provision of specified Road Furniture.
- Rehabilitation works on NMTs along the project road using AC type 1 and concrete paving blocks (Cabro) as instructed by the Engineer.
- Performance based and routine maintenance of the carriageway, road reserve, and structures to the required service level.
- Any other works as may be instructed by the Engineer.

The detailed location of the above activities is shown in the Line Diagram which is appended in Section 8 of this document.

Repairs and maintenance works will be paid for as measured items in accordance with the unit rates in the Bill of Quantities. These works shall be instructed and done concurrently during the Maintenance Period.

#### 2.1.2 Improvement Works

Improvement Works are a set of interventions to be executed by the Contractor to allow the Road to acquire new characteristics under the contract. Improvement Works shall be carried out by the Contractor when specifically instructed by the Engineer as set out in Clause 27 of GCC and in accordance with the Bill of Quantities. Improvement Works will be paid for as measured items in accordance with the unit rates in the Bill of Quantities.

#### 2.1.3 Emergency Works

Emergency Works are a set of necessary inputs to be executed by the Contractor to allow the Road to be reinstated under the contract in case of inflicted damages as a result of natural phenomena with imponderable consequences, such as strong storms, flooding and earthquakes. Emergency Works shall be carried out by the Contractor when specifically instructed by the Engineer as set out in Clause 27 of GCC and in accordance with the unit rates provided for in the Specifications.

In the event of an emergency, the Contractor shall draw to the attention of the Engineer that certain works need to be carried out to reinstate the carriageway and other road features to restore the safe passage of traffic and ensure the integrity of the Road.

The Engineer who will determine the quantities of activities to reinstate the roads, shall make the payments according to the measured works.

#### 2.1.4 Design Responsibility for Works

All Works, Rehabilitation Works, Improvement Works and Emergency Works shall be designed by the Employer in accordance with the latest specifications adopted by the Employer.

### 2.2 Maintenance Services

The services to be provided by the Contractor include all activities, physical and others, which the Contractor needs to carry out in order to improve, maintain and comply with the service levels as set out in Table 2.1. (Service level requirements).

The Contractor is expected to come up with a methodology of complying with the Service Levels, and other output in the performance criteria as indicated in the contract, or with any other requirements of the contract. These includes management tasks and physical works associated with the road-related assets and items.

The road pavement structure comprises of;

- a. Wearing course surfacing – single seal surface dressing (6/10mm).
- b. Base Course Layer – Dense Bituminous Macadam.  
Main Carriageway 120-170mm  
Service Roads 75-125 mm
- c. Sub base Layer - **Upper Subbase**  
Main Carriageway-250mm Cement Treated Graded Crushed Stone  
Service Road-200mm Cement Treated Graded Crushed Stone  
**Lower Subbase**  
Main Carriageway-200-250mm Cement Improved Gravel  
Service Road-150 mm Cement Improved Gravel.
- d. Base (Shoulders) – Gravel/Graded Crushed Stone.
- e. Wearing Course (Shoulders) - Asphalt Concrete.

Performance based routine maintenance services will be paid for as a fixed **lump sum per km per month, with payment reductions made for non-compliance**, if appropriate.

It is expected that the Contractor shall include in his rate the cost of bringing the road to required service levels as stipulated in the Contract and the same shall not be paid for separately in the bills of quantities. These works shall include but not limited;

- a. Site Clearance: Light bush clearing of the extent of the Road Reserve which is approximately 60m wide and vegetation height of 150mm and 300mm within the inner zone and outer zone respectively.
- b. Removal of debris, any siltation, structures, fences, illegal signs and disposal of any spoil material within the extent of the road reserve.
- c. Spoiling of deleterious materials within the road reserve and maintenance of the same during the contract period.
- d. Repair, reinstatement and maintenance of existing and new protection works comprising of gabion boxes and other auxiliary erosion protection structures.
- e. Repair, reinstatement and maintenance of existing and new side drains, mitre drains, cut off drains to free-flowing conditions.
- f. Repair, reinstatement and maintenance of existing and new pipe culverts, Access Culverts, Box Culverts, Vented Drifts, lined drains, earth drains, gulley pots, storm water manholes, closed drains, subsurface drains and any other auxiliary drainage structure to free-flowing condition.
- g. Allow the passage of traffic through the works during the entire Contract period.
- h. Repair and reinstatement of Subbase/Base failed potholes prior to pothole patching.



- i. To allow smooth passage of traffic throughout the duration of the Contract by patching existing and any new emerging pothole within 48 hours. This shall also include any other works that shall be deemed necessary to give a good riding surface.
- j. Maintaining river beds to ensure free flow of water under the bridge and up-to 50m upstream and downstream at all times.
- k. Repair, reinstate and maintain Protection works around Bridge abutments and piers to ensure that erosion is always mitigated and controlled at all times during the contract duration.
- l. Repair, reinstatement and maintenance of existing shoulders to conform to the existing pavement structure and cross section issued in Section 8 of this document.
- m. To repair, reinstate and maintain the existing and new road furniture for the duration of the Contract. These shall include road marking, road signs, guardrails, road studs and any other road-asset related furniture along the road.
- n. Cleaning and painting of guardrails and handrails until the end of the contract.
- o. Reinstatement and repair of polycarbonate roofing to footbridges.
- p. Reinstatement and repair of AC and Cabro NMTs.
- q. Maintenance of walkways, Separators, Medians, and Islands.
- r. Maintenance of bridge railing, bearings, expansions joints, clearing of vegetation from structures, pruning of trees, and trimming and watering of hedges and imported grass.
- s. **The PBC Contractor must standardise non-standard humps using AC type 1 and road mark all the humps and pedestrian crossings using hot thermoplastic paint including installation of signs at the standardized humps within the first three (3) months of commencement of works, after which the Contractor shall road mark all the faded humps and pedestrian crossings yearly until the end of the contract. The rates for carrying out these works shall be included in the monthly PBC rate. Failure to carry out these works shall result in monthly deductions until compliance is achieved.**

A detailed list of such road-related assets and items is attached under Appendix B of this Specification. (ARICS FY 2020-2021).

For guidance, the activities to be undertaken by the Contractor include, but are not limited to, management tasks and physical works associated with the following:

- 1. Inspect the road for safety defects and defects likely to impact on durability of the assets
- 2. Inspect road, identify and remove all obstructions
- 3. Clean drainage (side drains, culverts)
- 4. Repair and replace scour checks
- 5. Vegetation control, grass cutting, bush clearing, tree pruning
- 6. Maintain bridges and minor repairs (replacement of guardrails)
- 7. Maintain road furniture and replace damaged traffic signs

The Contract shall prepare and submit Routine Maintenance strategy for approval by Engineer.

Management tasks and physical works include, but not limited to the following;

- 1) Maintain road usability.
- 2) Maintain road user comfort.
- 3) Maintain road durability.
- 4) Maintain control of the Road by patrolling, data collection, conducting inspections

and reporting

Maintenance Services shall be paid for as a fixed lump sum per km per month, with payment reductions made for non-compliance, if appropriate.

### 3. Compliance with Service Level Requirements

The Initial Mobilization Period for the Road to be brought to Service Level requirements is 3 months after the issuance of the Actual Start Date by the Contractor. However, the period should vary depending on the initial condition of the road as defined and specified in the SCC. In the Contract. Within the first 3 months, compliance with the Service Levels will be adjusted as shown in Table 2.1 to allow the Contractor to properly mobilize the team within the Initial Mobilization Period.

**Table 2.1 Timetable for Compliance with Service Level Requirements**

<b>Contract Month</b>	<b>Road Usability (Compliance required on % of contract road)</b>	<b>Road User Comfort Compliance required on % of contract road</b>	<b>Durability Compliance required on % of contract road</b>
1	100	75	75
2	100	100	100
3	100	100	100
2 until end of Contract	100	100	100

### 4. Programme of Performance

In accordance with clause 14.1 of the General Conditions of Contract (GCC), the Contractor shall submit a Program of Performance within not later than Fourteen (14) days after issuance of Order to Commence in the format Prescribed in the Tender Document. The program shall include, but not be limited, to the following items:

#### 4.1 Contractor's Quality Assurance Plan

The purpose of the Contractor's Quality Assurance Plan is to integrate the requirements of the contract and the Contractor's quality assurance systems to deliver the Works and Services.

The Contractor's Quality Assurance Plan describes the methods and procedures which the Contract will apply for the execution of the Contract, including how the Contractor will:

- Identify the quality requirements specific to the contract,
- Plan and execute the Works and Services to satisfy those requirements
- Inspect and/or test the Works and Services to ensure compliance with the quality requirements
- Record and monitor the results as evidence of compliance, and

- e) Ensure that prompt action is taken to correct non-compliance.

The Contractor's Quality Assurance Plan must clearly describe the systems, procedures and methods that will be used to deliver and monitor compliance of the Works and Services.

#### 4.2 Traffic Management Plan

If required in the Special Conditions of Contract (SCC) the Program of Performance shall include a Traffic Management Plan. The Traffic Management Plan establishes the practices for traffic management at work sites. The Traffic Management Plan must be developed by the Contractor and agreed with the Engineer.

The objectives of the Traffic Management Plan are to:

- a clearly define and document the responsibilities and chain of command for the development, implementation and management of traffic control measures and systems
- b establish the minimum requirements for temporary traffic control
- c establish the minimum geometric, cross section and surfacing standards for temporary works
- d provide appropriate transitions and enable safe and efficient traffic flow into, through and out of work sites
- e protect the Contractor's personnel at all times
- f protect the Assets and the Contractor's resources at all times.
- g Meet the operational requirements for the road

The Traffic Management Plan must include at least the following:

Lay out diagrams, method statements etc. for implementation of traffic control while undertaking each aspect of the Works and Services (including site specific layout diagrams and method statements if the Services require traffic control measures not covered by standard codes of practice)

A documented process for preparation, review and approval of the Traffic Management Plan

A document tracking and control system to ensure that only the latest operative copy of the Traffic Management Plan is in circulation

Contact details for Contractor, Principal, emergency services and other stakeholders.

#### 4.3 Safety Management Plan

If required in the Special Conditions of Contract (SCC) the Program of Performance shall include a Safety Management Plan submitted within 14days after receipt of Order to commence. The Safety Management Plan establishes the practices for safety management at work sites. The Safety Management Plan must be developed by the Contractor and agreed with the Engineer.

The objectives of the Safety Management Plan are to:

- a Clearly define and document the responsibilities and chain of command for the development, implementation and management of safety control measures and systems.

- b Establish the minimum requirements for the safety of workers, road users and community people using the Road.
- c Protect the Contractor's personnel at all times.

Contractor shall observe the following measures with a view to enhance Road Safety to the Road Users and Site Workers:

- i. Prepare and submit a comprehensive Road Safety Implementation Plan within 14 days after receipt of Order to commence for the Engineer's Approval. The plan shall include but not limited to the following:
  - Night driving
  - Safety of workers
  - Diversions
  - Traffic management Plan
- ii. 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.
- iii. The Contractor shall install and maintain standard approved traffic warning signs, directional signs, secure the working areas and deploy flagmen at active construction sites.
- iv. 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.
- v. The Contractor shall factor the cost of implementation of the Road Safety Plan in the rates for the Works.

The Safety Management Plan must include at least the following:

Method statements for implementation of work safety undertaking on each aspect of the Works and Services (including safety gears for workers, use of tool box meetings for safety awareness, provision of work safety signs, training of workers on safe use of tools and equipment, safety inspection under the patrolling by Self Control Unit and commitment by the Contractor on adherence to the Occupational Safety and Health Act, 2007 amended on 2010.)

A documented process for preparation, review and approval of the Safety Management Plan

A document tracking and control system to ensure that only the latest operative copy of the Safety Management Plan is in circulation

Contact details for Contractor, Engineer, emergency services and other stakeholders.

#### 4.4 Environmental Management Plan

If required in the Special Conditions of Contract (SCC) the Program of Performance shall include an Environmental Management Plan. The Environmental Management Plan establishes the practices for environmental management at work sites. The Environmental Management Plan must be developed by the Contractor and agreed with the Engineer.

The objectives of the Environmental Management Plan are to:

- a clearly define and document the responsibilities and chain of command for the development, implementation and management of environmental control measures and systems
- b establish the minimum requirements for environmental control measures for maintaining the adequate environment for workers, road users and community people using the Road
- c maintain the awareness of the Contractor's personnel on environmental protection at all times

The Environmental Management Plan must include at least the following:

Method statements for maintaining the adequate environmental on work sites undertaking on each aspect of the Works and Services (including specific dumping locations of debris and materials unwanted from the Road, use of tool box meetings for environmental protection awareness, training of workers on environmental control measures, inspection under the patrolling by Self Control Unit and commitment by the Contractor on adherence to the regulations and acts enacted by the government of Kenya under National Environmental Management Authority.)

A documented process for preparation, review and approval of the Environmental Management Plan

A document tracking and control system to ensure that only the latest operative copy of the Environmental Management Plan is in circulation

Contact details for Contractor, Engineer, emergency services and other stakeholders

#### 4.5 Emergency Procedures and Contingency Plan

If required in the Special Conditions of Contract (SCC) the Program of Performance shall include an Emergency Procedures and Contingency Plan which shall establish the roles, practices and procedures during specific types of emergency events identified in the plans and contingency plans associated with the closure of roads. The Emergency Procedures and Contingency Plan must be developed by the Contractor and agreed with the Engineer and any other stakeholders the Engineer may identify.

The purpose of the Emergency Procedures and Contingency Plan is to ensure the safety of the Contractor's personnel and road users in the case of emergency and/or road closure. It should include: an effective communication and event recording system the name, contact number and specific duties of the Contractor's personnel nominated to respond to an emergency even the contact number of other parties who need to be notified in cases of emergency events, e.g. police detailed response procedures for all emergency events possible detour routes in the event of road closure

### 5 Service Criteria

The Contractor is required to carry out the Maintenance Services and to maintain the specific road related assets and items as stipulated in Clause 1.2.2 of the Performance Specifications during the contract duration in compliance with the Road Performance Standards as defined by the Service Criteria as stipulated hereunder.

The Employer requires the Contractor to maintain roads under the contract to be safe and efficient together with the satisfactory level of availability to road users. In order that the Contractor can achieve such, service criteria are established for guidance and

classified into three Service Categories; i.e. Road Usability, Road User Comfort and Road Durability.

- 1) Road Usability and comfort is a description that encompasses the scope of passability of the Road, and service level requirements entailed for each. The road user must be able to travel at a certain level of safety, unobstructed by objects, wash-out material and other debris on the carriageway and shoulders. The criteria for determining the service levels for safety are given in Table 2.2. The enforcement of these criteria is expected to be an immediate priority of the contractor due to the critical importance of road safety, and 100% compliance is expected from Month 2, as shown in the Timetable in Table 2.1. Compliance will be determined by Visual Inspection.

**Table 2.2 Service Levels for Road Safety (Road Usability & Comfort)**

Item	Service Level	Time Allowed
Cleanliness of the road pavement surfacing and shoulders	The road must always be clean and free of soil, debris, trash and other objects, which must be removed within the time given if they pose: <ul style="list-style-type: none"> <li>• A high danger to traffic: such as rocks, fallen trees, dead animals, abandoned vehicles, fly tipping and other large obstacles etc.:</li> </ul>	6 hours
	<ul style="list-style-type: none"> <li>• A lesser (medium) danger to traffic: such as material washed on to the road after storms etc.:</li> </ul>	12 hours
Obstruction on the carriageway by stalled motor vehicles	<p>The carriageway including shoulders shall at all times be free from stalled vehicles. Contractor must ensure the stalled vehicle is towed off the road to a safe location within the time given.</p> <p>Prior to towing, Contractor shall ensure cautionary measures are taken to alert other road users.</p>	1 hour

- 2) Road User Comfort is a description that encompasses the scope of operational performance indicators of road assets from the road user comfort perspective, such as cleanliness, smooth riding surface, sight distance availability, shoulder availability, adequacy of safety features and functionality of NMT facilities, and service level requirements entailed for each
- 3) Road Durability is a description that encompasses the scope of operational performance indicators of road assets from the Employer's perspective towards monitoring and prolonging the life spans of the assets such as drainage capabilities, functionality of structures, functionality of road furniture and suitability of road profiles, road widths, embankments, slopes and vegetation control.

The service level requirements, defects and the response times thereof that the Contractor must comply with and separately adhere to are defined in the Performance Standards for the various standard service level categories indicated in the appendices shown in tables below;

### **Pavement, shoulders and Right-of-Way**

The service level criteria for road pavement, shoulders including the road reserve of paved roads are defined as follows:

#### **5.1 Main Carriageway (Pavement, Paved Shoulders and medians)**

##### **5.1.1 Rutting**

Service Level Permissible Tolerance (Max. defective condition)	All rut depths should be rectified Rutting shall not exceed 20 mm; Maximum rutting is 2.5 percent in the sub-section Ex. [Say for length of sub-section of 200 m length, within any particular km between two consecutive km as per chainage; maximum cumulative rutting = $0.025 \times 200 = 5$ m]
Measurements and Detection	(i) The rutting should be measured in isolated locations
Maximum Response Time	Rutting beyond 2.5 percent should be measured in isolated locations within 3 days of detection and rectified in 28 days.

##### **5.1.3 Potholes**

Service Level	No potholes are allowed
Permissible Tolerance (Max. Defective Condition)	Not more than 3 isolated potholes in one km between two consecutive chainage. Maximum size of any pothole not more than 300 sq cm in area x 4 cm depth
Measurement and Detection	Visual inspection and with ruler Area of pothole shall be measured by the area of rectangle enclosing the pothole
Maximum Response Time	i) Within 3 days after detection of the pothole ii) Potholes causing safety hazard to be repaired within 24 hrs.

##### **5.1.4 Cracking in Flexible Pavement**

Service level	All cracks shall be sealed
Permissible Tolerance (Max. defective condition)	Cracked area shall not exceed 10 percent of the area in any sub-section of 200 m length Ex. [Say area of sub-section of 200 m length = $7 \times 200 = 1400$ sqm. Area

	of cracking notto exceeds 140 sqm in the sub-section.
Measurements and Detection	i) For isolated cracks more than 3 mm wide the cracked area will be measured as length of crack multiplied by 1 m width. ii) For multiple cracks, the area of the rectangle enclosing the cracked portion plus 0.3 m on all sides shall be the area of cracking.
Maximum Response Time	i) Cracks less than 3 mm wide must be sealed within 14 days after their detection. Cracks more than 3 mm wide must be sealed within 3 days after their detection

### 5.1.5 Cracks in Concrete Pavement

Service Level	All cracks above 0.2 mm width shall be sealed
Permissible Tolerance	Cracked area shall not exceed one percent of the area in any subsection 200 m length. e.g. (Say area of sub-section of 200 m length = $7 \times 200 = 1400$ sq m Area of cracking not to exceed 14 sq m.
Measurement Detection	i) For isolated cracks more than 3 mm wide, the cracked area will and be measured as length of crack multiplied by 1 m width. ii) For multiple cracks the area of the rectangle enclosing the cracked portion plus 0.3 m on all sides shall be the area of cracking.
Maximum Response Time	i) Cracks between 0.2 mm to 0.5 mm shall be sealed within one month of their detection. ii) Cracks between 0.5 mm to 3.0 mm shall be sealed within 14 days of their detection cracks. iii) Cracks more than 3.0 mm shall be sealed within 7 days of their detection cracks.

### 5.1.6 Spalls in Concrete Pavement

Service Level	All spalls above 10 mm to be repaired
Permissible Tolerance	i) Spalling exceeding 10 mm in width and more than 10 mm deep, 15 percent of aggregate length along a) Transverse joint in a panel b) along longitudinal joint in a panel.
Measurement and Detection	Measure with ruler and measuring tape.
Maximum Response Time	Spalls of width less than 20 mm shall be repaired within 56 days of their detection.  Spalls of width above 20 mm shall be repaired within 28 days of their detection.



### **5.1.7. Joint Seal defects**

Service Level	All joints shall be maintained in serviceable condition
Permissible Tolerance	Less than 25 percent of the joint length in a panel and no allowance for water ingress and trapping of incompressible.
Measurement and Detection	Measure with measuring tape
Maximum Response time	Within 28 days of their detection.

### **5.1.8 Corner Break**

Service Level	No corner break to be allowed
Permissible Tolerance	Maximum 0.2 mm and one corner break.
Measurement and Detection	By visual inspection and ruler
Maximum Response time	Within 28 days of their detection.

### **5.1.9 Ravelling/Honeycombed type surface and Scaling**

Service Level	Minimum Raveling/Honeycombed type surface and Scaling to be allowed
Permissible Tolerance	Not more than 2 percent of total surface area of slab and depth of damage not more than 5 mm.
Measurement and Detection	By visual inspection
Maximum Response time	Within 56 days of their detection.

### **5.1.10 Polished Surface/Glazing**

Polishing is a failure mode of the pavement surface consisting of rough exposed aggregates. This form of failure is caused by excess repeated traffic on an aging pavement system.

Service Level	<b>Textured depth more than 1 mm for brushed texturing and 1.5mm for tining.</b> <b>[British Pendulum Number (BPN) rating more than 45]</b>
Permissible Tolerance	Average texture depth not less than 0.3 mm for texturing and not less than 1.51mm for tining.
Measurement and Detection	Sand patch method in case of brush texturing and Vernier Calliper method in case of Tining.
Maximum Response time	Within 6 months of their detection.

### **5.1.11 Pop-out (small hole) and potholes**

Bowl- shaped holes of varying sizes in a surface layer or extending into the base course caused by localized disintegration of material. These holes in the pavement surface are indicative of a localized problem such as drainage or subgrade deterioration. Usually the pothole exposes the pavements subbases. Potholes usually occur after fatigue cracking has gone un-repaired for some time. Potholes are more common in thinner pavements. Areas of dense potholes may indicate an overall failure of an aging pavement.

<b>Service Level</b>	<b>Popout less than 50 mm depth acceptable upto and not more than 3 numbers in panel may exist and no pothole is allowed.</b>
Permissible Tolerance	i) Pop-out- Diameter less than 50 mm, Depth less than 25 mm and not more than 1 no. per 5 m <sup>2</sup> of surface area of slab. ii) Pothole-No pothole is permissible
Measurement and Detection	By visual counting and ruler
Maximum Response Time	Pop-out: -within 28 days of their detection. Potholes:- immediately within 3 days of their detection.

#### **5.1.12 Punch-out (applicable to Continuous Reinforced Concrete Pavement only)**

The area enclosed by two closely spaced transverse cracks, a short longitudinal crack, and the edge of the pavement or a longitudinal joint. Also includes "Y" cracks that exhibit spalling, breakup, or faulting.

<b>Service Level</b>	<b>No punch out allowed</b>
Permissible Tolerance	Width less than 0.5 mm and length less than 3.0 m per m <sup>2</sup> of surface area of panel.
Measurement and Detection	By measuring tape.
Maximum Response Time	Immediately i.e. within 3 days of their detection.

#### **5.1.13 Faulting in cracks or joints**

Durability cracking (Closely spaced, crescent-shaped hairline cracking pattern. Occurs adjacent to joints, cracks, or free edges. Initiates at the intersection, e.g., cracks and a free edge. Dark coloring of the cracking pattern and surrounding area.); longitudinal cracking (Cracks that are predominantly parallel to the pavement centerline); Transverse cracking (Cracks that are predominantly perpendicular to the pavement centerline. All transverse cracks that intersect an imaginary longitudinal line at midlane, and propagate from the pavement edges, shall be counted as individual cracks, as illustrated below.

<b>Service level</b>	<b>Faulting less than 3mm may exist</b>
Permissible Tolerance	Difference of level between two surfaces of slab across a joint or across the crack/slab shall be not more than 6 mm.
Measurement and Detection	By ruler
Maximum Response Time	Within 8 weeks of their detection.

#### **5.1.14 Heave and Bump**

Upward displacement of pavement caused by traffic loads or concrete slab buckling under a bituminous pavement overlay

<b>Service level</b>	<b>Not to exceed 5 mm</b>
Permissible Tolerance	vertical displacement not more than 5 mm.
Measurement and Detection	By ruler and straight edge.
Maximum Response Time	Within 12 weeks of their detection.

#### **5.1.15 Blow-up or Buckling**

Localized upward movement of the pavement surface at transverse joints or cracks, often accompanied by shattering of the concrete in that area.

<b>Service level</b>	<b>Not allowed</b>
Permissible Tolerance	vertical displacement not more than 10 mm.
Measurement and Detection	By ruler and straight edge.
Maximum Response Time	Immediately i.e. within 3 days of their detection.

#### **5.1.16 Depression**

A failure mode of the pavement surface characterized by prominent channel-like features in the pavement. Depression results from increased wheel loads and poor subbase and subgrade construction. Depression failure is not the same as Rutting.

<b>Service Level</b>	<b>Not more than 5 mm</b>
Permissible Tolerance	Negative vertical displacement not more than 10 mm.
Measurement and Detection	By ruler and straight edge.
Maximum Response Time	Within 4 weeks of their detection.

#### **5.1.17 Drop-off**

Difference in elevation between the edge of slab/ pavement and outside shoulder; typically occurs when the outside shoulder settles.

Service Level	Less than 3 mm
Permissible Tolerance	Difference of level not more than 25 mm in 200m aggregate length in 1.0 km.
Measurement and Detection	By ruler, measuring tape and straight edge.
Maximum Response Time	Within 12 weeks of their detection.

#### **5.1.18 Pumping**

Seeping or ejection of water from beneath the pavement through cracks or joints. In some cases detectable by deposits of fine material left on the pavement surface, which were eroded (pumped) from the support layers and have stained the surface.

Service Level	Not allowed
Permissible Tolerance	No tolerance allowed.
Measurement and Detection	By visual inspection.
Maximum Response Time	Immediately on detection.

#### **5.1.19 Ponding**

Service Level	Up to 2 number panels
Permissible Tolerance	No tolerance allowed.
Measurement and Detection	By visual inspection.
Maximum Response time	Immediately on detection.

### 5.1.20 Medians

Service Level	<ul style="list-style-type: none"> <li>i) Medians must always be clean, free of debris and objects posing danger to traffic safety.</li> <li>ii) The level of filling in the median should be maintained such that no fill material spills on to the carriageway.</li> <li>iii) Median plantations shall be maintained properly with watering and pruning as required from time to time. There shall be no obstruction in sight distance. No fallen plantations on roadway are allowed.</li> </ul>
Permissible Tolerance	<ul style="list-style-type: none"> <li>i) Zero tolerance in respect of objects posing danger to traffic safety.</li> <li>ii) Height of plantations not to exceed 1 m at any point of time.</li> <li>iii) No spillage of earth fill from median to carriageway</li> </ul>
Measurement and Detection	Visual Inspection and measuring tape.
Maximum Response Time	Maintenance-regularly Pruning of shrubs -14 days

### 5.1.21 *Litter, debris, dead animals*

Service Level	<ul style="list-style-type: none"> <li>i) Carriageway, shoulders, medians, footpaths, service roads, lay-byes, bridge decks must always be clean and free of objects posing danger to traffic safety including dead animals, oil spillages from vehicles.</li> <li>ii) Any animal carcass or debris will not be allowed within the road land.</li> </ul>
Permissible Tolerance	<ul style="list-style-type: none"> <li>i) Zero tolerance in respect of objects posing danger to traffic safety.</li> <li>ii) Not more than 5 percent length below the defined service level in case of no danger to traffic safety.</li> </ul>
Measurement and Detection	Visual Inspection.
Maximum Response Time	<ul style="list-style-type: none"> <li>i) All litter, debris, dead animals and any other obstructions in traffic from the areas specified under Service Level (i) must be removed within 12 hours.</li> <li>ii) Other within 1 days</li> </ul>

## 5.2 Granular Shoulder (Hard Shoulders Without Bituminous Surfacing)

Service Level	Granular shoulders shall be maintained to the requisite cross fall (2.5 percent) and shape. The level of shoulder should match the pavement edge. There shall be no undulations, potholes, loose surface, rutting, obstructions or vegetation, which may lead to water ponding or pose danger to traffic safety
Permissible Tolerance	<ul style="list-style-type: none"> <li>i) Crossfall not less than the camber on the paved surface or not more than 4 percent in 100m length in one km.</li> <li>ii) Not more than 5 isolated potholes (total number of potholes on both side shoulders) in one km. Maximum size of any pothole not more than 300 sq. cm. x 4 cm. depth</li> <li>iii) Rutting-Maximum upto 40mm in an aggregate length of 100m in one km</li> <li>iv) Edge drop-Maximum 50 mm in 200m length in one km.</li> <li>v) Except traffic sign posts (where permitted) no other objects/</li> <li>vi) obstructions are allowed.</li> </ul>
Measurement and Detection	Visual Inspection and measurement using camber board and straight edge
Maximum Response Time	<ul style="list-style-type: none"> <li>i) Within 14 days</li> <li>ii) Water ponding, if any, to be attended to and made safe within 48 hours.</li> </ul>

## 5.3 Earthen Shoulders

Service Level	Earthen shoulders shall be maintained to the requisite cross fall (1 percent more than the camber on the paved surface) and shape. The level of shoulder should match the pavement edge. There shall be no undulations, settlements, un-compacted surface, obstructions or vegetation (except permitted grass cover), which may lead to water ponding or pose danger to traffic safety
Permissible Tolerance	<ul style="list-style-type: none"> <li>i) Cross fall not less than 2.5 percent or greater than 5 percent in 100 m length in one km.</li> <li>ii) Edge drop-Maximum 50 mm in 200m length in one km.</li> <li>iii) Except traffic sign posts (where permitted) no other objects/ obstructions are allowed.</li> <li>iv) Height of grass cover not to exceed 100 mm.</li> </ul>
Measurement and Detection	Visual Inspection and measurement using camber board of 3 m straight edge
Maximum Response Time	<ul style="list-style-type: none"> <li>i) Within 14 days</li> <li>ii) Water ponding, if any, to be attended to within 3 days.</li> </ul>

## 5.4 Road Embankment

Service Level	Road embankment shall be maintained to standard width and side slopes including kerb drains, chute drains and pitching, where provided.
Permissible Tolerance	i) Not more than 100 m length in one km will fall below the defined Service Level ii) Damaged pitching not more than 10 percent area in 100 m length.
Measurement and Detection	Visual inspection, measured with 3m straight edge and measuring tape.
Maximum Response Time	i) Rain cuts, erosion of berms, side slopes must be repaired within 7 days after detection. Caution boards, signs, barricading shall be installed Within 8 hours of detection in case of any danger to traffic safety. ii) Any damage to the pitching, drains must be repaired within 14 days after detection

## 5.5 Culverts

Service Level	All culverts shall be free of any obstructions and shall be maintained in proper condition to ensure (i) proper functioning and safety of structure, and (ii) safety and comfort of users.
Permissible Tolerance	i) Not more than 10 percent restriction in waterway during dry season. ii) Damaged flooring, apron, pitching not more than 10 percent of the area. iii) Scouring not more than 500 mm depth. iv) Kerbs, parapets, guide posts/stones, as per Clause 5.11 of this document.
Measurement	Visual, measuring tape
Maximum Response Time	i) Clearing, before rains, the waterway of obstructions, silting, island formation, and vegetation-Within 28 days, as and when required, after detection. ii) Filling of scour around foundations, head walls, wing walls - Immediately during rains. Otherwise within 14 days. iii) Repairs of damaged flooring, pitching, apron, parapets, plaster guide posts/stones-within 14 days. iv) Painting of kerbs, parapet and guide posts-once a year.



## 5.6 Bridges

Service Level	All bridges shall be free of any obstacles in the waterway, and shall be maintained in proper condition to ensure: i) Proper functioning of all components and safety of the structure ii) Safety and comfort of road users
Permissible Tolerance	i) Max 10 percent restriction in waterway during dry season ii) Damaged flooring, aprons: Not more than 10 percent of area in a span iii) Damaged pitching: Not more than 10 percent area in 100m length iv) kerbs, parapets, railings-as per Clause 6.11 of this Section. v) Defects should not pose any danger to safety of road users and structures
Measurement and Detection	Visual inspection and measuring tape
Response Time	I) Cleaning and removal of dirt and vegetation from pier caps, Bearings, Expansion Joints, Superstructure, Kerb channel, Drainage spouts, Retaining walls -within 14 days.
Bearings, Expansion Joints, Superstructure, Kerb channel, Drainage spouts, Retaining walls -within 14 days.	ii) Clearing the waterway of obstructions, island formation, vegetation -Before rains.
Within 28 days, as and when required.	iii) Repairs to damaged flooring, aprons and pitching a) Within 14 days b) Flooring, aprons, pitching shall be thoroughly checked before the rainy season and the damaged portion if any, shall be reinstated to the original specifications
6 hours.	iv) Repairs to damaged footpaths, Wearing course a) Arrangements for traffic safety shall be made immediately, within b) Repairs must be carried out within 24 hours, if there is danger to traffic safety c) In other cases-within 14 days
(vi) Greasing of metallic Bearing- Once a year	v) Repairs to damaged kerbs, railings, parapets - as per Clause 6.11 of this Section. vii) Any structural distress in any component of the structure shall be reported to the Engineer immediately, as soon as noticed and necessary barricading and signing shall be fixed for traffic safety.

## 5.7 Drains

Service Level	All drains shall be clean, without any obstruction and maintained to normal cross-section. Lining, where provided, shall be maintained without any damage.
Permissible Tolerance	Not more than 5 percent length below the defined Service Level
Measurement and Detection	Visual and measured with straight edge and measuring tape.
Maximum Response Time	i) Cleaning of drains in Urban areas-Every 2 weeks (14 days) or earlier in case of obstructions to flow. ii). Cleaning and repairs of road side drains- Before and after rains. iii) Repairing of any damaged section -Within 14 days after detection.

## 5.8 Road Signs

Informatory Signs, Warning Signs and Mandatory Signs

Service Level	All signs shall be properly maintained and protected. It shall be ensured that: i) They are in place and properly installed ii) They are cleaned (with detergents) at least twice in a year and if situation demands again as per requirement. iii) They are clearly legible and free from any damage or pastings.
Permissible Tolerance	Not more than 5 percent below the defined Service Level
Measurement and Detection	Visual Inspection
Maximum Response Time	3 days

## 5.9 Road Delineators and Road Studs

Service Level	All delineators and road studs are to be clean and maintained in proper condition without any damaged or missing ones.
Permissible Tolerance	Not more than 5 percent below the defined Service Level.
Measurement and Detection	Visual Inspection
Maximum Response Time	Within 7 days after detection

### 5.10 Boundary Stones/Pillars

Service Level	All boundary stones shall be in place, clearly legible and free from defects and damage.
Permissible Tolerance	Not more than 5 percent below the defined Service Level.
Measurement and Detection	Visual Inspection.
Maximum Response Time	Within 14 days after detection. and shall be painted once every year.

### 5.11 Kerbs, Parapets, Railings, Guide Posts/Stones

Service Level	All kerbs, parapets, railings, guidepost/stones shall be clean, painted and maintained in proper condition without any damaged or missing units.
Permissible Tolerance	Not more than 5 percent below the defined Service Level. No missing parapet/railing shall be allowed without proper safety arrangements pending restoration/repairs.
Measurement and Detection	By visual inspection and measuring tape.
Maximum Response Time	i) Damaged parapets/railings posing danger to traffic shall be made safe within 12 hours. ii) Other repairs/replacement within 7 days after detection iii) Kerbs, parapets, railings, guide post/stones shall be painted once every year.

### 5.12 Steel Railings/Metal Beam Crash Barriers/Concrete Crash Barriers

Service Level	Railings/Crash Barriers shall be maintained to the original lines and levels, kept clean, free of any pastings, and well painted.
Permissible Tolerance	No missing Railings/Crash Barriers shall be allowed without proper signs, and safety arrangements pending repairs/replacement of the damaged portion.
Measurement and Detection	Visual inspection and 3m straightedge
Maximum Response Time	i) Repairs/Replacement within 48 hours after detection ii) In case the damaged railings/crash barriers pose danger to traffic safety, immediate measures (within 12 hours) shall be taken to make them safe iii) All railings and Crash barriers shall be painted once every year.

### 5.13 Pavement Markings

Service Level	All pavements markings shall be clearly visible and reflective.
Permissible Tolerance	Not more than total 100 m in one km.
Measurement and Detection	Visual inspection and measuring tape
Maximum Response Time	3 days

### 5.14 Clearing of Vegetation

Service Level	No vegetation growth (other than the normal grass cover/turfing, Plantation done for beautification and trees) is permitted in the road land. There should be no obstruction in the sight distance.
Permissible Tolerance	Height of grass not more than 100 mm. Vegetation free zones shouldn't have any vegetation whatsoever
Measurement and Detection	Visual
Maximum Response Time	All unwanted vegetation, brushes, weeds shall be cleared within 7 days

### 5.15 Trimming/Pruning/Maintenance/Removal of Trees

Service Level	All road side trees and plantations shall be maintained properly. There shall be no obstruction in sight distance and vertical clearance by the road side trees. No fallen trees on roadway are allowed.
Permissible Tolerance	Minimum sight distance of 240m and vertical clearance of 5 m.
Measurement And Detection	Visual inspection and measuring tape.
Maximum Response Time	Maintenance-regularly Trimming of trees-14 days Removal of dead trees with the approval of forest department – 14 days.

### 5.16 Encroachment

Item	Service Level	Measurement/Detection	Time allowed for repairs or Tolerance permitted
Encroachment/Illegal access on the Right of Way (Structures, access, advertisement, car wash, vending of seedlings, works, trenching	Illegal or unauthorized structures, access, advertisement, car wash, vending of flowers & tree seedlings, works, trenching, shall not be put up within the right of way after commencement of the Contract.	Visual Inspection	the structure, access, advertisement, works, car wash, vending of flowers & tree seedlings, trench etc to be removed or demolished within 24 hours of erection.

## **6 Self-Control Unit (SCU)**

The Contractor is required to establish a Self-Control Unit within his project organization throughout execution and completion of the Works and Services to the satisfaction of the Engineer. The roles of the SCU:

1. For conducting self-inspection to verify the degree of compliance with the Road Performance Standards as defined by the Service Levels and maintain the reporting system of self-inspection.
2. Assessment of the Road. The Self-Control Unit shall have a complete knowledge of the road condition, both on and off carriage way, at all times by carrying out patrolling, to the satisfaction of the Engineer.
3. The Self-Control Unit is responsible for Gathering information required by the Contractor to prepare the Monthly Statement.
4. The carrying out, in close cooperation with the Engineer, the Form a land Informal Inspections of Service Levels which will take place as required.

The Contractor is required to assign a technically qualified and trained person, or persons, to continuously verify the degree of compliance of Service Levels. The Contractor is also required to arrange a satisfactory means of mobility for conducting patrolling to the satisfaction of the Engineer.

## **7 Site Inspection and Patrolling/Reporting**

The Contractor is required to undertake the following management tasks to ensure the full integrity of the Road throughout execution and performance of the Works and Maintenance Services.

### **7.1 Site Condition Assessment before Commencement of Works and Services**

The Contractor shall conduct initial site condition assessment before commencement of the Works and Services under the contract. In case any defects and deficiencies are discovered under the assessment, the Contractor shall notify the Engineer by submitting the Defect Detection and Rectification List as attached to the Appendix 1 of the Performance Specifications and upon agreement of the Engineer, the Contractor shall carry out rectification works as the Rehabilitation Works.

In case the Contractor discovers cases of illegal encroachment and illegal dumping of unwanted materials or otherwise illegal actions by the third parties, the Contractor shall notify the Engineer for further instructions as required.

### **7.2 Determination of Subsection and Installation of Marker Posts**

The Contractor shall either mark clearly on the road or install temporary posts to determine the subsections inspection purposes. The Contractor shall submit the record of such identification and markers to the Engineer.

### **7.3 Patrolling/Reporting**

The Contractor shall carry out patrolling of the Road as required under the contract. Such patrolling shall be reported to the Engineer without delay through submission of the Daily Work Record, Daily Patrol Record, Monthly Photo Record and Incident Report as attached to the Appendices 2, 3, 4 and 5 of the Performance Specifications. The contractor is also required to give the result of self-inspection to the Engineer without delay through submission of the Detail Self Inspection Result Record Form (Paved Road) as attached to the Appendix 6 of the Performance Specifications.

In case the Contractor discovers cases of illegal encroachment and dumping of unwanted materials or illegal actions by third parties, the Contractor shall notify the Engineer for further instructions as required.

#### 7.4 Ad hoc Inspection

The Engineer may carry out ad-hoc inspections to verify the degree of compliance with the Road Performance Standards as defined by the Service Levels. He may do so on his own initiative, at anytime and anywhere on the roads under the contract. If he detects any road sections where the Service Level criteria are not met, he is required to notify the Contractor within 24 hours in writing as the Corrective Order, to enable the Contractor to take remedial action as soon as possible. The results of ad-hoc inspections may not be used by the Engineer for purposes of correcting the Contractor's monthly statements or applying penalties, except for cases in which the traffic flow on the road has been completely interrupted due to the negligence and tardy action by the Contractor.

### **8 Monthly Statement**

#### 8.1 Preparation for Monthly Statement

A2S1- Length of 9.2 km (Arterial Roads)											
Payment Reduction Calculation Table PAVED (SAMPLE)								Sheet	1 of 1		
Project	Project Title and Contract No.					Contract Period			Thirty-Six Months – 36 months		
Road Authority	Kenya National Highways Authority (KeNHA)			Contractor	M/s xxxxxx Company Ltd						
Road Name/ Class/ Chainage/ (j)Length		XXXX				Road Class	XXX	0+000	9.2+000	9.2 KM	
Statement Month/ Year and Elapse of Month		Month	Year	Elapsed time	Standard Service Level			Paved High			
(A2S1) Contract Length Per Month		9.2		KM							
Service Level Criteria		Compliance			Reduction						
Service	Service Scope	(a)	(b)	(c)=(a)*(b)	(d)=(a)-(c)	(e)	(f)=(e)-(d)	(g)=(f)/(c)	(h)	(i)=(g)*(h)	(j)=(c)x(i)
		Contract Road Length (km)	Required Target	Target Length (km)	Exemption Length (Km)	Non-Compliant Length (Km)	Adjusted Non-Compliant (Km)	NON-Compliant Rate	Reduction Weight	Reduction Rate (%)	Reduction Length (Km)
1. Documentation	Preparation and submission of daily Work Record Forms	9.2	100.00%	9.2	-		-	-	1.00%	0.00%	-
	Defects Detection and rectification Forms	9.2	100.00%	9.2	-		-	-	1.00%	0.00%	-
	Incident and Photo Records Form	9.2	100.00%	9.2	-		-	-	1.00%	0.00%	-
	Detailed and Summary Self Inspection forms	9.2	100.00%	9.2	-		-	-	1.00%	0.00%	-
	Monthly Statement Form	9.2	100.00%	9.2	-		-	-	1.00%	0.00%	-
2. Road Usability	Pavement Cleanliness – surfaced and edges	9.2	100.00%	9.2	-		-	-	15.00%	0.00%	-
	Road Advance Work signs	9.2	100.00%	9.2	-		-	-	5.00%	0.00%	-
3.Road User Comfort	Potholes on Carriageway/NMT	9.2	100.00%	9.2	-		-	-	20.00%	0.00%	-
	Shoulders-Potholes, water ponding, obstructions, raincuts, vegetation	9.2	100.00%	9.2	-		-	-	2.50%	0.00%	-
	Pavement Cracks and joint deficiencies	9.2	100.00%	9.2	-		-	-	2.50%	0.00%	-
	Road Signs – Directional Specific Schedule	9.2	100.00%	9.2	-		-	-	5.00%	0.00%	-
	Rutting	9.2	100.00%	9.2	-		-	-	2.50%	0.00%	-
	Road Marking of humps, pedestrian crossings, and carriageway.	9.2	100.00%	9.2	-		-	-	17.50%	0.00%	-
4. Road Duraility	(Culverts, Structures, Bridges) i) Clearing the waterway of obstructions, repairs to damaged pitching, flooring, approach slab, drainage spouts, weep tubes, vent holes, wearing course, footpaths.	9.2	100.00%						10.00%	0.00%	



bridge foundation, bearings and expansion joints										
ii) ) Painting, repairs/replacement of kerbs (, hand railings, parapets, guide posts/stones, Crash barriers, foot over bridges	9.2	100.00%						5.00%	0.00%	
<b>Roadside Drains</b> -Cleaning and repair of froad side drains	9.2	100.00%						20.00%	0.00%	
<b>Vegetation height and clearance</b> -Vegetation obstructing visibility, pruning of trees, Deterioration in health of trees and shrubs, Replacement of trees & shrubs, grass slashing, landscaping	9.2	100.00%	9.2	-		-	-	10.00%	0.00%	-
<b>Road Furniture</b> i) Cleaning, Repair/Replacement of Road Signs, Traffic Signals,Delineators/Road Studs, Road Markings, W-Beam Crash Barriers, MS Hand Railing, Footpaths	9.2	100.00%	9.2	-		-	-	50.00%	0.00%	-
ii) Replacement of Boundary Stones/Pillars	9.2	100.00%	9.2					20.00%	0.00%	
Embankment and Slopes.	9.2	100.00%	9.2	-		-	-	5.00%	0.00%	-
Any other Defects in other Project facilities but not listed above.	9.2	100.00%	9.2					5.00%	0.00%	
								(k) Total =200%		

Required Target - Maintained			
Elapse of Month	1. Road Usability	2. Road User Comfort	3. Road Durability
1	100%	100%	75%
2	100%	100%	100%
3	100%	100%	100%
4	100%	100%	100%
5	100%	100%	100%
6	100%	100%	100%
7~	100%	100%	100%

Calculation of the Payment (km per Month)			
Contract Due Km per Month	(Km per Month)	9.2	(x)
Reduction Rate	%		(k)
Reduction Amount	(Km per Month)		(z)=(x)x(k)
Payment Km	(Km per Month)		(y)=(x)-(z)
Month/Year	(Km per Month)	0	

## A2S2- Length of 17.1 km (Pangani to Githurai)

Payment Reduction Calculation Table PAVED (SAMPLE)								Sheet	1 of 1		
Project	Project Title and Contract No.					Contract Period			Thirty-Six Months – 36 months		
Road Authority	Kenya National Highways Authority (KeNHA)			Contractor	M/s xxxxxx Company Ltd						
Road Name/ Class/ Chainage/ (j)Length		XXXX				Road Class	XXX			17.1KM	
Statement Month/ Year and Elapse of Month		Month	Year	Elapsed time	Standard Service Level			Paved High			
(A2S2) Contract Length Per Month		17.1		KM							
Service Level Criteria		Compliance			Reduction						
Service	Service Scope	(a)	(b)	(c)=(a)*(b)	(d)=(a)-(c)	(e)	(f)=(e)-(d)	(g)=(f)/(c)	(h)	(i)=(g)*(h)	(j)=(c)x(i)
		Contract Road Length (km)	Required Target	Target Length (km)	Exemption Length (Km)	Non-Compliant Length (Km)	Adjusted Non-Compliant (Km)	NON-Compliant Rate	Reduction Weight	Reduction Rate (%)	Reduction Length (Km)
1. Documentation	Preparation and submission of daily Work Record Forms	17.1	100.00%	17.1	-		-	-	1.00%	0.00%	-
	Defects Detection and rectification Forms	17.1	100.00%	17.1	-		-	-	1.00%	0.00%	-
	Incident and Photo Records Form	17.1	100.00%	17.1	-		-	-	1.00%	0.00%	-
	Detailed and Summary Self Inspection forms	17.1	100.00%	17.1	-		-	-	1.00%	0.00%	-
	Monthly Statement Form	17.1	100.00%	17.1	-		-	-	1.00%	0.00%	-
2. Road Usability	Pavement Cleanliness – surfaced and edges	17.1	100.00%	17.1	-		-	-	7.50%	0.00%	-
	Road Advance Work signs	17.1	100.00%	17.1	-		-	-	2.50%	0.00%	-
3.Road User Comfort	Potholes on Carriageway/NMT	17.1	100.00%	17.1	-		-	-	17.00%	0.00%	-
	Shoulders-Potholes, water ponding, obstructions, raincuts, vegetation	17.1	100.00%	17.1	-		-	-	2.00%	0.00%	-
	Pavement Cracks and joint deficiencies	17.1	100.00%	17.1	-		-	-	2.00%	0.00%	-
	Road Signs – Directional Specific Schedule	17.1	100.00%	17.1	-		-	-	2.00%	0.00%	-
	Rutting	17.1	100.00%	17.1	-		-	-	2.00%	0.00%	-
	Road Marking of humps, pedestrian crossings, and carriageway.	17.1	100.00%	17.1	-		-	-	15.00%	0.00%	-
4. Road Duraility	(Culverts, Structures, Bridges) i) Clearing the waterway of obstructions, repairs to damaged pitching, flooring, approach slab, drainage spouts, weep tubes, vent holes, wearing course, footpaths.	17.1	100.00%	17.1					5.00%	0.00%	

bridge foundation, bearings and expansion joints										
ii) ) Painting, repairs/replacement of kerbs (, hand railings, parapets, guide posts/stones, Crash barriers, foot over bridges	17.1	100.00%	17.1					5.00%	0.00%	
<b>Roadside Drains</b> -Cleaning and repair of road side drains	17.1	100.00%	17.1					20.00%	0.00%	
<b>Vegetation height and clearance</b> -Vegetation obstructing visibility, pruning of trees, Deterioration in health of trees and shrubs, Replacement of trees & shrubs, grass slashing, landscaping	17.1	100.00%	17.1	-		-	-	10.00%	0.00%	-
<b>Road Furniture</b> i) Cleaning, Repair/Replacement of Road Signs, Traffic Signals, Delineators/Road Studs, Road Markings, W-Beam Crash Barriers, MS Hand Railing, Footpaths	17.1	100.00%	17.1	-		-	-	80.00%	0.00%	-
ii) Replacement of Boundary Stones/Pillars	17.1	100.00%	17.1					15.00%	0.00%	
Embankment and Slopes.	17.1	100.00%	17.1	-		-	-	5.00%	0.00%	-
Any other Defects in other Project facilities but not listed above.	17.1	100.00%	17.1					5.00%	0.00%	
								(k) Total =200%		

Required Target - Maintained			
Elapse of Month	1. Road Usability	2. Road User Comfort	3. Road Durability
1	100%	100%	75%
2	100%	100%	100%
3	100%	100%	100%
4	100%	100%	100%
5	100%	100%	100%
6	100%	100%	100%
7~	100%	100%	100%

Calculation of the Payment (km per Month)			
Contract Due Km per Month	(Km per Month)	17.1	(x)
Reduction Rate	%		(k)
Reduction Amount	(Km per Month)		(z)=(x)x(k)
Payment Km	(Km per Month)		(y)=(x)-(z)
Month/Year	(Km per Month)	0	

## A2S3- Length of 5.7 km (Githurai-Ruiru)

Payment Reduction Calculation Table PAVED (SAMPLE)									Sheet	1 of 1	
Project	Project Title and Contract No.					Contract Period			Thirty-Six Months – 36 months		
Road Authority	Kenya National Highways Authority (KeNHA)			Contractor	M/s xxxxxx Company Ltd						
Road Name/ Class/ Chainage/ (j)Length		XXXX			Road Class	XXX			5.7 KM		
Statement Month/ Year and Elapse of Month		Month	Year	Elapsed time	Standard Service Level			Paved High			
(A2S3) Contract Length Per Month		5.7		KM							
Service Level Criteria		Compliance			Reduction						
Service	Service Scope	(a)	(b)	(c)=(a)*(b)	(d)=(a)-(c)	(e)	(f)=(e)-(d)	(g)=(f)/(c)	(h)	(i)=(g)*(h)	(j)=(c)x(i)
		Contract Road Length (km)	Required Target	Target Length (km)	Exemption Length (Km)	Non-Compliant Length (Km)	Adjusted Non-Compliant (Km)	NON-Compliant Rate	Reduction Weight	Reduction Rate (%)	Reduction Length (Km)
1. Documentation	Preparation and submission of daily Work Record Forms	5.7	100.00%	5.7	-		-	-	1.00%	0.00%	-
	Defects Detection and rectification Forms	5.7	100.00%	5.7	-		-	-	1.00%	0.00%	-
	Incident and Photo Records Form	5.7	100.00%	5.7	-		-	-	1.00%	0.00%	-
	Detailed and Summary Self Inspection forms	5.7	100.00%	5.7	-		-	-	1.00%	0.00%	-
	Monthly Statement Form	5.7	100.00%	5.7	-		-	-	1.00%	0.00%	-
2. Road Usability	Pavement Cleanliness – surfaced and edges	5.7	100.00%	5.7	-		-	-	12.50%	0.00%	-
	Road Advance Work signs	5.7	100.00%	5.7	-		-	-	2.50%	0.00%	-
3.Road User Comfort	Potholes on Carriageway/NMT	5.7	100.00%	5.7	-		-	-	15.00%	0.00%	-
	Shoulders-Potholes, water ponding, obstructions, raincuts, vegetation	5.7	100.00%	5.7	-		-	-	10.50%	0.00%	-
	Pavement Cracks and joint deficiencies	5.7	100.00%	5.7	-		-	-	10.00%	0.00%	-
	Road Signs – Directional Specific Schedule	5.7	100.00%	5.7	-		-	-	2.00%	0.00%	-
	Rutting	5.7	100.00%	5.7	-		-	-	2.00%	0.00%	-
	Road Marking of humps, pedestrian crossings, and carriageway.	5.7	100.00%	5.7	-		-	-	10.50%	0.00%	-
4. Road Duraility	(Culverts, Structures, Bridges) i) Clearing the waterway of obstructions, repairs to damaged pitching, flooring, approach slab, drainage spouts, weep tubes, vent holes, wearing course, footpaths, bridge foundation, bearings and expansion joints	5.7	100.00%	5.7					5.00%	0.00%	

ii) ) Painting, repairs/replacement of kerbs (, hand railings, parapets, guide posts/stones, Crash barriers, foot over bridges	5.7	100.00%	5.7					5.00%	0.00%	
<b>Roadside Drains</b> -Cleaning and repair of froad side drains	5.7	100.00%	5.7					20.00%	0.00%	
<b>Vegetation height and clearance</b> -Vegetation obstructing visibility, pruning of trees, Deterioration in health of trees and shrubs, Replacement of trees & shrubs, grass slashing, landscaping	5.7	100.00%	5.7	-		-	-	15.00%	0.00%	-
<b>Road Furniture</b> i) Cleaning, Repair/Replacement of Road Signs, Traffic Signals, Delineators/Road Studs, Road Markings, W-Beam Crash Barriers, MS Hand Railing, Footpaths	5.7	100.00%	5.7	-		-	-	60.00%	0.00%	-
ii) Replacement of Boundary Stones/Pillars	5.7	100.00%	5.7					15.00%	0.00%	
Embankment and Slopes.	5.7	100.00%	5.7	-		-	-	5.00%	0.00%	-
Any other Defects in other Project facilities but not listed above.	5.7	100.00%	5.7					5.00%	0.00%	
								(k) Total =200%		

Required Target - Maintained			
Elapse of Month	1. Road Usability	2. Road User Comfort	3. Road Durability
1	100%	100%	75%
2	100%	100%	100%
3	100%	100%	100%
4	100%	100%	100%
5	100%	100%	100%
6	100%	100%	100%
7~	100%	100%	100%

Calculation of the Payment (km per Month)			
Contract Due Km per Month	(Km per Month)	5.7	(x)
Reduction Rate	%		(k)
Reduction Amount	(Km per Month)		(z)=(x)x(k)
Payment Km	(Km per Month)		(y)=(x)-(z)
Month/Year	(Km per Month)	0	

For the Maintenance Services. The Contractor shall take the following actions;

- 1) Prior to compilation of the Monthly Statement for each month, the Contractor is required to prepare the Payment Reduction Calculation Table for the month by utilizing the result of the most recent self- inspection recorded in Self Inspection Result Record Form to determine the total length of non-compliant sections for each Service Scope and for calculation of the reductions required for the month by determining the percentages of non-compliant sections for each Service Scope. The formats of Payment Reduction Calculation Table are attached as Appendix 8.
- 2) The prepared Payment Reduction Calculation Table shall become the basis of the payment request for the Maintenance Services.
- 3) Upon completion of Formal Inspection, the amounts indicated on the Monthly Statement and the Payment Reduction Calculation Table will be adjusted, if required. Such modified Monthly Statement and Payment Reduction Calculation Table shall be countersigned by the Engineer to sign it and present it to the Employer for payment, and to the Contractor for information.

## 8.2 Reduction Weighting for Non-Compliance on Maintenance Services

In accordance with the relevant clauses of the Performance Specifications and GCC, payment reduction is applied in case of non-compliance with Service Levels.

In accordance with the relevant clauses of the Conditions of Contract, Payment Reductions are applied in case of non-compliance with Service Level requirements, while Liquidated Damages are applied in the case of non-compliance with required Repair, Maintenance and Emergency Works.

The results of each formal inspection of the Service Levels and other performance criteria will be recorded by the Engineer in the form of a Memorandum. The Memorandum will state the type and location of any non-compliance detected, in particular those non-compliances already shown in the standard tables provided by the Contractor as part of the monthly statement. For each individual case of non-compliance, the Engineer will determine a date by which the Contractor must have completed the necessary measures in order to remedy the cause of the non-compliance. A follow-up site visit is therefore necessary at the date fixed by the Engineer, or soon thereafter, in order to verify that the Contractor has indeed remedied the cause of non-compliance.

If at the date indicated in the Memorandum, the Contractor has not remedied the cause for non-compliance, independent of the reason given for their failure to do so, the Contractor is subject to Payment Reductions in accordance with the relevant clauses of the Conditions of Contract.

Payment Reductions are variable over time. If the Contractor fails to remedy a cause of non-compliance for which a payment reduction has already been applied, the amount of the payment reduction increases month by month for that particular cause of non-compliance, without a ceiling being applied, until compliance is established.

The calculation of the initial (first month) amounts of payment reductions, and the formula for their adjustment over time, is to be based on the following rules given in Table 2.8.

**Table 2.8: Amounts of Payment Reductions, and the Formula for Their Adjustment over Time**

SERVICE LEVEL CATEGORY	SERVICE LEVEL SCOPE	% OF UNIT RATES FOR NON-COMPLIANCE			Reference to Performance Specifications
		A2S1	A2S2	A2S3	
<b>DOCUMENTATION</b>	Contractor to provide during the formal inspection	<b>5%</b>	<b>5%</b>	<b>5%</b>	Clause 2.6.1
<b>ROAD USABILITY</b>	A) Pass ability, Road Works Advance Signs	<b>20%</b>	<b>20%</b>	<b>15%</b>	Table 2.2
<b>ROAD COMFORT</b>	USER B) Road Cleanliness, Potholes, Cracking, Rutting, Raveling, loose Pavement, Drop Off, Paved Shoulders, Concrete Pavement	<b>50%</b>	<b>40%</b>	<b>50%</b>	Clause 2.5.1
<b>ROAD DURABILITY</b>	C) Drainage ( <i>Lined/Unlined drains, Culverts, Drifts, Scour Checks, Gabions, Scour Checks, Manhole, Gulleys pots etc.</i> )	<b>20%</b>	<b>15%</b>	<b>20%</b>	Clause 2.5.2
	D) Vegetation ( <i>Free Zone, Outer/Inner Vegetation, Tree within ROW, Extent of the RR</i> )	<b>10%</b>	<b>10%</b>	<b>15%</b>	Clause 2.5.4
	E) Structures ( <i>Concrete, Steel, Bridge Expansion Joints, Riverbeds</i> )	<b>15%</b>	<b>10%</b>	<b>10%</b>	Clause 2.5.5
	F) Road Furniture ( <i>Road signs, Edge Marker / Guide/ Kilometre Post, Traffic Signals, Streetlights, Road Marking / Studs, Guardrails / Pedestrian rails, humps etc.</i> )	<b>70%</b>	<b>90%</b>	<b>75%</b>	Clause 2.5.3
	G) Embankment and Slopes and other defects	<b>10%</b>	<b>10%</b>	<b>10%</b>	Clause 2.5.6
		<b>200%</b>	<b>200%</b>	<b>200%</b>	

**NOTE:**

1. Payment reduction is a % of the monthly lump sum for one km applied to each one-km section which does not comply.
2. Penalties can also be applied based on non-compliance as spelt out in the ***PBC Guidelines Developed by the Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works (MoTIHUD & PW) Edition 1.1 of February 2016.***

Note: (i) The Unit Rates of payment reductions (“PR<sub>u</sub>”) shown in the above table are applicable during the first 30 days of non-compliance.

(ii) If the non-compliance has not been remedied within thirty days, liquidated damages for periods beyond 30 days are calculated based on the following formula:

$$PR = 2^n PR_p \quad \text{considering:}$$

PR = New noncompliance rate to be applied

J = number of days of non-compliance

$$n = \left\lceil \frac{J-1}{30} \right\rceil \text{ rounded up to full number (without decimals)}$$

PR<sub>p</sub> = Percentage of rate of non-compliance of the previous month i.e.

$$\text{Month 1} = PR_u$$

$$\text{Month 2} = 2^n(PR_u)$$

$$\text{Month 3} = 2^n\{2^n(PR_u)\}$$

$$\text{Month 3} = 2^n\{2^n\{2^n(PR_u)\}\} \dots\dots\dots$$

(iii) Payment reductions and Liquidated damages will be charged as penalties and are non-recoverable in subsequent monthly payment certificates.

(iv) Failure to comply with the required service levels for a sequential/continuous period of **three (3)** months will lead to termination of the Contract by the Employer as stipulated in clause 63.1 (d) of the Condition of Contract. This failure should not exceed 30% of the overall monthly PBC amount per month.

A notice shall be served by the Engineer when the 30% reduction on the monthly payment of PBC is noted.

***Determination of Penalty for Encroachment***

In addition to the deduction for non-compliance indicated in **Table 2.8: Amounts of Payment Reductions and the Formula for Their Adjustment over Time**, the following schedule of penalties shall also apply for allowing/ failing to report to the Employer encroachment onto the road Reserve after the Commencement of the Contract.



**Table 2.8.1: SCHEDULE OF PENALTIES FOR ENCROACHMENT**

S/NO	ITEM ON ROAD RESERVE	PENALTY FOR NON-COMPLIANCE
1	Construction of Illegal structures (kiosks, shades etc.)	Kshs 50,000.00 per structure
2	Construction of illegal access	Kshs 50,000.00 per access
3	Erection of Illegal/ unauthorized advertisements (Billboards, banners, posters etc.)	Kshs 50,000.00 per advertisement
4	Illegal works (trenching for fibre optic cables, water, sewer lines etc.)	Kshs 50000.00 per event
5	car wash	Kshs 50,000.00 per car wash
6	vending of flowers & tree seedlings	Kshs 50,000.00 per establishment
7	any other encroachment	Kshs 50,000.00 per event

\*The deductions in the above schedule shall be applied in the monthly statement for the month during which the encroachment is detected and every subsequent month thereafter until the Contractor demolishes or removes the illegal structure, access, advertisement, car wash, vending of seedlings establishment, works etc. as the case shall be.

#### ***Determination of Liquidated Damages***

For **Emergency Works**, the liquidated damages are **0.05% of the contract price bill item for emergency works**,

**For the particular item delayed**, per calendar day of delay, of the payment normally due for the specific Works for which completion is delayed, the liquidated damages are up to a limit of 10% of the contract price for the Repair Works.

### **9 Formal Inspection**

The Formal Inspection shall be carried out jointly by the Engineer and the Road Manager at the end of each month. The Engineer shall notify the Contractor that he intends to carry out Formal Inspection in writing within 7 days of notification. The Contractor shall inform the Engineer of the proposed date and time and shall prepare for Formal Inspection. The main purpose of carrying out the Formal Inspection is to enable the Engineer to verify the information presented in the Contractor's Monthly Statement with the actual observed and measured conditions on the site.

#### **9.1 Procedure for Formal Inspection**

The Contractor shall submit the following documents as indicated in Table 10.1 to the Engineer for scrutiny prior to the Formal Inspection after the receipt of notification of carrying out Formal Inspection. The Contractor shall provide sufficient time to the Engineer to allow full scrutiny of the submitted documents.

*Table 10.1 List of Documents for Formal Inspection*

Appendices	Names of Documents	Mandatory Submission	Submission, if requested by the Engineer
1	Defect Detection and Rectification Lists		
2	Daily Work Records		
3	Daily Patrol Records		
4	Monthly Photo Records		
5	Incident Condition & Activity Reports		
6	Detail Self – Inspection Result Record Form		
7	Payment Reduction Calculation Table		

The criteria of each Service Level shall be checked jointly by the Engineer and the Road Manager at sections selected by the Engineer based on visual appearance. The Engineer shall be the sole judge of compliance. If a specified criterion is not met, the one-kilometer section in which the deficit occurs will be judged non-compliant in accordance with the Self Inspection Result Record Form.

The Engineer shall prepare a brief Memorandum describing

- i) The general circumstances of the site visit, including date, road sections visited, persons present, etc.,
- ii) Any non-compliance which may have been detected, and
- iii) The time granted by the Engineer to the Contractor to remedy the detected defects.

The results of Formal Inspection on Service Levels will be recorded by the Engineer in this Memorandum. The Memorandum will state the type and location of any non-compliance detected, in particular those non-compliances already shown in the most recent Self Inspection Result Record Form provided by the Contractor as part of the Monthly Statement. For each individual case of non-compliance, the Engineer will determine a date by which the Contractor must have completed the necessary measures in order to remedy the cause of the non-compliance. A follow-up site visit is therefore necessary at the date fixed by the Engineer, or soon thereafter, in order to verify that the Contractor has indeed remedied the cause of non-compliance. If at the date indicated in the Memorandum, the Contractor has not remedied the cause for non-compliance, independent of the reason given for their failure to do so, the Contractor is subject to payment reduction in accordance with the relevant clauses of the Performance Specifications and GCC.

Based on the outcome of the Formal Inspection and subsequent remedies by the Contractor or otherwise, the Engineer will correct any possible errors or misrepresentations in the Contractor's Monthly Statement, countersign it and present it to the Employer for payment, and to the Contractor for information.

## **10 Performance Monitoring by the Employer**

The Contractor shall acknowledge that the Employer encourages adoption of proactive approach by the Contractor on performing the Maintenance Services. To maintain such approach, the Employer shall have the power to entrust the Engineer to conduct monthly performance monitoring on the Contractor.

The Contractor, shall within seven (7) days of commencement, prepare and submit for the Engineer's approval the forms listed herein and any other that will be required for

monitoring, recording and checking the compliance of service levels during the implementation of Contract.

These forms are;

- ✓ Daily Work Record Form
- ✓ Daily Patrol Record Form
- ✓ Photo Record Form
- ✓ Incident Report Form
- ✓ Defect Detection and Rectification List
- ✓ Detail Self-Inspection Result Report
- ✓ Form (Paved Road)
- ✓ Detail Self-Inspection Result Report
- ✓ Summary Self-Inspection Report Form
- ✓ (Paved Road)
- ✓ Payment Reduction Calculation Table
- ✓ (Paved Road)
- ✓ Summary of Statement for Payment
- ✓ Account (Monthly Statement)

- 1) Performance monitoring will be conducted on service level compliance, self-control unit performance, work safety performance, performance on environment and social management, corrective order management and statutory compliance. The format of Monthly Evaluation Form is attached as Appendix 9, for the purpose of performance monitoring.
- 2) The result of performance monitoring of each month will be used for the evaluation of the Contract or at the end of each year. Evaluation of the Contractor shall be carried out by the Engineer using the Contract Evaluation Tally Sheet, which is attached as Appendix 10.

The total aggregate weighting of 100% is applied to 6 criteria in 1) above, with the weighting of 50% on service level compliance, 20% on work safety performance, 0% on statutory compliance and the remaining criteria each weighing 10%.

- 3) The result of each month on each criterion will be evaluated either a pass or a fail. The tally will be made at the end of each month, collected to the end of the year and to arrive at the performance of the criterion as the percentage of pass attained during the year. The respective weight will be applied to arrive at the evaluation score, with the maximum score of 100 and the minimum score of 0. For statutory compliance, the evaluation score will not be tabulated, but a penalty of 20 will be imposed in case the Contractor faces violation on statutory compliance at least once in a year.
- 4) Performance monitoring will be conducted on service level compliance, self-control unit performance, work safety performance, performance on environment and social management, corrective order management and statutory compliance. The format of Monthly Evaluation Form is attached as Appendix 9, for the purpose of performance monitoring.
- 5) The result of performance monitoring of each month will be used for the evaluation of the Contract or at the end of each year. Evaluation of the Contractor shall be carried out by the Engineer using the Contract Evaluation Tally Sheet, which is attached as Appendix 10.

The total aggregate weighting of 100% is applied to 6 criteria in 1) above, with the weighting of 50% on service level compliance, 20% on work safety

performance, 0% on statutory compliance and the remaining criteria each weighing 10%.

- 6) The result of each month on each criterion will be evaluated either a pass or a fail. The tally will be made at the end of each month, collected to the end of the year and to arrive at the performance of the criterion as the percentage of pass attained during the year. The respective weight will be applied to arrive at the evaluation score, with the maximum score of 100 and the minimum score of 0. For statutory compliance, the evaluation score will not be tabulated, but a penalty of 20 will be imposed in case the Contractor faces violation on statutory compliance at least once in a year.

## **11 USERS AND OPERATIONAL SERVICES**

### **11.1 Rest Areas and [Toll Plazas] and Other Project Facilities**

Not Applicable

### **11.2 Highway Patrol Unit(s)**

Scope: The O&M Contractor shall establish and operate Highway Patrol Unit(s) at any suitable locations, which shall continuously patrol the highway and shall remain in contact with the Control Centres on a real time basis. It shall provide 24 hrs route patrol to assist the road users of the highways, to provide information feedback and perform function in relation to incident management. To achieve this, the patrol vehicles should be fully equipped as well as the patrol persons should be adequately trained in traffic management, road safety and primary first aid.

The purpose of route patrolling is to:

- (a) Provide the users of the highway with basic help for towing of vehicles that breakdown on the road and also protect other users from such vehicles.
- (b) Immediately identify traffic hazards of whatever nature, such as unauthorized parking, public transport vehicles obstructing traffic during passenger loading and unloading, debris, stray animals and the like. The Contractor shall take the necessary measures to remove such obstructions.
- (c) Provide emergency management at accident sites until such time as the appropriate authorities arrive.
- (d) Provide road user information and to further the image of National Highway Section.
- (e) Maintain daily records of assistance provided to road users.
- (f) Observe record and report hazards and incidental damage caused by vehicles, floods, storms or other random events, such that the highway maintenance records and database are continuously improved.
- (g) Promptly report any unauthorized occupation/encroachment within ROW

**Patrol Vehicles (3 No.)**

**DESCRIPTION:** 4 x 4 Double Cab, Minimum 2500cc (0-10000Kms mileage) Branded in User Entity approved markings and colors, fitted with rear cabin and folding seats, lights on top and siren onboard, reflective fittings and CCTV system. The rear of each vehicle should have toll free number and email address details for the Employer and Resident Engineers office..

CCTV System shall Constitute of:

PRODUCT NAME.	DESCRIPTION.	QUANTITY. Per Vehicle
ANPR camera	Anpr Camera to be mounted on vehicle Front.	1
Rear Camera	Rear Camera – mounted on Vehicle Rear	1
Indoor camera for vehicle	Camera to be mounted inside vehicle for monitoring occupants of vehicle	1

The patrol vehicles (3 No.) shall be large enough for seating at least four personnel besides the driver and space to carry essential traffic and incidence management and safety tools. They should have Front and Rear bull bars with towing hooks and should tow all small vehicles to a safe location.

The

Contractor shall monitor movement of the vehicle on 24 hrs x 7 days of a week basis. Vehicles should be (white color) having sufficient rear space for the required equipment

storage, fitted with rotating light and hooter, and painted with a unique color pattern for quick recognition, with the KeNHA name and emblem painted prominently on sides, back and front,

together with the Control Centre and Help line Fire extinguisher (1 no.) numbers. Vehicle should be in good condition and but not older than two years from the date of award.

- |           |   |
|-----------|---|
| Equipment | <p>(a) Each vehicle shall carry the following equipment</p> <ol style="list-style-type: none"> <li>i. Gas cutter with protective glass (2 nos)</li> <li>ii. Liquid container (2 nos.),</li> <li>iii. Water container with freshwater (1no.),</li> <li>iv. Funnel (1 No.s)</li> <li>v. Rubber Gloves, Leather Gloves (1 pair each)</li> <li>vi. Brooms one hard bristle, other soft-(2nos.)</li> <li>viii. Gum boot (4 pairs), Rain coat (4 pairs)</li> <li>ix. Blanket (1 no.)</li> <li>x. Torch lights – (4 nos.), Spare Batteries,</li> <li>xi. Flashing light (1 no.)</li> <li>xii. Hydraulic jack, towing chain, Animal</li> <li>xiii. hook, rope.</li> <li>xiv. Tool set (with standard set of spanners,</li> <li>xv. pliers hammer etc.), shovels.</li> <li>xvi. Digital Camera, measuring tape.</li> <li>xvii. Paper pad, Forms, pen/pencils, folders.</li> <li>xviii. First Aid kit, Rain Coat, water proof</li> <li>xix. sheets, stretchers (2 nos.)</li> <li>xx. List of hospitals in the area</li> </ol> <p>(b) Each vehicle should also carry the following Traffic Management Equipment, (used/ worn out items shall be replaced forthwith with new ones)</p> <ol style="list-style-type: none"> <li>(i) Sign boards – “Accident ahead” – (3 nos.)<br/> “Lane merging” – (3 nos.)<br/> “Direction Arrows” – (3 nos.)<br/> “Speed Limit” (80/60/40) - (3 nos.)<br/> “Keep left / right” – (2 nos.)</li> </ol> <p>N/B: All signs 1200 mm size and of retro reflective type, microprismatic cube corner)</p> <ol style="list-style-type: none"> <li>(ii) Sign Stand set (one for triangular and other for circular sign) (6 sets).</li> <li>(iii)Flags, whistle, reflective hand signal.</li> <li>(iv)Traffic cones 500 mm size with solar</li> </ol> |
|-----------|---|

- bulb mounted on top – (20 nos.)
- (v) Barricades (4 nos.) reflective type (100 m), tape, stands, flags of 600 mm by 600 mm made of good red cloth secured to a staff at 1 m length, Paddles of at least 600 mm wide and provided with rigid handle with markings SLOW, STOP.
- (vi) Reflective jackets – (12 nos.)
- (c) As a minimum, each patrol vehicle should carry sufficient communication equipment to render its staff capable of direct communication with the Highway Control Centers.

**Manpower**

: The team to be deployed with each patrol vehicle, must have adequate training for their tasks, especially in First Aid, vehicle maintenance and minor repairs.

(a) The contractor must employ sufficient manpower to work in shifts for each patrol vehicle. Typical staffing shall be:

- (i) 1 Number Route Patrol In-Charge
  - (ii) 2 Number Route Patrol Assistants
  - (iii) Driver, with knowledge of vehicle minor repairs.
- Note: the vehicle with the police should have 1 Route patrol commander.

(b) Typical duties of the Route Patrol In-Charge are:

- (i) Patrol the corridor to ensure obstruction free flow as per shift standards
- (ii) To report to police and KeNHA and assist injured at accident scene and remove all obstructions from road when the vehicles are cleared
- (iii) To provide first aid to injured, contact control centre and ambulance service if needed, assist police
- (iv) Report all incidents on radio control, to control centres.
- (iv) To ensure safety of traffic with minimal delay at accidents spots.
- (vi) To assist motorists on broken down vehicles and to ensure that they do not obstruct free flow.



- (vii) Maintain relations with all emergency services, and local safety councils
- (viii) To report carriageway condition, especially traffic guidance aids, signs, markings condition, condition of drainage, ROW plantations, medians plantation etc.
- (ix) Check on encroachment irregularities taking place within ROW, and prevent unauthorized entry into the corridor.
- (x) Prevent theft of assets and report
- (xi) Attend to urgent maintenance for safety requirements.

(c) At all times, the Route Patrol In-Charge should have with him a list of telephone numbers and addresses of all concerned in providing the Road Users Services.

(d) On duty, all staff shall wear distinctive standard jackets having company LOGO, with night visibility. They are to deal with public and hence should be well trained to be courteous and helpful.

#### Service Quality

To achieve the above purpose and to satisfy the performance level, the Contractor shall provide sufficient number of fully equipped and manned patrol vehicles along with manpower to work in shifts for each patrol vehicle with adequate training for their tasks especially in first aid, maintenance of vehicle, including minor repairs.

The log books for Route Patrol Vehicle shall be maintained as per “Logging System” i.e. exact time of reaching at a particular incident and time of leaving the spot of incident.

The Contractor shall achieve the following Service Quality levels for the Route Patrols, by full conformity with the following requirements:

- (a) Conducting Route Patrols of the entire Highway in each direction at a frequency of

one patrol every 2 hours of project highway as follows:

One (1) Number patrol vehicle- To patrol arterial roads

Two (2) Number Patrol vehicles- to patrol the road section from Pangani to Ruiru. The patrol vehicles shall be mobilized in such a way that they patrol different carriageways at the same time (if one is on the Thika bound carriageway, the other is on the Nairobi bound carriageway)

(b) Efficiently implement traffic management procedures at the place of accident/incident, in order to mitigate traffic problems for assuring the safety of road users and third parties commencing this action not later than 30 minutes.

(c) The evaluation of the Service Quality Levels shall be based, amongst other things, on the following main criteria:

(i) Percentage Availability of the Route.

Patrols operating along the Highway, calculated on an average weekly basis, should be at least 87.5% to allow one-hour lunch, one-hour dinner and one-hour change of shift. Change of shift, lunch, and dinner should be in alternate manner to allow presence of patrol vehicle on the road at all times.

(ii) Record of performance detailing the response of Route Patrols based upon reports filed by the Contractor's monthly reporting obligations as well as independent audit records developed by the Engineer. In case of differences the records of the Engineer shall prevail.

(iii) Functionality of communication equipment and availability of the patrol vehicle equipment.

Detection

The Engineer shall conduct ad-hoc inspection at least once in every fortnight by employing his

personnel at any randomly selected location on patrolling route to note the frequency of patrolling of patrol vehicles for comparing it with the expected frequency as mentioned above.

The Engineer's personnel can stop the patrol vehicle anywhere and anytime to verify the requirements regarding the manpower, equipment and material supposed to be carried by patrol vehicle are met with or not.

The control room at the resident Engineers office shall monitor the patrol vehicle movement, response to incidents/accidents, and absenteeism of any of the three patrol vehicles and the towing truck. Any deviation from expected service quality levels will be recorded by the Engineer for deductions accordingly

For the purpose of assessing compliance, the Engineer will exercise his judgment on the basis of comparison with the requirements of the Contract. A penalty of Ksh 10,000/- for lack/malfunctioning radio communication and Ksh. 20,000/- for lack of any patrol vehicle equipment will be levied.

<p>11.3 Recovery/Crane (Towing truck)</p> <p>Vehicles with VTS</p>	<p>Recovery/Crane Vehicles of Minimum 7500cc Shall be provided fully loaded with unique three stage telescopic boom, a tow bar assembly and a wheel lift assembly that can : tow heavy stalled truck.</p>
	<p>Remove damaged, broken down, illegally parked, or otherwise inoperative, motorized and non-motorized vehicles from within the limits of the main carriageway and hard shoulders to make the road clear. The Contractor is not required to provide breakdown or recovery assistance to vehicles which require recovery from a level other than that of the highway (e.g. from the bottom of an embankment).</p> <p>The recovery van/crane services shall be in good condition with a capacity of 30 metric tonnes or higher capacity as per the requirement of the incident. The Contractor shall monitor movement of the vehicle on 24X7 days a week basis. The persons deployed with the crane services should have adequate training for their tasks. All persons should wear distinctive reflective jackets with night visibility.</p>
<p>Service Quality</p>	<p>: Service Quality Levels will be met by the Contractor if it can be shown from records of the Breakdown Service, the Control Centres, Police and KeNHA that all calls for towing of vehicles received a response within reasonable time limit from the notice of breakdown and that action was taken within such a</p> <p>period of time in excess of 87.5% of the cases unless, in the opinion of the Engineer, exceptional weather conditions made such a response impractical. The photographs of each incident shall be submitted monthly along with the statements and documents in approved formats.</p> <p>The Contractor is to provide a recovery/crane vehicles to reach the site of the incident within 20 minutes of that call and make arrangements for safe movement of traffic within 45 minutes. The damaged vehicles involved in the accident shall be removed under the supervision of the Police. Should there be need for the towing truck to be called on the other neighboring road section the</p>

contractor should comply upon request by the Resident engineer or his representative

The Contractor is to keep records of all activity with regard to assistance noting the Time of Notification (call out), the nature of the problem, the action taken, and the time at which the vehicle was removed from the Highway.

The Engineer, on receipt of information about the vehicle breakdown, may depute his personnel to

breakdown site to verify from the victims whether they are provided the service as per expected service levels stipulated above or not. Carrying out above verification checks is left solely to the discretion of the Engineer and he may select any particular incident for verification on random basis.

Any deviation from expected service quality levels will be recorded by the Engineer and deductions will be made as per the deduction sheet in Table 11.9.

#### **11.4 Ambulances and Paramedic Support**

Contractor to make arrangement with red cross or other ambulance service providers and have an agreement which should be forwarded to the Resident Engineer's office for record keeping.

The Contractor is expected to avail the ambulance services to accident victims within 20 minutes after occurrence of an incident.

#### **11.5 Emergency Vehicle**

##### **Scope**

During any road accident, disaster (natural or otherwise), or other extraordinary incident, such as fire or hazardous chemical and oil slippage, or to cater for rescue and recovery operations, there may be the need for the deployment of vehicles, equipment, and services which are not specifically provided for under this Contract.

As part of his Incident Management System, the Contractor will arrange for the provision and deployment to the Highway of all necessary emergency and recovery services, vehicles and

teams, by arrangement with Police, KeNHA, State Emergency Service Units, Local Transport Authorities and/or commercial organizations where appropriate.

The Contractor is required to show that, as part of the Incident Management System, arrangements have been made for mobilization of all necessary vehicles within a reasonable period. Unless an item is included in the Bill of Quantities, no separate payment will be made for arrangement for the provision of Emergency Vehicles.

#### Service Quality

The Contractor will satisfy the Service Quality requirement if he can show conclusively that arrangements have been made for mobilization of all necessary emergency vehicles and reactive and recovery services, within a reasonable period

#### **Highway Control 11.6 Centres (2 No.)**

The Contractor shall provide 2 No. Control centers

- 1) for the Contractor (Central location along the project road)
- 2) For the Resident Engineer (at RE's Office)

: that will function as the hub for:

- a) The Incident Management System.
- b) Communications System.
- c) A Source of Driver Information and Support.
- d) A Focus for all Automatic Traffic Managements System (VMS, CCTV, [Toll Plazas] etc.) whenever and wherever these have been installed on the Highway

However, Para (d) is beyond the scope of this Contract.

The Employer may, hand over to the Contractor, a fully or partially equipped Highway Control Centres, for the use of the Contractor for undertaking his related obligations under the Contract. However, if not so provided by the Employer, the Contractor must establish 2 No. Highway Control Centres -1 No. for the Contractor's and 1 No. for the RE to monitor condition of the highway 24/7. The Control room should be complete with parking and other facilities in temporary or rented accommodation suited to the purpose, at a location approximately at the midpoint of the project Highway Corridor Section, and approved by the Engineer. In this case, the Employer will not be in a position to provide land for such

purposes and the erection of any such building, within the Highway ROW, will not be permitted.

Provision is to be made for space requirements, equipment, and the tasks expected from staff operating from the Control Centre. Where the Contractor needs to establish the Control Centre, it shall be with the approval of the Engineer, suitable for purpose and provided with adequate water and electrical power supply, with fully functional domestic drainage, and able to be connected to land line (terrestrial) telephone system.

Space required for the Control Centre is expected to be a building space of 150 to 180 sq. meters for radio communication system, emergency response system, IT infrastructure, staff, office plus parking space for 10 vehicles and access ways, equipment, documentation/manuals.

The Control Centres will be manned and operated by a competent and well-trained team of individuals capable of undertaking the duties and implementing the activities for the benefit and convenience of the road user.

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Key personnel, as a minimum, to comprise a) Controller of Operations to coordinate all incoming, outgoing information, and actions required from time to time b) all necessary equipment operators and c) office assistants. Duties of key personnel would be to

- 1) develop good reports
- 2) monitor activities
- 3) identify type of emergency and inform authorities
- 4) initiate appropriate actions
- 5) coordinate various services
- 6) reports to Corridor Management Unit (CMU) of the Employer
- 7) ensure all equipment vehicle in functional condition
- 8) maintain filing system and good office environment.

The contractors control room will be commanding the operation captured above while the role of the RE's control room will be to monitor the operation and should there be any deviation of the user and operation mandate the RE's team will give the required instruction which should take precedence.

Incident  
Management System

: 24 hours per day, and 7 days per week, the Contractor is required to implement and maintain a comprehensive Incident Management System, based

in the Highway Control Centre, as part of its User and Operation Services requirements.

An Incident Management System should be capable of responding to and managing all accidents and emergency events occurring on the Highway, and will comprise aspects of anticipation, receipt and collation of information, detection and verification of event, and organization of a suitable response by coordinating the efforts of various agencies.

In addition, hazards associated with the highway should be identified and then eliminated or minimized to meet acceptable level of safety and security.

The Contractor should devise, prepare and submit his Incident Management System to the Engineer for approval. It should cover, as a minimum the following:

- (a) To develop and implement the provision and organization of incident response delivery in emergency situations.
- (b) To initiate and coordinate activities for the after effects of road accidents and other extraordinary events, causing reduction of road capacity.
- (c) To organize the prompt deployment of Patrol Vehicles, Recovery/Crane Vehicles and Ambulances as required and to liaise with State and other public/private bodies for the provision of other Emergency Services.
- (d) To plan for and to implement temporary traffic control and management of incidents.
- (e) To maintain and mobilize resources for necessary cleanup operations.
- (f) To collate and report on the emergency incidents, by type, with full supporting data and details, to the Engineer, in the form of a monthly Incident Response Report.

Communication  
Systems

: The Control Centres will also function as the hub for communications for the Contract, especially in order:

- (a) To disseminate information on road conditions to the public, wherever a VMS system has been installed as well as by arrangement for advance



warning to be made through different media which require lane closures. The Control Centre will also need to respond on telephone enquiries, from road users, on highway and traffic condition and works programmes.

(b) To act as the nerve centre for any emergency response activity as part of the Incident Management System requiring radio and wireless communication service as well as telephone communication with various media, the Engineer and the Employer.

Service Quality: : The Highway Control Centre is provided, manned, and equipped in compliance with the requirements as stated above. The public, and road users in particular, are kept fully informed of all project-related and highway-operation matters.

Detection : Information about incidents shall be recorded in the control centre upon receipt from any of the following sources

- i. Contractor's Route Patrols,
- ii. Inspections by the Engineer/Employer,
- iii. Reports from road users and
- iv. Information given by others

The Engineer will verify the records of control centre manned by contractor once every fortnight. He will verify the information provided in records with his own site inspection records. The Engineer may verify at his discretion on random basis the recorded time of incident at control centre with the actual time of incident happening at site noted by him from his independent source of information.

Failure to meet service quality levels shall be treated as non - performance and shall be dealt with as provided for under relevant specification of the contract.

The response to incidents on the Highway of the various relevant and related requirements should have a success rate in excess of 95%.

Response Time : The time at which the information from any source is received in the control room shall be deemed to be

time of incident detection and response time has to be counted from this time. The Engineer may verify at his discretion on random basis the recorded time of incident at control centre with the actual time of incident happening at site noted by him from his independent source of information.

A penalty of Ksh 20,000/- for each non-provision of specified facility, shortage of manpower and equipment including non-functioning will be levied.

### 11.7 Performance Standards for Route Operations:

Sl. No.	Serviceability Indicator	Required Maintenance Level	Frequency of Inspection to Ensure Required Level of Service
1	Frequency of highway patrol	Every 2 hours on entire stretch (logging system)	Daily on regular basis
2	Tow away trucks, Recovery/Cranes	To reach the incident spot within 20 minutes of incident detection	Daily on regular basis
3	To make arrangement for safe movement of traffic	Within 45 minutes of the incident detection	Daily or regular basis
5	Removal of dead animals/birds	Within 45 minutes of incident detection	Daily on regular basis

### 11.8 Maintenance of Records and Reporting

11.8.1 The detailed Logging System for Incident Management Services shall be proposed by the Contractor and approved by the Engineer. The log books for Route Patrol Vehicle, Ambulance and Recovery Vehicles shall be maintained as per approved “Logging System”.

11.8.2 A Route Patrol Report and Incident Management Report covering the daily log records, equipment, manpower and the report on working of the Global position in respect of Patrol Vehicle(s), Ambulance(s) and Recovery Vehicle(s) shall be submitted on a daily basis to the Engineer. It shall also include the response time for all incidents pertaining to ambulance(s) and recovery vehicle(s).

11.8.3 The Contractor shall keep a record of the removal of accident/damaged vehicles by taking a dated photograph of the same and submit the daily report of accidents / incidents occurrence on the next day. The accident data for various project roads sections is to be also recorded and submitted by the contractor in the format approved for this purpose on monthly basis.

11.8.4 The Contractor shall be responsible for 24 x 7 working of VTS for route patrol vehicles Recovery Vehicles.

11.8.5 The Contractor shall submit VTS generated reports such as transit/stoppage/idle, average speed etc. on a daily basis and hard copies for entire month along with each monthly bill.

11.8.6 Signed attendance rolls of staff separately for Highway Control Centre, Route Patrol and Recovery Vehicles(s) giving details of the absenteeism shall be submitted to the Engineer on a daily basis.

11.8.7 The reports of all user and operational services shall be submitted weekly in the formats approved by the Engineer. Failure to submit the report as directed by the Engineer shall attract a penalty of Ksh 20,000/-per incidence.

11.8.8 The Contractor shall also submit the following documents along with each monthly statements of the work done:

- a. The reports as per formats approved by Engineer of accidents which occurred during the month.
- b. The photographs in hard and soft copies of all accidents and in soft copies for all other incidents.
- c. The photographs (in hard copy) of each incidence of damaged towed vehicle with use of Crane/Recovery Vehicle for entire month.
- d. A certificate of route patrol In-charge and the driver of the recovery vehicle stating that the services of crane for towing the damaged vehicle were made available free of charge.

**Table 11.9: Amounts of Payment Reductions, and the Formula for Their Adjustment over Time**

Contract Road:				Contract Name							
Road Section:										32	
County:										Corridor C	
Contract Month:				Month				Deduction			
No.	Service	Weeks	Required Compliance	Achieved Compliance	Achieved Compliance	Achieved Compliance	Achieved Compliance		Deduction Factor	REDUCTION	Payable
			Target	Achieved	Achieved	Achieved	Average				
1	Percentage Availability of the Route Patrols Operating along the highway on an average weekly basis	Wk. 1	87.50%				AVERAGE(E8:G11)	(Rate/Km*32*AVERAGE(D8:D11)-(Rate/Km*32*H8))	1.00	I8*K8	(32*Rate/Km)-L8
		Wk. 2	87.50%								
		Wk. 3	87.50%								
		Wk. 4	87.50%								
PENALTIES											
2	Sufficient Communication Equipment to render staffs capable of direct communication with the highway Control Center	Base Radio	100.0%	1	1	1	E14*F14*G14	10,000.00	IF(H14<1,"1", "0")	I14*K14	L14*K14*(-1)
		Mobile Station 1	100.0%	1	1	1	E15*F15*G15	10,000.00	IF(H15<1,"1", "0")	I15*K15	L15*K15*(-1)
		Mobile Station 2	100.0%	1	1	1	E16*F16*G16	10,000.00	IF(H16<1,"1", "0")	I16*K16	L16*K16*(-1)
		Walkie Talkie 1	100.0%	1	1	1	E17*F17*G17	10,000.00	IF(H17<1,"1", "0")	I17*K17	L17*K17*(-1)
		Walkie Talkie 2	100.0%	1	1	1	E18*F18*G18	10,000.00	IF(H18<1,"1", "0")	I18*K18	L18*K18*(-1)

		Safety Cones	100.0%	1	1	1	E19*F19*G19	10,000.00	IF(H19<1,"1", "0")	I19*K19	L19*K19*(-1)
3	Timely Replacement of patrol vehicles	Patrol Vehicle	100.0%	1	1	1	E20*F20*G20	30,000.00	IF(H17<1,"1", "0")	I20*K20	L20*K20*(-1)
4	Sufficient equipment in patrol vehicles to render patrol vehicles fully operational	Equipment	100.0%	1	1	1	E21*F21*G21	20,000.00	IF(H17<1,"1", "0")	I21*K21	L21*K21*(-1)
<b>TOWING TRUCK</b>											
				No. of Non Responses	Allowable Tolerance	No. of Non Responses after Tolerance	Achieved Compliance	Deduction	Deduction Factor	REDUCTION	Payable
5	Response time for Recovery vehicles	Towing truck	100.0%		5	E23-F23	IF(G23<1,"0", "1")	20,000.00	0.50	I13*K13	L13*K13*(-1)
	Payable in Kilometers										SUM(M8:M21)/ Rate per Km
	Amount Payable										SUM(M8:M21+ M23)
	<b>Contractor's Representative:</b>										
								<b>Resident Engineer's Representative:</b>			

## **12 Handover Report**

Immediately prior to the completion of the contract, the Contractor shall prepare a Handover Report and submit to the employer. The purpose of the Handover Report is to provide a smooth transition to the next contract and ensure that the next contractor is aware of any outstanding issues. The Report will:

- a) Summarize any unresolved issues;
- b) Include the most recent complete set of data on the roads covered by the contract, and
- c) Provide the following details as shall be agreed by the Engineer:
  - i) A schedule of outstanding defects.
  - ii) Any unresolved issues, especially those that may impact on the next Contractor.
  - iii) Details of any sensitive issues.
  - iv) Any on-going special monitoring/maintenance needs

## **SECTION VI-B: SPECIFICATIONS ON INSTRUCTED WORKS**

The following specifications shall be used in the Tender

1. STANDARD SPECIFICATIONS - Standard Specifications refers to the Standard Specifications for Road and Bridge Construction, 1986 Edition
2. The Standard Road Maintenance Manual
3. The Special Specifications – Detailed hereunder

## 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.

## 102 LOCATION OF CONTRACT

The Road project is located in Nairobi and Kiambu Counties under Deputy Director Corridor “C”. The roads are:

a) Arterial connectors inside Nairobi City:

- **Connector 1:** Forest Road from Museum Roundabout on Uhuru Highway to Pangani Roundabout on Nairobi –Thika Road (3.6Km)
- **Connector 2:** Murang’a Road from Khoja Roundabout to Pangani Roundabout (2.4 Km)
- **Connector 3:** University way, Kipande road through Globe R/A and Limuru road from University R/A on Uhuru Highway (3.2Km)

b) Pangani Interchange (Km 3+600) to Eastern Bypass Junction at Ruiru (Km 21+700)

The total length of the road section is approximately 32km long and includes slip roads.

## 103 EXTENT OF CONTRACT

The works to be executed under the Contract comprise mainly but not limited to the following as shall be directed by the Engineer;

- General: Office Administration and Overheads.
- Top soil stripping at selected sections.
- Earthworks.
- Protection works: Provision of gabion boxes and stone pitching at critical sections at Githurai and Globe Roundabout as directed by the Engineer.
- Drainage works: Provision of subsoil drains at high water table areas, and access culverts (900mm dia) at proposed exits along the project road as instructed by the Engineer.
- Passage of traffic along the project road.
- Spot improvement on shoulders at selected sections of the project road as directed by the Engineer.
- Base repairs with hand packed stone or cement stabilized GCS/gravel for base as directed by the Engineer.
- Surfacing and regulation with asphalt concrete Type 1 at bus stops, bell mouth accesses, and base repair at selected sections.



- Laying of DBM including spraying of tack coat at base repair areas.
- Branding of structures along the project road including footbridges, underpasses, and overpasses
- Provision of Road Marking.
- Provision of specified Road Furniture.
- Rehabilitation works on NMTs along the project road using AC type 1 and concrete paving blocks (Cabro) as instructed by the Engineer.
- Performance based and routine maintenance of the carriageway, road reserve, and structures to the required service level.
- Any other works as may be instructed by the Engineer.

Any other activity not listed above in either category but deemed to be necessary by the Engineer, shall be subject to the Engineer's formal instructions within the mode of payment stipulated either by day works or on a measured basis.

#### **104 PROGRAMME OF EXECUTION OF THE WORKS**

The contractor shall provide the works programme, required under clause 14 of the Conditions of Contract, within 14 days of receipt of the Engineer's Order to commence work.

The programme shall be co-ordinated with climatic and other conditions to provide for the completion of the works in the order and by the time specified.

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

#### **105 ORDER OF EXECUTION OF WORKS**

In addition to Clause 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.

#### **107 TAKING OVER CERTIFICATE**

The minimum length of the road for which a certificate will be issued under clause 48 of the conditions of Contract shall be a whole length of the road substantially completed.

#### **109 NOTICE OF OPERATIONS**

- (a) 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.

## Explosive and Blasting

(b) 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.

(c) 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, 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**

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, nor for the making good of damage caused thereby to the existing services.

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).

## **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 therefrom. 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 competent surveyors 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.

After extraction of materials, all borrows pits shall be backfilled 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.

Spilling of bitumen fuels Oils and other pollutants shall be cleared up.

Including removal of excavated material from the pavement to spoil.

## **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.

## **131 SIGNBOARDS**

The Contractor shall provide and erect two (2) publicity signs on the site as directed. The Engineer shall, as shown in the Drawings, direct the minimum dimensions and thickness of the steel framework and sheet. The framework and sheet shall be prepared and painted black, while the ring at the top of the supporting frames shall be painted white. The wordings and KeNHA's logo shall be printed on backlit sticker paper resistant to the effects of weather using reflectorized paint or material approved by the Engineer. The colours, fonts and heights of the letters shall be as indicated on the attached drawings and as directed by the Engineer.

Payment for the Publicity signboards shall be made in instalments in accordance with the following conditions: -

- (a) 50% when the signboards are accepted by the Engineer fully installed
- (b) 30% in equal monthly instalments from the date Engineer accepts the signboards fully installed over the remainder of the Contract period. This payment shall be deemed to cover the securing and maintenance of the signboards and the Engineer may withhold or reduce payment if the contractor fails in these obligations

- (c) 20% when the signboards has been removed and the site cleared at the end of contract period or earlier if the Engineer has no further use of the signboards
- (d) Each instalment will be subject to the deduction of retention money

Signboard shall be removed and transported to RE's Yard at the end of Defects liability Period.

### **132.1 ENGINEER'S REPRESENTATIVE 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 appropriate bill items in the BoQ.

The Contractor, when instructed, shall provide and install at the Engineer's office the Equipment specified below with a dealer's certificate and warranty:

15. Three years warranty

### **132.3 COMMUNICATION FOR THE ENGINEER**

#### **Internet and e-mail services**

Where directed, the contractor shall provide 24 hours terrestrial or wireless internet connectivity with minimum throughput speed of 128kilobytes per second for the exclusive use by the Engineer, including all accessories and Terminal Equipment and pay for all associated installation, maintenance and usage charges throughout the duration of the contract.

The contractor shall allow for the provision and maintenance of internet connectivity and associated costs as per Bill Item 01-80-049(Appendix D) of the Bills of Quantities.

#### **Laptop Specifications**

<b>RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS</b>		
<b>ITEM</b>	<b>REQUIREMENT</b>	<b>Bidder Response (Yes/No)</b>
Make		
Model		
Manufacturers Brochure	Yes	
Operating system	Windows 10	
Processor and graphics	Intel Core i7 Processor	

Display	12.0" to 13.3" diagonal Full HD WLED-backlit IPS Display Touchscreen	
Memory	8 GB Memory	
Hard drive	500 GB Flash Solid State Drive (SSD)	
Primary battery	3-cell Lithium-ion Battery Battery life up to 6 hours	
Keyboard	Backlit Keyboard (natural silver)	
Camera	TrueVision Full HD WVA Webcam with Dual Digital	
Networking	Intel 802.11ac WLAN and Bluetooth®	
Audio	DTS Studio Sound with 2 speakers	
Pointing device / Touch support	Imagepad with multi-touch gesture support	
Application	Latest Licensed Ms. Office,	
Antivirus	Latest Licensed Kaspersky Antivirus	
External I/O Ports:	USB 3.0; HDMI; headphone/microphone	
Back Pack	Yes	
Warranty	1 Year	
Brochure	Manufacture's Literature and Detailed Specifications (Be Attached)	

## Desktop Specifications

RECOMMENDED MINIMUM TECHNICAL SPECIFICATIONS		
ITEM	REQUIREMENT	Bidder Response (Yes/No)
Processor & Core Logic	Core i7-6700 3.4GHz, 4 Cores	
System Memory	12 GB DDR4	
Storage Subsystem	1TB HDD	
Form Factor	Tower / Desktop	
Power System	220 – 240 V AC Power supply	
Display/Graphics	23" TFT Flat panel Color LCD, Same brand as CPU minimum Resolution 1024x768.	
Graphics Card	2 GB GDDR5 Dedicated	

Keyboard and Pointing Device	Enhanced keyboard & Optical Scroll mouse	
Audio	Stereo audio system full multimedia with speakers	
Communication interface	100/1000 Mbs Fast Ethernet NIC	
I/O interface ports	PS/2 compatible keyboard, Serial Port, Parallel Port, USB Port, Ethernet, VGA Port	
Operating System	64-Bit MS Windows 8.1 or later.	
	NOTE: Volume license of all Computers uploaded on KeNHA Volume License portal	
Application Software	Microsoft Office 2016 or later.	
Anti-Virus	Latest Antivirus Version with media and License	
UPS	700VA UPS	
Warranty	1 year	
Brochure	Manufacture's Literature and Detailed Specifications (Be Attached)	

The contractor shall allow for the provision for laptop with the above specifications costs as per Bill Item 01-80-026A (Appendix A) of the Bills of Quantities.

### **137 ATTENDANCE UPON THE ENGINEER AND HIS STAFF**

Add the following:

- (a) The Contractor shall pay wages (including all overtime and all allowances) to fulfil the requirements of Clause 137 of the Standard Specification.

The Contractor will be paid for the wages on a prime cost basis plus a percentage for overheads and profits under appropriate items in the Bills of Quantities. Overtime will be the Contractor's responsibility and rates to be used for the payment of overtime will be the salary levels defined by the Resident Engineer for his staff.

The payment referred to in this clause shall exclude the cost of maintaining the offices in compliance with clause 137, paragraphs 1, 2 and 4 of the standard specifications which are deemed to be included in the rates for providing the Office.

The costs, for attendance required by this Clause 137, shall be as specified in the attached table: -

<u>Designation</u>	<u>Number</u>
Deputy Director/PEE	1
Deputy Director/RE	1
Senior Engineer/A.R.E	1
AD ICT / Senior ICT Officer	1
Engineer	1
Inspector	1
Assistant Engineer-Project	1
Inspector-Project	2
Laboratory Technician	1
Laboratory Attendant	1
Surveyor	1
Chainman/Leveller	1
Secretary	1
Office Attendant	1
Casuals	1
Interns (Project)	1

and shall be paid for under Item 01-80-030A 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 technical staff comprising Engineers, Inspectors, Surveyors and Materials Technologists. These staff shall be paid a stipend as shall be directed by the Engineer and the Contractor shall be reimbursed under Item 01-80-030A of the Bill of Quantities.

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

In addition to provisions of the Clause 138 of the Standard Specification, the Contractor shall when instructed to do so provide, fuel and maintain in good working conditions, with driver, the number and type of vehicle specified in the **Bill of Quantities** for exclusive use of the Engineer and his staff throughout the Contract. The type and brand of the vehicle must be approved by the Engineer before supply by the Contractor.

The Contractor shall insure comprehensively the vehicles for any licensed driver 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 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 months. Payment for mileage above 4,000Km shall be made at a rate per kilometer. The payment shall be inclusive of all fuels, lubricants, servicing, insurance, maintenance, drivers and repairs. The rate shall include any overtime the driver might be due or any other allowance to the normal working hours. Payment shall be made under relevant items in Bills of Quantities No. 1.

The vehicles provided under this clause shall revert to the Contractor.

### **139 MISCELLANEOUS ACCOUNTS**

The Contractor maybe instructed by the Engineer to make payments of general miscellaneous accounts for such items as stationary, stores and equipment and miscellaneous supervision personnel and claims or the Engineer may direct the Contractor to purchase or pay for the above. The Contractor will be paid on a prime cost basis plus a percentage for overheads and profits under appropriate items in the Bills of Quantities.

### **140 PAYMENT OF OVERTIME FOR ENGINEER'S JUNIOR STAFF**

Delete in the last line the words "shall be at the Contractor's own expense" and substitute with "including the specified percentage for administrative overheads shall be paid by the Contractor to the Engineer".

Add the following

If the Contractor wishes to execute permanent work outside the Engineer's normal working hours, as stated in Clause 108 of this Specification, then the payment for the overtime for Engineer's support staff shall be paid by the Contractor, at the latest Ministry of Labour rate.

### **141 MEASUREMENT AND PAYMENT**

Delete Sub-Clause 141 (a) entirely and substitute with:



(a) No Preliminary item has been included in this Contract. All Contractor's mobilization and general costs shall therefore be included in relevant rates in the Bill of Quantities.

(b) To (e): Provision and Maintenance of Housing, Office and Laboratory for the Engineer and his staff.

Replace b (i) (ii) and (iii) with the following:

The Contractor shall be paid in the following manner:

(i) 50% (fifty percent) of the sum when the office and laboratory, as appropriate, have been erected, furnished, equipped, accepted and handed over to the Engineer.

(ii) 50% (fifty percent) of the sum in equal monthly instalments spread over the period from the date when the office, as appropriate is taken over by the Engineer until the end of the Contract Period.

This payment shall be deemed to cover servicing and maintenance of buildings, furniture, equipment and services and the Engineer may withhold or reduce any payment if the Contractor fails in his maintenance obligations. In the event of the Interim Certificate not being issued in any month, then the due payment shall be added to the subsequent certificate

## **142 ENVIRONMENTAL PROTECTION (where applicable)**

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 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, minimise 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 submit environmental progress reports to the Engineer every three (3) months.

The Contractor shall ensure so far as is 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 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 shall be 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 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 upon approval of the Engineer.
- (e) Immediately after extraction of materials, all borrows pits shall be backfilled 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 fuels Oils and other pollutants shall be cleared up.
- (g) The Contractor's attention is drawn to the requirements of the Standard Specification in 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
  - Clause 607: Site Clearance and Removal of Topsoil and Overburden
- (h) Payment in respect of this Clause 142 is included as a Lump Sum in the Bill of Quantities. Payment of the Lump Sum will be by equal monthly instalments over the period of the Contract excluding the Period of Maintenance. The total sum of the instalments shall not exceed the Lump Sum, and payment of the monthly instalment will only be made for that month if the Engineer is satisfied that the Contractor has fully complied with the requirements of Clause 142, otherwise the Contractor shall forfeit such instalment.

## **SECTION 2: MATERIALS AND TESTING OF MATERIALS**

### **205 SOILS AND GRAVEL**

All materials testing shall be in accordance with section 2 of the Standard Specifications

## **SECTION 3 - SETTING OUT & TOLERANCES**

### **301 SETTING OUT**

- a) In addition to the provisions of clause 3.01(a) 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 will have to 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. 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 road reserve boundary posts shall have 12mm diameter steel pins embedded in concrete, 200mm long with 25mm exposed to the air, sticking out from its top surface. This pin shall be co-ordinated and heighted and result of the same shall be provided to the Engineer for approval. Cost of these works shall be included in the rates as no separate item has been provided.

Commencement of the works shall not be permitted until this basic survey data has been provided and approved by the Engineer for at least 2 Kms of the road.

b) Detailed Setting Out

Reference pegs shall be 50mm by 50mm in section 600mm long driven 400mm firmly into ground and painted white above the ground. The offset from centre line shall be indicated by small nail 20mm to 25mm long with its head driven flush with the top of the peg.

Chainages, offset and reference elevation shall be clearly indicated to the sides of the peg to the satisfaction of the Engineer.

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

## **SECTION 4- SITE CLEARANCE AND TOP SOIL STRIPPING**

### **401 SITE CLEARANCE**

Site Clearance shall be carried out as directed by the Engineer.

## **REMOVAL OF TOPSOIL**

Topsoil shall include up to 200mm depth of any unsuitable material encountered in existing or newly constructed drains, drainage channels, and accesses.

## **SECTION 5: EARTHWORKS**

### **504 PREPARATION PRIOR TO FORMING EMBANKMENT**

Where benching of the existing pavement is required to accommodate earthworks subgrade or subbase for widening of 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 for fill in embankments.

Material with high swelling characteristics or high organic matter content and any other undesirable material shall not be used, unless specifically directed by the Engineer. Unsuitable material shall include:

- (i) All material containing more than 5% by weight or 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% (such as black cotton soil)
- (iii) All clay of plasticity index exceeding 50.
- (iv) All material having moisture content greater than 105% of optimum moisture content (Standard Compaction)

**Subgrade:** Shall mean upper 300mm of earthworks either in-situ or in fill and subgrade shall be provided for as part of earthworks operation and payment shall be made as “fill”. The material for subgrade shall have a CBR of not less than 8% measured after a 4-day soak in a laboratory mix compacted to a dry density of 100% MDD (AASHTO T99) and a swell of less than 1%.

**Subgrade repair:** Where directed by the Engineer, any localized failure in the subgrade shall be repaired by filling in selected soft, hard or natural of minimum CBR 30% and compacted in accordance with clauses in the specifications applying to normal subgrade.

**Embankment repair:** Where directed by the Engineer, any localized filling in soft, hard or natural; selected material requirements shall be executed with Clause 505.

## **508      COMPACTION OF EARTHWORKS**

At pipe culverts, all fill above ground level around the culverts shall be compacted to density of 100% MDD (AASHTO T.99) 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, all fill above ground level up to the underside of the subgrade shall be compacted to density of 105% MDD (AASHTO T.99). 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 wing-walls.

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 the Engineer issues specific instructions to the contrary are issued.

Where improved sub-grade material shall be required, 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.

#### **511 BORROW PITS**

*The first part of the Standard Specification is amended as follows: -*

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 but to the approval of the Engineer contrary to what has been stated.

#### **517 MEASUREMENT 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 (100% MDD AASHTO T.99).

### **SECTION 6 - QUARRIES, BORROW PITS, STOCKPILES AND SPOIL AREAS**

#### **601 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.

## **602 MATERIAL SITES**

The information on possible material sites is given for the general guidance of bidders. Bidders are however advised to conduct their own investigation as the information contained therein is neither guaranteed nor warranted

## **603 PROVISION OF LAND**

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.

## **605 SAFETY AND PUBLIC HEALTH REQUIREMENTS**

In addition to clause 605, the contractor shall allow for professionals to conduct lectures to the workers regarding the spread of HIV/Aids.

## **SECTION 7 - EXCAVATION AND FILLING FOR STRUCTURES**



### **703 EXCAVATION 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 100% MDD (AASHTO T.99) immediately before structures are constructed.

Thus in Standard Specification, Paragraph 4, last line: - Replace "95%" with "100%".

### **707 BACKFILLING FOR STRUCTURES**

Unless otherwise instructed by the Engineer, all backfilling material shall be compacted to a minimum of 100% MDD (AASHTO T.99).

### **709 EXCAVATION FOR RIVER TRAINING AND NEW WATER COURSES**

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.

### **710 STONE PITCHING.**

Where shown on the drawings or directed by the Engineer the contractor shall excavate for, trim to line and level, provide and lay stone pitching.

Stone pitching shall be formed of hard stone, roughly dressed square. The least dimension of any stone shall be less than 200 mm, and the volume not less than  $0.01\text{m}^3$ . no rounded boulders shall be used.

The stones shall be set on edge and securely bedded with the largest dimensions at right angles to the flow of water, fitted closely together so as to leave only a minimum of voids between the stones which can be filled in with suitably shaped and tightly wedged

Spalls. The top of the pitching shall be finished flush with the adjacent material.

Where grout is specified, a 1:4 cement : sand mortar shall be rammed into the wetted interstices and smoothed off with the pitched face.

### **711 GABIONS.**

Where shown on the drawings or directed by the Engineer the contractor shall excavate for, trim to line and level, provide and erect gabions including providing selected rock, crushed if necessary, packed and compacted inside the gabions.

Gabions shall include gabion mattresses and gabion boxes and for the purposes of construction and method of measurement and payment no distinction shall be made between them.

Gabions shall be ‘Maccaferri’ boxes and/or “Reno” mattresses both with diaphragms at 1 metre centres, or similar approved. The maximum mesh size shall be 100mm x 120mm for boxes and 60mm x 80mm for mattresses. The wire used for the construction of gabions shall unless otherwise instructed by the Engineer comply with the requirements of Table 7-1.

**TABLE 7 – 1**

		Diameter (mm)	Galvanizing (g/m <sup>2</sup> )
Mesh	Box	3.4	275
	Mattress	2.7	260
Binder	Box	2.2	240
	Mattress	2.2	240
Selvedge	Box	3.9	290
	Mattress	3.4	275

All wire shall be to BS1052 having a tensile strength of not less than 40kg/mm<sup>2</sup>.

Galvanizing shall comply with the requirements of BS443.

Gabions shall be constructed to the shapes and dimensions as shown on the drawings or given in the special specification or as directed by the Engineer. Gabions, as constructed shall be within a tolerance of  $\pm 5\%$  on the height or width instructed and  $\pm 3\%$  on the length instructed.

The alignment of the gabion shall be correct within a tolerance of 100mm of the instructed alignment and the level of any course of gabion shall be correct to within a tolerance of 50mm of the instructed level. In addition adjacent gabions shall not vary by more than 25mm in line and/or level from each other.

The surface upon which gabions are to be laid shall be compacted to a minimum dry density of 95% MDD (AASHTO T99) and trimmed to the specified level or shape.

Joints in gabions shall be stitched together with 600mm minimum lengths of binder wire, with at least one stitch per 50mm, and each end of the wire shall be fixed with at least two turns upon itself.

Adjacent gabions shall be stitched together with binder wire along all touching edges.

Gabion boxes shall be laid with broken bond throughout to void continuous joints both horizontally and vertically. Pre-tensioning of gabions shall be subject to the approval of the Engineer.

Gabions shall be hand packed with broken rock of 150mm minimum dimension. 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 layers shall be finished off with larger pieces. The whole interior and top layers shall be packed tight and hammered into place.

Where instructed by the Engineer the contractor shall place filter fabric ('Terram' or similar approved) behind gabion faces in contact with existing or backfilled ground. The contractor shall ensure that the filter fabric is not damaged during the construction or backfilling around the gabion works and any damaged or torn fabric shall be replaced at the contractor's expense. The filter fabric shall be installed in accordance with the manufacturer's instructions and the filter fabric shall not be left exposed to sunlight for more than 3 weeks.

At the back face ends of completed gabion work or where shown on the drawings or instructed by the Engineer the existing soil shall be backfilled, thoroughly compacted against the sides of the gabions and finished flush with the top surface of the gabion.

On completion of gabion construction the exposed joints shall be painted with a thick bitumen to the approval of the Engineer to discourage vandalism.

## **712 RIP-RAP PROTECTION WORK**

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 insitu material. The insitu material immediately behind the pitching shall be compacted to minimum density of 100% MDD compaction (AASHTO T.99)

## **714 BACKFILL BELOW STRUCTURES**

Where instructed this shall be carried out in compliance with the requirements of Clause 507 and 804 of the Standard Specification.

## **SECTION 8 - CULVERTS AND DRAINAGE WORKS**

### **801 SCOPE OF SECTION**

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: -

- Extending of existing 450mm, 600mm and 900mm diameter pipes to be compatible with the increased road width or access.
- Desilting and cleaning of existing pipes and outfall drains to make them free flowing.

### **804 EXCAVATION FOR CULVERTS AND DRAINAGE WORKS**

In the Standard Specifications, make the following amendments: -

- (a) In paragraph 6, line 3, and in paragraph 7, line 5 and in paragraph 11, line 6, delete "95%" and insert "100%".
- (b) Removal of Existing Pipe Culverts

Where instructed by the Engineer, the Contractor shall excavate and remove all existing blocked or collapsed culvert pipes of 450mm, 600mm and 900mm diameter including concrete surround, bedding, inlet and outlet structure.

The void left after removal of culvert pipes shall be widened as necessary to accommodate new concrete bedding, pipe and haunching.

The payment of this work shall be per linear metre of pipes removed, and the volume in m<sup>3</sup> of inlet/outlet structure removed. The void left by removal of these pipes shall be carefully preserved in order to accommodate replacement of 450mm, 600mm or 900mm diameter pipe culverts as shall be directed by the Engineer.

(c) Removal of Other Existing Drainage Structures

When instructed by the Engineer, the Contractor shall demolish or remove any other structure and payment for this shall be made on day work basis.

(d) 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.

## **805 EXCAVATION IN HARD MATERIAL**

In the Standard Specifications, Sub-clauses 805(a) and 805 (b) delete "95%" and insert "100%".

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

In sub-clause 809(c), paragraph 2, line 4, between the words "compacted" and "and shaped" insert the words "to 100% MDD (AASHTO T.99)".

Hard material is material that 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 0.2m<sup>3</sup> occurring in soft material shall be classified as hard material.

## **809 BEDDING AND LAYING OF PIPE CULVERTS**

Concrete pipes shall be laid on a 150mm thick concrete bed of class 15/20 and the pipes shall be bedded on a 1:3 cement: sand mortar at least 50mm thick, 150mm wide and extending the full length of the barrel.

The rates inserted shall allow for compaction of the bottom of excavation to 100% MDD (AASHTO T.99).

## **810 JOINTING CONCRETE PIPES**

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

## **812 BACKFILLING OVER PIPE CULVERTS**

In the Standard Specifications, clause 812

- a) Wherever the expression "dry density of 95% MDD (AASHTO T. 99)" occurs delete and replace with "dry density of 100% MDD (AASHTO T.99)".

The rates entered for laying of pipe culverts shall allow for backfilling to pipe culverts and compacting to 100% MDD (AASHTO T.99) and these works shall not be measured and paid for separately.

## **814 SUBSOIL DRAINS**

In the event of excavation for repairs exposing local seepage, springs or unacceptably 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 material as specified in clause 815 of the standard specification. Where these drains lie within the carriageway the carriageway shall be reinstated with compacted stabilised gravel and surfaced with hot asphalt or a surface dressing as instructed by the Engineer.

## **815 INVERT BLOCK DRAINS AND HALF ROUND CHANNELS**

Invert Block Drains and Half Round Channels shall be constructed as shown in the drawings provided in accordance with the Standard Specifications where directed by the Engineer.

## **817 REPAIRS TO DRAINS**

### **817.1 Cleaning, construction and Repair of 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.

Shaping the drains to free-flowing condition as directed by the Engineer and: -

- i. Removing any broken side slabs for inverted block drains and replacing with new ones.
- ii. Or removing any broken inverted block drains and replacing with Concrete class 20/20 and A142 BRC reinforcement.

Measurement and Payment for cleaning drains shall be by linear metre of drain cleaned measured as the product of plan area and vertical depth of extraneous material instructed to be removed. Where insitu concrete is used measurement will be on cubic metre of concrete and BRC area or weight in relevant unit e.g., Kg, Tonnes etc. No extra payment will be made for removal of vegetation and roots.

### **817.2 Channels**

The Engineer may instruct that the Contractor provides open channels in place of existing subdrains where the latter may be damaged or in any other place. The rates entered by the Contractor in the bills of quantities must include for removal and disposal of any subdrain 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 80mm thickness and lengths or widths not exceeding 1000mm. Joints shall be at least 15mm wide filled with 1:2 cement sand mortar.

### **817.3 Rubble fills for protection work**

Quarry waste or similar approved material shall be used to back fill scoured and eroded side, outfall and cut-off drains. 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.

#### **817.5 Gabions**

Gabions shall be constructed in accordance with clause 711 of the standard Specification.

#### **817.6 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.

#### **818 SCOUR CHECKS**

Scour checks are to be constructed in mass concrete in accordance with clause 818 of the standard Specifications and the drawings as shall be provided.

#### **819 CLEANING AND MAINTENANCE**

##### **819.1 Desilting of Pipe Culverts**

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

Measurement and payment shall be by the linear metres of pipes de-silted, regardless of diameter size.

### **SECTION 9 - PASSAGE OF TRAFFIC**

#### **903 MAINTENANCE OF EXISTING ROADS**

The Contractor shall maintain the existing project road ahead of works using compacted asphalt concrete type I in accordance with the provisions in clause 1601B – 1607B of the Special Specifications or gravel material depending on the nature of the wearing course surface.



**(a) General**

In addition to requirement of this clause, 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.

Subject to the approval by the Engineer, the Contractor may maintain and use existing roads for deviation. Payment for this, made in accordance with clause 912 (a) (i), shall be by the Kilometre used depending on the type of road used, whether bituminous or earth/gravel. The rates shall include for the provision of materials and the works involved.

**b) Geometry**

- i. The carriageway width of the deviations shall not be less than 6m wide and suitable for 2-way lorry traffic unless otherwise specified.
- ii. The carriageway width of the deviations shall not be less than 3.5 m wide and suitable for 1-way lorry traffic unless otherwise specified.

**c) Construction**

Unless otherwise instructed gravel wearing course for the deviation shall be 150 mm compacted thicknesses complying with section 10 of the Standard Specification. The CBR at 4-day soak shall not be less than 25 and the PI range shall be 15- 20. 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 to 1.4 litres/Square meter in regular interval to minimise the effects of dust. Latest sprinkling time shall be one hour before the sunset.

Where existing neighbouring roads are used as deviation, Contractor shall carry out repairs and maintenance in parent materials used for the existing base and surfacing of the road being used.

**SECTION 9 - PASSAGE OF TRAFFIC****901 Scope of the Section**

Add the following Sub-Clauses to Clause 901

**(i) Programme for Passage of Traffic**

Following the award of the Contract, the Contractor shall submit to the Engineer a detailed Programme for Passing of Traffic. Such programme shall be approved by the Engineer before the Contractor commences work, and shall show amongst other things the method of protection of the public and give details of the hours of operation, location types and numbers of traffic safety devices, barricades, warning signs, flagmen and the like. The Programme for Passing of Traffic shall be in accordance with and complementary to the Programme of Works submitted under Clause 8 of the Conditions of Contract.

In the preparation of this programme of Passage of Traffic, the Contractor should take into consideration the following: -

-The Contractor shall conduct his operation in such a manner that no greater length or amount of work is undertaken than he can carry out efficiently having due regard to the rights and convenience of the public.

If the Contractor proposes a road closure he shall provide an alternative routing of the traffic which must be approved by the Engineer.

No revisions shall be made to the approved Programme for Passing of Traffic without the prior written permission of the Engineer, and the Contractor shall allow 7 days for the Engineer to review any request for a revision of the Programme for Passage of Traffic.

-The Programme for Passage of Traffic shall conform in all aspects with the requirements of this Special Specification.

Temporary road signs, lights, marks, barriers, etc. for construction shall be in accordance with the laws of Kenya and shall include approved warning, mandatory, prohibitory and priority signs to the satisfaction of the Engineer, including, but not be limited to, signs giving warning of construction works, reduction in speed, overtaking prohibited, road narrows, etc. Under no circumstances will work be allowed on the carriageway or shoulders of the road without such signs in both directions.

**(ii) Passage and Control of Traffic**

It is the intention of the Contract that public traffic should be able to pass along the sections of the works at all times during construction, within the road reserve in all weather conditions. For this purpose, the Contractor will be required to order this work in such a way as to assure that no less than a single lane at least 4.0 m wide with adequate drainage system and reasonable riding surface free of dust is available for public traffic at all times and he shall furnish sufficient police assistance, guards, temporary traffic lights, road signs and barriers, competent flagpersons and the like to control and regulate the flow of traffic under **one-way traffic operations**.

Sections of road where possible to carry traffic in two directions but with single lane width shall be regulated by temporary electric traffic lights and shall not be longer than 800 m. The

Engineer may in exceptional circumstances allow longer sections where in his opinion this is unavoidable.

Where such sections are not more than about 100 m in length and have a clear line of sight from one end to the other, the Engineer may allow manual traffic regulation by flagmen, rather than traffic lights, during daylight hours only. When electric traffic lights are in operation, the Contractor shall at all times have available complete reserve equipment and spare parts.

The frequency and duration of delays to traffic while passing through, over or across the Works, shall be kept to a minimum. They shall, in no case exceed half an hour and should normally be less than 20 minutes. Any method of working which requires road closures in excess of 30 minutes shall be the subject of 48 hours prior notice to and agreement of the Engineer, who may refuse to allow such closure.

The Contractor shall take particular care, when passing traffic through the Works that all excavations and other hazards are properly protected with barriers and are illuminated at night.

The Contractor is placed on notice that maintenance of existing as well as diversion roads and protection of traffic through the Works during construction is considered as important as the construction itself. The Contractor shall all times, conduct his operations in a manner to ensure the convenience and safety of motorists, pedestrians, adjoining property owners and the safety of his employees and those of the Engineer.

### **903 Maintenance of existing road**

The Engineer shall hand over the existing road to the Contractor, in sections, at the commencement of the contract for construction purpose. However the contractor shall be responsible for all repairs and maintenance of the entire road for the duration of the contract. In sections where the diversion is on an existing bitumen surfaced road ( i.e at the proposed interchange sections) the contractor shall construct the diversion and maintain it with materials similar to those of the existing pavement layers or as instructed by the Engineer. 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**

Add the following:

- (a) **Length**

The contractor shall program his works in such a way that traffic shall not be required to pass over more than 5 km at any one time unless otherwise approved by the Engineer. The total length of the deviations to be constructed is approximately 50 km.

**(b) Geometry**

The carriageway width of the deviations shall not be less than 8.0m wide with adequate drainage and suitable for 2-way lorry traffic unless otherwise specified. 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.

**(c) Pavement Structure at the existing bitumen surfaced road**

The pavement structure for the deviations shall consist of the following;

- Natural gravel base- 150 mm
- Double seal surface dressing as instructed by the Engineer

**(d) Gravel base (Base quality gravel material)**

- Unless otherwise instructed gravel base for the deviation shall be 150 mm compacted thicknesses complying with section 10 of the Standard Specification. The Contractor shall allow in his rate for removal of any unsuitable material, opening side drains and backfilling as necessary 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/m<sup>2</sup> in regular interval to minimise the effects of dust. Latest sprinkling time shall be one hour before the sunset.

**906 Passage of traffic through the works**

The contractor shall be deemed to have inspected the site and satisfied himself as to the adequacy of his bid for these works and no additional payments will be made for any expenditure on traffic control. Should the contractor propose any other method of passage of traffic e.g. Construction of traffic deviations use of existing roads etc. the contractor shall investigate the alternatives, construct and maintain them to the satisfaction of the Engineer. The Employer shall not be liable for investigations or costs arising from the alternatives methods of traffic control proposed by the contractor. Deviations or other measures for traffic control where proposed by the contractor shall meet the requirements of the Specifications and drawings and be approved by the Engineer.

The contractor shall ensure that the workforce and site supervisory staff at all times wear high visibility garments when work is carried out on or adjacent to a section of the road open to traffic. The contractor shall ensure that the supervisor or person in charge of the work force

is readily recognized from the rest of the workforce. In addition, the contractor shall provide a full time traffic safety officer to co-ordinate aspects of road safety for the whole site.

The Contractor shall be deemed to have included all costs related to employing the traffic safety officer and for all the duties performed by him, in his rate for passage of traffic.

#### **907 Signs, Barriers and Lights**

Add the following to Clause 907:

The Contractor shall be responsible for the provision, erection, maintenance and removal of all temporary signs and barriers necessary for safety and convenience, to pass traffic not only upon the sections of the existing road to be upgraded, but also on all minor and private roads off the site of the Works which are used as deviations.

Temporary "Advance Detour Signs" shall be erected before any road junction and a "Detour Sign" shall be erected at the junction of the deviation route and other minor roads where there is any possibility of the diverted traffic mistaking the route of the detour, and there shall be mounted on the same posts, a sign bearing the inscription "Detour".

In addition, any hazard such as a narrow bridge, drift, level crossing, steep hill, sharp bend, etc. occurring on the deviation shall be marked by the Contractor with the appropriate sign, if the existing sign is inadequate or none exists. All sharp bends and all places where the shoulder is higher than 2.0 m above the natural ground shall be marked with painted posts.

#### **909 Assistance to Public**

Add the following:

The Contractor shall be responsible for safety maintaining and directing traffic through or around any part of the Works included in the Contract, with the maximum practical convenience, for the full twenty four hours of each day.

The Contractor shall render to the public all possible assistance when they are passing over roads maintained by him and over minor, private or temporary roads or bridges when used as deviation or when passing through the Works.

Whenever the Contractor's operations create a condition hazardous to traffic or to the public, he shall furnish, erect and maintain such fences, barricades, lights, signs and other services, as are necessary to prevent accidents or damage or injury to the public.

The Contractor shall also furnish such guards and flagmen as are necessary to give adequate warning to traffic or to the public of any dangerous conditions that might be encountered and shall provide prompt assistance to any vehicle experiencing difficulty in passing over the

Works under construction, or through any diversions or roads maintained by the Contractor, if necessary by providing a towing vehicle, labour and tow rope to assist such vehicles.'

Should the Contractor appear to be neglectful or negligent in furnishing warning and protective measures, as above provided, the Engineer may direct attention to the existence of hazard, and the necessary warning and protective measures shall be furnished and installed at the Contractor's expense. Should the Engineer point out the inadequacy of warning and protective measures, such action on the part of the Engineer shall not relieve the Contractor from responsibility for public safety or relieve him of his obligation to furnish and pay for these devices.

## **911 Contractor's Construction Traffic**

Add the following new Clause 911.1 and 911.2.

### **911.1 Insurance**

The Contractor's attention is particularly drawn to Clause 18, "Insurance" of the Conditions of Contracts, and the Contractor shall indemnify the Employer against and shall insure against all losses and claims for injuries or damage to any person or any property which may occur due to the passing of traffic, whether through the Works, or on specially constructed deviations, or on existing public or private roads used as deviations.

### **911.2 Penalty for failure to comply with these specifications**

If, in any month, the Engineer is not satisfied that the Contractor has fully complied with any provisions or instructions under Section 9 of the Specifications, the Employer shall withhold the whole of the installment or payment due to the Contractor for the relevant item of work stated in the Bills of Quantities. Failure or refusal by the Contractor to maintain deviations, improve and maintain the existing roads ahead of the works, or failure to take the necessary actions for the safety and convenience of the public traffic within the time instructed or as required by Statutory Authorities shall be sufficient cause for the Employer to apply a deduction of **Kshs.150,000/=**(One Hundred and Fifty Thousand shillings) per day from any monies due to the Contractor, until all provisions and instructions prescribed have been complied with to the satisfaction of the Engineer. Provided further that where notified by the Engineer and the Contractor fails to complete improvement or maintenance of any section of existing road or deviation within 14 days of the Engineer's notice thereof, the Employer shall deduct **Kshs 400,000/=** (Four hundred thousand shillings) per day.

## **912 Measurement and payment**

### **Item: Construction of Deviation**

*Insert the following immediately below the heading of this Clause in the Standard Specification:*

The Contractor shall be deemed to have allowed elsewhere in his rates and prices for any differences between the actual cost of carrying out the works and the Lump Sum amounts for the said works priced by the contractor in the Bills of Quantities.

*Delete the contents of the last paragraph of sub-clause 912(b) and substitute with the following:*

The rate for construction of deviation shall include the cost of complying fully with the requirements of Clause 904 of this specification (for removal of any unsuitable material, construction of side drains and temporary culverts, providing, placing, forming, mixing and compaction of the gravel wearing course) for the deviation.

**Unit: Kilometers**

Construct and maintain Deviation shall be measured to the nearest 0.1 km along the centreline of the deviation road and paid for from the relevant item in the Bills of Quantities. The Contractor shall be paid 70% of the billed amount when he completes construction of the deviation road to the satisfaction of the Engineer. The balance shall be paid in equal monthly installments during the remaining period of the contract, excluding the period of defects liability, provided that the contractor has satisfactorily maintained the deviation in accordance with Clauses 904 and 905 of the Specification when the deviation road is in operation.

Payments for this item shall be subject to recoveries and deductions that become due under this Clause as a result of any failure by the contractor to carry out maintenance of the deviation road as required.

If the Contractor fails to construct and / or to maintain diversions at the proper time, or to take the necessary precautions for the safety and convenience of public traffic as required by statutory authorities or as ordered by the Engineer, the Employer may engage other contractors or use the services of others to maintain the diversion. The actual cost of such maintenance shall be deducted from the Contractor's interim payment certificate.

It is the Contractor's responsibility to plan and execute the construction of any diversions deemed necessary during construction work. Prior approval of the diversion routes must be cleared with the landowners concerned and the Engineer before commencing the construction of any diversion.

Delete the contents of of sub-clause 912(e) to (h) entirely.

**Item: Maintain the passage of traffic**

**Unit: Lumpsum**

Add the following:

Payments for this item shall be made under Bill item 9-60-001 and shall be **subject to recoveries and deductions of Kshs. 50,000/day** that become due under this Clause as a result of failure by the contractor to maintain passage of traffic as required.

The rate shall include the cost of **maintain existing roads ahead of works**. Maintenance include repair of potholes with GCS, Compaction, priming and sealing with asphaltic concrete. The rate shall also include the cost for complying with the requirements of clause 902 of the Specification and as directed by the engineer

On completion of the Works, the Contractor shall remove all temporary diversions, haul roads, access ramps and signs and barriers, etc. and restore the land to its original condition unless otherwise instructed by the Engineer.

**Item: 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..



## SECTION 10: GRADING AND GRAVELLING

### 1001 SCOPE:

Grading covers the works involved in the reinstatement of the carriageway to the camber by removing the high points and filling up gullies corrugations and wheel ruts to restore smooth running surface. Graveling consists of excavation, loading hauling and spreading of gravel wearing course material on the formation of carriageway. Gravel shall include lateritic gravel, quartzitic gravel, calcareous gravel, decomposed rock, soft stone coral rag, clayey sand and crushed rock.

The material may be obtained from borrow pits or excavation in cuttings. Gravel material shall conform to the requirement given in Table 10.1

**Table 10.1: Requirement for Gravel Wearing Course**

GRADING REQUIREMENTS AFTER COMPACTION	
Sieve (mm)	% by Weight Passing
40	100
28	95 – 100
20	85 – 100
14	65 – 100
10	55 – 100
5	35 – 92
2	23 – 77
1	18 – 62
0.425	14 – 50
0.075	10 – 40

PLASTICITY REQUIREMENTS PI		INDEX
Zone	Min	Max
WET	5	20
DRY	15	20

BEARING STRENGTH	
Traffic VPD	DCP Equivalent mm/Blow
Greater than 15	25
Less than 15	20
CBR at 95 % at MDD, Modified AASHTO and 4 days soak	
Lower quality material (CBR 15) may be accepted if no better material can be found	

NB: Wet Zone - mean annual rainfall greater than 500 mm.

Dry zone - mean annual rainfall less than 500 mm.

The Engineer shall approve quarries and their extent of exploitation. The quarries shall be shown to the Contractor prior to commencement of the Works. The Contractor shall be responsible for the acquisition of the quarry rights and shall therefore conduct respective negotiations with landowners and affected communities.

Alternative sources of gravel material whose quality can be shown to be in compliance with the specification requirements may be used, with the proviso that the Employer is not to incur additional expenses in connection with its winning and haulage. Contractor is deemed to have included in his rates for the provision of the gravel material to have included the cost of complying with the testing requirements.

## **1002 Removal of Overburden**

The Item consists of excavation of overburden including loading, hauling and stockpiling at the approved locations. The thickness of the overburden layer to be removed shall be determined from the depths of the trial pits dug at a 30m grid within the quarry area.

The overburden shall be removed and deposited neatly in order to use it again to reinstate the quarry at the end of improvement work.

### **Work Method:**

The contractor shall use **labour** or **equipment** to carry out this item of work

### **Quality Control**

- The location and manner of stock piling of the overburden for the reinstatement of the quarry shall be visually checked

### **Measurement and Payment**

No separate measurement and payment shall be made for removal of overburden and contractor shall be deemed to have allowed in his rates and prices for the cost.

### **1003 Excavation of Gravel**

The gravel shall be excavated from quarries approved by the Engineer. It is the Contractors obligation to inform the Engineer in the case that the quality / availability of the gravel changes during the course of excavation.

Oversize stones and boulders shall be removed from the excavated gravel and deposited outside the quarry at locations approved by the Engineer. Such stones and boulders may be reused for structures and scour checks

#### **Work Method**

##### **(i) Labour based methods**

The contractor shall excavate and stockpile the gravel in bays for efficient loading by labour.

##### **(ii) Equipment methods**

The Contractor shall excavate the gravel and stockpile in heap(s) for the efficient loading by equipment.

#### **Quality Control**

- The widths of the loading bays shall be checked before excavation can commence.
- The loading bays shall be checked to ensure it is free draining.

#### **Measurement and Payment**

No separate measurement and payment shall be made for excavation of gravel and contractor shall be deemed to have allowed in his rates and prices for the cost.

## **1004 Haulage**

This activity involves loading of excavated gravel, haulage by appropriate equipment and off-loading of the same as specified in the drawings or as directed by the Engineer. Where the loads delivered in any load falls short of agreed equipment capacity, dumping shall not be permitted unless the agreed spacing is adjusted accordingly.

Where loads supplied are found to contain material other than from the approved quarry and thus of unacceptable quality, the Engineer shall cause them to be removed from site at the contractor's expense.

### **Work Method**

The Contractor shall use a combination of both Labour and equipment to carry out this Item work.

### **Quality Control**

- No haulage equipment shall be used unless its capacity has been ascertained the Engineer.
- The quality of gravel dumped on the carriageway/carriageway shall be visually checked daily.
- The quantity of material delivered in each load shall be checked before dumping is allowed.
- The distance between the stacks shall be checked using tape measure.

### **Measurement and Payment**

No separate measurement and payment shall be made for haulage of gravel and contractor shall be deemed to have allowed in his rates and prices for the cost.

## 1005 Spreading and compaction of gravel

### i. Labour methods

### ii. Equipment methods

This activity involves spreading gravel material, shaping to ensure uniform thickness of the layer across the full width of the carriageway and to the specified camber. Spreading also includes, removing any oversized stones or boulders which cannot be broken down to required size, spoil dump.

Where water needs to be added, it shall be applied in an even manner and the rate of application shall be such that no transverse or longitudinal flows occur. Unless otherwise instructed by the Engineer, the moisture content shall be within the range of +/- 2% of the optimum moisture content. Compaction will be carried out as specified in 5.05.

### Work Method

The Contractor shall use **Labour** or Equipment to carry out this Item work.

### Quality Control

- The gravel surface width shall be checked at every 100m interval using tape measure and shall have tolerance of + / - 50mm.
- Trial holes at every 100m shall be used to check the gravel surface thickness and shall have a tolerance of + 5mm / - 0mm.
- The camber cross fall shall be checked at every 50m and the maximum tolerances shall be + / - 1 %
- The longitudinal profile shall be checked with every load to ensure a smooth surface with no corrugations or depressions

**Measurement:**  $\text{m}^3$

The unit of measurement shall be in cubic metres of compacted material on carriageway

## **Payment**

The unit rate shall be the full compensation for labour, tools, equipment and any incidental costs required for carrying out the work.

## **1006 Carriageway Grading**

### **i)Light Grading**

This activity shall consist of trimming of the carriageway to control roughness and corrugations using either a towed grader or a motorized grader. The width of the carriageway shall be as specified in the drawings or as directed by the Engineer.

Pegs 200 to 300mm shall be placed at 10 to 20 m intervals to mark edge of the carriageway.

The material shall be bladed toward the center of the carriageway starting from both edges to the specified camber.

### **Work Method**

The contractor shall use equipment to carry out this item work.

### **Quality Control**

- The width of the carriageway shall be checked using tape measure at every 10m with tolerance of +50mm or -20mm.
- The camber shall be checked using camber board at every 5m with and shall have a tolerance of +/- 1%

**Measurement:**  $m^2$

The unit of measurement shall be square meters of carriageway graded.

#### **Payment**

The unit rate shall be the full compensation for labour, equipment and any incidental costs required for carrying out the work.

### **ii) Heavy Grading and Compaction**

This activity shall consist of scarifying of the existing carriageway/carriageway surface, cutting high spots and moving materials to fill potholes, corrugations and wheel ruts and reshaping of the surface to the specified camber, using either towed or motorized grader. All loose rocks, roots grasses shall be removed and disposed well clear of the drains.

Pegs 300 to 400mm shall be placed at 10 to 20 m intervals to mark edge of the carriageway.

The material shall be bladed toward the center of the carriageway starting from both edges until the specified camber is achieved. Compaction will be carried out as specified in 5.05.

#### **Work Method**

The contractor shall use equipment to carry out this item work.

#### **Quality Control**

- The width of the carriageway shall be checked using tape measure at every 10m with tolerance of + 50mm or -20mm.
- The camber shall be checked using camber board at every 5m with and shall have a tolerance of +/- 1%

**Measurement:**  $\text{m}^2$

The unit of measurement shall be square meters of carriageway graded.

### **Payment**

The unit rate shall be the full compensation for labour equipment and any incidental costs required for carrying out the work.

## **1007 Restoration of Quarries and Borrow pits**

The ground shall be levelled, topsoil hauled back and uniformly spread over the entire exposed/excavation area.

Adequate drainage provisions shall be made to protect excavation areas. Where necessary appropriate protection measures may be taken to avoid erosion of the spread topsoil layer. Grass and trees may be replanted as directed by the Engineer.



## **SECTION 11 – SHOULDERS TO PAVEMENT**

### **1101 GENERAL**

Shoulders shall be constructed in accordance with guidelines given in 1102 and as directed by the Engineer.

For sections where shoulders are extremely low and requires fill material before the shoulder is reconstructed, the construction of fill embankment shall be in accordance with Section 5 of this specification.

### **1102 MATERIAL FOR CONSTRUCTION OF SHOULDERS**

Low shoulder shall be reconstructed by cutting benches, filling and compacting approved fill material to form the formation to the shoulders.

The gravel material shall have a minimum CBR of 25 at 95% MDD (AASHTO T180) and 4 days soak. The gravel shall also be within a Plasticity Index of 15-20.

Shoulder reconstruction shall be same in all sections including the slip roads.

### **1106 MEASUREMENT AND PAYMENT**

Payment for shoulder construction shall be in accordance with the relevant clauses in the bill of quantities.

## **SECTION 12 - NATURAL MATERIAL SUBBASE AND BASE**

### **1201 GENERAL**

Where instructed by the Engineer, the Contractor shall undertake repairs, widening and reprocessing to the existing carriageway and shoulders in accordance with sections 12 and 14 of the Special Specifications.

#### **a) Areas to be scarified and reprocessed**

The contractor will scarify, add new material and reprocess sections as determined by the Engineer.

#### **b) Pavement repairs**

The Contractor will carry out repairs to base and subbase as directed by the Engineer and according to Specifications given in Sections 12 and 14 of the Standard Specifications.

#### **c) Pavement widening**

The Contractor shall, as directed by the Engineer, bench and compact the subgrade to 100% MDD (AASHTO T99), provide lay and compact material for subbase and base as directed by the Engineer and in accordance with Sections 5 and 12 of the Standard Specifications.

### **1203 MATERIAL REQUIREMENTS**

Natural materials for base and subbase shall conform to the specifications given in Section 12 of the Standard Specifications for Road and Bridge Construction for cement and lime improved base and subbase.

### **1209 MEASUREMENT AND PAYMENT**

Natural material for subbase and base shall be measured by the cubic metre placed and compacted upon the road calculated as the product of the compacted sectional area laid and the length.

## **1210            HAND PACKED STONE**

Hand packed stone base is a layer of hand laid stone of defined size and durable in nature, laid in a manner such that when proof rolled and compacted it forms a stable and dense matrix as a road base.

### **a) Material for Hand Packed Stone Base**

This shall consist of durable stone with nominal base dimensions of 75 mm square and minimum height of 150 mm or when compacted to give a layer of 150 mm. The stone shall be class C with the following requirements:

**LAA            45 max**

**ACV            32 max**

**SSS            12 max**

**FI              30 max**

**CR              60 min.**

It shall be free from foreign matter. The fines passing 0.425 mm sieve shall be **NONPLASTIC**

### **b) Laying**

The stone shall be laid by hand closely together. The stone shall be carefully bedded and tightly wedged with suitable spalls. The base of the stone shall alternate with the apex in all directions or as directed by the Engineer. The layer shall be proof rolled with a loaded scrapper or truck with a minimum axle load of 8 tonnes in the presence of the Engineer who shall approve of its stability before compaction.

### **c) Compaction**

This shall be by a steel wheeled roller of at least five tonnes per metre width of roll. It shall consist of four static runs or until there is no movement under the roller. There shall follow vibratory compaction until an average dry density of 85% minimum of specific gravity of stone has been achieved. No result shall be below 82% of specific

gravity. The surface of the compacted layer shall then be levelled by quarry dust (0/6 mm). The dust shall have the following specifications:

The stone shall be class C

## Grading

Sieve Size	% Passing
10	100
6.3	90-100
4	75-95
2	50-70
1	33-50
0.425	20-33
0.300	16-28
0.150	10-20
0.075	6-12

The dust shall be free from foreign matter and fines passing 0.425 mm sieve shall be **NON-PLASTIC**. The maximum layer shall be 40 mm or as directed by the Engineer

### d) Measurement and Payment

Payment shall be by the cubic metre laid ( $m^3$ ). Measurement of volume shall be determined as the product of length and compacted thickness laid. The rate quoted for this item should include the cost for laying the levelling quarry dust layer, as no extra payment shall be made for this layer.

**2.5.1 General**

The existing surfacing and the base shall be reprocessed with additional material and the composite mixture shall be compacted to form the subbase layer.

Before commencement of the work the Contractor shall propose plants and equipment he proposes to use for this activity.

The Contractor after approval of his proposal shall carry out test section in accordance with Section 3 of the Standard Specifications.

- 2.5.2 The existing surfacing and base course shall be broken up to specified depth and reprocessed in place, where required. The underlying layers shall not be damaged, and material from one layer may normally not be mixed with that of another layer. Where unauthorized mixing occurs or where the material is contaminated in any way by the actions of the Contractor, and the contaminated material does not meet the specified requirements of for the particular layer, he shall remove such material and replace it with other approved material, all at his own expense.
- 2.5.3 Any mixture composition of the new layer must not contain more than 30% of the bituminous material by volume. The mixture must not contain pieces of bound bituminous material larger than 37.5mm, and any such material shall be removed at the Contractor's cost.
- 2.5.4 The requirements for imported material used in the respective pavement layers shall comply with the limitations, norms, sizes and strengths specified in the Standard Specifications clause 1203(b) and (d) and shall be worked as per Section 14 of the Standard Specification.
- 2.5.5 Material reworked in-situ or that obtained from existing pavement is not expected to comply with the material requirements but the reworking should achieve the specified requirements.
- 2.5.6 Where the thickness of any existing pavement layer requires to be supplemented within reprocessing and the thickness of the additional material after compaction will be less than 100mm, the existing layer shall be scarified to a depth that will give a layer

thickness of at least 100mm after compacting the loosened existing and the additional material.

### **Controlling the Reworked Depth**

The Contractor shall submit a proven method to method to control the depth of excavation, or layer to be reworked, to the Engineer for approval. The Engineer may order a trial section to be reprocessed before any major length of the road is rehabilitated.

### **Excavations**

Excavations in the pavement shall be kept dry. In the event of water penetrating the underlying layers, construction of the consecutive 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 when excavating, both longitudinally (if appropriate) and perpendicular to the direction of travel. The step width shall be 500mm perpendicular to the direction of travel, and 150mm long longitudinally, unless otherwise instructed by the Engineer.

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

### **Measurement and Payment**

(a) Item: In-situ reprocessing of existing pavement layers as subbase compacted to specified density (95% MDD AASHTO T180) and thickness.

Unit: M<sup>3</sup>

The tendered rate shall include full compensation for breaking up the existing pavement layer to specified depth, breaking down and preparing the material and the spreading and mixing in of any additional material

(b) Item: The addition of extra gravel to subbase.

Unit: M<sup>3</sup>

The tendered rate shall include full compensation for procuring and addition of the material to the in-situ scarified layers and the transportation of the material over unlimited free-haul distance. The tendered rates will also include full compensation for prospecting for materials and any payments necessary to acquire the specified quality material.

- (c) Excavation of existing bituminous pavement materials including unlimited free-haul.

Unit: M<sup>3</sup>

The tendered rates shall include full compensation for excavating the existing bituminous material from the pavement layers and for loading, transporting the material for unlimited free-haul, off-loading and disposing of the materials as specified.

- (d) Excavation of the existing pavement

Unit: M<sup>3</sup>

The tendered rate shall include full compensation for excavating the existing material from the pavement layers and for loading, transporting the material for unlimited free-haul distance, off-loading and disposing of the material as specified.

Payment will only be made for breaking up and excavating existing pavement layers to the specified depth if the material is to be removed to spoil.

## **SECTION 13: GRADED CRUSHED STONE SUBBASE AND BASE**

### **1302 SOURCES OF MATERIAL.**

The contractor shall be responsible for locating and developing suitable sources of material for graded crushed stone. Such sources shall be termed quarries and the opening up of quarries and the construction and maintenance of access roads shall be carried out in accordance with section 6 of this specification.

### **1303 MATERIAL REQUIREMENTS.**

The material shall comply with the following requirements:-

- a) It shall consist of crushed stone, free from clay, organic or other deleterious matter.
- b) It shall comply with the following physical requirements:-
  - i) Stone Classes A, B and C.

Stone Class	BASE			SUBBASE		
	A	B	C	A	B	C
LAA	30	40	45	40	45	50
Max.	25	30	32	30	32	35
ACV	12	12	12	20	20	20
Max.	25	30	30	35	35	35
SSS Max.	100	80	60	30	30	-
FI Max.						
CR Min.						

ii) Stone Class D

#### BASE

min 80% CBR at 95% MDD (AASHTO T180) and 4 days soak

Los Angeles Abrasion

max 50%

Aggregate Crushing Value

max 35%

Plasticity Index

max 15%

#### SUBBASE

The plasticity of the material will be specified in the special specification.

min 30% CBR at 95% MDD (AASHTO T180) and 4 days soak

- c) It shall comply with the following gradings:
  - i) Stone Classes A, B and C



The grading of the material, after processing, placing and compaction in the pavement shall be a smooth curve within, and approximately parallel to, one of the following envelopes. The class and normal size shall be specified in the special specification:

Sieve size (mm)	Percentage by weight passing			
	BASE		SUBBASE	
	0/30	0/40	0/40	0/60
75	-	-	-	100
63	-	-	-	95 - 100
50	-	100	100	85 - 100
37.5	100	900 - 100	90 - 100	75 - 95
28	90 - 100	75 - 95	75 - 95	60 - 87
20	65 - 95	60 - 90	60 - 90	50 - 80
10	40 - 70	40 - 75	35 - 75	30 - 67
6.3	30 - 55	30 - 63	25 - 63	23 - 58
2	20 - 40	20 - 45	15 - 45	13 - 40
1	15 - 32		8 - 35	7 - 32
0.425	10 - 24	15 - 31	4 - 23	4 - 20
0.075	4 - 10	5 - 15	0 - 12	0 - 10

Cleanliness and plasticity: Material passing the 0.425 mm sieve shall be non-plastic.

ii) Stone Class D

Base

Sieve (mm)	% by weight passing
50	100
37.5	90 – 100
28	80 – 100
20	60 – 100
10	35 – 90
5	20 – 75
2	12 – 50
1	10 – 40
0.425	7 – 33
0.075	4 - 20

Subbase

Maximum particle size to be 2/3 layer thickness or 80mm whichever is the lesser.

Uniformity coefficient min 5

- d) The grading and physical requirements of the material for use in treated material in accordance with section 14 of this specification shall be specified in the special specification.

#### 1304 CRUSHING, SCREENING AND MIXING.

Unless otherwise instructed, crushing shall be carried out in at least two stages. The crushing, screening and proportioning of materials and their subsequent mixing shall be carried out using such methods and machines as shall be acceptable to the Engineer. To avoid segregation, graded crushed stone shall be moistened when being handled and shall not be stockpiled in heaps higher than 5 m.

Should the contractor wish to add material from another source in order to achieve the specified grading, the following conditions shall apply:-

- i) The contractor shall be responsible for all costs associated with the provision and mixing in of the material, including land acquisition.
- ii) The material shall be non-plastic and consist of 90 – 100% quartz or other approved hard, sharp durable particles and shall be free from organic materials, clays and other deleterious substances.

#### **STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION**

- iii) Only material passing the 6.3mm sieve may be added. The percentage to be added shall be agreed with the Engineer and in any case shall not exceed 15% by weight of the mixture.
- iv) The minimum crushing ratios specified in clause 1303 of this specification shall be maintained.

#### **1305 TRANSPORTING GRADED CRUSHED STONE.**

Graded crushed stone shall be transported damp and in such a way that no segregation occurs.

#### **1306 LAYING AND COMPACTING GRADED CRUSHED SUBBASE AND BASE.**

The contractor shall take appropriate measures to prevent segregation during dumping and spreading operations.

The graded crushed stone shall be laid by plant capable of distributing the graded crushed stone in a layer of uniform thickness and without segregation.

The compacted thickness of any layer laid, processed and compacted at one time shall not exceed 200mm, and where a greater thickness is required, the graded crushed stone shall be laid in two or more layers.

The compacted thickness of any base layer shall not be less than 3 times the maximum size of the graded crushed stone and the compacted thickness of any subbase layer shall not be less than 2 times the maximum size of the graded crushed stone.

As soon as possible after laying, compaction shall be carried out. The moisture content shall be adjusted as necessary and, during compaction, care shall be taken to maintain the moisture content evenly at the required value. Unless otherwise instructed by the Engineer, the moisture content at the time of compaction shall be between 80 and 100% of the optimum moisture content as determined by the vibrating hammer method in BS 1377 – test 14. the appropriate sections of clause 1204 of this specification shall apply.



No overhaul will be paid.

## **SECTION 14: CEMENT TREATED MATERIALS**

### **1401. Cement Treatment**

Cement for stabilization will be CEM 1 Portland cement conforming to KS 1262. The cement content of the stabilized material shall be as indicated by the Engineer and will normally be about 1.5-4%. The Engineer shall exercise his discretion to any variation in the rate of application of the cement, which he may see fit, to order from time to time.

#### **Moisture Content**

The moisture content of the stabilized material shall be as directed by the Engineer but nevertheless within the range of 85% to 100% of the optimum Moisture Content (AASHTO T.180)

#### **Mixing and Placing**

The material to be stabilized and the cement shall be mixed by an approved mixing plant, which will either be a mix-in-place pulvimixer or a stationary mixing plant for material to be used for pavement reconstruction, widening and shoulders.

### **1403. Lime Improvement**

Lime improvement shall be carried out in accordance with Section 14 of the Standard Specification.

### **1409. Protection & Curing**

Protection and curing shall be carried out in accordance with the provisions of Clause 1409(i) of the Standard Specification but provision shall be made to wet the surface from time to time as directed by the Engineer.

## **1410. Traffic**

The requirements of clause 1410 of the Standard Specification will not apply to improved natural material utilized for patching and repair works but will apply in case reprocessing of reconstruction and widening of the existing base and shoulders.

## **SECTION 15 - BITUMINOUS SURFACE TREATMENTS**

### **1501B PREPARATION OF SURFACE**

In addition to requirements of Clause 1503B of the Standard Specifications, the contractor shall prepare and Repair Cracks, Edges, Potholes and Other Failures as follows: -

#### **a) Cracks 3.0mm or less in width**

The entire crack area shall be cleaned by brushing with a wire brush and then blowing with a compressed air jet and the crack sealed with 80/100 cutback bitumen using a pouring pot or pressure lance and hand squeegee. The surface shall then be dusted with sand or crushed dust.

#### **b) Cracks greater than 3.0mm in width**

Before these cracks are filled a steel wire brush or router shall be used to clean them and then a compressed air jet shall be used to clean and remove any foreign or loose material in the crack until the entire crack area is clean.

When the crack and surrounding area have been thoroughly cleaned, dry sand shall be forced into the crack until it is sealed in the manner specified for cracks less than 3.0mm width.

**c) Potholes, edges and other repair areas**

Where instructed, the Contractor shall prepare areas for the repair of potholes, road edges and other repair areas by excavating off unsuitable or failed material and debris, trimming off excavated edges, cleaning and compacting the resulting surfaces and applying MC 30 or MC 70 cut-back bitumen prime coat at a rate of 0.8-1.2 litres/m<sup>2</sup>, all as directed by the Engineer. Measurement and payment shall be made under the relevant item of Bill No 15. Where the surface repair on potholes and edges are to be carried out, Asphalt Concrete Type I (0/14 gradation) shall be used. Bituminous material for repair of failures and other repair areas shall be paid for under the relevant item of Bill No 16

## **PART B - PRIME COAT**

### **1502B MATERIALS FOR PRIME COAT AND TACK COAT.**

For prime coat, the binder shall be a medium-curing cutback MC 30 unless otherwise directed by the Engineer.

The rate of spray of bituminous prime coat refers to the gross volume of the cutback bitumen, that is to say the volume of the bitumen plus dilatants.

Prime coat shall be applied to gravel areas that are to receive bituminous mixes as directed by the Engineer.

The tack coat shall consist of bitumen emulsion KI-60 unless otherwise directed by the Engineer.

The rates of spray of the binder shall be as instructed by the Engineer and shall generally be within the range 0.8-1.2 litres/square metre.

### **1502C MATERIALS FOR SURFACE DRESSING**

Material for surface dressing will be pre-coated chipping class 1 and grading shall be 10/14 on Carriageway and Shoulders. The bituminous binder used for precoating chippings shall be MC-30 and the bituminous binder for surface dressing shall be 80/100 pen grade bitumen as specified below.

#### **Surface Dressing**

Requirements of Section '15 Part C-Surface Dressing' of Standard Specification shall be met.

#### **Binder**

The binder shall be 80/100 penetration grade bitumen modified with 3% Styrene Butadiene Styrene (SBS) based elastomeric polymer (elastomer Modified bitumen). The Contractor shall be required to provide the manufacturer's Certificate/specifications with regards to application of the binder for approval by the Engineer.

The TG1 Specifications as outlined in the Technical Guideline for use of Modified Binders in Road Construction. (Asphalt Academy, Pretoria, South Africa) should be adopted.

### **Chippings**

The chippings for surface dressing shall be class 1 chippings as specified in the standard specifications for road and bridge constructions.

The grading of the chippings shall meet the requirements nominal size 6/10 as specified in the standard specifications for road and bridge constructions.

### **Rate of application of Binder and Chippings**

The rate of spray of binder and the rate of spread of chippings shall be as instructed by the Engineer after relevant tests on the binder and chippings

### **Pre-Coating of Chippings**

The bituminous binder used for pre-coated chippings shall be a medium curing cut-back MC-30.

## **1511C MEASUREMENT AND PAYMENT**

### **(a) Seal coat**

Seal coats shall be measured by the litre, for each type of bituminous binder for each seal coat, calculated as the product of the area in square metres sprayed and the rate of application in litres/square metres, corrected to 15.6 ° C

## **SECTION 16 - BITUMINOUS MIX BASES, BINDER COURSES AND WEARING COURSES**

This section covers different types of bituminous mixes for base and surface (wearing and binder courses) and is divided into the following parts: -

Part A            General

Part B            Superpave Asphalt Concrete for Carriageway, Shoulders and NMT.



Part C            Superpave DBM for carriageway.

## **PART A – GENERAL**

### **1601A            SCOPE OF PART A**

Part A comprises all the general requirements for bituminous mixes, which apply to Part B as well.

### **1602A            REQUIREMENTS FROM OTHER SECTIONS**

The following sections of this Specification apply to Part B of this section and shall be read in conjunction therewith: -

Section 2	Materials and Testing of Materials
Section 3	Setting Out and Tolerances
Section 6	Quarries, Borrow Pits, Stockpile and Spoil Areas
Section 15	Bituminous Surface Treatments and Surface Dressing

### **1603A            CONSTRUCTION PLANT**

#### **(a)            General**

The Contractor shall submit to the Engineer in accordance with Section 1 of its Specification, full details of the construction plant he proposes to use and the procedures he proposes to adopt for carrying out the permanent Works.

The Engineer shall have access at all times to construction plant for the purposes of inspection. The Contractor shall carry out regular calibration checks in the presence of the Engineer and shall correct forthwith any faults that are found.

All construction plant used in the mixing, laying and compacting of bituminous mixes shall be of adequate rated capacity, in good working condition, and shall be acceptable to the Engineer. Obsolete or worn-out plant will not be allowed on the work.

(b) **Mixing Plant**

Bituminous materials shall be mixed in a plant complying with ASTM Designation D995 and shall be located on the Site unless otherwise agreed by the Engineer. It shall be equipped with at least three bins for the storage of heated aggregates and a separate bin for filler. All bins shall be covered to prevent the ingress of moisture.

The plant may be either the batch-mix type or the continuous-mix type and shall be capable of regulating the composition of the mixture to within the tolerances specified in Clause 1614A of this Specification.

The bitumen tank shall be capable of maintaining its contents at the specified temperature within a tolerance of 5<sup>0</sup>C and a fixed thermometer easily read from outside the tank. Any bitumen that has been heated above 180<sup>0</sup>C or has suffered carbonisation from prolonged heating shall be removed from the plant and disposed of.

(c) **Laying Plant**

Bituminous materials shall be laid by a self-propelled spreader finisher equipped with a hopper, delivery augers and a heated adjustable vibrating screed. It shall be capable of laying bituminous materials with no segregation, dragging, burning or other defects and within the specified level and surface regularity tolerance. Delivery augers shall terminate not more than 200mm from the edge plates.

(d) **Compaction Plant**

The Contractor shall provide sufficient rollers of adequate size and weight to achieve the specified compaction. Prior to commencing the laying of bituminous mixes in the permanent Works the Contractor shall carry out site trials in accordance with

Section 2 of this Specification to demonstrate the adequacy of his plant and to determine the optimum method of use and sequence of operation of the rollers.

It is important to achieve as high a density as possible at the time of construction and it is expected that vibrating rollers will be required to produce the best results. However, it is essential that thorough pre-construction trials are carried out to ensure that: -

- (a) The roller is set up to have the optimum amplitude and frequency of vibration for the particular material being laid
- (b) That the roller does not cause breakdown of the aggregate particles.
- (c) That the optimum compaction temperatures are established which allow compaction without causing ripple effects or other distortions of the surfacing.

#### **1604A PREPARATION OF SURFACE**

Immediately before placing the bituminous mix in the pavement, the existing surface shall be cleaned of all material and foreign matter with mechanical brooms or by other approved methods. The debris shall be deposited well clear of the surface to be covered.

Any defect of the surface shall be made good and no bituminous mix shall be laid until the Engineer has approved the surface.

A tack coat shall be applied in accordance with Section 15 of this Specification. If the Engineer considers a tack coat is required prior to laying the bituminous mix or between layers of the bituminous mix, due solely to the Contractor's method of working, then such tack coat shall be at the Contractor's expense.

#### **1605A DESIGN AND WORKING MIXES**

At least two months prior to commencing work using a bituminous mix, the Contractor shall, having demonstrated that he can produce aggregates meeting the grading requirements of the Specification, submit samples of each constituent of the mix to the Engineer. The contractor in the presence of the Engineer will then carry out laboratory tests in order to decide upon the proportion of each constituent of the initial design mix or mixes to be used for site trials to be carried out in accordance with Clause 1606A of this Specification.

Should the Engineer conclude from the site trials that the mix proportion or aggregate grading are to be changed, the Contractor shall submit further samples of the constituents and carry out further site trials all as directed by the Engineer.

The Engineer may instruct the alteration of the composition of the -75-micron fraction of the aggregates by the addition or substitution of mineral filler. The Engineer may also instruct the alteration of all or part of the -6.3mm fraction of the aggregates by the addition or substitution of natural sand.

The Contractor shall make the necessary adjustments to his plant to enable the revised mix to be produced.

Following laboratory and site trials the contractor jointly with the Engineer will determine the proportions of the working mix and the Contractor shall maintain this composition within the tolerances given in Clause 1614A.

Should any changes occur in the nature or source of the constituent materials, the Contractor shall advise the Engineer accordingly? The procedure set out above shall be followed in establishing the new mix design.

#### **1606A            SITE TRIALS**

Full scale laying and compaction site trials shall be carried out by the Contractor on all asphalt pavement materials proposed for the Works using the construction plant and methods proposed by the Contractor for constructing the Works. The trials shall be carried out with the agreement, and in the presence of the Engineer, at a location approved by the Engineer.

The trials shall be carried out to: -

- a) Test materials, designed in the laboratory, so that a workable mix that 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.

Each trial area shall be at least 100 metres long and to the full construction width and depth for the material. It may form part of the Works provided it complies with this Specification. Any areas that do not comply with this Specification shall be removed.

The Contractor shall allow in his programme for conducting site trials and for carrying out the appropriate tests on them. The trial on any pavement layer shall be undertaken at least 21 days ahead of the Contractor proposing to commence full-scale work on that layer.

The Contractor shall compact each section of trial over the range of compactive effort the Contractor is proposing and the following data shall be recorded for each level of compactive effort at each site trial: -

- i. The composition and grading of the material including the bitumen content and type and grade of bitumen used.
- ii. The moisture content of aggregate in the asphalt plant hot bins.
- iii. The temperature of the bitumen and aggregate immediately prior to entering the mixer, the temperature of the mix on discharge from the mixer and the temperature of the mix on commencement of laying, on commencement of compaction and on completion of compaction. The temperature of the mixture is to be measured in accordance with BS 598, Part 3, Appendix A.
- iv. The type, size, mass, width of roll, number of wheels, wheel load, tyre pressures, frequency of vibration and the number of passes of the compaction equipment, as appropriate for the type of roller.
- v. The target voids and other target properties of the mix together with the results of the laboratory tests on the mix.
- vi. The density and voids achieved.
- vii. The compacted thickness of the layer.
- viii. Any other relevant information as directed by the Engineer.

At least eight sets of tests shall be made by the Contractor and the Engineer on each 100 metres of trial for each level of compactive effort and provided all eight sets of results over

the range of compactive effort proposed by the Contractor meet the specified requirements for the material then the site trial shall be deemed successful. The above data recorded in the trial shall become the agreed basis on which the particular material shall be provided and processed to achieve the specified requirements.

#### **1607A            MIXING OF AGGREGATES AND BITUMEN**

The bitumen shall be heated so that it can be distributed uniformly and care shall be taken not to overheat it. The temperature shall never exceed 170<sup>0</sup> C for 60/70-penetration grade bitumen.

The aggregates shall be dried and heated so that they are mixed at the following temperatures: -

125-165<sup>0</sup>C when 60/70 bitumen is used

The dried aggregates shall be combined in the mixer in the amount of each fraction instructed by the Engineer and the bitumen shall then be introduced into the mixer in the amount specified. The materials shall then be mixed until a complete and uniform coating of the aggregate is obtained.

The mixing time shall be the shortest required to obtain a uniform mix and thorough coating. The wet mixing time shall be determined by the Contractor and agreed by the Engineer for each plant and for each type of aggregate used. It shall normally not exceed 60 seconds.

#### **1608A            TRANSPORTING THE MIXTURE**

The bituminous mix shall be kept free of contamination and segregation during transportation. Each load shall be covered with canvas or similar covering to protect it from the weather and dust.

## **1609A            LAYING THE MIXTURE**

Immediately after the surface has been prepared and approved, the mixture shall be spread to line and level by the laying plant without segregation and dragging.

The mixture shall be placed in widths of one traffic lane at a time, unless otherwise agreed by the Engineer. The compacted thickness of any layer shall be at least 2.5 times the maximum size of the aggregate for wearing course and at least 2 times for binder course. The minimum thickness shall be 25mm.

Only on areas where irregularities or unavoidable obstacles make the use of mechanical laying impracticable, may the mixture be spread and compacted by hand.

## **1610A            COMPACTION**

Immediately after the bituminous mixture has been spread, it shall be thoroughly and uniformly compacted by rolling.

The layer shall be rolled when the mixture is in such a condition that rolling does not cause undue displacement or shoving.

The number, weight and type of rollers furnished shall be sufficient to obtain the required compaction while the mixture is in a workable condition. The sequence of rolling operations shall be as agreed with the Engineer and proved during site trials. Initial rolling with steel tandem or three-wheeled roller shall follow the laying plant as closely as possible. The rollers shall be operated with the drive roll nearest the laying plant, at a slow and uniform speed (not exceeding 5 Km/Hr).

Rolling shall normally commence from the outer edge and proceed longitudinally parallel to the centreline, each trip overlapping one half of the roller width. On super elevated curves, rolling shall begin at the low side and progress to the high side. Where laying is carried out in lanes care must be taken to prevent water entrapment.

Intermediate rolling with a pneumatic-tyred or vibratory roller shall follow immediately. Final rolling with a steel-wheeled roller shall be used to eliminate marks from previous rolling.

To prevent adhesion of the mixture to the rollers, the wheels shall be kept lightly moistened with water.

In areas too small for the roller, a vibrating plate compactor or a hand tamper shall be used to achieve the specified compaction.

## **1611A FINISHING, JOINTS AND EDGES**

Any mixture that becomes loose and broken, mixed with dirt or foreign matter or is in any way defective, shall be removed and replaced with fresh hot mixture, which shall be compacted to conform to the surrounding area.

Spreading of the mixture shall be as continuous as possible. Transverse joints shall be formed by cutting neatly in a straight line across the previous run to expose the full depth of the course. The vertical face so formed shall be painted lightly with hot 60/70 penetration grade bitumen just before the additional mixture is placed against it.

Longitudinal joints shall be rolled directly behind the paving operation. The first lane shall be placed true to line and level and have an approximately vertical face. The mixture placed in the abutting lane shall then be tightly crowded against the face of the previously placed lane. The paver shall be positioned to spread material overlapping the joint face by 20-30mm. Before rolling, the excess mixture shall be raked off and discarded.

When the abutting lane is not placed in the same day, or the joint is destroyed by traffic, the edge of the lane shall be cut back as necessary, trimmed to line and painted lightly with hot 60/70 penetration grade bitumen just before the abutting lane is placed.

Any fresh mixture spread accidentally on the existing work at a joint shall be carefully removed by brooming it back on to uncompacted work, so as to avoid formation of irregularities at the joint. The finish at joints shall comply with the surface requirements and shall present the same uniformity of finish, texture and density as other sections of the work.

The edges of the course shall be rolled concurrently with or immediately after the longitudinal joint. In rolling the edges, roller wheels shall extend 50 to 100mm beyond the edge.



## **1612A            SAMPLING AND TESTING OF BITUMINOUS MIXTURES**

The sampling of bituminous mixtures shall be carried out in accordance with AASHTO T168 (ASTM Designation D979).

## **1613A            QUALITY CONTROL TESTING**

During mixing and laying of bituminous mixtures, control tests on the constituents and on the mixed material shall be carried out in accordance with Clause 1612A and Section 2 of this Specification.

If the results of any tests show that any of the constituent materials fail to comply with this Specification, the Contractor shall carry out whatever changes may be necessary to the materials or the source of supply to ensure compliance.

If the results of more than one test in ten on the mixed material show that the material fails to comply with this Specification, laying shall forthwith cease until the reason for the failure has been found and corrected. The Contractor shall remove any faulty material laid and replace it with material complying with this Specification all at his own expense.

## **1614A            TOLERANCES**

Surfacing courses and base shall be constructed within the geometric tolerances specified in Section 3 of this Specification.

The Contractor shall maintain the composition of the mixture as determined from the laboratory and site trials within the following tolerances, per single test: -

Bitumen Content	0.3% (by total weight of total mix)
Passing 10mm sieve and larger sieves	6% (by total weight of dry aggregate including mineral filler)

Passing sieves between 10mm and 1.0mm sieves	4% (by total weight of dry aggregate including mineral filler)
Passing sieves between 1.0mm and 0.075mm sieve	3% (by total weight of dry aggregate including mineral filler)
Passing 0.075mm sieve	2% (by total weight of dry aggregate Including mineral filler)

The average amount of bitumen in any length of any layer, calculated as the product of the bitumen contents obtained from single tests and the weight of mixture represented by each test, shall not be less than the amount ordered.

The average amount of bitumen for each day's production calculated from the checked weights of mixes shall not be less than the amount ordered.

The average amount of bitumen in any length of any layer, calculated as the product of the bitumen contents obtained from single tests and the weight of mixture represented by each test, shall not be less than the amount ordered.

The average amount of bitumen for each day's production calculated from the checked weights of mixes shall not be less than the amount ordered.

The final average overall width of the upper surface of a bituminous mix layer measured at six equidistant points over a length of 100m shall be at least equal to the width specified. At no point shall the distance between the centreline of the road and the edge of the upper surface of a bituminous mix layer be narrower than that specified by more than 13mm.

## **1615A MEASUREMENT AND PAYMENT**

No separate measurement and payment shall be made for complying with the requirements of Clauses 1601A to 1614A inclusive and the Contractor shall be deemed to have allowed in his rates in Parts B and C of Section 16 of this Specification for the costs of complying with the requirements of Part A of Section 16 of this Specification

## **PART B: ASPHALT CONCRETE FOR SURFACING - SUPERPAVE**

### **1601B INTRODUCTION**

Some modifications, to the Standard Specification, which takes into account aspects of the Super Pave Mix Design methods, have been made. This shall be in accordance with the procedures presented in Overseas Road Note 19, ‘‘A guide to the design of hot mix asphalt in tropical and subtropical countries’’ and detailed in the current manuals produced by the Asphalt Institute. The contractor shall be deemed to possess a copy of these publications and shall provide at least two copies of each on site, one for the Engineer and the other for the Contractor.

### **1602B MATERIALS FOR ASPHALT CONCRETE**

#### **(a) Penetration grade bitumen**

Bitumen shall be 60/70 penetration grade, and shall meet the requirements of Table 4.3 in ORN 19 as summarised below:

### Minimum requirements for penetration grade bitumen (ORN19 Table 4.3)

				<i>Test method (ASTM)</i>	<i>Penetration grade</i>		
				40/50	60/70	80/100	
<i>Test</i>							
Based on original bitumen							
Penetration at 25 <sup>0</sup> C				D 5	40-50	60-70	80-100
Softening point (°C)				D 36	49-59	46-56	42-51
Flash point (°C)	Min			D 92	232	232	219
Solubility in trichloroethylene (%)	Min			D 2042	99	99	99
TFOT heating for 5h at 163 °C				D1754			
a. Loss by mass (%)	Max	-			0.5	0.5	0.8
b. Penetration (% of original)	Min			D 5	58	54	50
c. Ductility at 25°C	Min			D 113	-	50	75

### (b) Aggregate

(i) In the standard specification rename Table 16B-1 as 16B-1(a)

Add the following:

The coarse aggregate shall be entirely crushed rock, from a source known to give high values of stability (> 9kN) in the Marshall test. Aggregate shall be Class 'a' meeting the requirements given in Table 16B-1b below.

**Table 16B-1b: Requirements for coarse aggregate**

Property	Test	Property
Cleanliness	Sand equivalent: <sup>1</sup> for <4.75 mm fraction (Material passing 0.425 sieve)	>40
	Plasticity Index <sup>2</sup>	<4
	Linear Shrinkage	<2
Particle shape	Flakiness Index (FI) <sup>3</sup>	<25
Strength	Aggregate Crushing Value (ACV) <sup>4</sup>	<25
	Aggregate Impact Value (AIV) <sup>4</sup>	<25
	10%FACT (dry) kN <sup>4</sup>	>160
	Los Angeles Abrasion (LAA) <sup>5</sup>	<30
Abrasion	Aggregate Abrasion Value <sup>4</sup>	<12
Soundness <sup>7</sup> (5 cycles, % loss)	Sodium Sulphate Soundness (SSS):	
	Coarse aggregate	<10
	Fine aggregate	<16
	Magnesium Sulphate Soundness (MSS):	
	Coarse aggregate	<15
	Fine aggregate	<20
Polishing	Polished Stone Value	>60
Water absorption	Water Absorption <sup>6</sup>	<2
Bitumen affinity	Immersion Mechanical test: index of retained Marshall stability <sup>8</sup>	>75
	Static Immersion Test <sup>9</sup>	>95% coating retained
	Retained Indirect Tensile strength <sup>10</sup>	>79% (at 7% VIM)

1 AASHTO T176

2 British Standard 1377: Part 2

3 British Standard 812: Part 105

4 British Standard 812: Parts 110 to 114

5 ASTM C131 and C535

6 British Standard 812: Part 2

7 AASHTO T104

8 D White oak (1990) (Shell Bitumen Handbook)

9 AASHTO T182

10 AASHTO T283

Unless otherwise instructed by the Engineer aggregates shall satisfy the following Super pave aggregate consensus properties which requirements are presented in Table 16B-1(c):

- Coarse Aggregate Angularity (CAA) – ASTM D 5821
- Fine Aggregate Angularity (FAA) – AASHTO T 304
- Flat and elongated particles – ASTM D 4791
- Sand equivalent – AASHTO T 176

**Table 16B-1(c) Super pave aggregate consensus property requirements**

Cumulative Equivalent Standard Axles (CESA) <sup>1</sup> in Million	Fractured faces,  Coarse Aggregate,  Percent Minimum		Uncompacted Content of Aggregate,  Percent Minimum		Sand Equivalent,  Percent Minimum	Flat and Elongated <sup>3</sup> ,  Percent Maximum
	Depth from surface		Depth from surface			
	≤100mm	>100mm	≤100mm	>100mm		
≥ 30	100/100	100/100	45	45	50	10

<sup>1</sup>The anticipated project traffic level expected over a 20-year design period

<sup>2</sup>85/80 denotes that 85 percent of the coarse aggregate has one fractured face and 80 percent has two or more fractured faces

<sup>3</sup>Criterion based upon a 5:1 maximum to minimum ratio

## 1603B GRADING REQUIREMENTS

The grading mixture of coarse and fine aggregate shall meet the requirements given in Table 16B-1(d) for a 19mm and 12.5mm nominal maximum size aggregate.

**A gradation of 19mm and 12.5mm nominal maximum size aggregate shall be used for the works**

### Table 16B-1(d) Superpave aggregate grading control point

*Note (1) - The definition of Nominal Maximum Size of aggregate is one sieve larger than the first sieve to retain more than ten per cent of the aggregate. It is also recommended that where possible the largest particle size should not be more than 25 mm so that the requirements of the Marshall test can be complied with.*

## 1604B REQUIREMENTS FOR ASPHALT CONCRETE

The mix design should be carried out using the Super pave test procedures.

### Super pave – Carriageway, shoulders, and NMT

The mix design, when compacted in accordance with AASHTO T 312 (Preparing and determining the density of Hot Mix Asphalt (HMA) specimens by means of the Super pave gyratory compactor) shall meet the relative density, voids in the mineral aggregate (VMA), Voids filled with Asphalt (VFA) and dust to binder ratio requirements specified in Table 16-B2(b).

The initial, design and maximum number of gyrations are specified in AASHTO R 35, Super pave volumetric design for Hot Mix Asphalt (HMA).

Nominal Maximum Size (mm)  (Note 1 below)	Sieve size  (mm)	Control point  (%passing)	
		Minimum	Maximum
19.0	25	100	-
	19	90	100
	12.5	-	90
	2.36	23	49
	0.075	2	8

Cumulative Equivalent Standard Axles (CESA) <sup>1</sup> in Million	Required Percent maximum	Relative Density, of theoretical specific gravity	Voids in the Mineral Aggregate (VMA), Percent Minimum	Voids Filled with Asphalt (VFA) Range, Percent	Dust-to-Binder Ratio Range
	N initial	N design	N max	Nominal maximum size Aggregate (mm)	
				19.0	
>10	≤89.0	96.0	≤98.0		65-75
					0.6-1.2

<sup>1</sup>The anticipated project traffic level expected over a 20-year design period

## **1605B MIXING AND LAYING ASPHALT CONCRETE**

Add the following:

The temperature of the bitumen and aggregates when mixed should be determined using both Penetration Index (PI) and softening point of the bitumen on the bitumen tests data chart (BTDC). The temperature of the bitumen and aggregates when mixed shall be 110+/-3°C above the softening point (Ring and Ball) of the bitumen.

Compaction shall commence as soon as the mix can support the roller without undue displacement of material and completed before the temperature of the mix falls below 90°C.

The mixing and placing of asphalt concrete must be carried out only under favorable weather conditions. Mixing and placing of asphalt concrete will not be allowed if the moisture content of aggregate affects the uniformity of temperature, or if free water is present on the working surface. Mixing shall not be allowed to take place more than two hours before placing begins unless provision had been made for storing. Storage of mixed materials will only be permitted in insulated hot mix bins. In any case, storage will not be permitted for a period longer than 12 hours after mixing, unless otherwise approved by the Engineer.

The minimum thickness of the compacted layer shall be 35mm when 12.5mm nominal maximum size aggregate is used (on the road shoulders).

## **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.

## **1607B MEASUREMENT AND PAYMENT**



a) Item : Asphalt Concrete

Unit: m<sup>3</sup> of Asphalt Concrete Used

Asphalt concrete shall be measured by the cubic metre compacted on the road calculated as the product of the length instructed to be laid and the compacted cross-sectional area shown on the Drawings or instructed by the Engineer.

The rate for asphalt concrete shall include for the cost of providing, transporting, laying and compacting the mix with the nominal binder content and complying with the requirements of Parts A and B of Section 16 of this Specification.

## **SECTION 17 - CONCRETE WORKS**

### **1703 MATERIALS FOR CONCRETE**

All material shall comply with the requirements of section 1703 of the standard specification

#### **1703(A) DESIGN OF CONCRETE MIXES**

The following classes of concrete shall be designed in mix proportions approved for use as follows:

- Class 15/20 for all blinding to structures and precast pipe culverts beds and surrounds
- Class 25/20 for all culvert headwalls, wingwalls, aprons and toe walls.

Specification for construction material and quality control shall be in accordance to the Standard Specification.

## **SECTION 20 - ROAD FURNITURE**

### **2001 ROAD RESERVE BOUNDARY POSTS**

Road reserve boundary posts shall be provided as directed by the Engineer and in compliance with Standard Specification clause 2001. They shall be placed at 50m. intervals along the boundary of the road reserve.

### **2003 EDGE MARKER POST**

Edge marker post 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. The signs shall be stored as directed by the Engineer.

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 stored as directed.

### **2005 ROAD MARKING**

Paint for road marking shall be internally reflectorized hot applied thermoplastic material in accordance with Clause 219 of the Standard Specification.

The rates inserted in the Bills of Quantities for road marking shall include for prior application of approved tack coat.

## **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 of the marker is of optical menthlymethacrylic.

### **CONSTRUCTION**

The road studs 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 98.5. m<sup>2</sup>. 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

#### **Colour**

Shall be white, yellow or red as specified and the Retro – reflectance values should conform to the testing procedures of ASTM E 809.

#### **Impact Resistance**

The market shall not crack or break when tested using a 1000-gram weight from a height of 1 metre. (ASTM D 2444) or BS 3900 Part E3.

#### **Resistance to Water Penetration**

Shall not have water penetration behind the lens after submerged in a water bath at 70 ± 5 °C for 10 minutes. And it should still meet the reflectance Requirement. BS 998.

70 + 50

### **Heat Resistance**

Shall comply with the initial brightness as per BS 873 Part IV of 1978

### **Night Visibility**

The marker shall be bright as per BS 873 Part IV of 1978

### **Compression Resistance**

There shall be no cracking sound at a pressure lower than 25 tones as per BS 873 Part IV of 1978.

### **Corrosion Resistance**

After immersing a sample of Road stud in a solution containing 30g/l of sodium chloride for 30 days, there shall not be any signs of corrosion -(BS998).

**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**

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.

Pot life: not less than 20 minutes at 20 °C

Rotational cure time: between 20 and 30 minutes at 20 °C

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 strike 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 10 mm 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**

Contrary to the Standard Specification, guard rails shall be complete with posts and \_swarflex\_ ART 3240 guardrail reflectors every 4m as per drawings and as directed by the Engineer.

## **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 2.0 m.

## **2008 KILOMETRE MARKER POSTS**

Kilometre marker posts shall be provided as directed by the Engineer and in compliance with Standard Specification clause 2008.

## **2009 RUMBLE STRIPS**

Where directed by the Engineer, the Contractor shall provide, place, trim, shape and compact to line and level asphalt concrete rumble strips on the finished shoulders. This shall be done to the satisfaction of the Engineer

## **2010 BOLLARDS**

Where directed by the Engineer, the Contractor shall provide, and install 150mm diameter steel encased bollards. The Bollards shall be concreted 300mm into the ground and 900mm above the ground, they shall be painted and marked with two strips of retro reflective yellow tape around the post. Concrete shall be class 15/20.

## **2011 MEASUREMENT AND PAYMENT**

### **Road reserve boundary posts**

Road reserve boundary posts shall be measured by the number erected

### **Permanent road signs**

Permanent road signs shall be measured by the number of each particular size erected.

### **Road marking**

Road markings in yellow or white material shall be measured in square metres calculated as the plan area painted.

### **Road Studs**

Road studs shall be measured by the number of each particular size erected.

### **Guardrail**

Guardrail shall be measured by the metre as the length of the guardrail constructed.

## **2202 MEASUREMENTS AND PAYMENT**

### **(a) Plant**

Where items of major plant listed in the schedule of Day works are specified by type (e.g., Concrete mixer etc.) the power rating if such items of plant are provided by the Contractor shall not be lower than the power ratings of such plant manufactured within the last two years prior to the date of BID. Any item of major plant employed upon Day works that has a power rating lower than specified above shall be paid for at rates lower than those in the schedule of Day works. The reduction in the rate payable shall be in proportion to the reduction in power rating below that specified above.

## **SECTION 21: MISCELLANEOUSE BRIDGE WORKS**

### **BRANDING OF MAJOR STRUCTURES**

Paint shall be applied only to surfaces which have been prepared and cleaned.

All paint used in the Works shall be subject to the approval of the Engineer.

Surfaces shall be painted with the specified primer paint within four hours of having been blast cleaned. As soon as the first undercoat has dried, a further stripe coat of paint shall be applied by to all edges, corners and crevices. The stripe coat should have the same specification as the undercoat.

All paint shall be supplied from the store to the painters ready for application. Any addition of thinners must be made in the store under the supervision of the Engineer and only as permitted by the manufacturer's data sheet. All the requirements of the manufacturer's data sheet shall be strictly complied with.

Paint shall not be applied under any of the following conditions: -

- (a) When the ambient temperature is less than 4°C.
- (b) When the relative humidity is greater than 90%
- (c) During fog, rain or mist.
- (d) When any moisture is present or likely to condense on the surface.

Each coat of paint shall be free from surface defects. The design for the branding shall be as specified and instructed by the Engineer.

The Contractor shall ensure that the proposed application rates shall enable the specified minimum dry film thickness to be achieved. If the total dry film thickness is less than the specified minimum, an extra finishing coat or coats shall be applied until the specified dry film thickness is obtained.

## **SECTION 23: CONCRETE PAVING BLOCK**

This works shall consist of providing, laying and fixing of concrete paving blocks and concrete paving slabs on a sand base on the driveway and walkways and other areas as directed by the Engineer.

### **a. Concrete Paving Blocks**

The paving blocks shall 80 mm thick precast concrete paving block with 49 N/MM<sup>2</sup> Cube classing strength conforming to BS 6717 PART 1 of 1986 or Kenya bureau of standard equivalent including 50 mm thick sand/quarry dust M2.

The laying shall be broken at intervals of 50 m by concrete ribs of class 25 concrete.

The blocks shall be laid on a 40 mm minimum sand base whose specifications are as in section (b) of this specification.

### **b. Sand for Sand Base**



Sand used as bedding for paving blocks and slabs shall be natural sand either pit or river sand. The grading shall conform and be parallel as much as possible to KS02 – 95 Parts 1 & 2: 1984 for zones 1, 2 or 3. The other requirements shall be as specified in section 1703 (c) of Standard Specifications.

**c. Measurement and Payment**

Payment for paving blocks and paving slabs shall be by square metre laid. The rate quoted would include the cost of haulage to site of the blocks, slabs and sand, as no extra payment shall be made for haulage

# PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD

## SUPERVISION CHECKLIST

### Supervision Check List

Project Name:	<b>PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD</b>	Date	Signatures
1. This checklist 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		

				before	During execution							after	Remarks
Item		Check Point		Date	Date	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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

			date specified in contract document										
		1-2	Works Execution Programme properly reflects the given specifications and site conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		1-3	Execution procedures are in accordance with Works Execution Programme		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2	Equipment holding	2-1	All equipment used are properly mobilized in accordance with Works		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

			Execution Programme										
		2-2	All equipment used is well maintained during the execution of works		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Contractor's in-house staff	3-1	Qualified technical staff of Contractor are properly assigned as specified in Works Execution Programme		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		3-2	Contractor's in-house key staff understand work process and schedule properly		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		3-3											

**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

			Contractor's in-house staff give technical guidance and direction to workers and operators properly and timely		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		3-4	Communications with authority in writing is properly and timely		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Personnel employment	4-1	Workers and operators are deployed in accordance with Works Execution Programme		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		4-2	Wage payment is properly		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

			made on time										
5	Site base facilities	5-1	Office and stockyard are prepared in accordance with Works Execution Programme		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		5-2	Site is well maintained during the work execution and cleared on completion		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		5-3	Material stored on site is properly managed during the work execution		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

6	Quality and quantity management	6-1	Material testing, structural examination, and measurements are properly and Periodically conducted based on specifications and Works Execution Programme		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		6-2	Results of material testing, structural examination and measurements are within the specifications.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		6-3												

**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

			Results of material testing, structural examination, and measurements are properly compiled as reports for confirmation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Work scheduling	7-1	Understanding of critical path and its reflection on scheduling is proper		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		7-2	Actual proceedings are periodically compared to the planned schedule described in		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

			Works Execution Programme										
		7-3	Changes caused by site conditions are properly handled to keep things on schedule		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		7-4	All works are completed within the contract term or within the extended term as allowed									<input type="checkbox"/>	
8	Work safety management	8-1	No accident occurs to workers, operators, or third-parties.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		8-2											

**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

			Safety of workers and operators is considered		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		8-3	Accident prevention efforts for third-parties are proper		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		8-4	Traffic and site safety devices are properly installed and managed		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		8-5	Temporary facilities (e.g., scaffolding) are constantly checked		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Environmental and social	9-1	Environmental and social mitigation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

managem ent		efforts (e.g., against noise, vibration, emission, and dust) are conducted										
	9-2	Waste material from site is properly disposed		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	9-3	Damage to existing roads, works and services is avoided or are repaired when it occurs		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	9-4	No overloading for work-related vehicles is reported		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**PERFORMANCE BASED CONTRACT FOR MAINTENANCE OF NAIROBI-THIKA HIGHWAY (NAIROBI-RUIRU) A2S ROAD**

Filling Example: ✓ Check point is satisfactory      ■ Check point is unsatisfactory      N/A Not applicable
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## **SECTION VII – BILLS OF QUANTITIES**

## BILLS OF QUANTITIES

The tender includes the following Bills of Quantities:

- i) Bills of Quantities for Maintenance Services.
- ii) Bills of Quantities for Rehabilitation/Improvement Works.
- iii) Bills of Quantities for Emergency Works

### A. BOQ SUMMARY

Description	Amount (in figures)
<b>A. TOTALS BROUGHT FORWARD</b>	
a) Maintenance Services in an amount of <i>[amount in words] KSh</i>	
b) Rehabilitation/Improvement Works in an amount of <i>[amount</i>	
<b>B. SUB-TOTAL = (a) + (b)</b>	
c) Emergency Works in an amount of <i>[Ksh. Five Million]</i>	5,000,000.00
<b>C. TOTAL = B + (c)</b>	
<b>D. Add 16% VAT</b>	
<b>E. GRAND TOTAL = C + D (Carried to the Form of Tender)</b>	

## **B. BILLS OF QUANTITIES FOR MAINTENANCE SERVICES**

1. The Bills of Quantities for Maintenance Services shall be read in conjunction with the Instructions to Tenderers, Conditions of Contract, Specifications and the Drawings.
2. This Bills of Quantities is the basis for payment of maintenance services that are to be provided on a lump sum per km basis for maintaining the roads covered under the contract, at the Service Levels defined in the Specifications. The rates given by the Tenderer shall, except insofar as is otherwise provided under the Contract, include all plant, equipment, labour, management and supervision, materials, erection, maintenance, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.
3. Payment shall be made in accordance with the actual performance of the Contractor and compliance with the Service Level criteria given in the Specifications for each road. Failure to meet the Service Levels will result in payment reductions in accordance with Clause 47 of the General Conditions and the Performance Specifications.
4. The unit rates and prices shall be quoted entirely in local currency but payment will be made in the proportions and currencies quoted in the Schedule of Adjustment Data.
5. A unit rate or price shall be entered by the Tenderer against each item in the Bill of Quantities. The cost of items against which the Tenderer has failed to enter a unit rate or price shall be deemed to be covered by other unit rates and prices entered in the Bill of Quantities.
6. General directions and descriptions of work and materials are not repeated or summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities.
7. The method of measurement of completed work for payment shall be in accordance with the measurement and payment provisions of the relevant section in the Performance Specifications.

**C. 1. BILL OF QUANTITIES AND UNIT PRICES FOR MAINTENANCE SERVICES**

Price No	Description of Service and Price	Unit Price
1.		In Local Currency
	<b>Unit Price per kilometer and month</b>	
	<p>This price is the full remuneration to the Contractor to carry out the services and works required in order to reach and maintain the services levels described in the Specifications and elsewhere in the contract. It further includes the activities of the Contractor related to self-control, quality assurance and material testing.</p> <p>The Unit Price per kilometer and month is:</p> <p>i. Road section a: .....</p> <p>ii. Road section b: .....</p> <p>iii. Road section c: .....</p> <p><i>[Note: There may either be one-unit price for all roads or road sections included in the contract, or different prices for different roads.]</i></p>	

**2 BILL OF QUANTITIES FOR MAINTENANCE SERVICES AND THEIR PRICES**

Price No.	Road or road section	Length (km)	Service Level	Unit Price per kilometer and month	Total Price
<b>2</b>	<b>Monthly lump sum payment</b>				
2a	A2SA	9.2	High		
2b	A2SB	17.1	High		
2c	A2S3	5.7	High		
<b>SUB-TOTAL per month:</b>					
Multiply by number of months (duration of contract)					<i>[36 months]</i>
<b>Total for contract period (Carried to Summary)</b>					



## **D. BILL OF QUANTITIES FOR REHABILITATION AND IMPROVEMENT WORKS**

1. The Bills of Quantities for Rehabilitation Works and for Improvement Works shall be read in conjunction with the Instructions to Tenderers, Conditions of Contract, Specifications and the Drawings.

### **a) Bill of Quantities for Rehabilitation Works**

2. The Bill of Quantities for Rehabilitation Works presents a number of explicit activities considered necessary to rehabilitate particular road sections before some or all of the Service Level criteria for performance-based maintenance defined in the Specifications can be applied. The Tenderer shall undertake a detailed assessment of road conditions at the time of Tender. The location and extent of the particular rehabilitation works considered necessary to reach required Service Levels shall be indicated by the Tenderer in his Tender submission.
3. Although the tendering document may show estimated quantities of Rehabilitation Works, it is the responsibility of the Tenderer to prepare his own estimate for the quantity of work required for each rehabilitation activity, and he shall indicate these quantities in the Bill of Quantities.
4. The Procuring Entity may in some cases indicate fixed quantities for some specific Rehabilitation Works, such as asphalt resurfacing. Those cases are clearly indicated as such by the Procuring Entity in the TDS Specifications and the Bill of Quantities for Rehabilitation Works.
5. Payment for Rehabilitation Works shall be made in relation to the work outputs satisfactorily completed in conformity with the Specifications as measured by the Contractor and verified by the Engineer, and valued at the unit rates and prices stated in the priced Bill of Quantities. The total price for Rehabilitation Works and Improvement Works, if any, shall not exceed the threshold value or percentage given by the Procuring Entity in the TDS.

### **b) Bill of Quantities for Improvement Works**

6. The Bill of Quantities for Improvement Works lists a set of interventions to be carried out by the contractor that add new characteristics to the Road in response to existing or new traffic, safety or other conditions, as defined in the TDS and the Specifications.
7. Payment for Improvement Works shall be made in relation to the work items satisfactorily completed in conformity with the Specifications, as measured by the Contractor and verified by the Engineer, and valued at the unit rates and prices stated in the priced Bill of Quantities for Improvement Works.

### **c) General**

8. The unit rates and prices Tender in the priced Bill of Quantities shall, except insofar as is otherwise provided under the Contract, include all plant, equipment, 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. Unit rates and prices shall also include the cost of engineering design services, and measures needed to prevent or mitigate environmental impacts and safety measures.
9. The unit rates and prices shall be quoted entirely in local currency but payment will be made in the proportions and currencies quoted in the Schedule of Adjustments.
10. A quantity, unit rate or price shall only be entered against those work items considered necessary to attain the required Service Levels and sustain such Service Levels thereafter through execution of maintenance services that are provided for separately.
11. General directions and descriptions of work and materials are not repeated or summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before

entering rates or prices against each item in the Bill of Quantities.

12. The method of measurement of completed work for payment shall be in accordance with the measurement and payment provisions of the relevant section of the Specifications.

**PERFORMANCE BASED CONTRACT FOR THE  
MAINTENANCE OF NAIROBI-THIKA HIGHWAY  
(NAIROBI-RUIRU) A2S ROAD**

**SUMMARY BILL OF REHABILITATION /  
IMPROVEMENT WORKS**

BILL NO.	DESCRIPTION	TENDER
		AMOUNT
1	GENERAL: 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	
11	PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS	
12	NATURAL MATERIAL BASES AND SUBBASE	
13	GRADED CRUSHED STONE SUBBBASE AND BASE	
14	CEMENT AND LIME TREATMENT	
15	BITUMINOUS SURFACE TREATMENT AND SURFACE DRESSING	
16	BITUMINOUS MIXES	
20	ROAD FURNITURE REPAIR AND MAINTENANCE	
21	MISCELLANEOUS BRIDGE/DRIFT WORKS	
23	PAVED SURFACES	
	Sub Total 1	
	ADD 5% Contingencies	
	Total Carried to BOQ Summary	

<b>Bill of Quantities</b>					
<b>Bill No.1</b>	<b>General: Office administration and overheads/Preliminaries</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
01-80-010A	Payment for material testing as detailed in the schedule attached in Appendix C and Instructed by the Engineer	SUM	1,000,000.00	1	1,000,000.00
01-80-011A	Extra over item 01-80-010 for contractors' overheads and profits	%	1,000,000.00		
01-80-016	Provide and erect publicity signs as directed by the Engineer	NO.	2.00		
01-80-017	Provide fuel and maintain with driver, 2 No. brand new 4WD double cabin (Odometer 0-10,000) for exclusive use by the Engineer inclusive of the first 4,000km per vehicle month in accordance with clause 138 of special specification.	V/Months	72.00		
01-80-018	Extra over 01-80-017 for mileage over 4,000km	KM	20,000.00		
01-80-021	Provide fuel and maintain with driver, 1 No brand new 4WD Station Wagon vehicles (Odometer 0-10,000) of diesel Engine capacity not less than 2500cc and not more than 3000cc for exclusive use by the Engineer inclusive of the first 4,000km per vehicle month	V/Months	36.00		
01-80-022	Extra over 01-80-021 for mileage over 4,000km	KM	10,000.00		
01-80-026A	Payment of Resident Engineer Miscellaneous account as per Clause 132.7 Of Special Specification and for items and services detailed in Appendix B	SUM		1	
01-80-030A	Payment of Engineers Supervisory Staff including overtime in accordance with clause 137 of Special Specifications and as per Remuneration Rates in Appendix A	SUM	30,399,900.00	1.00	30,399,900.00
01-80-031A	Extra over 01-80-031A for contractors' profits and overheads	%	30,399,900.00		

01-80-090	Allow a Prime Cost (P.C) sum of KShs 1,000,000 for Environmental Impact Assessment Study and license.	PC Sum	1,000,000.00	1	1,000,000.00
01-80-091	Extra Over 01-80-090 for the contractor's overheads and profit.	%	1,000,000.00		
01-80-049	Payment for the Resident Engineer's utility items and services as detailed in Appendix D	SUM	2,444,000.00	1	2,444,000.00
01-80-050	Extra over for Bill Item above for contractors overhead and profit	%	2,444,000.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.04</b>	<b>SITE CLEARANCE</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
04-60-002	Top soil removal	M <sup>3</sup>	17,000.00		
<b>Total Carried Forward to Summary:</b>					

Bill No.05	EARTHWORKS			Unit Bid Rate	
Item No.	Description	Units	Quantity	Unit (Kshs)	Amount KSh
05-50-006	Fill in soft material and compact	M³	1,200.00		
05-50-007	Fill in hard material and compact	M³	400.00		
05-50-008	Cut to spoil in soft material	M³	1,200.00		
05-50-009	Cut to spoil in hard material	M³	235.00		
05-50-014	Grassing	M²	85,000.00		
Total Carried Forward to Summary:					

<b>Bill No.7</b>	<b>EXCAVATION AND FILLING FOR STRUCTURES</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
07-50-001	Excavate for structure in soft material	M <sup>3</sup>	600.00		
07-50-002	Excavate for structure in hard material	M <sup>3</sup>	150.00		
07-60-002	Provide and place gabion boxes and mattresses as specified or as directed by the Engineer	M <sup>2</sup>	7,700.00		
07-60-003	Provide and place rockfill to gabions and mattresses	M <sup>3</sup>	1,400.00		
07-60-004	Allow for grouting of the rock fill where necessary	M <sup>2</sup>	3,100.00		
07-60-005	Provide and place 200mm thick stone pitching including grouting to aprons upstream and downstream of bridges and culverts as detailed in the drawing or as directed by the Engineer (This will include hand packing of approved stones, placing BRC along the drain and grouting with concrete to give a concrete finish)	M <sup>2</sup>	4,100.00		
<b>Total Carried Forward to Summary:</b>					



<b>Bill No.8</b>	<b>CULVERT AND DRAINAGE WORKS</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
08-60-034	Provide, lay and join 900mm inner dia concrete pipes	MT	320.00		
08-60-035	Provide, place and compact class 15/20 concrete	M³	410.00		
08-60-036	Provide, place and compact class 25/20 concrete. The rate shall include provision of BRC Mesh A142 as directed by the Engineer	M³	90.00		
08-70-041	Excavate and provide materials and construct subsoil drains, back fill with approved hard material where instructed by the engineer as per the attached drawing	M³	20.00		
08-70-042	Provide fabric to sub soil drains.	M²	40.00		
08-90-003	Excavation in soft material for pipe culverts, headwalls, wingwalls, apron, toe walls and drop inlets and compact as specified or as directed by the Engineer	M³	600.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.09</b>	<b>PASSAGE OF TRAFFIC</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
09-60-001	Allow for passage of traffic through the works	LSUM	1		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.11</b>	<b>PAVED ROADS - SHOULDER MAINTENANCE AND REPAIRS</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
11-50-002	Prepare surface of existing shoulders, accesses and busbays, including benching where necessary, water process and compact in accordance with the specification and as directed by the engineer to receive gravel	M <sup>2</sup>	4,800.00		
11-50-003	Provide, place and compact natural gravel to shoulders accesses and busbays.	M <sup>3</sup>	3,250.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.12</b>	<b>NATURAL MATERIAL FOR BASE AND SUB BASE</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
12-50-003	Provide, place, spread and compact natural gravel for base	M³	1,000.00		
12-60-001	Provide and place hand packed approved stone complete with quarry dust blinding layer	M³	500.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.13</b>	<b>GRADED CRUSHED STONE SUBBBASE AND BASE</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
13-60-001	Provide, lay and compact Graded Crushed Stone for Base	M³	300.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.14</b>	<b>CEMENT TREATMENT</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
14-50-001	Provide, transport, spread, cement Stabilizer on natural material	TON	100.00		
14-50-003	Mixing in cement/lime stabilizer into natural gravel	M³	3,000.00		
14-50-004	Curing and protection of treated layers	M²	17,200.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.15</b>	<b>BITUMINOUS SURFACE TREATMENT AND SURFACE DRESSING</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
15-92-001	Provide and Spray MC 30 cut-back bitumen as prime coat to carriageway, shoulders, busbays and junctions at rate 0.8-1.2 lts/m2 as prime coat	L	44,200.00		
15-80-004	Provide, heat and spray 80/100 pen grade bitumen modified with 3% SBS (Styrene Butadiene Styrene) based elastomeric polymer binder (elastomer modified Bitumen)	L	5,000.00		
15-60-003	Provide, spread and roll 6/10 mm precoated chippings	M <sup>3</sup>	50.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.16</b>	<b>BITUMINOUS MIXES</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
16-80-001	Provide, lay and roll asphalt concrete type 1 (bitumen content 5-6% by weight) as directed by the Engineer	M³	1,820.00		
16-50-006	Provide, transport, lay and compact Dense Bitumen Macadam	M³	230.00		
16-80-003	Provide and spray K-160 as tack coat at a rate of 0.8-1.0 L/sq metre as directed by the Engineer	L	44,200.00		
<b>Total Carried Forward to Summary:</b>					



<b>Bill No.20</b>	<b>ROAD FURNITURE REPAIR AND MAINTENANCE</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Bid Rate (Kshs)</b>	<b>Amount KSh</b>
20-50-001	Road reserve boundary posts	No.	20.00		
20-50-012	Straight kerbs	M	2,010.00		
20-50-012	Radius kerbs 1m-5m	M	150.00		
20-50-034	Provide and Install Guard rails complete with posts and swarflex ART 3240 guardrail reflectors every 4m as per drawings and as directed by the Engineer	M	500.00		
20-50-033	Provide and erect chevrons in every bridge location as directed by the Engineer	No.	20.00		
20-70-002	Provide and erect warning type signs 750mm size	No.	30.00		
20-70-004	Provide and erect standard informatory signs 400*300 mm	No.	25.00		
20-70-006	Provide and erect Non-Standard informatory signs: (a) Less than 1m <sup>2</sup>	No.	35.00		
20-70-011	Paint 0.1m wide thermoplastic white lines on road as specified	M <sup>2</sup>	1,700.00		
20-70-012	Paint 0.15m wide thermoplastic white bus bays separation marking	M <sup>2</sup>	50.00		
20-70-072	Pedestrian barrier 2M with razor wire	MT	3,750.00		
20-70-073	Provide and place RC Bollards (200mm thick) with yellow reflective strips	No.	300.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.21</b>	<b>MISCELLANEOUS BRIDGE/DRIFT WORKS</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Rate</b>	<b>Amount (KSh)</b>
21-60-001	Branding of footbridges, Underpasses, Overpasses, and structures as directed by the Engineer	M²	12,000.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.23</b>	<b>MISCELLANEOUS BRIDGE/DRIFT WORKS</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Rate</b>	<b>Amount (KSh)</b>
23-50-006	Supply, lay and compact 80 mm thick precast concrete paving block with 49 N/MM2 Cube classing strength conforming to BS 6717 PART 1 of 1986 or Kenya bureau of standard equivalent including 50 mm thick sand/quarry dust M <sup>2</sup>	M <sup>2</sup>	6,000.00		
23-50-007	Prepare surface of existing NMT, including benching, addition of 100mm base quality gravel where necessary, water process and compact in accordance with the specification and as directed by the engineer to receive gravel	M <sup>2</sup>	11,000.00		
<b>Total Carried Forward to Summary:</b>					

<b>Bill No.26</b>	<b>Performance Maintenance Contract</b>				
<b>Item No.</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Rate</b>	<b>Amount (KSh)</b>
26-50-007-A2S1	Carry out Performance Based routine maintenance on and off carriageway-paved for arterial roads as stipulated in the contract.	Km-Month	331.20		
26-50-007-A2S2	Carry out Performance Based routine maintenance on and off carriageway-paved from Pangani to Githurai as stipulated in the contract.	Km-Month	615.60		
26-50-007-A2S3	Carry out Performance Based routine maintenance on and off carriageway-paved from Githurai to Ruiru as stipulated in the contract.	Km-Month	205.20		
26-50-006	Provide user and operational service as per technical specifications sub-clause 11.2 to 11.8 required to maintain the stipulated service quality levels for the entire length of the road included in the Contract.	Km-Month	1,152.00		
<b>Total Carried Forward to Summary:</b>					

# APPENDIX A

PART I: PAYMENT FOR TRAINING												
N o.	Description				Amount per month		No of months		Amount per Month			
1	PROFESSIONAL DEVELOPMENT TRAINING OF RE'S STAFF				20,000.00		20.00		400,000.00			
	SubTotal A								400,000.00			
PART II: KeNHA PROJECT STAFF RENUMERATION SCALE												
KeNHA RE's Payment of Engineers Supervisory Staff												
S/ N o	Description		Wages & Salaries			Per-diem (County HQs)			Per-diem (Others)			TOTAL (Kshs)
		Unit	Durati on of Contra ct	Rate per day / Month	Amount (Kshs)	No. of Days	Rate per day	Amount (Kshs)	No. of Days	Rate per day	Amount (Kshs)	
	Resident Engineer (Field Allowances)	Man - Days	540.00	4,200.00	2,268,000.00	5.00	16,800.00	84,000.00	5.00	10,500.00	52,500.00	2,404,500.00
	Senior Engineer / Asst. Director (Field Allowances)	Man - Days	540.00	3,500.00	1,890,000.00	5.00	14,000.00	70,000.00	5.00	8,400.00	42,000.00	2,002,000.00
	Senior ICT Officer	Man - Months	6.00	300,000.00	1,800,000.00							1,800,000.00
	Engineer (Field Allowances)	Man - Days	936.00	2,800.00	2,620,800.00	5.00	11,200.00	56,000.00	5.00	7,000.00	35,000.00	2,711,800.00
	Assistant Engineer	Man - Months	36.00	93,500.00	3,366,000.00							3,366,000.00
	Trainee Engineer	Man - Months	12.00	36,500.00	438,000.00							438,000.00
	Inspectorate department				-							-
	Roads Inspector (Field Allowances)	Man - Days	936.00	2,100.00	1,965,600.00	5.00	11,200.00	168,000.00	5.00	7,000.00	105,000.00	2,238,600.00
	Project Inspector	Man - Months	72.00	52,500.00	3,780,000.00							3,780,000.00
	Materials Dept											-

	Lab Technician	Man - Months	<b>36.00</b>	52,500.00	1,890,000.00							<b>1,890,000.00</b>
	Lab Attendant	Man - Months	<b>36.00</b>	36,500.00	1,314,000.00							<b>1,314,000.00</b>
<b>Survey Dept</b>												<b>-</b>
	Surveyor	Man - Months	<b>18.00</b>	93,500.00	1,683,000.00							<b>1,683,000.00</b>
	Leveller	Man - Months	<b>18.00</b>	36,500.00	657,000.00							<b>657,000.00</b>
	Chainman	Man - Months	<b>18.00</b>	36,500.00	657,000.00							<b>657,000.00</b>
	<b>Administration</b>											<b>-</b>
	Secretary	Man - Months	<b>36.00</b>	67,500.00	2,430,000.00							<b>2,430,000.00</b>
	Office Attendant	Man - Months	<b>36.00</b>	36,500.00	1,314,000.00							<b>1,314,000.00</b>
	Casuals	Man - Months	<b>36.00</b>	36,500.00	1,314,000.00							<b>1,314,000.00</b>
<b>SubTotal B</b>												<b>29,999,900.00</b>
<b>GRAND TOTAL CARRIED FORWARD TO APPENDIX A 01-80-030A</b>												<b>30,399,900.00</b>

# APPENDIX B

<b>KeNHA RE's OFFICE MISCELLANEOUS EXPENSES</b>					
<b>1. Stationaries</b>					
<b>NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>Quantity</b>	<b>Rate (Ksh)</b>	<b>Amount (Ksh)</b>
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.	50		
8	Reflector Jackets	No	200		
9	Branded of Hoodies	No	35		
10	Branded reflectors	No	100		
11	Safety Boots	No.	100		
12	Gumboots	No.	100		
13	Rains coats	No.	100		
14	Diaries	No.	100		
15	Scientific Calculator	No	12		
16	Cordless Mouse	No	5		
17	Mouse Pads	No	10		
18	Mouse batteries	Pairs	20		
19	Quality Envelopes (A4)	9gsm	50		
20	Quality Envelopes (A3)	90gsm	30		
21	Stapler Removers	No.	20		
22	Binder clips (medium, Large)	Pkt	100		
23	Binding Spirals (10mm)	pcs	100		

24	Binding spirals (16mm)	pcs	100		
25	Binding Spirals (22mm)	pcs	100		
26	Binding Spirals (25mm)	pcs	100		
27	Binding Spirals (28mm)	pcs	50		
28	Conference Chairs	No	10		
29	Orthopedic Chair	No.	5		
30	Rubber bands	Pkts	3		
31	Highlighters	Pkt	60		
32	Marker Pens	No.	60		
33	Executive Gel Pen (Parker Roller ball)	No.	30		
34	Ball Pens (Fine point) Assorted colours	pks	20		
35	Pen holder	No.	20		
36	Paper clip holder	No.	10		
37	Stick Notes(3*3)	No	200		
38	urgent stickers	Rolls	10		
39	Short Hand Note Books	dozen	100		
40	Biro Pens Sharp Pointed- Black	Pkt	12		
41	Biro Pens Sharp Pointed Blue	No.	12		
42	Biro Pens Sharp Pointed Red	No.	12		
43	Box File Medium (PVC)	No.	200		
44	Counter Books A4 (2 Quire)	No.	50		
45	Envelopes Brown Size 4.3 X 8.7 Inch	No.	200		
46	Envelopes Brown - A3	No.	350		
47	Envelopes Brown-A4	No.	500		



48	Envelopes Brown-A5	No.	400		
49	Highlighting Pens	dozen	10		
50	Paper Punch Medium	No.	5		
51	Paper Punch Giant	No.	3		
52	Measuring Tapes 30fts	No	10		
53	Pelikan ink 273	No.	50		
54	Staple Pins 24/6	Pkts	500		
55	Staple Pins Giant	Pkts	50		
56	Stapler	No	10		
57	Paper Clips 33mm	Pkts	150		
58	White Out	No.	60		
59	Cello tape 1 inch	No.	60		
60	Embossed Covers (Blue & Green)	Reams	100		
61	Binder Clips (32mm)	Pkts	200		
62	Clear Pocket Folder	pcs	300		
63	Glue Stick Pritt	No.	360		
64	Masking tape	No	12		
65	Bulbs	No.	50		
66	Pencils	Box (12 pcs)	5		
67	Delivery Book	No.	12		
68	Stick notes (Sign here)	Psc	12		
69	Hp Toner- for HP Color LaserJet Pro MFP M404dn	No.	12		
70	Hp Toner-Cb541A for HP OfficeJet Pro 8710	sets	12		
71	Hp Toner- for HP Color LaserJet Pro M283fdw	Set	6		
72	Toner for KYOCERA ECOSYS M6235cidn KX	set	16		

73	Toner for KYOCERA TASKALF 2553ci	set	6		
74	Extension Cables with Power Surge	No	10		
75	Floor detergents	No	50		
76	Kitchen detergents	No	50		
77	Washroom detergents	No	50		
78	General cleaning tools	No	20		
79	Kitchen consumables	Box	100		
80	Dust Coats ( BrandedTwill Material)	No.	50		
81	Milk	Box (12 pcs)	120		
82	Coffee	No.(500gm)	200		
83	Ketepa tea leaves	Pkts	200		
84	Assorted tea leaves	Pkts	30		
85	Chocolate	No	100		
86	Sugar	Kgs	300		
87	Kitchen towels	No	36		
88	Gloves Plastic	Pairs	12		
89	Door mats	No	10		
90	Serviettes	Dozens	24		
91	Dust Bins	No	12		
92	Air fresheners	No	100		
93	Soap Dispenser	No	8		
94	Antibacterial foam soam 1 litre	No	60		
95	Refill sanitizers	No	12		
96	Folded Paper 1 bale	No	12		
97	Jumbo tissues 1 bale	No	12		
98	Assorted beverages	Sum	1		
99	Hand Sanitizers (500) ml	No.	60		
100	Face Masks 3 ply	Pkts	120		
101	Hand washing gels (Dettol).250 ml	No.	60		

102	Refillable Drinking water (20LTS) Bottle	No.	150		
103	Drinking water (Small bottles)	Box (12 pcs)	240		
104	Shredder	No.	4		
105	Room Heater	No.	2		
106	File cabinet	No.	4		
107	Office cabinet(Metal Lockable)	No.	2		
108	First aid kit	No.	3		
109	Office Fumigation	M <sup>2</sup>	800		
110	Computer Laptops	No	2		
	<b>Sub-total A</b>				
<b><u>2.Consumables and Allowances</u></b>					
1	Lunches	LS	100,000.00	1	100,000.00
	Extra over for lunches	%	100,000.00		
	<b>Sub-total B</b>				
<b>GRAND TOTAL CARRIED FORWARD TO BILL ITEM 01-80-026A</b>					

# APPENDIX C

<b>LAB TESTS CHARGE SHEET AS PER MTRD</b>				
-	-	-	-	-
<b>CONCRETE CUBES</b>				
S/No.	Description	Cost (Kshs)	No of Test	Total Cost (Kshs)
1	Cube Crushing per Cube	400	24	9,600.00
2	Making and Crushing of cubes (set of 3)	1500	4	6,000.00
<b>AGGREGATES</b>				
1	Flakines Index (FI)	600	5	3,000.00
2	Bulk Density	500	5	2,500.00
3	LAA	1000	5	5,000.00
4	ACV	1000	5	5,000.00
5	Seave Analysis (Course Aggregates)	500	5	2,500.00
6	Seave Analysis (Fine Aggregates and Sand)	500	5	2,500.00
7	Water Absorption and Specific Gravity	900	5	4,500.00
8	SG	500	5	2,500.00
9	Silt and Clay Content	500	5	2,500.00
10	AIV	700	5	3,500.00
11	10% Fines	1200	5	6,000.00
12	Weathering 5 cycles (SSS)	3000	5	15,000.00
13	Arithmetical Mix Design(Calculation only)	2500	5	12,500.00
14	Concrete mix Design (Complete)	10000	4	40,000.00
<b>TAR,BITUMEN,ASPHALTS &amp; SEALING COMPOUNDS</b>				
1	Water Content in Bitumen	750	5	3,750.00
2	Penetration Test	500	5	2,500.00
3	Softening Point	500	5	2,500.00
4	Viscosity of Petroleum Products	750	5	3,750.00
5	Pre-Mix Design analysis	6000	5	30,000.00
6	Mix Design including Marshall & Voids	15000	5	75,000.00
7	Crushing Marshall Specimen (Sets of 3)	1800	5	9,000.00
8	Core Cutting per core	1500	5	7,500.00
9	CutBack Bitumen Design and Analysis	10000	5	50,000.00
<b>SOIL ANALYSIS</b>				
1	Determination of liquid,plastic and linear shrinkage (Atterbergs)	500	5	2,500.00

2	Seave Analysis Down to 200 Mesh (0.075mm) Dry	400	5	2,000.00
3	Seave Analysis Down to 200 Mesh (0.075mm) Wet	500	5	2,500.00
4	Complete sieve analysis	1000	5	5,000.00
5	Moisture density (compaction test) BS or MOD, AASHTO T180	1100	5	5,500.00
6	CBR statically compacted to 100% MDD, OMC AT 4 Day soak	800	5	4,000.00
7	CBR dyamically compacted at 3 levels, 95% MDD MOD AASHTO day soak	1800	5	9,000.00
8	CBR for stabilization and 7 day cure and 7 day soak and statitally compacted to 95%MDD.MOD.AASHTO	2400	5	12,000.00
9	CBR for stabilized samples	1200	5	6,000.00
10	Determination of specific gravity of medium grained soils	600	5	3,000.00
11	UCS tests on stabilised soil 200 x 100 mm dia. Set of 3 tests only	1500	5	7,500.00
12	Moisture content determination	400	5	2,000.00
13	Sand replacement test for stabilised samples	750	5	3,750.00
14	Moisture/Density content determination (Compaction Test) Proctor T90 - Sample Preparation before testing	300	5	1,500.00
15	Moisture/Density content determination (Compaction Test) Proctor T90 - Vibrating Hammer	1600	5	8,000.00
<b>OTHERS</b>				
1	Thermoplastic Paint Testing with beads	10000	4	40,000.00
2	Guardrail Flex Beam, Post,Bolts and Nuts	6500	1	6,500.00
3	Gabion Box	6500	1	6,500.00
4	Major Tests on AC	18000	15	270,000.00
<b>Subtotal A</b>				<b>703,850.00</b>
<b>Description</b>		<b>Quantity</b>	<b>Rate</b>	<b>Total</b>
1	Allowances for MTRD Team	296,150.00	1	296,150.00
<b>Subtotal B</b>				<b>296,150.00</b>
<b>GRAND TOTAL CARRIED FORWARD TO BILL ITEM 01-80-010A</b>				<b>1,000,000.00</b>

## APPENDIX D

KeNHA RE's OFFICE MISCELLANEOUS EXPENSES					
<b>1. Stationaries &amp; Consumables</b>	-	-	-	-	-
NO.	DESCRIPTION	UNIT	Quantity	Rate(Ksh)	Amount (Ksh)
1	Electricity Bill	Months	12	5,000.00	468,000.00
2	Water Bill	Months	12	7,000.00	468,000.00
3	Electricity Repairs and Connections	Months	12	1,000.00	72,000.00
4	Water Repair/Plumbing	Months	12	1,000.00	72,000.00
5	Furniture Repair	Months	12	1,000.00	72,000.00
6	Internet subscription	Months	12	32,000.00	384,000.00
7	Printer/Copier Repair and Service	1year	1	40,000.00	40,000.00
8	Filling of Gas Cylinders (13kg)	No	12	3,000.00	36,000.00
9	Genset service & fuel (4quarters)	Service/fuel	4	40,000.00	160,000.00
10	Garbage Collection	12months	12	3,500.00	42,000.00
11	Exhauster(4quarter)	No.	4	36,000.00	144,000.00
12	Courier services	No.	12	500.00	6,000.00
13	Provision of airtime	No.	12	40,000.00	480,000.00
	<b>SubTotal A</b>				<b>2,444,000.00</b>
<b>GRAND TOTAL CARRIED FORWARD TO BILL ITEM</b>					<b>2,444,000.00</b>

#### **d) Bills of Quantities for Emergency Works**

##### **GENERAL**

1. The Bill of Quantities for Emergency Works shall be read in conjunction with the Instructions to Tenderers, Conditions of Contract, Specifications and the Drawings.
2. The quantities given in the Bill of Quantities are hypothetical and provisional, and are given to provide a common basis for Tendering. Actual quantities for Emergency Works will be specified in Work Orders, issued by the Engineer in accordance with the General Conditions. The basis of payment for Emergency Works 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 unit rates and prices Tender in the priced Bill of Quantities, where applicable, and otherwise at such unit rates and prices as may be agreed or determined by the Engineer under the provisions of the Contract.
3. The unit rates and prices Tender in the priced Bill of Quantities shall, except insofar as is otherwise provided under the Contract, include all plant, equipment, labour, 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. The unit rates and prices shall be quoted entirely in local currency, but payment will be made in the proportions and currencies quoted in the Schedule of Adjustments.
5. A unit rate or price shall be entered against each item in the Bill of Quantities. The cost of items against which the Contractor has failed to enter a unit rate or price shall be deemed to be covered by other unit rates and prices entered in the Bill of Quantities.
6. General directions and descriptions of work and materials are not repeated or summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities.
7. The method of measurement of completed work for payment shall be in accordance with the measurement and payment provisions of the relevant section of the Specifications.

##### **D.1 Sample**

##### **Bill of Quantities for Emergency Works**

##### **B. Work Items**

1. The Bill of Quantities usually contains the following part Bills, which have been grouped according to the nature or timing of the work:

Bill No. 1—General

Items Bill No. 2—

Earthworks

BillNo.3—Culverts and

Bridges BillNo.4—etc., as

required and

Summary Bill of Quantities

2. Tenderers shall price the Bill of Quantities in local currency only and shall indicate in the Schedule of Adjustments the percentage expected for payment in foreign currency or currencies.

### Bill of Quantities for Emergency Works.

ITEM	DESCRIPTION	UNITS	QUANTITY	RATES (KSHS)	Amount (kshs.)
05-50-006	Fill in soft material and compact	M <sup>3</sup>	12.00		
05-50-007	Fill in hard material and compact	M <sup>3</sup>	18.00		
05-50-008	Cut to spoil in Soft	M <sup>3</sup>	6.00		
05-50-012	Rock fill to swamp	M <sup>3</sup>	8.00		
07-50-001	Excavate for structure in soft material	M <sup>3</sup>	18.00		
07-50-006	Selected granular fill material	M <sup>3</sup>	12.00		
07-60-002	Provide and place gabion boxes and mattresses as specified or as directed by the Engineer	M <sup>2</sup>	22.00		
07-60-003	Provide and place rock fill to gabions and mattresses	M <sup>2</sup>	6.00		
07-60-004	Allow for grouting of the rock fill where necessary	M <sup>2</sup>	18.00		
07-60-005	Provide and place 200mm thick stone pitching including grouting to aprons upstream and downstream of bridges and culverts as detailed in the drawing or as directed by the Engineer	M <sup>2</sup>	15.00		
08-60-030	Excavate in soft material for culverts	M <sup>3</sup>	20.00		
08-60-033	Provide, lay and join 600mm inner dia concrete pipes	MT	6.00		
08-60-035	Provide, place and compact class 15/20 concrete	M <sup>3</sup>	24.00		
08-60-036	Provide, place and compact class 20/25 concrete	M <sup>3</sup>	18.00		
08-60-037	Provide and place A142 fabric mesh reinforcement	M <sup>2</sup>	15.00		
08-70-006	Construction of scour checks (concrete)	NO	12.00		



ITEM	DESCRIPTION	UNITS	QUANTITY	RATES (KSHS)	Amount (kshs.)
09-60-002	Construct, gravel, water, compact and maintain deviation roads in maximum lengths of 5km. Allow for minimum width of 6.5m, thickness of gravel 150mm with minimum CBR 20.	KM	10.00		
12-50-002	Provide, place, spread and compact natural gravel for subbase	M <sup>3</sup>	22.00		
12-70-002	Excavation and spoiling of the existing bituminous layers to any distance where directed by the Engineer (milling).	M <sup>3</sup>	10.00		
14-50-001	Provide, transport, spread, mix and curing cement on natural material or GCS material	TON	6.00		
14-50-003	Mixing in cement/lime into natural gravel or GCS	M <sup>3</sup>	6.00		
14-50-004	Curing and protection of treated layers	M <sup>2</sup>	6.00		
15-50-003	Tack coat	L	200.00		
15-92-001	Provide and Spray MC 30 cut-back bitumen as prime coat to carriageway, shoulders, busbays and junctions at rate 0.8-1.2 lts/m <sup>2</sup> as prime coat	L	24.00		
16-80-001	Provide, lay and roll asphalt concrete type 1 (bitumen content 5-6% by weight) as directed by the Engineer	M <sup>3</sup>	18.00		
17-60-003	Vertical framework class F2 finish	M <sup>2</sup>	17.00		
17-80-004	Provide, cut, bend and fix steel reinforcement of diameter greater, equal to or less than 16mm dia per the drawing or as instructed by the Engineer	TON	4.00		

ITEM	DESCRIPTION	UNITS	QUANTITY	RATES (KSHS)	Amount (kshs.)
20-50-001	Road reserve boundary posts	No.	15.00		
20-70-001	Provide and erect priority type signs 1000mm size	NO.	2.00		
20-70-002	Provide and erect warning type signs 750mm size	NO.	8.00		
20-70-003	Provide and erect warning type signs 1000mm size	NO.	5.00		
20-70-004	Provide and erect standard informatory signs 400*300 mm	NO.	8.00		
20-70-005	Provide and erect standard mandatory signs 600mm diameter	NO.	8.00		
20-70-006	Provide and erect Non-Standard informatory signs: (a) Less than 1m2	NO.	9.00		
20-70-007	Provide and erect Non-Standard informatory signs: (b) 1-2m2 area	NO.	5.00		
20-70-008	Provide and erect Non-Standard informatory signs: (c) 2-5m2 area	NO.	4.00		
20-70-009	Provide and erect Non-Standard informatory signs: (d) >5m2 area	NO.	2.00		
20-70-010	Paint 0.1m wide themoplastic yellow centerline on the road as specified	M2	15.00		
20-70-011	Paint 0.1m wide themoplastic white line on the road as specified	M2	12.00		
20-50-010	Guardrail installation	M	8.00		
20-70-025	Provide and paint white reflective deleanator (cat eyes) as directed by the Engineer.	NO	15.00		
22-50-085	Crawler dozers with hydraulic attachments to include ripper				

ITEM	DESCRIPTION	UNITS	QUANTITY	RATES (KSHS)	Amount (kshs.)
	a) Up to 135 kw rated flywheel power	hrs	5.00		
	b) Over 136 kw rated flywheel power	hrs	5.00		
22-50-150	Motor Grader				
	a) Up to 110kw rated flywheel power	hrs	5.00		
	b) Over 100kw rated flywheel power	hrs	5.00		
22-50-216	Vibratory Roller				
	a) 6.5 - 8.81 tonne un-ballasted weight	hr	5.00		
	b) Over 8.91 tonne un-ballasted weight	hr	5.00		
22-50-119	Hand propelled vibrating roller 650 - 1300kg	hrs	5.00		
22-50-225	Cat 950G wheel loader or equivalent	hrs	5.00		
22-61-008	10 Tonne tipper lorry	hrs	5.00		
22-80-012	Small dumpers, 750-1000kg rated payload	hrs	5.00		
22-80-013	Dual purpose hydraulic excavator with backhoe/loader and a rated	hrs	4.00		
	bucket capacity of up to 1m3.				
22-80-014	Articulated wheel loader with 1.5-2.0m3 SAE rated bucket capacity	hrs	5.00		
22-66-003	50mm delivery water pump and motor	hrs	5.00		
22-80-025	Self-propelled water tanker 4,500ls min. capacity with pick-up pump	hrs	5.00		
22-65-002	Concrete Mixer of 100 - 150litres	hrs	5.00		
22-67-004	Concrete poker vibrator	hrs	5.00		
	LABOUR				
22-50-002	Unskilled Labour	hrs	5.00		

ITEM	DESCRIPTION	UNITS	QUANTITY	RATES (KSHS)	Amount (kshs.)
22-50-005	Artisans	hrs	5.00		
22-50-157	Office attendants and chainmen	hrs	5.00		
22-50-003	Watchmen (all round surveillance)	hrs	5.00		
	MATERIALS				
	All materials are to comply with the Specification. The rates inserted herein are to include for delivery to the site, storage, handling, overheads and profit				
22-70-005	Ordinary Portland Cement	Ton	2.00		
22-70-006	Hydrated Lime	Ton	2.00		
22-71-018	Mild Steel (any diameter)	Ton	1.50		
22-90-034	High Yield Steel (any diameter)	Ton	2.00		
22-70-002	Fine Aggregate for Concrete	M3	3.00		
22-50-069	Coarse Aggregate for Concrete	M3	6.00		
22-70-010	Wrot Shuttering Timber	M2	8.00		
22-70-011	Rough shuttering timber.	M2	5.00		
22-73-010	Bitumen Emulsion KI-60.	Litre	200.00		
22-73-014	Straight run bitumen Grade 80/100.	Litre	200.00		
22-74-004	Kerosene	Litre	50.00		
22-72-020	14/20 mm nominal size surface chips.	M3	5.00		
22-72-018	6/10mm nominal size surface chips	M3	5.00		
22-73-004	AC Type II Ex-plant	M3	4.00		

**Table A. Schedule of Currency requirements**

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

<i><b>Name of currency</b></i>	<i><b>Amounts payable</b></i>
Local currency	
Foreign currency #1:	
Foreign currency #2:	
Foreign currency #3:	
Provisional sums expressed in local currency	[To be entered by Procuring Entity]

### Table B. Summary of Payment Currencies

For ..... [insert name of Section of the Works]

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

Name of payment currency	A Amount of currency	B Rate of exchange (local currency per unit of foreign)	C Local currency equivalent $C=A*B$	D Percentage of Net Tender Price (NBP) $\frac{100*C}{NBP}$
Local currency		1.00		
Foreign currency #1				
Foreign currency #2				
Net Tender Price				100.00
Provisional sums expressed in local currency				
<u>Delete if not applicable:</u> Additional provisional sums, expressed in local currency, for ESHS outcomes				
TENDER PRICE				

## **SECTION VIII - DRAWINGS**

## **SECTION VIII DRAWINGS**

Standard Drawings

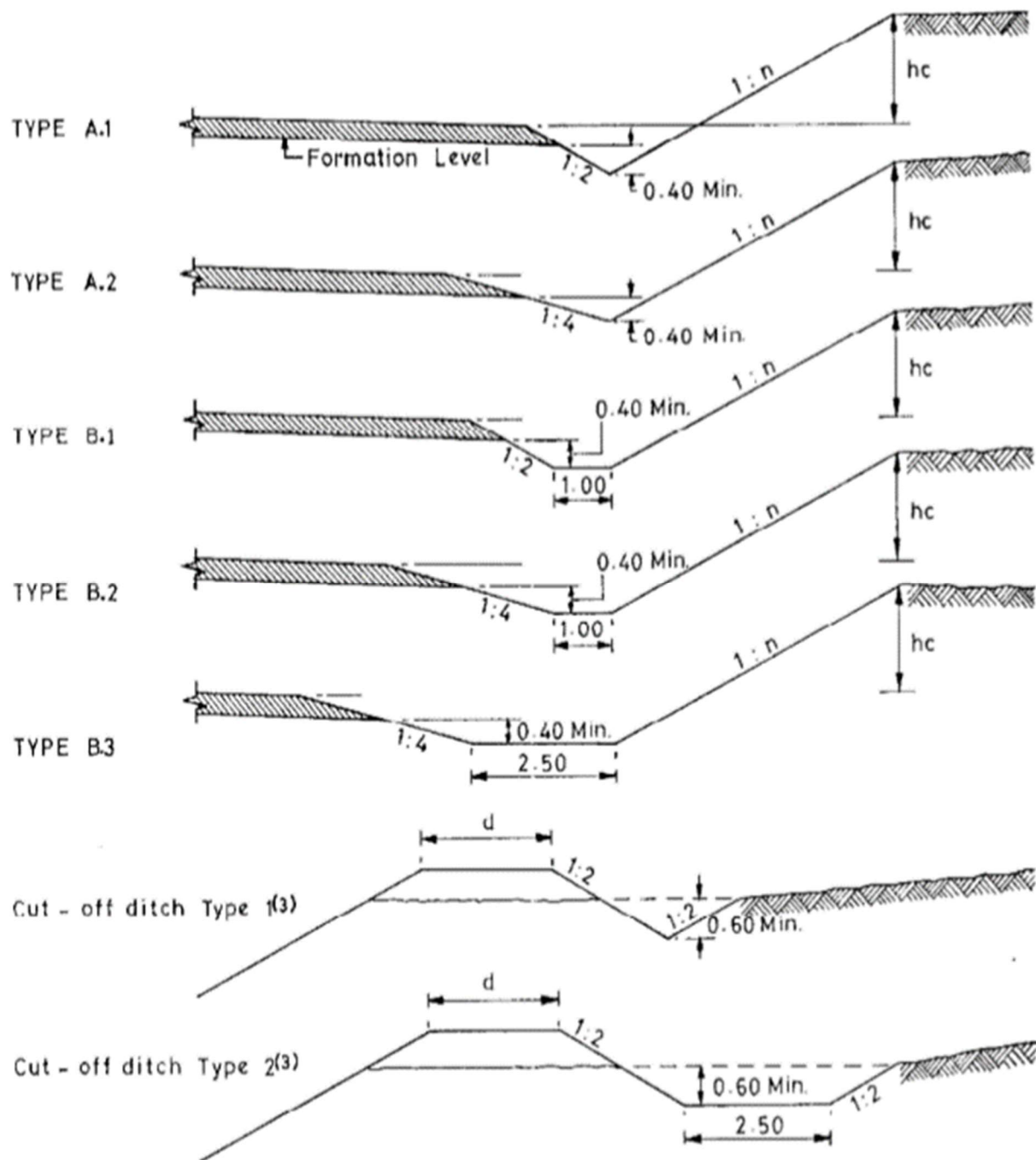
Project Specific Drawings

Line Diagrams

Road Condition Survey (ARICS)



# **STANDARD DRAWINGS** **SIDE DITCHES AND CUT OFF DITCHES**

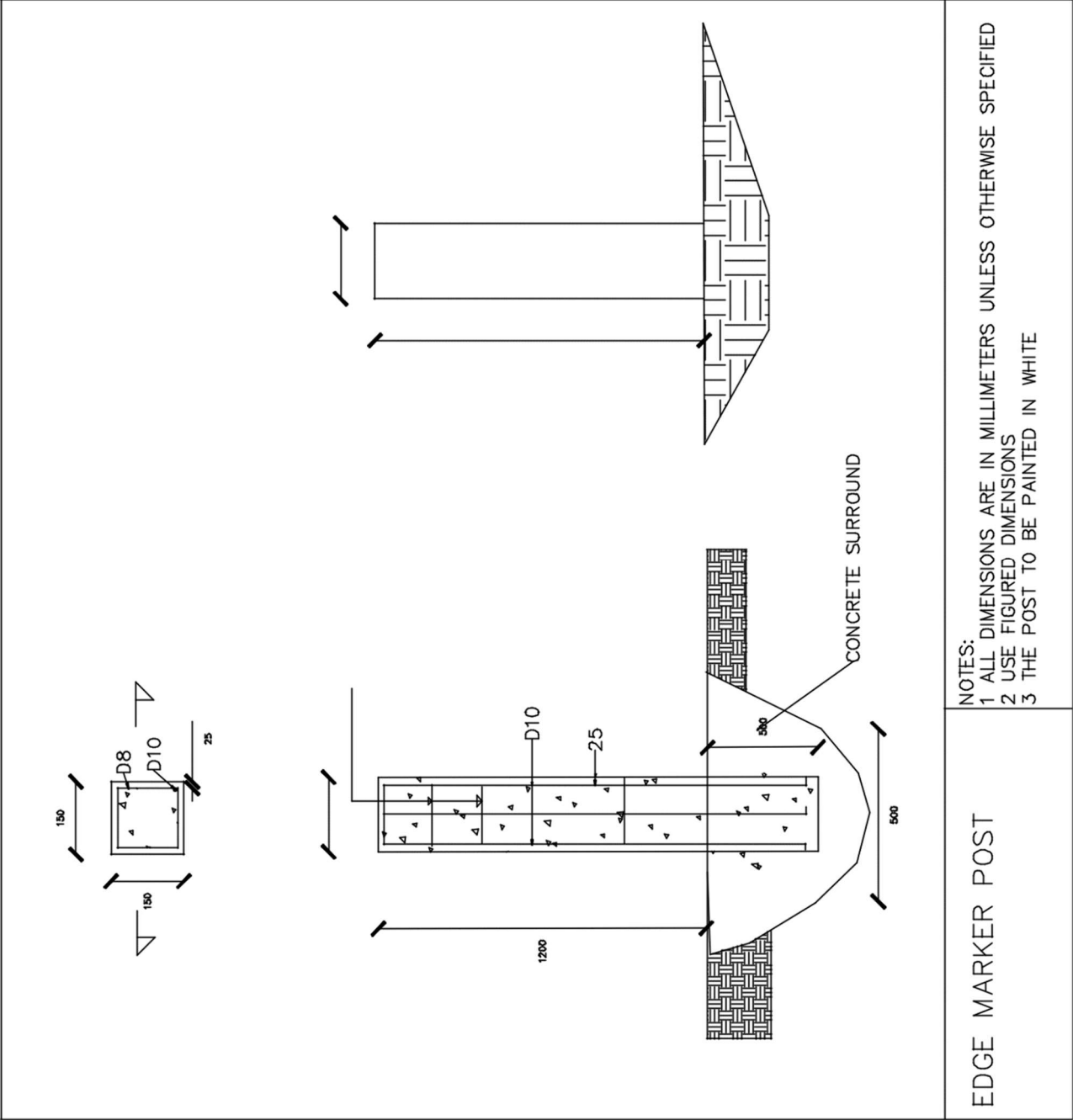


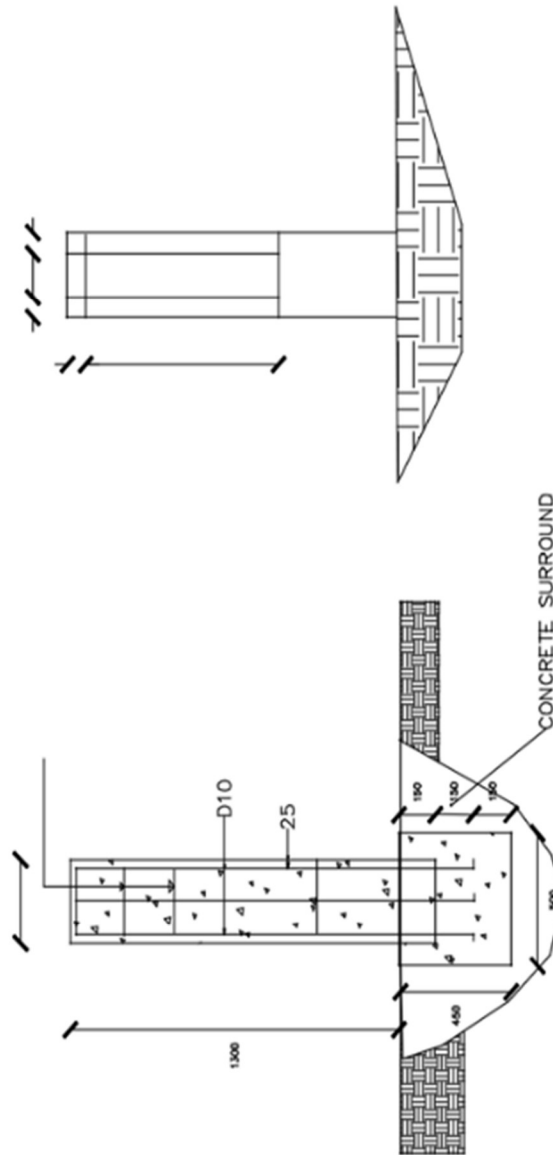
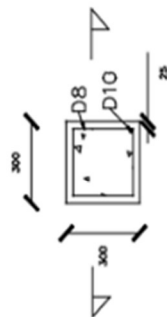
The diagram illustrates a highway cross-section with the following components and dimensions:

- Left Side (Shoulder):**
  - See NOTE 4** (width)
  - Type 2 control** zone
  - Type 3 control** zone (width: 6.0m)
  - VEGETATION FREE ZONE (Type 5 control)** (width: 6.0m)
  - Edgeline** (indicated by a dashed line)
  - Edge marker post** (width: 0.5m)
  - Surface water channel** (width: 1.0m)
  - See NOTE 1** (width)
- Right Side (Shoulder):**
  - See NOTE 4** (width)
  - Type 2 control** zone
  - Type 3 control** zone (width: 6.0m)
  - Edgeline** (indicated by a dashed line)
  - Edge marker post** (width: 0.5m)
  - Surface water channel** (width: 1.0m)
  - See NOTE 1** (width)
- Central Area:**
  - Centrelines** (indicated by dashed lines)
  - All sealed surfaces must be maintained free of vegetation** (text label)
  - Extent of control on some urban highways** (dimension line)
  - Extent of control on some non-urban highways** (dimension line)

this distance must be a minimum of 3.0m on straights and on the outside of curves and a minimum of 5.0m on the inside of curves.

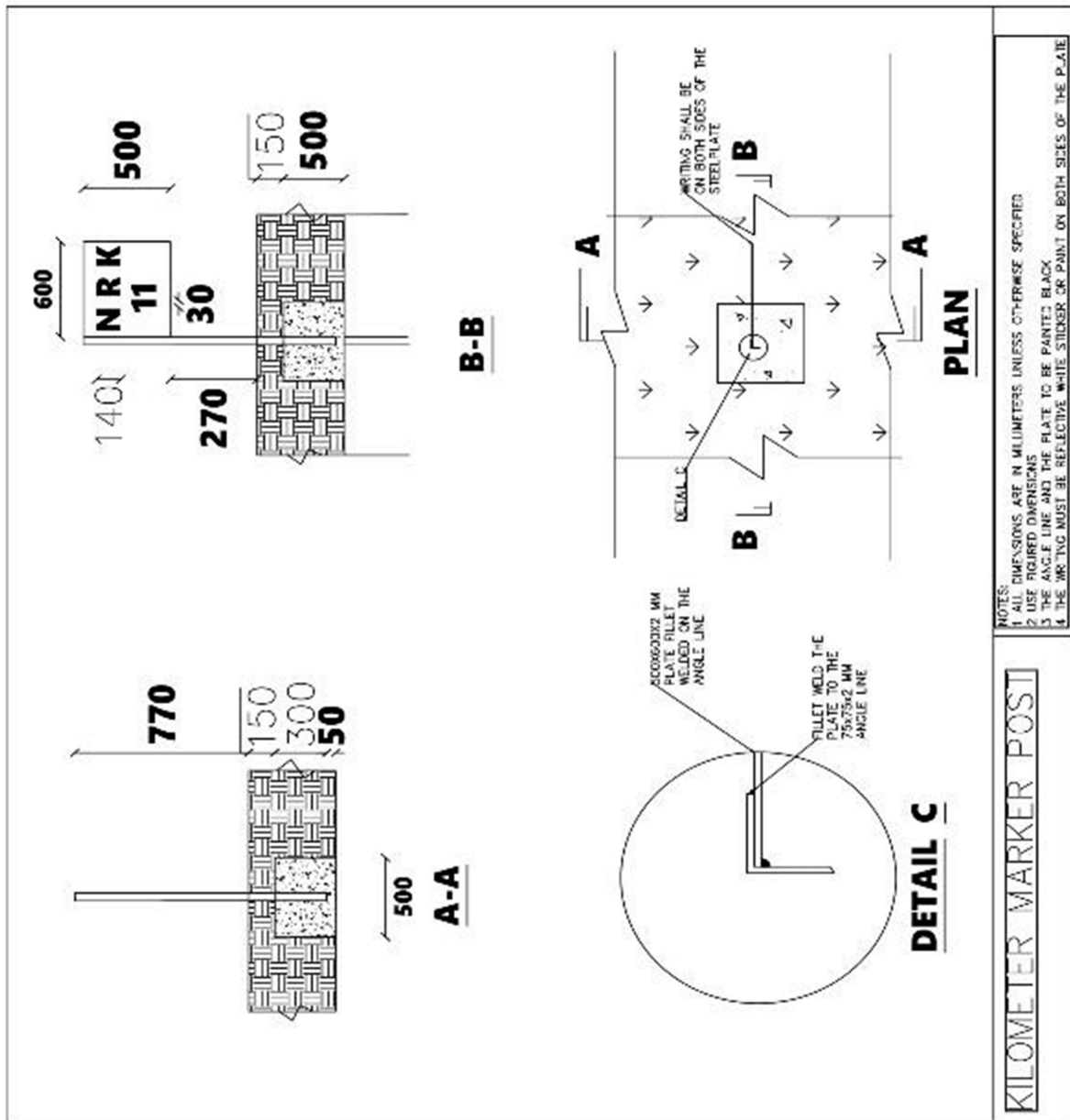
Vegetation free zone must be maintained free of all vegetation.



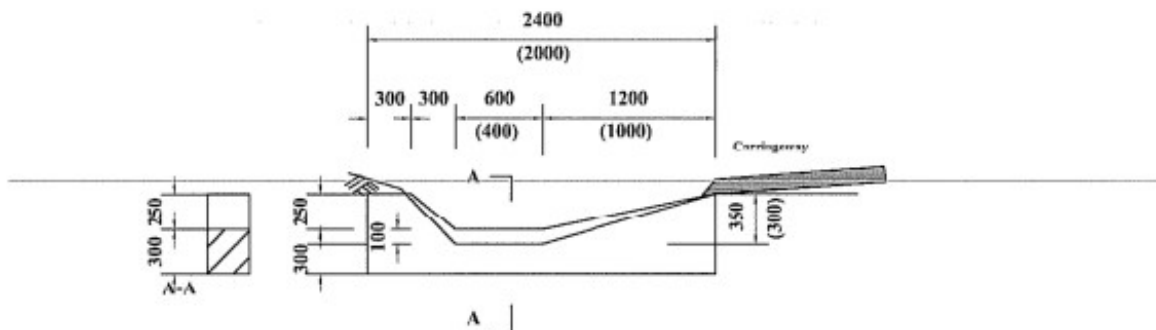


- NOTES:
- 1 ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED
  - 2 USE FIGURED DIMENSIONS
  - 3 THE POST TO BE PAINTED IN WHITE
  - 4 THE WRITING TO BE IN BLACK

ROAD RESERVE  
BOUNDARY MARKER POST

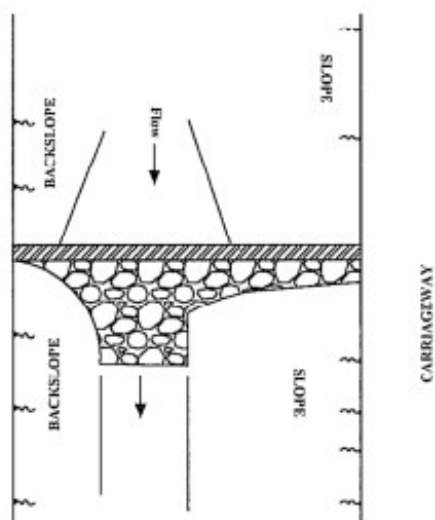


## SCOUR CHECK



**SECTION OF CONCRETE SCOUR CHECK**

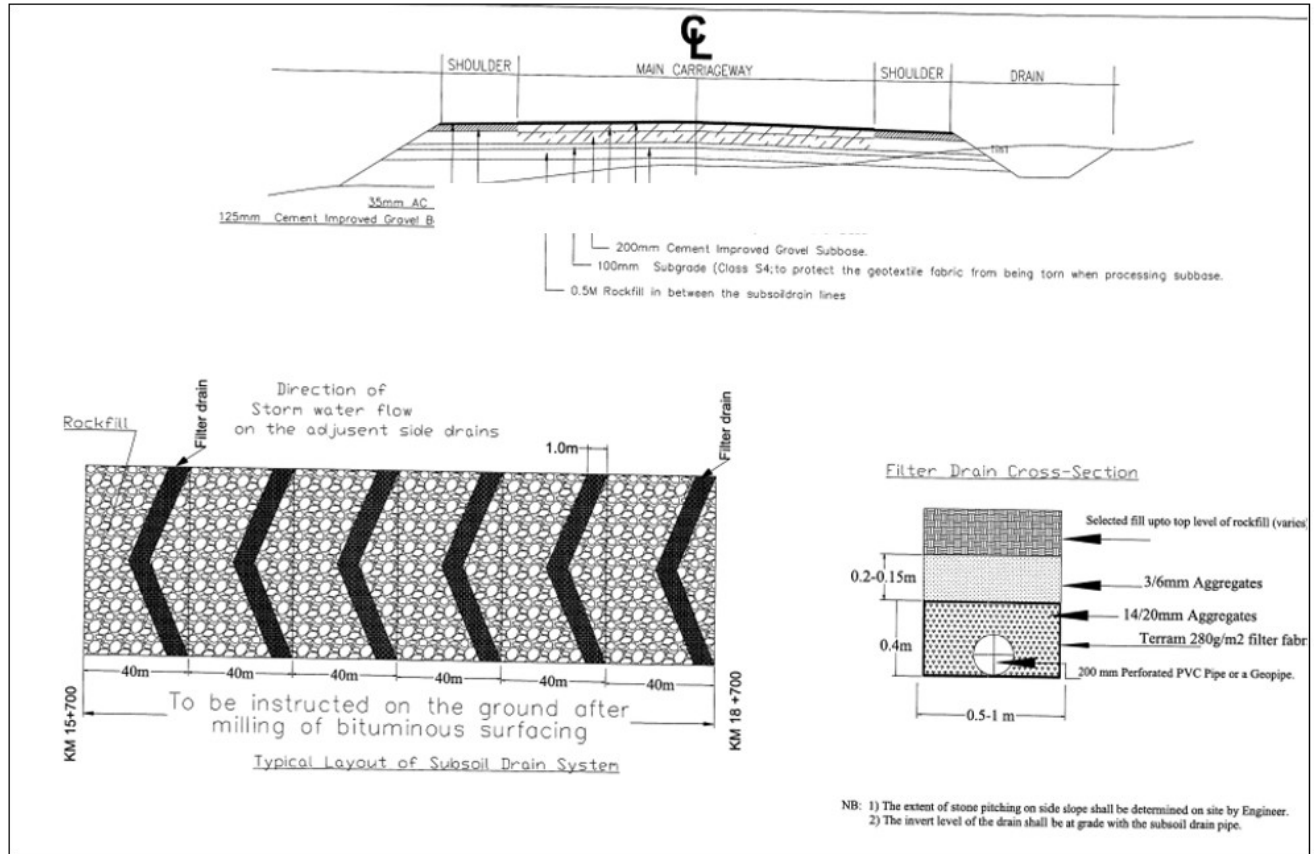
**NOTE**  
1. Dimensions in mm



**PLAN OF DRAIN WITH SCOUR CHECK**

Cross-Section	Sizes in mm			Excav (m <sup>3</sup> )	Concrete (m <sup>3</sup> )	Apron stone pitching (m <sup>3</sup> )
	Length	Width	Depth			
A	2400	100	550	0.13	0.15	0.18
B	2000	100	500	0.10	0.09	0.14

## SUBSOIL DRAINS







## LINE DIAGRAM

**Tender Name: Performance Based Contract for the Maintenance of Nairobi-Thika Highway (Nairobi-Ruiru) A2S Road**

**Tender Number: KeNHA/R5/162/2021**

LINE DIAGRAM FOR INSTRUCTED WORKS ON NAIROBI-RUIRU (A2S) ROAD										
Description	Units	QUANTITY	Km 0-5	Km 6-10	Km 11-15	Km 16-20	Km 20-25	Km 26-30	Km 31-32	Total
Top soil removal	M3	17,000.00	2,656.25	2,656.25	2,656.25	2,656.25	2,656.25	2,656.25	1,062.50	17,000.00
										-
Fill in soft material and compact	M <sup>3</sup>	1,200.00	187.50	187.50	187.50	187.50	187.50	187.50	75.00	1,200.00
Fill in hard material and compact	M <sup>3</sup>	400.00	62.50	62.50	62.50	62.50	62.50	62.50	25.00	400.00
Cut to spoil in soft material	M <sup>3</sup>	1,200.00	187.50	187.50	187.50	187.50	187.50	187.50	75.00	1,200.00
Cut to spoil in hard material	M <sup>3</sup>	250.00	39.06	39.06	39.06	39.06	39.06	39.06	15.63	250.00
Grassing	M <sup>2</sup>	85,000.00	13,281.25	13,281.25	13,281.25	13,281.25	13,281.25	13,281.25	5,312.50	85,000.00
			-			-				-
Excavate in soft material	M <sup>3</sup>	600.00	360.00			240.00				600.00
Excavate in hard material	M <sup>3</sup>	150.00	90.00			60.00				150.00
Providing and placing abion boxes	M <sup>2</sup>	7,700.00	4,620.00			3,080.00				7,700.00
Rockfill to gabions	M <sup>3</sup>	1,400.00	840.00			560.00				1,400.00
Grouting of the rock fill	M <sup>2</sup>	3,100.00	1,860.00			1,240.00				3,100.00
Stone pitching	M <sup>2</sup>	4,100.00	200	300	500	2000	1000	100		4,100.00
										-
900mm inner dia concrete pipes	MT	320.00		192.00	128.00					320.00

class 15/20 concrete	M³	410.00		246.00	164.00					410.00
Class 25/20 concrete including BRC Mesh A142	M³	90.00		54.00	36.00					90.00
Excavate for subsoil drains, back fill with approved hard material	M³	20.00		12.00	8.00					20.00
Provide fabric to sub soil drains.	M²	40.00			20.00	20				40.00
Excavation in for culverts	M³	600.00		360.00	240.00					600.00
										-
Passage of traffic	LSUM	1.00	0.16	0.16	0.16	0.16	0.16	0.16	0.06	1.00
										-
Shoulder preparation	M²	4,800.00		960.00	1,920.00	480.00	480.00	960.00		4,800.00
Gravel to shoulders	M³	3,250.00		650.00	1,300.00	325.00	325.00	650.00		3,250.00
										-
Natural gravel for base	M³	1,000.00				1,000.00				1,000.00
Handpacking	M³	500.00			500.00					500.00
Graded Crushed Stone for Base	M³	300.00	100	25		100			75	300.00
										-
Cement Stabilizer	TON	100.00	5.00	20.00	40.00	10.00	10.00	15.00		100.00
Mixing in cemen stabilizer into	M³	3,000.00	150.00	600.00	1,200.00	300.00	300.00	450.00		3,000.00
Curing and protection treated layers	M²	17,200.00	860.00	3,440.00	6,880.00	1,720.00	1,720.00	2,580.00		17,200.00
										-
MC-30	L	44,200.00	6,906.25	6,906.25	6,906.25	6,906.25	6,906.25	6,906.25	2,762.50	44,200.00

80/100 Bitumen modified with SBS	L	5,000.00			5000					5,000.00
6/10 mm chippings	M³	50.00			50					50.00
AC Type 1	M³	1,820.00	284.38	284.38	284.38	284.38	284.38	284.38	113.75	1,820.00
0-30mm DBM	M³	230.00				230				230.00
K1-60	L	44,200.00	6250	6250	6250	10450	6250	6250	2500	44,200.00
										-
Road reserve boundary posts	No.	20.00			10	10				20.00
Straight kerbs	M	2,010.00	335.00	335.00	335.00	335.00	335.00	335.00		2,010.00
Radius kerbs 1m-5m	M	150.00	25.00	25.00	25.00	25.00	25.00	25.00		150.00
Guard rails installation	M	500.00		50		200		150	100	500.00
Erection of chevrons	No.	20.00	2	6	10		2			20.00
Warning type signs	No.	30.00	5	5	5	5	5	5		30.00
Standard informatory signs	No.	25.00			10	10	5			25.00
Non-Standard informatory signs	No.	35.00	5	5	5	5	5	5	5	35.00
Paint 0.1m wide themoplastic white	M²	1,700.00	265.63	265.63	265.63	265.63	265.63	265.63	106.25	1,700.00
Paint 0.15m wide themoplastic white	M²	50.00	5	10	15	5	5	5	5	50.00
Pedestrian barrier with razor wire	MT	3,750.00	200	400	300	1150	1000	200	500	3,750.00
RC Bollards	No.	300.00	50	100	40	20	50	30	10	300.00
										-
Footbridge Branding	M²	12,000.00	1,875.00	1,875.00	1,875.00	1,875.00	1,875.00	1,875.00	750.00	12,000.00
80 mm cabro	M²	6,000.00	937.50	937.50	937.50	937.50	937.50	937.50	375.00	6,000.00
Preparation of surface of existing NMT,	M²	11,000.00	1,718.75	1,718.75	1,718.75	1,718.75	1,718.75	1,718.75	687.50	11,000.00

Routine maintenance for Section 1	Km-Month	331.20	181.98	149.22						331.20
Routine maintenance for Section 2	Km-Month	615.60		28.80	180.00	180.00	180.00	46.80		615.60
Routine maintenance for Section 3	Km-Month	205.20						133.20	72.00	205.20
	Km-Month	1,152.00	180.00	180.00	180.00	180.00	180.00	180.00	72.00	1,152.00

# ARICS REPORT (March 2021)

## 1.Pavement Condition Summary

ROAD CONDITION SURVEY - PAVED										KeNHA: Corridor C										ARICS P (F)										ARICS P (F)																																							
COUNTY: NAIROBI										REGION: NAIROBI										CORRIDOR C																																																	
ROAD NO: A2										ROAD SECTION NAME: KIPANDE RD										SECTION LENGTH (km): 1+550																																																	
SECTION START; CHAINAGE: 0+000										LOCATION: MUSEUM HILL																																																											
SECTION END; CHAINAGE: 1+550										LOCATION: GLOBE CINEMA ROUND ABOUT																																																											
SHEET: 1 OF 10										CARRIAGEWAY WIDTH: 14										F										R H																																							
Chainage: per 200 meters										SHOULDER										ON/OFF-CARRIAGEWAY										REMARKS										STRUCTURES										Road Reserve Features																			
										G R										1 2 3 4 5										(SPOT IMPROVEMENT)										CULVERTS										REMARKS/										RRM GPS NO. WIDTH ENCR REMARKS									
																																								N RR HR NH G B										OTHER STRUCTURES																			
0+200										✓										✓																				✓										✓										NON NON 60 YES encroachment km 0+100-200(HAWKERS)									
0+400										✓										✓																														NON NON 60 YES encroachment with sewerline km 0+100-0+200																			
0+600										✓										✓																														NON NON 60 YES encroachment with kiosk 0+450																			
0+800										✓										✓																				✓										NON NON 60 NON encroachment with kiosk																			
1+000										✓										✓																				✓										NON NON 60 NON non																			
1+200										✓										✓																														NON NON 60 YES non																			
1+400										✓										✓																				✓										NON NON 60 YES clothes vendors/ GARAGE																			
1+600										✓										✓																														NON NON 60 YES clothes vendors/hawkers																			
+800																																																																					
+000																																																																					
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Σ km										1.6										1.6										Σ No										2										2 1										RRM : ROAD RESERVE MARKER POST									
SECTION KM:										1.6																																								ENCR : ENCROACHMENT																			
Σ %										1 0 0 0 0										Average Rate of Deterioration:										1																																							
PRIORITY FOR SPOT IMPROVEMENT IN THIS SECTION:										Ch:										PRIORITY FOR STRUCTURES IN THIS SECTION:										Ch: 0+200										PRIORITY FOR ROAD RESER. IN THIS SECTION:										Ch: 0+200																			
																																																												Ch: 0+000- 1+600									
																																																												Ch: 0+800									

## ROAD CONDITION SURVEY - PAVED

KeNHA: Corridor C

ARICS P (F)

ARICS P (F)

COUNTY:	NAIROBI	REGION:		CORRIDOR C
ROAD NO:	A2	ROAD SECTION NAME:	UNIVERSITY WAY	SECTION LENGTH (km):
SECTION START; CHAINAGE:	0+000	LOCATION:	GLOBE ROUND ABOUT	
SECTION END; CHAINAGE:	0+670	LOCATION:	UNIVERSITY WAY	
SHEET:	2 OF 10	CARRIAGEWAY WIDTH:	28M	

Chainage: per 200 meters	SHOULDER G R	ON/OFF-CARRIAGEWAY (Rate of Deterioration)					REMARKS (SPOT IMPROVEMENT)		STRUCTURES						Road Reserve Features				
		1	2	3	4	5			REMARKS/ OTHER STRUCTURES						RRM	GPS NO.	WIDTH	ENCR	REMARKS
		N	RR	HR	NH	G	B												
0+200	✓														NON		60	YES	HOTEL FRONTAGE TENTS
0+400	✓														NON		60	NON	
0+600	✓														NON		60	NON	
+800																			
+000																			
+200																			
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+400																			
+600																			
+800																			
+000																			
Σ km	1		0.6						Σ No										

SECTION KM: 0.6

Σ %

1 0 0 0 0

Average Rate of Deterioration:

1

PRIORITY FOR  
SPOT IMPROVEMENT  
IN THIS SECTION:

Ch:  
Ch:  
Ch:

PRIORITY FOR  
STRUCTURES  
IN THIS SECTION:

Ch:  
Ch:  
Ch:

PRIORITY FOR  
ROAD RESER.  
IN THIS SECTION

Ch:  
Ch:  
Ch:

ROAD CONDITION SURVEY - PAVED										KeNHA: Corridor C										ARICS P (F)										ARICS P (F)																																							
COUNTY: NAIROBI										REGION: NAIROBI										CORRIDOR C																																																	
ROAD NO: A2										ROAD SECTION NAME: LIMURU RD										SECTION LENGTH (km): 0+750																																																	
SECTION START; CHAINAGE: 0+000										LOCATION: LIMURU ROUND ABOUT																																																											
SECTION END; CHAINAGE: 0+750										LOCATION: NGARA STAGE																																																											
SHEET: 3 OF 10										CARRIAGEWAY WIDTH: 14m										F R H																																																	
Chainage: per 200 meters										SHOULDER: G R										ON/OFF-CARRIAGEWAY (Rate of Deterioration)										REMARKS (SPOT IMPROVEMENT)										STRUCTURES										Road Reserve Features																			
																				1 2 3 4 5																				CULVERTS										REMARKS/ OTHER STRUCTURES										RRM GPS NO. WIDTH ENCR REMARKS									
																																								N RR HR NH G B																													
+200										✓										✓																																								NON NON 60 YES encroachment by sand,flowers									
+400										✓										✓																														2no:dia 300,1no:dia 600,L=10M										NON NON 60 YES encroachment by sand,flowers									
+600										✓										✓																																								NON NON 60 YES encroachment by sand,flowers									
+800										✓										✓																														dia 450 twin, 14m										NON NON 60 YES encroachment by sand,flowers									
+000																																																																					
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SECTION KM:																				0.8																														ENCR : ENCROACHMENT																			
Σ %																				1 0 0 0 0										Average Rate of Deterioration:										1.0																													
PRIORITY FOR SPOT IMPROVEMENT IN THIS SECTION:																				Ch:										PRIORITY FOR STRUCTURES IN THIS SECTION:										Ch:										PRIORITY FOR ROAD RESER. IN THIS SECTION:										Ch:0+000 - 0+750									
																				Ch:																				Ch:																				Ch:									









ROAD CONDITION SURVEY - PAVED										KeNHA: Corridor C										ARICS P (F)										ARICS P (F)									
COUNTY: NAIROBI					REGION: NAIROBI					CORRIDOR C																													
ROAD NO: A2					ROAD SECTION NAME: KARIOKOR					SECTION LENGTH (km): 1+800																													
SECTION START; CHAINAGE: 0+000					LOCATION: PANGANI ROUND ABOUT																																		
SECTION END; CHAINAGE: 1+800					LOCATION: SHELL KARIOKOR																																		
SHEET: 5 OF 10					CARRIAGEWAY WIDTH: 26m										F					R					H														

Chainage: per 200 meters	SHOULDER G R		ON/OFF-CARRIAGEWAY (Rate of Deterioration)					REMARKS (SPOT IMPROVEMENT)	STRUCTURES							Road Reserve Features																				
			1	2	3	4	5		CULVERTS						REMARKS/ OTHER STRUCTURES	RRM	GPS NO.	WIDTH	ENCR	REMARKS																
									N	RR	HR	NH	G	B																						
0+200	✓		✓															NON	NON	60	YES	encroachment by business vendors														
0+400	✓		✓															NON	NON	60	NON															
0+600	✓		✓															NON	NON	60	NON															
0+800	✓		✓															NON	NON	60	NON															
1+000	✓		✓									✓		dia 900,18m				NON	NON	60	YES	encroachment by business vendors														
1+200	✓		✓									✓						NON	NON	60	YES															
1+400	✓		✓															NON	NON	60	YES	encroachment by business vendors														
1+600	✓		✓									✓						NON	NON	60	YES	encroachment by business vendors														
1+800	✓		✓									✓						NON	NON	60	YES	encroachment by business vendors														
+000																																				
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+200																																				
+400																																				
+600																																				
+800																																				
+000																																				
Σ km	2		1.8							Σ No			4					RRM : ROAD RESERVE MARKER POST																		
SECTION KM:		1.8																				ENCR : ENCROACHMENT														
Σ %		1		0	0	0	0	0	Average Rate of Deterioration:		1.0																									
PRIORITY FOR SPOT IMPROVEMENT IN THIS SECTION:		Ch:							PRIORITY FOR STRUCTURES IN THIS SECTION:							Ch:							PRIORITY FOR ROAD RESER. IN THIS SECTION:							Ch:0+000- 1+800						



ROAD CONDITION SURVEY - PAVED										KeNHA: Corridor C										ARICS P (F)										ARICS P (F)																													
COUNTY: <b>NAIROBI</b>										REGION: <b>NAIROBI</b>										CORRIDOR C																																							
ROAD NO: <b>A2S</b>										ROAD SECTION NAME: <b>0+000</b>										SECTION LENGTH (km): <b>5+000</b>																																							
SECTION START; CHAINAGE: <b>0+000</b>										LOCATION: <b>MUSEUM HILL</b>																																																	
SECTION END; CHAINAGE: <b>5+000</b>										LOCATION: <b>MATHARI FOOTBRIDGE</b>																																																	
SHEET: <b>6</b> OF <b>10</b>										CARRIAGEWAY WIDTH: <b>35</b>										F <b>R</b> H																																							
Chainage: per 200 meters										SHOULDER: G R										ON/OFF-CARRIAGEWAY (Rate of Deterioration)										REMARKS (SPOT IMPROVEMENT)										STRUCTURES										Road Reserve Features									
										1 2 3 4 5																				CULVERTS										REMARKS/ OTHER STRUCTURES										RRM GPS NO. WIDTH ENCR. REMARKS									
0+200 ✓										✓										NON																				1 bridge										NON picked 60 NON ramp with retaining wall 300m									
0+400 ✓										✓										NON										2 ✓										2 CBX										NON picked 60 NON ramp with retaining wall									
0+600 ✓										✓										NON										✓										1 CBX										NON picked 60 NON									
0+800 ✓										✓										NON																				2 bridge										NON picked 60 NON									
1+000 ✓										✓										NON																														NON NON 60 NON									
1+200 ✓										✓										NON										2 ✓										Ø900,2no,100m										NON NON 60 NON ramp 200m cross culvert									
1+400 ✓										✓										NON																														NON NON 60 NON									
1+600 ✓										✓										NON																														NON NON 60 NON									
1+800 ✓										✓										40m needed (15m width)																														NON NON 60 NON									
2+000 ✓										✓										NON																														NON NON 60 NON									
2+200 ✓										✓										30 by 7m																														NON									
2+400 ✓										✓										NON																														NON NON 60 NON									
2+600 ✓										✓										30 by 7m																														NON NON 60 NON									
2+800 ✓										✓										NON																														NON NON 60 NON									
3+000 ✓										✓										NON																														NON NON 60 NON									
3+200 ✓										✓										NON																														NON NON 60 NON									
3+400 ✓										✓										NON																														NON NON 60 NON									
3+600 ✓										✓										NON																														NON NON 60 NON									
3+800 ✓										✓										NON																														NON NON 80 NON									
4+000 ✓										✓										NON																														NON NON 80 NON									
4+200 ✓										✓										NON																														NON NON 80 NON									
4+400 ✓										✓										NON																														NON NON 120 muthaiga									
4+600 ✓										✓										NON																														NON NON 120 NON									
4+800 ✓										✓										NON																														NON NON 120 YES									
5+000 ✓										✓										NON																														NON NON 120 YES									
Σ km										5										Σ No										8										RRM : ROAD RESERVE MARKER POST																			
SECTION KM:										5																														ENCR : ENCROACHMENT																			
Σ %										1 0 0 0 0										Average Rate of Deterioration:										1.0																													
PRIORITY FOR SPOT IMPROVEMENT IN THIS SECTION:										Ch:										PRIORITY FOR STRUCTURES IN THIS SECTION:										Ch:										PRIORITY FOR ROAD RESER. IN THIS SECTION:																			













ROAD CONDITION SURVEY - PAVED										KeNHA: Corridor C										ARICS P (F)										ARICS P (F)									
COUNTY:		KIAMBU								REGION:		CENTRAL								CORRIDOR C																			
ROAD NO:		A2		ROAD SECTION NAME:				GITHURAI				SECTION LENGTH (km):				5+000																							
SECTION START; CHAINAGE:				15+000				LOCATION:		GITHURAI																													
SECTION END; CHAINAGE:				20+000				LOCATION:		NORTHLANDS																													
SHEET:		9 OF		110		CARRIAGEWAY WIDTH:				35m				F		R		H																					
Chainage: per 200 meters		SHOULDER LDER		ON/OFF-CARRIAGEWAY (Rate of Deterioration)		REMARKS (SPOT IMPROVEMENT)		CULVERTS		STRUCTURES		REMARKS/ OTHER STRUCTURES		Road Reserve Features																									
		G R		1 2 3 4 5				N RR HR NH G B						RRM GPS NO. WIDTH ENCR		REMARKS																							
15+200		✓		✓										YES NON 100 YES		viosks/furniture																							
14+400		✓		✓										NON NON 100 YES		githurai encroachment area																							
15+600		✓		✓										NON NON 100 YES		githurai encroachment area																							
15+800		✓		✓										NON NON 100 YES		githurai encroachment area																							
16+000		✓		✓										NON NON 100 YES		githurai encroachment area																							
16+200		✓		✓		service lane (surface dressing)								NON NON 100 YES		githurai encroachment area																							
16+400		✓		✓		service lane (surface dressing)								YES NON 100 YES		wendani encroachment																							
16+600		✓		✓		service lane (surface dressing)								YES NON 100 YES		wendani encroachment																							
16+800		✓		✓		service lane (surface dressing)				✓		Ø900,50m		YES NON 100 YES		wendani encroachment																							
17+000		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
17+200		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
17+400		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
17+600		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
17+800		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
18+000		✓		✓		service lane (surface dressing)				✓		4cells, Ø1200		YES NON 100 NON																									
18+200		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
18+400		✓		✓		service lane (surface dressing)				✓		Ø1200,cross,50m		YES NON 100 NON																									
18+600		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
18+800		✓		✓		service lane (surface dressing)								YES NON 100 YES		NRB bound KU																							
19+000		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
19+200		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
19+400		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
19+600		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
19+800		✓		✓		shoulder repair						1no. CBX		YES Picked 100 NON																									
20+000		✓		✓		service lane (surface dressing)								YES NON 100 NON																									
Σ km		5 0.2		5 0				Σ No		2				RRM : ROAD RESERVE MARKER POST																									
SECTION KM:		5												ENCR : ENCROACHMENT																									
Σ %		1 0 0 0 0				Average Rate of Deterioration:		1.0																															
PRIORITY FOR SPOT IMPROVEMENT IN THIS SECTION:		Ch: 19+600-19+700 (shoulder repair)		PRIORITY FOR STRUCTURES IN THIS SECTION:		Ch:		PRIORITY FOR ROAD RESER. IN THIS SECTION:		Ch:																													



ROAD CONDITION SURVEY - PAVED										KeNHA: Corridor C										ARICS P (F)										ARICS P (F)									
COUNTY: KIAMBU					REGION: CENTRAL					CORRIDOR C																													
ROAD NO: A2					ROAD SECTION NAME: NORTHLANDS					SECTION LENGTH (km): 1+700																													
SECTION START; CHAINAGE: 20+000					LOCATION: NORTHLANDS																																		
SECTION END; CHAINAGE: 21+700					LOCATION: GITHURAI																																		
SHEET: 10 OF 10					CARRIAGEWAY WIDTH: 35m					F					R					H																			

Chainage: per 200 meters	SHOULDER		ON/OFF-CARRIAGEWAY (Rate of Deterioration)					REMARKS (SPOT IMPROVEMENT)	CULVERTS		STRUCTURES		Road Reserve Features												
	G	R	1	2	3	4	5		N	RR	HR	NH	G	B	REMARKS/ OTHER STRUCTURES	RRM	GPS NO.	WIDTH	ENCR	REMARKS					
20+200	✓		✓													YES	NON	120	NON						
20+400	✓		✓													YES	NON	120	NON						
20+600	✓		✓													YES	NON	120	NON						
20+800	✓		✓													YES	NON	120	NON						
21+000	✓		✓													YES	NON	120	NON						
21+200	✓		✓									✓		Ø1200, cross, 4no, 50m		YES	NON	120	NON						
21+400	✓		✓													YES	NON	120	NON						
21+600	✓		✓													YES	NON	120	NON						
21+800	✓		✓													YES	NON	120	NON						
+000																									
+200																									
+400																									
+600																									
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+400																									
+600																									
+800																									
+000																									
+200																									
+400																									
+600																									
+800																									
+000																									
Σ km	2		1.8						Σ No				1			RRM : ROAD RESERVE MARKER POST									
SECTION KM: 1.8															ENCR : ENCROACHMENT										
Σ %			1	0	0	0	0	Average Rate of Deterioration:			1.0														
PRIORITY FOR SPOT IMPROVEMENT IN THIS SECTION:			Ch:					PRIORITY FOR STRUCTURES IN THIS SECTION:			Ch:					PRIORITY FOR ROAD RESER. IN THIS SECTION:					Ch:				

## 2.Structures

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Murang'a Road		Location: Km from: 0+750		River Width:		
Road Name: A2S		Carriageway Width: 2.2 m		Present Water Level:		
Name of Crossing: Footbridge		Side Walk/Shoulder Width:		Highest Water Level		
County: Nairobi		Design Spec: STEEL		Topography: Rolling		
				Construction Year: 2011		
Superstructure	Bridge Type:	Steel foot Bridge			Type of abutment	Steel
	Span Composition:	2 Span, 35,35			Height of abutment (A-1)	7.5
	Clear Span/Bridge Length	70 m			Height of abutment (A-2)	7.5
	Effective Span Length:	74 m				
	Type of Support	Fixed				
	Type of structure	Steel foot Bridge				
	Type of Deck Slab	RC				
	Spacing of girders	2.55 m				
	Beam Depth	0.35 m				
	Number of beams	2				
	Thickness of slab	0.15				
Components and ancillary	Type of expansion joint	Single Gap			Foundation	pad
	Type of Bearing	N/a				
	Type of Railing	Steel Railing			Surface	
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 258182, 9859582						
Inspected by: WWW				Date:9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Kariokor Footbridge		Location: Km from: 0+450		River Width: N/A		
Road Name: A2S -Kariokor stretch		Carriageway Width: 2.2		Present Water Level:		
Name of Crossing: Footbridge		Side Walk/Shoulder Width:		Highest Water Level		
County: Nairobi		Design Spec: Steel		Topography: Rolling		
				Construction Year: 2011		
Superstructure	Bridge Type:	Steel		Substructure: Steel column	Type of abutment	RC
	Span Composition:	2 span			Height of abutment (A-1)	7.5
	Clear Span/Bridge Length	70 m			Height of abutment (A-2)	7.5
	Effective Span Length:	70 m				
	Type of Support	Fixed				
	Type of structure	Steel foobridge				
	Type of Deck Slab	RC				
	Spacing of girders	2.55 m				
	Beam Depth	0.35 m				
	Number of beams	2				
Thickness of slab	0.15 m					
Components and ancillary	Type of expansion joint	S. Gap		Foundation	pad	
	Type of Bearing	N/A				
	Type of Railing	Steel Railing			Surface: Concrete	
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes						
Inspected by: WWW				Date:9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Globe		Location: Km from: 0+950		River Width: 15 m		
Road Name: A2S		Carriageway Width: 14 m		Present Water Level: 2 m		
Name of Crossing:Globe Flyover		Side Walk/Shoulder Width: N/A		Highest Water Level 4 m		
County: Nairobi		Design Spec: RC		Topography: Rolling		
				Construction Year: 2011		
Superstructure	Bridge Type:	RC		Substructure: RC Abutments and Peirs	Type of abutment	RC
	Span Composition:	8 span each 25 m			Height of abutment (A-1)	8 m
	Clear Span/Bridge Length	200 m			Height of abutment (A-2)	8 m
	Effective Span Length:	204 m			Piers	10 m
	Type of Support	Simple				
	Type of structure	RC				
	Type of Deck Slab	RC				
	Spacing of girders	1.2 m				
	Beam Depth	1.2 m				
	Number of beams	10				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	S. Gap		Foundation	Pad & Strip	
	Type of Bearing	Fixed with Rubber				
	Type of Railing	Steel Railing			Surface: AC	
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 257454, 9858852						
Inspected by: WWW				Date:9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: <b>Globe inbound</b>		Location: Km from: 0+150		River Width: 15 m	Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: <b>A2S</b>		Carriageway Width: 8 m	Present Water Level: 2 m		Meandering: yes	
Name of Crossing: <b>Nairobi River</b>		Side Walk/Shoulder Width: 1.2x2 m		Highest Water Level 4m	Contractor:	
County: <b>Nairobi</b>		Design Spec: <b>RC</b>		Topography: <b>Rolling</b>	Construction Year: 2011	
Superstructure	Bridge Type:	RC		Substructure : RC Abt and Piers	Type of abutment	RC
	Span Composition:	1 Span			Height of abutment (A-1)	8 m
	Clear Span/Bridge Length	15 m			Height of abutment (A-2)	8 m
	Effective Span Length:	17 m				
	Type of Support	Simple				
	Type of structure	RC				
	Type of Deck Slab	RC				
	Spacing of girders	1.2m				
	Beam Depth	0.75 m				
	Number of beams	7				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	S. Gap		Foundation: Strip		
	Type of Bearing	Pad				
	Type of Railing	Steel				
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 257548, 9858835						
Inspected by: WWW				Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: <b>Globe Outbound</b>		Location: Km from: 1+400		River Width: 15 m	Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: <b>A2S</b>		Carriageway Width: 8 m	Present Water Level: 2 m		Meandering: yes	
Name of Crossing: <b>Nairobi River</b>		Side Walk/Shoulder Width: 1.2x 2		Highest Water Level 4m	Contractor:	
County: <b>Nairobi</b>		Design Spec: <b>Masonry Walls and RC Deck</b>		Topography: <b>Rolling</b>	Construction Year: 1950	
Superstructure	Bridge Type:	Masonry & RC		Substructure : Masonry Abutments .	Type of abutment	Masonry
	Span Composition:	1 Span			Height of abutment (A-1)	8 m
	Clear Span/Bridge Length	8 m			Height of abutment (A-2)	8 m
	Effective Span Length:	10 m				
	Type of Support					
	Type of structure	Masonry ABT				
	Type of Deck Slab	RC				
	Spacing of girders	2 m				
	Beam Depth	0.75 m				
	Number of beams	8				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	S. Gap		Foundation: Strip		
	Type of Bearing	Pad				
	Type of Railing	Steel				
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 0257406, 9858927						
Inspected by: WWW				Date: 9/03/2021		



INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS					
Bridge Name: University Way		Location: Km from: 0+400		River Width: N/A	Detour: Yes: No: ✓
Road Name: A2S University Way		Carriageway Width: 33 m	Present Water Level: N/A		Meandering: yes
Name of Crossing: Foot Path		Side Walk/Shoulder Width: 2 m	Highest Water Level N/A		Contractor:
County: Nairobi		Design Spec: RC	Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	RC	Substructure : RC wall and Piers	Type of abutment	RC
	Span Composition:	1 Span		Height of abutment (A-1)	8 m
	Clear Span/Bridge Length	15 m		Height of abutment (A-2)	8 m
	Effective Span Length:	17 m			
	Type of Support	Simple			
	Type of structure	RC			
	Type of Deck Slab				
	Spacing of girders	1.2m			
	Beam Depth	0.7 m			
	Number of beams	7			
Thickness of slab	0.45 m				
Components and ancillary	Type of expansion joint	S. Gap	Foundation: Strip & Pad		
	Type of Bearing	Pad			
	Type of Railing	Steel			
Bridge Profile (Sketch)			Bridge Cross Section (Sketch)		
Additional Notes 257548, 9858835					
Inspected by: WWW			Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS					
Bridge Name: Waiyaki Way		Location: Km from: 0+130		River Width:	Detour: Yes: No: ✓
Road Name: A2S		Carriageway Width:	Present Water Level:		Meandering:
Name of Crossing: Nairobi River		Side Walk/Shoulder Width:	Highest Water Level		Contractor:
County: Nairobi		Design Spec: RC	Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	RC Bridge	Substructure:	Type of abutment	RC
	Span Composition:	One Span		Height of abutment (A-1)	3.5
	Clear Span/Bridge Length	14 m		Height of abutment (A-2)	3.5
	Effective Span Length:	15 m			
	Type of Support	Simply supported			
	Type of structure	Re Bridge			
	Type of Deck Slab	RC			
	Spacing of girders	N/A			
	Beam Depth	N/A			
	Number of beams	N/A			
Thickness of slab	0.4 M				
Components and ancillary	Type of expansion joint	Spacer simple joint	Foundation	Strip	
	Type of Bearing	Fixed Pad			
	Type of Railing	Concrete with steel Handrail			
Bridge Profile (Sketch)			Bridge Cross Section (Sketch)		
Additional Notes 256431, 9859311					
Inspected by: WWW			Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Museum Box 1		Location: Km from: 0+300		River Width: 10 m		
Road Name: A2S		Carriageway Width: 14 m		Present Water Level: 1 m		
Name of Crossing: Nairobi River		Side Walk/Shoulder Width:		Highest Water Level 4 m		
County: Nairobi		Design Spec: 2(5x6) 36 m		Topography: Rolling		
Construction Year:		2011				
Superstructure	Bridge Type:	RC Box Culvert		Substructure: Rc wall	Type of abutment	RC
	Span Composition:	2 Cell (5x36), Height = 6			Height of abutment (A-1)	6 m
	Clear Span/Bridge Length	10 m			Height of abutment (A-2)	6 m
	Effective Span Length:	11 m				
	Type of Support	N/A				
	Type of structure	RC Twin Cell box culvert				
	Type of Deck Slab	RC Slab				
	Spacing of girders	N/A				
	Beam Depth	N/A				
	Number of beams	N/A				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	N/A		Foundation : Slab		
	Type of Bearing	N/A				
	Type of Railing	Concrete walls		Surface		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 0256358E,9859253N The box structurally sound.						
Inspected by: WWW				Date:9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Museum Box 2		Location: Km from: 0+450		River Width: 10 m		
Road Name: A2S		Carriageway Width: 14 m		Present Water Level: 1 m		
Name of Crossing: Nairobi River		Side Walk/Shoulder Width:		Highest Water Level 4 m		
County: Nairobi		Design Spec: 2(5x6) 36 m		Topography: Rolling		
Construction Year:		2011				
Superstructure	Bridge Type:	RC Box Culvert		Substructure: Rc wall	Type of abutment	RC
	Span Composition:	2 Cell (5x36), 4 m, 4m			Height of abutment (A-1)	6 m
	Clear Span/Bridge Length	10 m			Height of abutment (A-2)	6 m
	Effective Span Length:	11 m				
	Type of Support	N/A				
	Type of structure	RC Twin Cell box culvert				
	Type of Deck Slab	RC Slab				
	Spacing of girders	N/A				
	Beam Depth	N/A				
	Number of beams	N/A				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	N/A		Foundation : Slab		
	Type of Bearing	N/A				
	Type of Railing	Concrete walls		Surface		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 0256358E,9859253N The box structurally sound.						
Inspected by: WWW				Date:9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Museum Box 3		Location: Km from: 0+600		River Width: 10 m		
Road Name: A2S		Carriageway Width:		Present Water Level: 1 m		
Name of Crossing: Nairobi River		Side Walk/Shoulder Width:		Highest Water Level 4 m		
County: Nairobi		Design Spec: Twin Box Culvert		Topography: Rolling		
				Construction Year: 2011		
Superstructure	Bridge Type:	Twin cell box Culvert		Substructure: RC Walls	Type of abutment	RC
	Span Composition:	2 cells (3.5x6x47)			Height of abutment (A-1)	6 m
	Clear Span/Bridge Length	7 m			Height of abutment (A-2)	6 m
	Effective Span Length:	8 m				
	Type of Support	N/A				
	Type of structure	Rc Box Culvert				
	Type of Deck Slab	RC Slab				
	Spacing of girders	N/A				
	Beam Depth	N/A				
	Number of beams	N/A				
Thickness of slab	N/A					
Components and ancillary	Type of expansion joint	N/A		Foundation: Slab		
	Type of Bearing	N/A				
	Type of Railing	N/A				
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 0256333E,9859346N The structure is sound and one cell is quarterly silted.						
Inspected by: WWW				Date:9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Museum Hill		Location: Km from: 0+700		River Width:10 m		
Road Name: A2 S		Carriageway Width: 14 m		Present Water Level:		
Name of Crossing:Museum Flyover		Side Walk/Shoulder Width:		Highest Water Level		
County: Nairobi		Design Spec: RC		Topography: Rolling		
				Construction Year: 2011		
Superstructure	Bridge Type:	RC Bridge		Substructure Reinforced concrete	Type of abutment	Rc
	Span Composition:	5 Span 25 m, 25.5 m, 25 m, 25 m,25 m			Height of abutment (A-1)	7 m
	Clear Span/Bridge Length	125 m			Height of abutment (A-2)	7 m
	Effective Span Length:	127 m			8 piers	10.8 m
	Type of Support	Simply supported				
	Type of structure	RC Bridge				
	Type of Deck Slab	RC				
	Spacing of girders	1.2 m				
	Beam Depth	1.5 m				
	Number of beams	10				
Thickness of slab	0.4 m					
Components and ancillary	Type of expansion joint	Space with Angle Iron		Foundation: Pad		
	Type of Bearing	Pad				
	Type of Railing	Concrete with steel hand rail				
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 256458, 9859315						
Inspected by: WWW				Date:9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Museum slip RD		Location: Km from: 0+800		River Width: 10 m		
Road Name: A2S		Carriageway Width: 7M		Present Water Level: 1 m		
Name of Crossing:		Side Walk/Shoulder Width:		Highest Water Level		
County: Nairobi		Design Spec: One sided 2m		Topography: Rolling		
				Construction Year: 1950		
Superstructure	Bridge Type:	Arch Slab bridge		Substructure: RC Walls	Type of abutment	RC Arch
	Span Composition:	One Span			Height of abutment (A-1)	2.5 m
	Clear Span/Bridge Length	14m			Height of abutment (A-2)	3 m
	Effective Span Length:	15m				
	Type of Support	Abutments				
	Type of structure	RC				
	Type of Deck Slab	RC				
	Spacing of girders	N/A				
	Beam Depth	N/A				
	Number of beams	N/A				
Thickness of slab	N/A					
Components and ancillary	Type of expansion joint	N/A		Foundation: Strip		
	Type of Bearing	N/A				
	Type of Railing	N/A		Surface: AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 256497, 9859338						
Inspected by: WWW				Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Ojijo/ Flyover		Location: Km from: 0+950		River Width: N/A		
Road Name: A2S		Carriageway Width: 14 m		Present Water Level: N/A		
Name of Crossing:		Side Walk/Shoulder Width:		Highest Water Level		
County: Nairobi		Design Spec: RC Bridge		Topography: Rolling		
				Construction Year: 2011		
Superstructure	Bridge Type:	RC Bridge		Substructure: RC Walls	Type of abutment	RC
	Span Composition:	2 Span 26.4 m, 26.4 m			Height of abutment (A-1)	7 m
	Clear Span/Bridge Length	52.8 m			Height of abutment (A-2)	7 m
	Effective Span Length:	53.8 m			Piers	7 m
	Type of Support	Simply Supported				
	Type of structure	RC Bridge				
	Type of Deck Slab	RC				
	Spacing of girders	1.5 m				
	Beam Depth	1.5 m				
	Number of beams	10 m				
Thickness of slab	0.4 m					
Components and ancillary	Type of expansion joint	Gap		Foundation: Strip		
	Type of Bearing	Pad				
	Type of Railing	Concrete G/rails with pipe Handrail.		Surface: AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 256731, 9859592						
Inspected by: WWW				Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS					
Bridge Name: Limuru Flyover (2 Bridges)		Location: Km from: 2+100		River Width: N/A	Detour: Yes: No: <input checked="" type="checkbox"/>
Road Name: A2S		Carriageway Width: 14 M	Present Water Level: N/A		Meandering:
Name of Crossing:		Side Walk/Shoulder Width:	Highest Water Level		Contractor:
County: Nairobi		Design Spec: RC	Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	RC Bridge		Type of abutment	square wing walls
	Span Composition:	(1). 3 span 25, 25, 25 (2). 4 Span 25, 25, 25, 25		Height of abutment (A-1)	8m
	Clear Span/Bridge Length	(1) 75 m (2) 100 m		Height of abutment (A-2)	8m
	Effective Span Length:	(1) 79 m (2) 104 m			
	Type of Support	Simple		Substructure: Pier and Abt	
	Type of structure	RC			
	Type of Deck Slab	RC			
	Spacing of girders	1.2 m			
	Beam Depth	1.5 m			
	Number of beams	5 No both Bridges			
Thickness of slab	0.45 m				
Components and ancillary	Type of expansion joint	Gap		Foundation: Pad & Strip	For Pier Pad
	Type of Bearing	Fixed with Rubber			Abutment Strip
	Type of Railing	Concrete		Surface : AC	
Bridge Profile (Sketch)			Bridge Cross Section (Sketch)		
Additional Notes					
Inspected by: WWW			Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS					
Bridge Name: Pangani		Location: Km from: 3+450		River Width:	Detour: Yes: No: <input checked="" type="checkbox"/>
Road Name: A2S		Carriageway Width: 14 m	Present Water Level:		Meandering:
Name of Crossing:		Side Walk/Shoulder Width:	Highest Water Level		Contractor:
County: Nairobi		Design Spec: RC	Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	RC Bridge		Type of abutment	RC
	Span Composition:	7 span		Height of abutment (A-1)	7 m
	Clear Span/Bridge Length	175 m		Height of abutment (A-2)	7 m
	Effective Span Length:	180 m			
	Type of Support	Simple		Substructure: RC ABT & Piers	
	Type of structure	RC			
	Type of Deck Slab	RC			
	Spacing of girders	1.2 m			
	Beam Depth	1.5 m			
	Number of beams	5			
Thickness of slab	0.45 m				
Components and ancillary	Type of expansion joint	Simple Gap		Foundation: Pad & Strip	
	Type of Bearing	Fixed with Rubber			
	Type of Railing	Concrete with Handrail		Surface : AC	
Bridge Profile (Sketch)			Bridge Cross Section (Sketch)		
Additional Notes 0258878E, 9860181N					
Inspected by: WWW			Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Pangani Foot bridge		Location: Km from: 4+120		River Width:	Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2S		Carriageway Width: 2.2 m	Present Water Level:		Meandering:	
Name of Crossing:		Side Walk/Shoulder Width:		Highest Water Level	Contractor:	
County: Nairobi		Design Spec: Steel and RC		Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	Steel		Substructure: Steel column	Type of abutment	Steel
	Span Composition:	2 Span 35, 35			Height of abutment (A-1)	7.5 m
	Clear Span/Bridge Length	70 m			Height of abutment (A-2)	7.5 m
	Effective Span Length:	70 m				
	Type of Support	Steel Columns				
	Type of structure	Steel				
	Type of Deck Slab	Composite ( Steel & Concrete)				
	Spacing of girders	2 m				
	Beam Depth	2 m				
	Number of beams	2				
Thickness of slab	0.15 m					
Components and ancillary	Type of expansion joint	N/A		Foundation:		
	Type of Bearing	N/A				
	Type of Railing	N/A		Surface: AC		
				Bridge Cross Section (Sketch)		
Additional Notes 0259221E, 9860522N						
Inspected by: WWW				Date:9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Pangani		Location: Km from: 4+400		River Width:	Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2S		Carriageway Width: 8 m	Present Water Level:		Meandering:	
Name of Crossing: Underpath		Side Walk/Shoulder Width:		Highest Water Level	Contractor:	
County: Nairobi		Design Spec:RC		Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	RC		Substructure: RC Wall	Type of abutment	RC
	Span Composition:	One Span			Height of abutment (A-1)	7.5 m
	Clear Span/Bridge Length	14 m			Height of abutment (A-2)	7.5 m
	Effective Span Length:	15 m				
	Type of Support	RC				
	Type of structure	RC				
	Type of Deck Slab	RC				
	Spacing of girders	N/A				
	Beam Depth	N/A				
	Number of beams	N/A				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	N/A		Foundation . Strip		
	Type of Bearing	N/A				
	Type of Railing	Concrete		Surface: AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 260729, 9861178						
Inspected by: WWW				Date:9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Muthaiga Footbridge		Location: Km from: 4+950		River Width:	Detour: Yes: No:	
Road Name: A2 S		Carriageway Width: 2.2	Present Water Level:		Meandering:	
Name of Crossing:		Side Walk/Shoulder Width:		Highest Water Level	Contractor:	
County: Nairobi		Design Spec: Steel		Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	Steel Foot bridge		Substructure: Steel Columns	Type of abutment	Steel
	Span Composition:	2 Span 35 m, 35 m			Height of abutment (A-1)	7.5
	Clear Span/Bridge Length	70 m			Height of abutment (A-2)	7.5
	Effective Span Length:	74 m				
	Type of Support	Fixed				
	Type of structure	Steel Foot bridge				
	Type of Deck Slab	RC				
	Spacing of girders	2.55 m				
	Beam Depth	0.35 m				
	Number of beams	2				
Thickness of slab	0.15 m					
Components and ancillary	Type of expansion joint	S.Gap		Foundation: Pad		
	Type of Bearing	N/A				
	Type of Railing	Steel		Surface		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 260081, 9861011						
Inspected by: WWW				Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Mathari		Location: Km from: 5+700		River Width: 15 m	Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2 S		Carriageway Width: 14 m	Present Water Level: 2 m		Meandering:	
Name of Crossing: Matahri River		Side Walk/Shoulder Width:		Highest Water Level 5 m	Contractor:	
County: Nairobi		Design Spec: RC		Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	Steel		Substructure: RC Abt	Type of abutment	RC
	Span Composition:	one Span			Height of abutment (A-1)	7.5 m
	Clear Span/Bridge Length	15 m			Height of abutment (A-2)	7.5 m
	Effective Span Length:	17 m				
	Type of Support	Simple				
	Type of structure	RC				
	Type of Deck Slab	RC				
	Spacing of girders	1.2 m				
	Beam Depth	1.5 m				
	Number of beams	14				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	Gap		Foundation: Strip		
	Type of Bearing	Pad with Rubber				
	Type of Railing	Concrete with Steel		Surface : AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 261273, 9861386 . 2 No. Bridges, NB and TB at the highway						
Inspected by: WWW				Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: NYS Footbridge		Location: Km from: 6+300		River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>
Road Name: A2S		Carriageway Width: 2.2 m		Present Water Level:		Meandering:
Name of Crossing:		Side Walk/Shoulder Width:		Highest Water Level		Contractor:
County: Nairobi		Design Spec: Steel		Topography: Rolling		Construction Year: 2011
Superstructure	Bridge Type:	Steel		Substructure : Steel	Type of abutment	
	Span Composition:	2 Bridges on service lane			Height of abutment (A-1)	7.5 m
	Clear Span/Bridge Length	70 m			Height of abutment (A-2)	7.5 m
	Effective Span Length:	74 m				
	Type of Support	Fixed				
	Type of structure	Steel				
	Type of Deck Slab	RC				
	Spacing of girders	2.55 m				
	Beam Depth	0.35 m				
	Number of beams	2				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	Gap		Foundation: Pad		
	Type of Bearing	N/A				
	Type of Railing	Steel		Surface : Concrete		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 260772, 9861174						
Inspected by: WWW				Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: KCA		Location: Km from: 6+700		River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>
Road Name: A2S		Carriageway Width: 8 m		Present Water Level:		Meandering:
Name of Crossing: Underpath		Side Walk/Shoulder Width:		Highest Water Level		Contractor:
County: Nairobi		Design Spec: RC		Topography: Rolling		Construction Year: 2011
Superstructure	Bridge Type:	RC		Substructure : Steel	Type of abutment	RC
	Span Composition:	One Span			Height of abutment (A-1)	7 m
	Clear Span/Bridge Length	14 m			Height of abutment (A-2)	7 m
	Effective Span Length:	15 m				
	Type of Support	Simply				
	Type of structure	RC				
	Type of Deck Slab	RC				
	Spacing of girders	N/A				
	Beam Depth	N/A				
	Number of beams	N/A				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	N/A		Foundation: Pad		
	Type of Bearing	N/A				
	Type of Railing	Concrete		Surface : AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 261589, 9861692						
Inspected by: WWW				Date: 9/03/2021		



INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: KSMS FB		Location: Km from: 7+500			River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: Nairobi-Thika		Carriageway Width: 16 m		Present Water Level:		Meandering:			
Name of Crossing:		Side Walk/Shoulder Width: 7M+3.5M			Highest Water Level		Contractor:		
County: Nairobi		Design Spec: Steel			Topography: Rolling		Construction Year:		2021
Superstructure	Bridge Type:	Steel			Substructure: Concrete RC	Type of abutment	RC Columns		
	Span Composition:	13 Span 38 m, 15m				Height of abutment (A-1)	7.5 m		
	Clear Span/Bridge Length	66 m				Height of abutment (A-2)	7.5 m		
	Effective Span Length:	81 m							
	Type of Support	Fixed							
	Type of structure	Steel FB							
	Type of Deck Slab	RC							
	Spacing of girders	3.5 m							
	Beam Depth	0.45 m							
	Number of beams	4 No							
Thickness of slab	0.35 m								
Components and ancillary	Type of expansion joint	Gap			Foundation: PAD				
	Type of Bearing	N/A							
	Type of Railing	Steel							
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 9862200, 262157									
Inspected by: WWW					Date: 9/03/2021				
INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: GSU Fly Over		Location: Km from: 8+200			River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2 Thika Road		Carriageway Width: 16 m		Present Water Level:		Meandering:			
Name of Crossing:		Side Walk/Shoulder Width: 7M+3.5M			Highest Water Level		Contractor:		
County: Nairobi		Design Spec: RC			Topography: Rolling		Construction Year:		2011
Superstructure	Bridge Type:	RC			Substructure: Concrete	Type of abutment	Concrete		
	Span Composition:	2 Span 20 m, 20 m				Height of abutment (A-1)	7 m		
	Clear Span/Bridge Length	40 m				Height of abutment (A-2)	7 m		
	Effective Span Length:	48 m							
	Type of Support	Simply supported							
	Type of structure	RC							
	Type of Deck Slab	RC							
	Spacing of girders	1.2 m							
	Beam Depth	1.5 m							
	Number of beams	12 m							
Thickness of slab	0.4 m								
Components and ancillary	Type of expansion joint	Gap/ Simple			Foundation: Strip				
	Type of Bearing	N/A							
	Type of Railing	Concrete							
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 0262935E, 9863315N (Fully silted expansion Joints)									
Inspected by: WWW					Date: 9/03/2021				

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: GSU Fly Over		Location: Km from: 8+150		River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>
Road Name: A2S		Carriageway Width: 16 m		Present Water Level:		Meandering:
Name of Crossing:		Side Walk/Shoulder Width:		Highest Water Level		Contractor:
County: Nairobi		Design Spec: RC		Topography: Rolling		Construction Year: 2019
Superstructure	Bridge Type:	RC bridge		Substructure: RC	Type of abutment	RC
	Span Composition:	One Span			Height of abutment (A-1)	7.5 m
	Clear Span/Bridge Length	12 m			Height of abutment (A-2)	7.5 m
	Effective Span Length:	15 m				
	Type of Support					
	Type of structure	RC bridge				
	Type of Deck Slab	RC				
	Spacing of girders	N/A				
	Beam Depth	N/A				
	Number of beams	N/A				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	N/A		Foundation: Strip		
	Type of Bearing	N/A				
	Type of Railing			Surface AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 262583, 9862600 (Guardrails not fixed)						
Inspected by: WWW				Date: 9/03/2021		
INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: GSU Fly Over New		Location: Km from: 8+500		River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>
Road Name: A2S		Carriageway Width: 16 m		Present Water Level:		Meandering:
Name of Crossing:		Side Walk/Shoulder Width:		Highest Water Level		Contractor:
County: Nairobi		Design Spec: RC		Topography: Rolling		Construction Year: 2019
Superstructure	Bridge Type:	RC bridge		Substructure: RC ABT and Piers	Type of abutment	RC
	Span Composition:	4 Span 19 m, 19 m, 19 m, 19 m			Height of abutment (A-1)	9.0 m
	Clear Span/Bridge Length	76 m			Height of abutment (A-2)	9.0 m
	Effective Span Length:	79 m			Piers	10.5 m
	Type of Support	Simple				
	Type of structure	RC bridge				
	Type of Deck Slab	RC				
	Spacing of girders	N/A				
	Beam Depth	0.7 M				
	Number of beams	24				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	Gap with iron		Foundation: Strip & Pad		
	Type of Bearing	N/A				
	Type of Railing	Concrete walls		Surface AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 262805, 9862996						
Inspected by: WWW				Date: 9/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: Ruaraka		Location: Km from: 8+860			River Width: 6.4 m		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width: 8 m		Present Water Level: 1 m		Meandering:			
Name of Crossing:		Side Walk/Shoulder Width: 4 m			Highest Water Level 3 m		Contractor:		
County: Nairobi		Design Spec: RC			Topography: Rolling		Construction Year:		2011
Superstructure	Bridge Type:	CBX			Substructure: RC	Type of abutment	RC		
	Span Composition:	3 Cells (2x3x12)				Height of abutment (A-1)	3 m		
	Clear Span/Bridge Length	6.4 m				Height of abutment (A-2)	N/A		
	Effective Span Length:	7.2 m							
	Type of Support	N/A							
	Type of structure	RC CBX							
	Type of Deck Slab	RC							
	Spacing of girders	N/A							
	Beam Depth	N/A							
	Number of beams	N/A							
Thickness of slab	0.45 m								
Components and ancillary	Type of expansion joint	N/A			Foundation: Slab				
	Type of Bearing	N/A							
	Type of Railing	N/A			Surface AC				
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 262935, 9863315 structure on thika bound service road									
Inspected by: WWW					Date: 9/03/2021				
INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: Ruaraka		Location: Km from: 8+860			River Width: 6.4 m		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width: 8 m		Present Water Level: 1 m		Meandering:			
Name of Crossing: Ruaraka River		Side Walk/Shoulder Width: 4 m			Highest Water Level 3 m		Contractor:		
County: Nairobi		Design Spec: RC			Topography: Rolling		Construction Year:		2011
Superstructure	Bridge Type:	CBX			Substructure: RC	Type of abutment	RC		
	Span Composition:	3 Cells (6x4x35)				Height of abutment (A-1)	4 m		
	Clear Span/Bridge Length	6 m				Height of abutment (A-2)	N/A		
	Effective Span Length:	6.8 m							
	Type of Support	N/A							
	Type of structure	RC CBX							
	Type of Deck Slab	RC							
	Spacing of girders	N/A							
	Beam Depth	N/A							
	Number of beams	N/A							
Thickness of slab	0.45 m								
Components and ancillary	Type of expansion joint	N/A			Foundation: Slab				
	Type of Bearing	N/A							
	Type of Railing	N/A			Surface AC				
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 262935, 9863315									
Inspected by: WWW					Date: 9/03/2021				

<b>Bridge Name: Homeland Fly Over</b>		<b>Location:</b> Km from: 9+500		<b>River Width:</b>	<b>Detour:</b> Yes: No: <input checked="" type="checkbox"/>	
<b>Road Name: A2S</b>		<b>Carriageway Width: 16 m</b>	<b>Present Water Level:</b>		<b>Meandering:</b>	
<b>Name of Crossing:</b>		<b>Side Walk/Shoulder Width: 4 m</b>		<b>Highest Water Level</b>	<b>Contractor:</b>	
<b>County: Nairobi</b>		<b>Design Spec: RC Bridge</b>		<b>Topography: Rolling</b>	<b>Construction Year:</b>	2011
Superstructure	Bridge Type:	RC		Substructure: RC	Type of abutment	RC
	Span Composition:	2 Span 17m ,17 m			Height of abutment (A-1)	7.0 m
	Clear Span/Bridge Length	34 m			Height of abutment (A-2)	7.0 m
	Effective Span Length:	36 m				
	Type of Support	Simple				
	Type of structure	RC Fly Over Bridge				
	Type of Deck Slab	RC				
	Spacing of girders	1.2 m				
	Beam Depth	1.5 m				
	Number of beams	12				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	Gap		Foundation: Strip		
	Type of Bearing	pad				
	Type of Railing			Surface: AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 263286, 9863364						
Inspected by: WWW				Date:10/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
<b>Bridge Name: Garden City FB</b>		<b>Location:</b> Km from:10+050		<b>River Width:</b>	<b>Detour:</b> Yes: No: <input checked="" type="checkbox"/>	
<b>Road Name: Nairobi-Thika</b>		<b>Carriageway Width: 16 m</b>	<b>Present Water Level:</b>		<b>Meandering:</b>	
<b>Name of Crossing:</b>		<b>Side Walk/Shoulder Width: 7M+3.5M</b>		<b>Highest Water Level</b>	<b>Contractor:</b>	
<b>County: Nairobi</b>		<b>Design Spec: Steel</b>		<b>Topography:Rolling</b>	<b>Construction Year:</b>	2021
Superstructure	Bridge Type:	Steel		Substructure: Concrete RC	Type of abutment	RC Columns
	Span Composition:	13 Span 38 m, 15m			Height of abutment (A-1)	7.5 m
	Clear Span/Bridge Length	66 m			Height of abutment (A-2)	7.5 m
	Effective Span Length:	81 m				
	Type of Support	Fixed				
	Type of structure	Steel FB				
	Type of Deck Slab	RC				
	Spacing of girders	3.5 m				
	Beam Depth	0.45 m				
	Number of beams	4 No				
Thickness of slab	0.35 m					
Components and ancillary	Type of expansion joint	Gap		Foundation: PAD		
	Type of Bearing	N/A				
	Type of Railing	Steel		Surface: RC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 9862200, 262157						
Inspected by: WWW				Date:10/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Safari Park		Location: Km from: 11+000		River Width:	Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2S		Carriageway Width:	Present Water Level:		Meandering:	
Name of Crossing:		Side Walk/Shoulder Width: 2x2		Highest Water Level	Contractor:	
County: Nairobi		Design Spec: CBX (5.4x2x70)		Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	CBX		Substructure: RC Walls	Type of abutment	RC
	Span Composition:	Single cell			Height of abutment (A-1)	2 m
	Clear Span/Bridge Length	5.4 m			Height of abutment (A-2)	
	Effective Span Length:	6.2 m				
	Type of Support	N/A				
	Type of structure	RC				
	Type of Deck Slab	RC				
	Spacing of girders	N/A				
	Beam Depth	N/A				
	Number of beams	N/A				
Thickness of slab	0.45 m					
Components and ancillary	Type of expansion joint	N/A		Foundation: Slab		
	Type of Bearing	N/A				
	Type of Railing	N/A		Surface: AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 264500.9864713						
Inspected by: WWW				Date: 10/03/2021		
INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Safari park (Usiu)		Location: Km from: 11+050		River Width:	Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2 Thika Road		Carriageway Width: 2.2	Present Water Level:		Meandering:	
Name of Crossing:		Side Walk/Shoulder Width: N/A		Highest Water Level	Contractor:	
County: Nairobi		Design Spec: Steel Foot bridge		Topography: Rolling	Construction Year:	2011
Superstructure	Bridge Type:	Steel		Substructure: Steel Column	Type of abutment	Steel
	Span Composition:	2 spans 35 m, 35 m			Height of abutment (A-1)	7.5 m
	Clear Span/Bridge Length	70 m			Height of abutment (A-2)	7.5 m
	Effective Span Length:	74 m				
	Type of Support	Fixed				
	Type of structure	Steel				
	Type of Deck Slab	RC				
	Spacing of girders	2.55 m				
	Beam Depth	0.35 m				
	Number of beams	2				
Thickness of slab	0.15 m					
Components and ancillary	Type of expansion joint	Gap		Foundation: Pad		
	Type of Bearing	N/A				
	Type of Railing	Steel		Surface: Concrete		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 264558, 9844736						
Inspected by: WWW				Date: 10/03/2021		

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: Kasarani		Location: Km from: 12+000			River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width: 25M		Present Water Level:		Meandering:			
Name of Crossing:		Side Walk/Shoulder Width:			Highest Water Level		Contractor:		
County: Kiambu		Design Spec: RC Bridge			Topography: Rolling		Construction Year:		
Superstructure	Bridge Type:	RC Bridge			Substructure: RC	Type of abutment			
	Span Composition:	4 Spans				Height of abutment (A-1)	8M		
	Clear Span/Bridge Length	84 m				Height of abutment (A-2)	8M		
	Effective Span Length:	86 m				Piers (6 in No)	8M		
	Type of Support	Simple support							
	Type of structure	R.C							
	Type of Deck Slab	RC							
	Spacing of girders	1.2 m							
	Beam Depth	1.5 m							
	Number of beams	16							
Thickness of slab	0.45 m								
Components and ancillary	Type of expansion joint	Gap			Foundation	Strip-Abutment			
	Type of Bearing	Fixed pad, Rubber bearing				Pad- Piers			
	Type of Railing	Concrete with steel rail.			Surface	AC			
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 265285, 9865422									
Inspected by: WWW					Date:10/03/2021				
INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: Roysambu		Location: Km from: 12+300			River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width: 25 m		Present Water Level:		Meandering:			
Name of Crossing:		Side Walk/Shoulder Width:			Highest Water Level		Contractor:		
County: Kiambu		Design Spec: Steel			Topography: Rolling		Construction Year: 2011		
Superstructure	Bridge Type:	Steel			Substructure: Steel Column	Type of abutment	Steel		
	Span Composition:	2 Spans 35 m, 35 m				Height of abutment (A-1)	7.5 m		
	Clear Span/Bridge Length	70 m				Height of abutment (A-2)			
	Effective Span Length:	74 m							
	Type of Support	Fixed							
	Type of structure	Steel							
	Type of Deck Slab	RC							
	Spacing of girders	2.55 m							
	Beam Depth	0.35 m							
	Number of beams	2							
Thickness of slab	0.15 m								
Components and ancillary	Type of expansion joint	Gap			Foundation	Strip-Abutment			
	Type of Bearing	N/A				Pad- Piers			
	Type of Railing	Steel			Surface	AC			
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 265592, 9865704									
Inspected by: WWW					Date:10/03/2021				

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: carwash footbridge		Location: Km from: 14+125			River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width: 2.2 m		Present Water Level:		Meandering:			
Name of Crossing: F/Bridge		Side Walk/Shoulder Width:			Highest Water Level		Contractor:		
County: Kiambu		Design Spec: Steel			Topography:		Construction Year: 2011		
Superstructure	Bridge Type:	Steel Foot Bridge			Substructure	Type of abutment			
	Span Composition:	2 Span 35 m, 35 m				Height of abutment (A-1)		7.5 m	
	Clear Span/Bridge Length	70 m				Height of abutment (A-2)		7.5 m	
	Effective Span Length:	74 m							
	Type of Support	Fixed							
	Type of structure	Steel							
	Type of Deck Slab	RC							
	Spacing of girders	2.55 m							
	Beam Depth	0.35 m							
	Number of beams	2							
Thickness of slab	0.15m								
Components and ancillary	Type of expansion joint	gap			Foundation				
	Type of Bearing	N/A							
	Type of Railing	Steel			Surface				
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 0267048E, 9866373N									
Inspected by: WWW					Date:10/03/2021				
INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: Githurai Box Culvert		Location: Km from: 14+900			River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width:		Present Water Level:		Meandering:			
Name of Crossing: Underpass		Side Walk/Shoulder Width:			Highest Water Level		Contractor:		
County: Kiambu		Design Spec: CBX (6x3x12)			Topography:		Construction Year: 2011		
Superstructure	Bridge Type:	CBX			Substructure	Type of abutment			
	Span Composition:	2No. Box Culvert				Height of abutment (A-1)		3 m	
	Clear Span/Bridge Length	6 m				Height of abutment (A-2)		N/A	
	Effective Span Length:	6.8 m							
	Type of Support	RC							
	Type of structure	RC CBX							
	Type of Deck Slab	RC							
	Spacing of girders	N/A							
	Beam Depth	N/A							
	Number of beams	N/A							
Thickness of slab	0.45 m								
Components and ancillary	Type of expansion joint	N/A			Foundation				
	Type of Bearing	N/A							
	Type of Railing	Steel			Surface				
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 267727, 9866707									
Inspected by: WWW					Date:10/03/2021				

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: Githurai Fly over		Location: Km from: 15+500			River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width: 21 m		Present Water Level:		Meandering:			
Name of Crossing: Underpass		Side Walk/Shoulder Width:			Highest Water Level		Contractor:		
County: Kiambu		Design Spec: RC Bridge			Topography: Rolling		Construction Year:		2011
Superstructure	Bridge Type:	RC			Substructure: RC	Type of abutment			
	Span Composition:	4 Span 22 m, 22 m, 22 m, 22 m				Height of abutment (A-1)		7m	
	Clear Span/Bridge Length	88m		Height of abutment (A-2)		7m			
	Effective Span Length:	89m							
	Type of Support	Simply							
	Type of structure	RC							
	Type of Deck Slab	RC							
	Spacing of girders	1.2 m							
	Beam Depth	1.5 m							
	Number of beams	16							
Thickness of slab	0.45 m								
Components and ancillary	Type of expansion joint	gap			Foundation: Strip & Pad	Pad for Piers			
	Type of Bearing	pad & Rubber							
	Type of Railing	concrete with steel handrail			Surface				
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 268092, 9867123									
Inspected by: WWW					Date: 10/03/2021				
INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: Githurai Railway Bridge		Location: Km from: 15+800			River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width: 57 m		Present Water Level:		Meandering:			
Name of Crossing: Underpass		Side Walk/Shoulder Width:			Highest Water Level		Contractor:		
County: Kiambu		Design Spec: RC Bridge			Topography: Rolling		Construction Year:		2011
Superstructure	Bridge Type:	RC			Substructure: RC ABT	Type of abutment			
	Span Composition:	One Span				Height of abutment (A-1)		7.5 m	
	Clear Span/Bridge Length	22 m		Height of abutment (A-2)		7.5 m			
	Effective Span Length:	23 m							
	Type of Support	Simple							
	Type of structure	RC							
	Type of Deck Slab	RC							
	Spacing of girders	1.2 m							
	Beam Depth	1.5m							
	Number of beams	31							
Thickness of slab	0.45 m								
Components and ancillary	Type of expansion joint	gap			Foundation : Strip				
	Type of Bearing	pad with Rubber							
	Type of Railing	concrete with steel			Surface: AC				
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 0268279E, 9867387N									
Inspected by: WWW					Date: 10/03/2021				



INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: Githurai River		Location: Km from: 16+200			River Width: 11m		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width:		Present Water Level: 2 m		Meandering: Yes			
Name of Crossing: Githurai River		Side Walk/Shoulder Width: 2 mx2			Highest Water Level 5m		Contractor:		
County: Kiambu		Design Spec: RC Bridge			Topography: Rolling		Construction Year: 2011		
Superstructure	Bridge Type:	RC			Substructure: RC ABT	Type of abutment			
	Span Composition:	One Span				Height of abutment (A-1)	7.5 m		
	Clear Span/Bridge Length	9 m				Height of abutment (A-2)	7.5 m		
	Effective Span Length:	11 m							
	Type of Support	Simply							
	Type of structure	RC							
	Type of Deck Slab	RC							
	Spacing of girders	1.2 m							
	Beam Depth	1.5 m							
	Number of beams	48 m							
Thickness of slab	0.45 m								
Components and ancillary	Type of expansion joint	Gap			Foundation: Strip				
	Type of Bearing	Pad with Rubber							
	Type of Railing	Concrete							
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 0268583E, 9867643N									
Inspected by: WWW					Date: 10/03/2021				

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS									
Bridge Name: Kanawa wendum Footbridge		Location: Km from: 16+625			River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>		
Road Name: A2S		Carriageway Width: 2.2 m		Present Water Level:		Meandering: Yes			
Name of Crossing: Foot bridge		Side Walk/Shoulder Width:			Highest Water Level		Contractor:		
County: Kiambu		Design Spec: Steel			Topography: Rolling		Construction Year: 2011		
Superstructure	Bridge Type:	Steel			Substructure: Steel Column	Type of abutment	Steel		
	Span Composition:	2 span 35,35				Height of abutment (A-1)	7.5		
	Clear Span/Bridge Length	70 m				Height of abutment (A-2)	7.5		
	Effective Span Length:	74 m				Pier	7.5		
	Type of Support	Fixed							
	Type of structure	Steel							
	Type of Deck Slab	RC							
	Spacing of girders	2.55 m							
	Beam Depth	0.35 m							
	Number of beams	2							
Thickness of slab	0.15 m								
Components and ancillary	Type of expansion joint	Gap			Foundation: Pad				
	Type of Bearing	N/A							
	Type of Railing	Steel							
Bridge Profile (Sketch)					Bridge Cross Section (Sketch)				
Additional Notes 0268839E, 9867986N									
Inspected by: WWW					Date: 10/03/2021				

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS							
Bridge Name: Engen Underpass		Location: Km from: 17+800		River Width: N/A		Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2S		Carriageway Width: 8.0M		Present Water Level: N/A		Meandering:	
Name of Crossing: Underpass		Side Walk/Shoulder Width: 2x2sides		Highest Water Level		Contractor:	
County: Kiambu		Design Spec: RC Bridge		Topography: Rolling		Construction Year: 2011	
Superstructure	Bridge Type:			Substructure: RC Wall	Type of abutment	RC	
	Span Composition:	Single			Height of abutment (A-1)	7 m	
	Clear Span/Bridge Length	13 m			Height of abutment (A-2)	7 m	
	Effective Span Length:	15 m					
	Type of Support	RC					
	Type of structure	RC					
	Type of Deck Slab	RC					
	Spacing of girders	N/A					
	Beam Depth	N/A					
	Number of beams	N/A					
Thickness of slab	0.45 m						
Components and ancillary	Type of expansion joint	N/A		Foundation: Strip			
	Type of Bearing	N/A					
	Type of Railing	Concrete with hardrail		Surface: AC			
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)			
Additional Notes 0269692E, 9868863N							
Inspected by: WWW				Date: 10/03/2021			
INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS							
Bridge Name: KU Foot bridge		Location: Km from: 18+900		River Width:		Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2S		Carriageway Width: 2.2 m		Present Water Level:		Meandering: Yes	
Name of Crossing: Foot bridge		Side Walk/Shoulder Width:		Highest Water Level		Contractor:	
County: Kiambu		Design Spec: Steel		Topography: Rolling		Construction Year: 2011	
Superstructure	Bridge Type:	Steel Foot Bridge		Substructure: Steel column	Type of abutment	Steel	
	Span Composition:	2 Span 35, 35			Height of abutment (A-1)	7.5 m	
	Clear Span/Bridge Length	70 m			Height of abutment (A-2)	7.5 m	
	Effective Span Length:	70 m			Pier	7.5 m	
	Type of Support	Fixed					
	Type of structure	Steel					
	Type of Deck Slab	Concrete					
	Spacing of girders	2.55 m					
	Beam Depth	0.35 m					
	Number of beams	2					
Thickness of slab	0.15 m						
Components and ancillary	Type of expansion joint	S.gap		Foundation : Pad			
	Type of Bearing	N/A					
	Type of Railing	Steel		Surface: AC			
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)			
Additional Notes 267042, 9869624							
Inspected by: WWW				Date: 10/03/2021			

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS							
Bridge Name: Unicity KU		Location: Km from: 19+800		River Width: 10 m		Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2S		Carriageway Width:		Present Water Level:		Meandering: Yes	
Name of Crossing:		Side Walk/Shoulder Width:		Highest Water Level		Contractor:	
County: Kiambu		Design Spec: CBX		Topography: Rolling		Construction Year: 1988	
Superstructure	Bridge Type:	RC CBX		Substructure: RC Walls	Type of abutment		
	Span Composition:	Twin (5x3x12)			Height of abutment (A-1)	3 m	
	Clear Span/Bridge Length	10.3 m			Height of abutment (A-2)		
	Effective Span Length:	11.1 m					
	Type of Support						
	Type of structure	Box					
	Type of Deck Slab	RC					
	Spacing of girders	N/A					
	Beam Depth	N/A					
	Number of beams	N/A					
Thickness of slab	0.45 m						
Components and ancillary	Type of expansion joint	Gap		Foundation: Strip			
	Type of Bearing	N/A					
	Type of Railing	N/A		Surface: Concrete			
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)			
Additional Notes 270954, 9870310							
Inspected by: WWW				Date: 10/03/2021			
INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS							
Bridge Name: Unicity		Location: Km from: 19+800		River Width: 10 m		Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2S		Carriageway Width: 21 m		Present Water Level: 1 m		Meandering: Yes	
Name of Crossing: Kamiti River		Side Walk/Shoulder Width: 3 m		Highest Water Level 2 m		Contractor:	
County: Kiambu		Design Spec: CBX		Topography: Rolling		Construction Year: 2011	
Superstructure	Bridge Type:	RC CBX		Substructure: Rc Wall	Type of abutment	RC	
	Span Composition:	3 cell (3x3x12)			Height of abutment (A-1)	3 m	
	Clear Span/Bridge Length	12 m			Height of abutment (A-2)		
	Effective Span Length:	12.8 m					
	Type of Support						
	Type of structure	RC Box Culvert					
	Type of Deck Slab	RC					
	Spacing of girders	N/A					
	Beam Depth	N/A					
	Number of beams	N/A					
Thickness of slab	0.45m						
Components and ancillary	Type of expansion joint	N/A		Foundation: Slab			
	Type of Bearing	N/A					
	Type of Railing	N/A		Surface: AC			
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)			
Additional Notes 271015, 9870281							
Inspected by: WWW				Date: 10/03/2021			

INSPECTION FORM 1: GENERAL INFORMATION AND STRUCTURAL DETAILS						
Bridge Name: Unicity		Location: Km from: 19+800		River Width: 10 m	Detour: Yes: No: <input checked="" type="checkbox"/>	
Road Name: A2S		Carriageway Width: 21 m	Present Water Level: 1 m		Meandering: Yes	
Name of Crossing: Kamiti River		Side Walk/Shoulder Width: 3 m		Highest Water Level 2 m	Contractor:	
County: Kiambu		Design Spec: CBX		Topography: Rolling	Construction Year: 2011	
Superstructure	Bridge Type:	RC CBX		Substructure: Rc Wall	Type of abutment	RC
	Span Composition:	3 cell (3x3x12)			Height of abutment (A-1)	3 m
	Clear Span/Bridge Length	12 m			Height of abutment (A-2)	
	Effective Span Length:	12. 8 m				
	Type of Support					
	Type of structure	RC Box Culvert				
	Type of Deck Slab	RC				
	Spacing of girders	N/A				
	Beam Depth	N/A				
	Number of beams	N/A				
Thickness of slab	0.45m					
Components and ancillary	Type of expansion joint	N/A		Foundation: Slab		
	Type of Bearing	N/A				
	Type of Railing	N/A		Surface: AC		
Bridge Profile (Sketch)				Bridge Cross Section (Sketch)		
Additional Notes 271015, 9870281						
Inspected by: WWW				Date: 10/03/2021		

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## **PART 3 – CONDITIONS OF CONTRACT AND CONTRACT FORMS**

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## **SECTION IX - CONDITIONS OF CONTRACT PART I -GENERAL CONDITIONS**

## **SECTION IX        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 X - CONDITIONS OF CONTRACT PART II -CONDITIONS OF PARTICULAR APPLICATION**



**SECTION X: 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.

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## **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.

(iv) The “Engineer” is the Director Road Asset and Corridor Management - Kenya National Highways Authority.

(v) The “Engineer Representative” is the Deputy Director - Trunk Network Coordination.

(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) The PBC Guidelines Edition 1.1 of February;
- (9) Road Maintenance Manual, May 2010 Edition and Performance Based Contract Manuals.
- (10) The Drawings;
- (11) The priced Bills of Quantities
- (12) Other documents as listed in the Appendix to form of Bid

#### SUBCLAUSE 8.2 - Site Operations and Method of Construction

Add

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 Resident Engineer shall provide a 28days 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 14days extend the Performance security and provide evidence of such an extension to the Resident Engineer. Failure by the contractor to renew his performance Security 7days 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.

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 SUBCLAUSE;

#### ‘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 SUBCLAUSE;

#### ‘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.’

## 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 Day (1st January)
- Good Friday
- Easter Monday
- Labour day (1<sup>st</sup> May)
- Madaraka Day (1<sup>st</sup> June)
- IddUIFitr
- Utamaduni Day (10<sup>th</sup> October )
- Mashujaa Day (20<sup>th</sup> October)
- Jamhuri day (12<sup>th</sup> December)

- Christmas Day (25<sup>th</sup> December)
- Utamaduni day (26<sup>th</sup> 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 /Road 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 a minimum qualification of a Registered Professional Engineer (Highways), BSc in Civil Engineering and shall be able to read and write English fluently.

The Contractor’s Agent or Representative shall have at least 5 years relevant experience as a Site Agent.

#### SUBCLAUSE 16.2- ENGINEER AT LIBERTY TO OBJECT

At the end of this Clause add



“by a competent substitute approved by the Engineer and at the Contractors own expense.”

Add the following Sub-Clauses 16.3 and 16.4:

#### ADD THE FOLLOWING SUB-CLAUSE

##### ‘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 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 of 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.

Add Paragraph (e) of Sub-Clause 19.1 as follows:

e). Notwithstanding the Contractor's obligation under Sub-Clause-paragraph (a), (b) and (c) of Sub-Clause 19.1 of the Conditions of Contract, the Contractor shall observe the following measures with a view to enhance Road Safety to the Road Users and Site Workers:

- vi. Prepare and submit a comprehensive Road Safety Implementation Plan within 14 days after receipt of Order to commence for the Engineer's Approval. The plan shall include but not limited to the following:
  - Night driving
  - Safety of workers
  - Diversions
  - Traffic management Plan
  - Towing of stalled vehicle
- vii. 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.
- viii. The Contractor shall install and maintain standard approved traffic warning signs, directional signs, secure the working areas and deploy flagmen at active construction sites.
- ix. 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.
- x. The Contractor shall factor the cost of implementation of the Road Safety Plan in the rates for the Works.

Failure by the Contractor to observe the above safety features shall be deemed to be a violation of the Contractor's Obligations and shall be grounds for Suspension and/or Termination.

#### SUBCLAUSE 20.4 - EMPLOYERS RISKS

Delete Sub-Clause (h) and substitute with;

(h) any operation of the forces of nature (insofar as it occurs on site) which an experienced contractor:

- (v) could not have reasonably foreseen, or
- (vi) 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 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 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 subclause 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 of 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 36.1 – MATERIALS, PLANT AND WORKMANSHIP

Add at the end of Sub-Clause 36.1 the following:

Failure by the Contractor to observe and control quality of the works shall be deemed to be a violation of the Contractor's Obligations and shall be grounds for Suspension of works and/or Termination of Contract.

The Contractor shall submit to the Engineer, Project Specific Quality Management Plan for approval 14 days after issuance of order to commence. The Plan shall include but not limited to:

1. Key staff that will be involved in the project and their role in quality management
2. Resources (Human and machinery) and Resource allocation in quality management
3. Processes and procedures to be followed in quality management
4. Controls to be put in place to ensure that the quality management plan is adhered to.
5. Reporting methodology on quality Management
6. Methodology on inspection, testing, monitoring and measuring to ensure conformity to quality requirement in accordance with the contract.
7. Description on correction action to be undertaken on non-conforming outputs and corrective action to avoid recurrence.

#### 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 47.1(B) – PENALTY FOR NOT ATTENDING TO POTHOLE

“If the Contractor trims/excavates any single pothole for repair and fails to seal it with AC within a period of 48 hours from the time of the excavation, penalty shall be charged to the contractor in the next due certificate at a rate specified in the Appendix to form of bid per pothole.

#### 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

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 48.3 – SUBSTANTIAL COMPLETION OF PARTS

In Hybrid PBC Works Contracts, when Instructed works are substantially completed, the same works shall be taken over and shall be considered complete.

#### SUBCLAUSE 49.1 – DEFECTS LIABILITY PERIOD

Defects 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

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. Routine Maintenance works/PBC Works shall also be inspected at the time of End of Defects Liability Inspection and should comply to the specifications of the PBC Works.

#### 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)

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 52.3

#### SUBCLAUSE 52.3 – 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 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 a 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
- such an amount (not exceeding 75 percent of the value) as the Engineer may consider proper on account of materials for permanent work delivered by the Contractor in the site
- such amount as the Engineer may consider fair and reasonable for any Temporary Works for which separate amounts are provided in the Bill of Quantities
- adjustments under Clause 70
- 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 Subclause 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 subclause 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

- (d) “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:
- ii. Provision by the Contractor of the Performance Security in accordance with Clause 10 of the Conditions of Contract, and
  - iii. 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.
- (e) 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.
- (f) 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.
- (g) 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%.

- (h) With each reimbursement the guarantee will be reduced accordingly.

#### SUBCLAUSE 60.13 MATERIALS FOR PERMANENT WORKS

With respect to materials brought by the Contractor to the site for incorporation into the permanent works, the Contractor shall,

-Receive a credit in the month in which these materials are brought to site,

-Be charged a debit in the month in which these materials are incorporated in the permanent works.

Both such credit and debit to be determined by the Engineer in accordance with the following provisions.

No credit shall be given unless the following conditions shall have been met to the Engineers satisfaction

The materials are in accordance with the specifications for the works;

The materials have been delivered to site and are properly stored and protected against loss, damage or deterioration;

The Contractors record of the requirements, orders receipts and use of materials are kept in a form approved by the Engineer and such records are available for inspection by the Engineer;

The Contractor has submitted a statement of his cost of acquiring and delivering the materials and plant to the Site, together with such documents as may be required for the purpose of evidencing such cost;

The materials are to be used within a reasonable time.

The amount to be credited to the Contractor shall not be more than 75% of the Contractor's reasonable cost of the materials delivered to site, as determined by the Engineer after review of the documents listed in subparagraphs (a) (iv) above;

The amount to be debited to the Contractor for any materials incorporated into the works shall be equivalent to the credit previously granted to the Contractor for such materials pursuant to Clause (b) above as determined by the Engineer.

#### SUBCLAUSE 63.1

Add

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).”

#### SUBCLAUSE 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),  
P.O. Box 49712 - 00100  
**NAIROBI**

- b. The Engineer's address is:  
Director,  
Road Asset and Corridor Management,  
Kenya National Highways Authority (KeNHA),  
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.

#### 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 – INCREASE OR DECREASE OF COST*

Delete Sub-Clause 70.1 of part 1 in its entirety and substitute the following:

*“The Contract Price shall be deemed to have been calculated in the manner set below and shall be subject to the adjustment in the event specified hereunder:*

*The rates contained in the priced Bills of Quantities are based upon the rates of wages and other emoluments and expenses applicable at the site at the date of Bid pricing (as defined in Sub-Clause 70.4 hereinafter);*

- (a) If the said rates of wages and other emoluments and expenses shall be increased or decreased by Act, Statute, Decree, Regulation and the like after the said Date of Bid Pricing then the net amount of increase or decrease the emoluments and expenses shall, as the case may be, be paid to or allowed by the Contractor;

- (b) The rates contained in the priced Bills of Quantities are based upon the rates of the Contractor's compulsory contributions payable at the date of Bid under or by virtue of any Act, Statute, Regulations and the like applicable at the site;
- (c) If any of the said rates of contribution shall be increased or decreased by any Act, Statute, Decree, Regulation and the like after the said Date of Bid Pricing, or if any new statutory contribution becomes payable after that date then the net amount of increase or decrease of the emoluments and expenses shall, as the case may be, be paid to or allowed by the Contractor. The difference between what the Contractor actually pays in respect of work people engaged upon or in connection with the works and what he would have paid in respect of such person had any of the said rates not been increased or decreased or had a new contribution not become payable as aforesaid, shall as the case may be, be paid to or allowed by the Contractor. The formulae for this price adjustment shall be of the following type;

$$pn = A + b \frac{Bn}{Bo} + c \frac{Cn}{Co} + d \frac{Dn}{Do} + e \frac{En}{Eo} + f \frac{Fn}{Fo}$$

where:

<i>Pn</i>	Price adjustment factor
<i>A</i>	Fixed constant specified in the appendix to Bid
<i>b</i>	Weighting for Labour
<i>c</i>	Weighting for Fuel and lubricants
<i>d</i>	Weighting for Plant and spares
<i>e</i>	Weighting for cement
<i>f</i>	Weighting for Bitumen products
<i>Bo</i>	base cost index for Labour
<i>Co</i>	Base cost index for fuel and lubricants
<i>Do</i>	Base cost index for plant and spares
<i>Eo</i>	Base cost for cement
<i>Fo</i>	Base cost for Bitumen products
<i>Bn</i>	Current cost index for Labour
<i>Cn</i>	Current cost index for fuel and lubricants
<i>Dn</i>	Current cost index for plant and spares
<i>En</i>	Current cost index for cement
<i>Fn</i>	Current cost for Bitumen products

- (d) The rates contained in the priced Bills of Quantities are based upon the market prices of the materials and goods specified in the Schedule of Basic Materials (Schedule G) attached hereto and current at the Date of Bid Pricing (hereinafter referred to as "the basic prices" and the Contractor shall state in the said schedule the basic prices of such materials and goods.
- (e) If the market price of any materials or goods specified as aforesaid shall be increased or decreased after the said Date of Bid Pricing, then the net amount of difference between the basic price and the market price payable by the Contractor and current when any such goods and materials are bought shall, as the case may be, be paid to or allowed by the Contractor. Orders for materials and goods listed as aforesaid shall have been placed within a reasonable time after the date at which sufficient information is available for the placing of such orders, and the placing of orders at that time shall be a condition precedent to any payments being made to the Contractor in respect of increased market prices."

#### SUB-CLAUSE 70.2: SUBSEQUENT LEGISLATION

Add the following to sub clause 70.2:

“Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid for or credited as aforesaid if the same shall already have been taken into account in accordance with the other provisions of Clause 70.

*Add the following sub clause: -*

#### SUB-CLAUSE 70.3: SUB-CONTRACT

- (a) If the Contractor shall decide subject to Clause 4 thereof to sub-let any portion of the work he shall incorporate in the sub-contract provisions to the like effect as those contained in sub-clause (1) of this Clause;
- (a) If the price payable under a sub-contract as aforesaid is increased above or decreased below the price in such sub-contract by reason of the operation of the incorporated provisions of sub- clause (1) of this clause then the net amount of such increase or decrease shall as the case may be, be paid to or allowed by the Contractor under this contract.

#### SUB-CLAUSE 70.4: NOMINATED SUB-CONTRACTORS

*This clause shall not apply in respect of work executed by any nominated sub-Contractor (fluctuation in relation to nominated sub-Contractors shall be dealt with under provisions in relation thereto which may be included in the appropriate sub-contract or contract of sale).*

#### SUB-CLAUSE 70.5: DATE OF BID PRICING

*The expression “the date of Bid pricing” as used in this Clause means the date 30 days prior to the final date for submission of Bids as determined by the Employer in the Bid documents.*

#### SUB-CLAUSE 70.6: PRIME COST

*For imported materials, the supplier’s/ manufacturer’s Prime costs shall be C.I.F. cost at point of entry by the same means of transport as determined by the Contractor’s Basic Rate.*

*For locally produced materials, the supplier’s or manufacturer’s prime costs shall be at their nearest depot or the nearest railway station relevant to the works.*

*For materials which are subject to Government Price Control, payments for price variations will be determined from the difference between the control price in force at a date 30 days prior to the final date for submission of Bids and the price in force on the date of purchase.*

#### SUB-CLAUSE 70.7: MATERIALS TO WHICH VARIATION CLAUSE APPLIES

*The materials to which this Variation Clause applies are as outlined in Schedule G of this Bid Document*

#### SUB-CLAUSE 70.8: CHANGE OF SUPPLIER

*The Contractor shall not change the supplier or manufacturer during the Contract without the approval of the Engineer.*

#### SUB-CLAUSE 70.9: CONTRACTORS HEAD OFFICE EXPENSES

*No payments will be made for price variation related to expenses incurred by the Contractor in his Head Office in Kenya, or overseas.*

#### SUB-CLAUSE 70.10: CURRENCY OF PAYMENTS UNDER CLAUSE 70

*All payments made pursuant to Clause 70 shall be in Kenya Shillings.*

#### SUB-CLAUSE 70.11 – COST OF PREPARING VARIATION OF PRICE CLAIMS

*No payments will be made for the cost of preparing V.O.P. claims.*

#### 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:

“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 Clause 74.1:

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 XI - STANDARD 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 – FORM OF AGREEMENT

FORM No. 4 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee]

FORM No. 5 - PERFORMANCE SECURITY [Option 2 - Performance Bond]

FORM No. 6 - ADVANCE PAYMENT SECURITY

FORM No. 7 - FORM RB 1 APPLICATION FOR PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

## FORM NO. 1: NOTIFICATION OF INTENTION TO AWARD

*[This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender.]*

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

### **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](http://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 Fourteen (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: LETTER OF 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: FORM OF AGREEMENT

### FORM OF 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 \_\_\_\_\_ ( ),<sup>1</sup> such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.
4. This guarantee shall expire, no later than the ..... Day of ..... 2...<sup>2</sup>, and any demand for payment under it must be received by us at this office indicated above on or before that date.
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.*

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

<sup>2</sup> *Insert the date twenty-eight days after the expected completion date as described in 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 - PERFORMANCE SECURITY OPTION 2– (Performance Bond)

*[Note: Procuring Entities are advised to use Performance Security–Unconditional Demand Bank Guarantee instead of Performance Bond due to difficulties involved in calling Bond holder to action]*

*[Guarantor letterhead or SWIFT identifier code]*

**Beneficiary:** \_\_\_\_\_ *[insert name and Address of Procuring Entity]*

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

**PERFORMANCE BOND No.:** \_\_\_\_\_

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

- 1 By this Bond \_\_\_\_\_ as Principal (hereinafter called “the Contractor”) and \_\_\_\_\_] as Surety (hereinafter called “the Surety”), are held and firmly bound unto \_\_\_\_\_] as Obligee (hereinafter called “the Procuring Entity”) in the amount of \_\_\_\_\_ for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.
- 2 WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the day of, 20\_\_, for \_\_\_\_\_ in accordance with the documents, plans, specifications, and amendments thereto, which to the extent here in provided for, are by reference made part hereof and are herein after referred to as the Contract.
- 3 NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations there under, the Surety may promptly remedy the default, or shall promptly:
  - 1) Complete the Contract in accordance with its terms and conditions; or
  - 2) Obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term “Balance of the Contract Price,” as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or
  - 3) Pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions upto a total not exceeding the amount of this Bond.
- 4 The Surety shall not be liable for a greater sum than the specified penalty of this Bond.
- 5 Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named here in or the heirs, executors,



administrators, successors, and assigns of the Procuring Entity.

- 6 In testimony whereof, the Contractor has here unto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this day \_\_\_\_\_ of \_\_\_\_20\_\_\_\_.

SIGNED ON \_\_\_\_\_ on behalf of \_\_\_\_\_

By \_\_\_\_\_ in the capacity of \_\_\_\_\_

In the presence of \_\_\_\_\_

SIGNED ON \_\_\_\_\_ on behalf of \_\_\_\_\_

By \_\_\_\_\_ in the capacity of \_\_\_\_\_

In the presence of \_\_\_\_\_

**PERFORMANCE BASED CONTRACT FOR THE MAINTENANCE OF NAIROBI –  
THIKA HIGHWAY (NAIROBI – RUIRU) (A2S) ROAD**

**FORM NO. 6 - 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 \_\_\_\_\_ ( )<sup>1</sup> upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
  - a) Has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
  - b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.
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 \_\_\_\_\_, 2\_\_\_\_\_,<sup>2</sup> whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.
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

## PERFORMANCE BASED CONTRACT FOR THE MAINTENANCE OF NAIROBI – THIKA HIGHWAY (NAIROBI – RUIRU) (A2S) ROAD

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.***

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<sup>1</sup> *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Procuring Entity.*

<sup>2</sup> *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.”*

**PERFORMANCE BASED CONTRACT FOR THE MAINTENANCE OF NAIROBI –  
THIKA HIGHWAY (NAIROBI – RUIRU) (A2S) ROAD**

**FORM NO. 7: FORM RB 1 APPLICATION FOR PUBLIC PROCUREMENT  
ADMINISTRATIVE REVIEW BOARD  
FOURTEENTH SCHEDULE (r.203(1))**

**FORM FOR REVIEW PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW  
BOARD**

**APPLICATION NO..... OF.....20.....**

**BETWEEN**

..... **APPLICANT (Review Board)**

**AND**

.....**RESPONDENT (Procuring Entity)**

Request for review of the decision of the..... (Name of the Procuring Entity of  
.....dated the...day of .....20.....in the matter of Tender No.....of  
.....20.... for .....(Tender description). **REQUEST FOR REVIEW**  
I/We....., the above-named Applicant(s), of address: Physical  
address..... P. O. Box No..... Tel. No..... Email ....., hereby request the  
Public Procurement Administrative Review Board to review the whole/part of the above-  
mentioned decision on the following grounds, namely: 1. 2. By this memorandum, the Applicant  
requests the Board for an order/orders that: 1. 2. **SIGNED .....** (Applicant) Dated  
on..... day of ...../...20.....

---

**FOR OFFICIAL USE ONLY**

**Lodged with the Secretary Public Procurement Administrative Review Board  
on.....day of ..... 20.....**

**SIGNED**

**Board Secretary**