



KENYA RURAL ROADS AUTHORITY

CONSTRUCTION OF MUNYU BRIDGE AND APPROACH ROADS

BID DOCUMENT

- 1. FORM OF BID**
- 2. APPENDIX TO FORM OF BID**
- 3. FORM OF BID SECURITY**
- 4. INSTRUCTIONS TO BIDDERS**
- 5. QUALIFICATION CRITERIA**
- 6. CONDITIONS OF CONTRACT**
- 7. SCHEDULES OF SUPPLEMENTARY INFORMATION**
- 8. FORM OF AGREEMENT**
- 9. FORM OF PERFORMANCE SECURITY**
- 10. STANDARD SPECIFICATIONS**
- 11. SPECIAL SPECIFICATIONS**
- 12. BILLS OF QUANTITIES**
- 13. DRAWINGS**

Tender No: KeRRA/011/39/22/18-19

APRIL, 2019

**DIRECTOR GENERAL
KENYA RURAL ROADS AUTHORITY
P.O.BOX 48151 - 00100
NAIROBI**

**GENERAL MANAGER (DESIGN AND
CONSTRUCTION)
KENYA RURAL ROADS AUTHORITY
P.O.BOX 48151 - 00100
NAIROBI**

CONSTRUCTION OF MUNYU BRIDGE

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CONSTRUCTION OF MUNYU BRIDGE

SECTION 1: FORM OF BID

CONSTRUCTION OF MUNYU BRIDGE

FORM OF BID

(NOTE: The Appendix forms part of the Bid. Bidders are required to fill all the blank spaces in this form of Bid and Appendix)

NAME OF CONTRACT: CONSTRUCTION OF MUNYU BRIGDE

CONTRACT No. KeRRA

TO: The Director General,
Kenya Rural Roads Authority,
P.O.BOX 48151– 00100,
NAIROBI, KENYA

Sir,

1. Having examined the Conditions of Contract, Specifications, Bills of Quantities, and Drawings for the execution of the above-named works, we, the undersigned, offer to construct and install such works and remedy any defects therein in conformity with the said Bills of Quantities, Conditions of Contract, Specifications and Drawings for the sum of

(Insert amount in words)
.....
.....

(Insert amount in figures.....

as specified in the Appendix to Bid or such other sums as may be ascertained in accordance with the said Conditions.

2. We undertake, if our bid is accepted, to commence the works within twenty-eight (28) days of receipt of the Engineer’s order to commence, and to complete and deliver the whole of the works comprised in the contract within the time stated in the Appendix to Bid.
3. If our bid is accepted we will, when required, obtain the guarantee of a Bank or other sureties (to be approved by you) to be jointly and severally bound with us in a sum not exceeding 5% of the above named sum for the due performance of the contract under the terms of a Bond to be approved by you.
4. We agree to abide by this bid for the period of (210) days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

CONSTRUCTION OF MUNYU BRIDGE

5. We understand that you are not bound to accept the lowest or any bid you may receive.
6. On the basis of our previous experience we are fully experienced and competent in the type of work included in this BID and we have adequate financial resources to carry out the works described within the period for completion. We are in a position to fulfil the contract for which we have bid.

Dated this Day of 20

Signature.....in the capacity of

Duly authorized to sign bids on behalf of (Name of Bidder)

.....

(Address of Bidder).....

(Name of Witness).....

(Signature of Witness).....

(Address of Witness).....

(Occupation of Witness).....

SECTION 2: APPENDIX TO FORM OF BID

APPENDIX TO FORM OF BID**(This appendix forms part of the bid)**

CONDITIONS OF CONTRACT	CLAUSE	AMOUNT
Bid Security (Bank Guarantee/Insurance Guarantee)		Kshs 300000
Amount of Performance Security (Unconditional Bank Guarantee)	10.1	5 per cent of BID Sum in the form of Unconditional Bank Guarantee or cash retentions
Program to be submitted	14.1	Not later than 28 (twenty eight) days after issuance of Order to Commence
Cash flow estimate to be submitted	14.3	Not later than 28 (twenty eight) days after issuance of Order to Commence
Minimum amount of Third Party Insurance	23.2	KShs. 1,000,000 (Kshs. One million)
Period for commencement, from Engineer's order to commence	41.1	28 days
Time for completion	43.1	12 (Twelve) months
Amount of liquidated damages	47.1	KShs. 30000 per day
Limit of liquidated damages	47.1	10% of Contract Value
Defects Liability period	49.1	24 (twenty four) months
Percentage of Retention	60.3	10% of Interim Payment Certificate
Limit of Retention Money	60.3	5% of Contract Price
Minimum amount of interim certificates	60.2	Kshs.4,000,000 (four million)
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
Amount of Advance	60.12	10% of BID sum
Advance Payment Security	60.12	5% of BID sum in the form of Unconditional Bank Guarantee
Appointer of Arbitrator/Adjudicator	67.3	The Chartered Institute of Arbitrators (Kenya)
Notice to Employer and Engineer	68.2	<p>The Director General, Kenya Rural Roads Authority, P.O.BOX 48151 – 00100, <u>NAIROBI, KENYA</u></p> <p>The Engineer's address is: General Manager (Design and Construction) Kenya rural Roads Authority P.O.BOX 48151 - 00100 <u>NAIROBI, KENYA</u></p>

Signature of Bidder.....Date

SECTION 3: FORM OF BID SECURITY

CONSTRUCTION OF MUNYU BRIDGE

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2. SECTION 3

FORM OF BID SECURITY (BANK/INSURANCE GUARANTEE)

Note: The bidder shall complete only this form of Bank/Insurance Security. No other Form of Bid Bond or any other forms of security will be accepted. Bidders who fail to comply with this requirement will be disqualified.

WHEREAS [*Name of bidder*].

.....
.....

for the proposed construction of **MUNYU BRIDGE** hereinafter called “The Bid”

(herein after called “the Bidder”) has submitted his bid dated.....

KNOW ALL MEN by these presents that we [*Name of Bank/Insurance Company*]

.....
.....

of [*Name of bank/Insurance Company*]

.....

Having our registered offices at

.....

(Hereinafter called the Bank/Insurance Company) are bound unto the Director General, Kenya Rural Roads Authority (hereinafter called “the Employer”) in the sum of (in words) KShs.....

.....

(In figures) KShs.....

for which payment will be well and truly made to the said Employer, the Bank/Insurance Company binds itself, its successors and assigns by these presents.

Signed for the said Bank/Insurance Company thisday of20.....

CONSTRUCTION OF MUNYU BRIDGE

THE CONDITIONS of this obligation are:

1. If after tender opening the Tenderer withdraws his Tender during the period of Tender Validity specified in the instructions to tenderers; or
2. If the Bidder, having been notified of the acceptance of his bid by the Employer during the Period of Bid Validity
 - (i) Fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders when required or
 - (ii) Fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders.

We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of any of the above conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to 210 days after the opening date of the tender.

At the request of the Employer the Bid validity period may be extended by mutual agreement between the Employer and the Bidder and we undertake to extend the validity of this surety accordingly without you having to inform us of such an extension of the Bid validity period if within this period the Bidder has been notified of the acceptance of his Bid. This Surety shall remain valid up to the time the Contract Agreement has been executed.

SIGNATURE AND SEAL OF THE BANK/INSURANCE COMPANY

..... DATE

NAME OF SIGNATORY

.....

TITLE OF SIGNATORY

NAME OF THE WITNESS

SIGNATURE OF THE WITNESS DATE

ADDRESS OF THE WITNESS

SECTION 4: INSTRUCTIONS TO BIDDERS

**SECTION 4: INSTRUCTIONS TO BIDDERS
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CONDITIONS OF BID AND INSTRUCTIONS TO BIDDERS

A. GENERAL

1 **Scope of Bid**

1.1 The Employer, as defined in the Conditions of Contract Part II hereinafter “the Employer” wishes to receive bids for the construction of works as described in Section 1, clause 102 of the Special Specifications –“Location and extent of the Works”

1.2 The successful bidder will be expected to complete the Works within the period stated in the Appendix to Bid from the date of commencement of the Works.

1.3 Throughout these bidding documents, the terms bid and BID and their derivatives (bidder/Bidder, bid/bidder, bidding/Bidding etc) are synonymous, and day means calendar day. Singular also means plural.

2 **Source of Funds**

2.1 The source of funding is the Government of Kenya

3 **Corrupt Practices**

3.1 The Government requires that the bidders, suppliers, sub-contractors and supervisors observe the highest standard of ethics during the procurement and execution of such contracts. In this pursuit of this policy, the government;

- (a) Defines for the purposes of this provision, the terms set forth below as follows:
 - (i) “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in the execution, and
 - (ii) “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practices among bidders (prior to or after bid submission) designed to establish bid prices at artificial, non-competitive levels and to deprive the Employer of the benefits of free and open competition
- (b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract, and
- (c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a government contract if it at any times determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Government financed contract.

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4 Eligible Bidders

- 4.1 This invitation to bid is open to Kenyan Nationals whose construction firms are legally registered or incorporated in the Republic of Kenya as of the time of bid submission. Registration with National Construction Authority (NCA) as a Contractor is mandatory.
- 4.2 Bidders shall not have a conflict of interest. Bidders shall be considered to have conflict of interest, if they participated as a consultant in the preparation of the design, documentation or technical specifications of the works that are the subject of this bidding other than as far as required by the Employer.
- 4.3 A firm that is under a declaration of ineligibility by the Employer in accordance with clause 3, at the date of submission of the bid or thereafter, shall be disqualified
- 4.4 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.

5 Qualification of the Bidder

- 5.1 Bidders shall as part of their bid:
 - a) Submit a written power of attorney authorizing the signatory of the bid to commit the bidder; and
 - b) Update any information submitted with their bids and update in any case the information indicated in the schedules and continue to meet the minimum threshold criteria set out in the bid documents.
- 5.2 As a minimum, Bidders shall provide latest information set out below:
 - a) Registration with National Construction Authority “NCA 5 – NCA 6 ”
 - b) Similar previous experience
 - c) Equipment holding
 - d) Professional and Technical personnel
 - e) Turnover and liquid assets supported by audited accounts for the previous (3) years
 - f) Current work load
 - g) Litigation history
 - h) VAT registration
 - i) Pin registration
 - j) VAT Tax compliance certificate
 - k) Proof of Bank Account in the Renderers’ Name
- 5.3 Bidders shall also submit proposals of work methods and schedule in sufficient detail to demonstrate the adequacy of the bidders proposals to meet the technical specifications and the completion time referred to in Clause 1.2 above.

6 One Bid Per Bidder

- 6.1 Each bidder shall submit only one bid. A bidder who submits or participates in more than one bid will be disqualified.

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7 Cost of Bidding

- 7.1 The bidder shall bear all costs associated with the preparation and submission of his bid and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

8 Site Visit

- 8.1 The bidder is informed that pre-bid site visit is **mandatory** and he/she shall examine the Site of Works and its surroundings and obtain for himself all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the site shall be at the bidder's own expense.
- 8.2 The bidder and any of his personnel or agents will be granted permission by the Employer to enter its premises and lands for the purpose of such inspection, but only on the express condition that the bidder, its personnel and agents, will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused, which but for the exercise of such permission would not have arisen.
- 8.3 The Employer will conduct a Site Visit concurrently with the pre-bid meeting referred to in Clause 19, attendance for which is mandatory for all bidders. Failure to attend the site visit by any bidder will lead to disqualification of his /her bid.

B. BIDDING DOCUMENTS

9 Contents of Bidding Documents

- 9.1 The set of documents comprising the BID includes the following together with any addenda issued in accordance with Clause 11:
- (a) Invitation to Bid
 - (b) Instructions to bidders
 - (c) Qualification Criteria
 - (d) Conditions of Contract - Part II
 - (e) Conditions of Contract - Part I
 - (f) Standard Specifications
 - (g) Special Specifications
 - (h) Form of Bid, Appendix to Form of Bid and Bid Security
 - (i) Bills of Quantities
 - (j) Schedules of Supplementary information
 - (k) Form of Contract Agreement
 - (l) Form of Performance Security
 - (m) Drawings
 - (n) BID addenda (BID notices)

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- 9.2 The bidder is expected to examine carefully all instructions, conditions, forms, terms, specifications and drawings in the bidding documents. Failure to comply with the requirements of bid submission will be at the bidder's own risk. Bids that are not substantially responsive to the requirements of the bidding documents will be rejected.

10 Clarification of Bidding Documents

- 10.1 The prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing or by cable (hereinafter the term cable is deemed to include telex and facsimile) at the Employer's mailing address indicated in the Bidding Data.
- 10.2 The Employer will respond in writing to any request for clarification that he receives earlier than 7 days prior to the deadline for the submission of bids. Copies of the Employer's response to queries raised by bidders (including an explanation of the query but without identifying the sources of the inquiry) will be sent to all prospective bidders who will have purchased the bidding documents.

11 Amendment of Bidding Documents

- 11.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by issuing subsequent Addenda.
- 11.2 The Addendum thus issued shall be part of the bidding documents pursuant to Sub-Clause 10.1 and shall be communicated in writing or cable to all purchasers of the bidding documents. Prospective bidders shall promptly acknowledge receipt of each Addendum in writing or by cable to the Employer.
- 11.3 In order to afford prospective bidders reasonable time in which to take an Addendum into account in preparing their bids, the Employer may, at his discretion, extend the deadline for the submission of bids in accordance with Clause 22.

C. PREPARATION OF BIDS

12 Language of Bid

- 12.1 The bid prepared by the bidder and all correspondences and documents relating to the bid exchanged by the bidder and the Employer shall be written in the English Language. Supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an appropriate translation of pertinent passages in the above stated language. For the purpose of interpretation of the bid, the English language shall prevail.

13 Documents Comprising the Bid

- 13.1 The bid to be prepared by the bidder shall comprise:
- a) Duly filled-in the Form of Bid and Appendix to form of bid;
 - b) Bid security;
 - c) Priced Bills of Quantities;
 - d) Schedules of information
 - e) Qualification Criteria
 - f) Any other materials required to be completed and submitted in accordance with the Instructions to Bidders embodied in these bidding documents.
- 13.2 These Forms, Bills of Quantities and Schedules provided in these bidding documents shall be used without exception (subject to extensions of the Schedules in the same format).

14 Bid Prices

- 14.1 Unless explicitly stated otherwise in the bidding documents, the contract shall be for the whole works as described in Sub-Clause 1.1, based on the basic unit rates and prices in the Bill of Quantities submitted by the bidder.

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- 14.2 The bidder shall fill in rates and prices for all items of Works described in the Bills of Quantities, whether quantities are stated or not.
- 14.3 All duties, taxes (excluding VAT) and other levies payable by the Contractor under the Contract, or for any other cause as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the bidder.
- 14.4 Unless otherwise provided in the Bidding Data and Conditions of Particular Application the rates and prices quoted by the bidder are subject to adjustment during the performance of the contract in accordance with the provisions of Clause 70 of the Conditions of Contract.

15 Currencies of Bid and Payment

- 15.1 Bids shall be priced in Kenya Shillings.

16 Bid Validity

- 16.1 The bid shall remain valid and open for acceptance for a period of 210 days from the closing date of tender.
- 16.2 In exceptional circumstances prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required nor permitted to modify his bid, but will be required to extend the validity of his bid security for the period of the extension, and in compliance with Clause 17 in all respects.

17 Bid Security

- 17.1 The bidder shall furnish, as part of his bid, a bid security in the amount shown in the Appendix to Form of Bid.
- 17.2 **The Bid Security shall be in the form of unconditional Bank or Insurance Guarantee from a reputable Bank or Insurance Company approved by the Public Procurement Oversight Authority (PPOA) selected by the bidder and located in Kenya**. The format of the bank guarantee shall be in accordance with bid security included in Section 1. The bid security shall remain valid for a period of 28 days beyond the original validity period for the bid, and beyond any period of extension subsequently requested under Sub-Clause 16.2.
- 17.2 Any bid not accompanied by an acceptable bid security will be rejected by the Employer as non-responsive.
- 17.3 The bid securities of unsuccessful bidders will be discharged/ returned as promptly as possible but not later than 28 days after the expiration of the period of bid security validity.

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17.4 The bid security of the successful bidder will be discharged upon the bidder signing the Contract Agreement and furnishing the required performance security.

17.5 The bid security may be forfeited:

- (a) if a bidder withdraws his bid, except as provided in Sub-Clause 24.2.
- (b) if the bidder does not accept the correction of any errors, pursuant to Sub-Clause 28.2 or
- (c) in the case of a successful bidder, if he fails within the specified time limit to:
 - (i) sign the Contract Agreement or
 - (ii) furnish the necessary performance security

18 No Alternative Offers

18.1 The bidder shall submit one offer, which complies fully with the requirements of the bidding documents.

18.2 The bid submitted shall be solely on behalf of the bidder. A bidder who submits or participates in more than one bid will be disqualified.

18.3 A price or rate shall be entered in indelible ink against every item in the Bills of Quantities with the exception of items which already have Prime Cost or Provisional sums affixed thereto. The bidders are reminded that no "nil" or "included" rates or "lump-sum" discounts will be accepted. The rates for various items should include discounts if any. Bidders who fail to comply will be disqualified.

19 Pre-Bid Meeting

19.1 The bidders designated representative and who must be one of the technical persons listed as a key staff in the Schedule No 6 is invited to attend a pre-bid meeting, which will take place on the The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

19.2 The bidder is requested as far as possible to submit any questions in writing or by cable, to reach the Employer not later than one week before the meeting. It may not be practicable at the meeting to answer questions received late, but questions and responses will be transmitted in accordance with the Minutes of the meeting, including the text of the questions raised and the responses given together with any responses prepared after the meeting, will be transmitted without delay to all purchasers of the bidding documents. Any modification of the bidding documents listed in Sub-Clause 8.1, which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 10 or through the minutes of the pre-bid meeting.

19.3 Non-attendance at the pre-bid meeting by a Bidder will be a cause for disqualification of his BID.

20 Format and Signing of Bids

- 20.1 The bidder shall prepare one original of the documents comprising the bid as described in Clause 13 of these Instructions to Bidders, bound with the section containing the Form of Bid and Appendix to Bid, and clearly marked "ORIGINAL". In addition, the bidder shall submit two copies of the bid clearly marked "COPIES". In the event of discrepancy between them, the original shall prevail.
- 20.2 The original and copies of the bid shall be typed or written in indelible ink (in the case of copies, photocopies are also acceptable) and shall be signed by a person or persons duly authorized to sign on behalf of the bidder pursuant to Sub-Clause a). The person or persons signing the bid shall initial all pages of the bid where entries or amendments have been made.
- 20.3 The bid shall be without alterations, omissions or conditions except as necessary to correct errors made by the bidder, in which case such corrections shall be initialled by the person or persons signing the bid.

D. SUBMISSION OF BIDS

21 Sealing and Marking of Bids

- 21.1 The bidder shall seal the original and each copy of the bid in separate envelopes duly marking the envelopes "ORIGINAL" and "COPY". The envelopes shall then be sealed in an outer separate envelope.
- 21.2 The inner and outer envelopes shall be:
- (a) addressed to the Employer at the address provided in the Appendix to Form of Bid.
 - (b) bear the name and identification number of the contract. In addition to the identification required in sub-Clause 21.2, the inner envelopes shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared "late" pursuant to Clause 23.1, and for matching purposes under Clause 24.
- 21.3 If the outer envelope is not sealed and marked as instructed above, the Employer will assume no responsibility for the misplacement or premature opening of the bid. If the outer envelope discloses the bidder's identity the Employer will not guarantee the anonymity of the bid submission, but this shall not constitute grounds for rejection of the bid.

22 Deadline for Submission of Bids

- 22.1 Bids must be received by the Employer at the address specified in Sub Clause 21.2 not later than
- 22.2 The Employer may, at his discretion, extend the deadline for the submission of bids through the issue of an Addendum in accordance with Clause 11 in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline shall thereafter be subject to the new deadline as extended.

23 Late Bids

- 23.1 Any bid received by the Employer after the deadline for submission of bids prescribed in Clause 22 will be returned unopened to the bidder.

24 Modification, Substitution and Withdrawal of Bids

- 24.1 The bidder may modify, substitute or withdraw his bid after bid submission, provided that written notice of modification or withdrawal is received by the Employer prior to the prescribed deadline for submission of bids.
- 24.2 The bidder's modification, substitution or withdrawal notice shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause 21, with the outer and inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL" as appropriate.

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- 24.3 No bid may be modified subsequent to the deadline for submission of bids, except in accordance with Sub-Clause 28.1.
- 24.4 Any withdrawal of a bid during the interval between the deadline for submission of bids and expiration of the period of bid validity specified in Clause 17 may result in the forfeiture of the bid security pursuant to Sub-Clause 17.5.

E. BID OPENING AND EVALUATION

25 Bid Opening

- 25.1 The Employer will open the bids, including withdrawals and modifications made pursuant to Clause 24, in the presence of bidders' designated representatives who choose to attend, at **5th floor boardroom KeRRA headquarters**. The bidders' representatives who are present shall sign a register evidencing their attendance.
- 25.2 Envelopes marked "WITHDRAWAL" and "SUBSTITUTION" shall be opened first and the name of the bidder shall be read out. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause 24 shall not be opened.
- 25.3 The bidder's name, the Bid Prices, including any bid modifications and withdrawals, the presence (or absence) of bid security, and any such details as the Employer may consider appropriate, will be announced by the Employer at the opening. Subsequently, all envelopes marked "MODIFICATION" shall be opened and the submissions therein read out in appropriate detail. No bid shall be rejected at bid opening except for late bids pursuant to Clause 23.
- 25.4 The Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with Sub-Clause 25.3.
- 25.5 Bids not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.

26 Process to be Confidential

- 26.1 Information relating to the examination, evaluation and comparison of bids, and recommendations for the award of contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful bidder has been announced. Any effort by a bidder to influence the Employer's processing of bids or award decisions may result in the rejection of the bidder's bid.

27 Clarification of Bids and Contacting of the Employer

- 27.1 To assist in the examination, evaluation, and comparison of bids, the Employer may, at its discretion, ask any bidder for clarification of its bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the bid shall be sought, offered, or permitted

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except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with Clause 28.

- 27.2 Subject to Sub-Clause 26.1, no bidder shall contact the Employer on any matter relating to its bid from the time of the bid opening to the time the contract is awarded. If the bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.
- 27.3 Any effort by the bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the bidder's bid.

28 Examination of Bids and Determination of Responsiveness

- 28.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid (a) has been properly signed; (b) is accompanied by the required securities; (c) is substantially responsive to the requirements of the bidding documents; and (d) provides any clarification and/or substantiation that the Employer may require to determine responsiveness pursuant to Sub-Clause 28.2.
- 28.2 A substantially responsive bid is one that conforms to all the terms, conditions, and specifications of the bidding documents without material deviation or reservation and has a valid BID bank guarantee. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the works; (b) which limits in any substantial way, inconsistent with the bidding documents, the Employer's rights or the bidder's obligations under the contract; or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.
- 28.3 If a bid is not substantially responsive, it will be rejected by the Employer and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

29 Correction of Errors

- 29.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:
 - a) Where there is a discrepancy between the amounts in figures and in words, the amount in words as indicated in the Form of Bid will govern; and
 - B) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the line item total will govern and the unit rate will be adjusted accordingly in such a way that the BID Sum remains unaltered.
- 29.2 Any error by the Bidder in pricing or extending the Bills of Quantities or carrying forward to the summary or BID Sum, shall be corrected in such a way that the BID Sum

CONSTRUCTION OF MUNYU BRIDGE

remains unaltered and the Bidder shall within seven (7) days after issuance of the written notice by the Employer, or such further time as the Employer may allow, correct his BID in such a manner as may be agreed or directed by the Employer failing which the BID may be absolutely rejected and the Bid Security forfeited in accordance with Sub-Clause 17.6.

30 Evaluation and Comparison of Bids

- 30.1 The Employer will then evaluate and compare only the bids determined to be substantially responsive in accordance with Clauses 27 and 28. Any variation, deviation and alternative offers will be rejected and shall not be taken into account in bid evaluation.
- 30.2 If the bid, which results in the lowest Evaluated Bid Price is seriously unbalanced or front loaded in relation to the Engineer's estimate of the items of work to be performed under the contract, the Employer may require the bidder to produce detailed price analyses for any or all items of the Bills of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated contract payments, the Employer may require that the amount of the Performance Security set forth in Clause 35 be increased at the expense of the bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful bidder under the contract.

31 Preference for Domestic Bidders

This will not be applicable for this bid.

F. AWARD OF CONTRACT

32 Award

- 32.1 Subject to Clause 32, the Employer will award the contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest Evaluated Bid Price pursuant to Clause 29, provided that such bidder has been determined to be (a) eligible in accordance with the provisions of Sub-Clause 4.1, and (b) qualified in accordance with the provisions of Clause 5.

33 Employer's Right to Accept any Bid and to Reject any or All Bids

- 33.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Employer's action.

34 Notification of Award

- 34.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing or by cable confirmed by

CONSTRUCTION OF MUNYU BRIDGE

registered letter that its bid has been accepted. This letter (hereinafter and in the Conditions of Contract called "Letter of Acceptance") shall specify the sum, which the Employer will pay the Contractor in consideration of the execution and completion of the works and the remedying of any defects therein by the Contractor as prescribed by the contract (hereinafter and in the Conditions of Contract called "the Contract Price").

- 34.2 At the same time that the Employer notifies the successful bidder that his bid has been accepted, the Employer shall notify the other bidders that their bids have been unsuccessful and that their bid securities will be returned as promptly as possible, in accordance with sub-clause 17.4.

35 Signing of Agreement

- 35.1 At the same time that the Employer notifies the successful bidder that its bid has been accepted, the Employer will send the bidder the Agreement in the form provided in the bidding documents, incorporating all agreements between the parties.
After 21 days of receipt of the Agreement, the successful bidder shall sign the Form of Agreement and return it to the Employer, together with the required performance security.

36 Performance Security

- 36.1 After 21 days of receipt of the Letter of Acceptance from the Employer, the successful bidder shall furnish to the Employer a performance security in the form stipulated in the Conditions of contract. The form of performance security provided in Section 8 of the bidding documents shall be used.
- 36.2 The successful bidder shall provide a performance security in the form of an Unconditional Bank Guarantee from a reputable bank located in Kenya.
- 36.3 Failure by the successful Bidder to lodge the required Performance Guarantee within 60 days of the receipt of the Letter of Acceptance shall constitute sufficient grounds for the annulment of the Award and forfeiture of the Bid Surety; in which event the Employer may make the award to another bidder or call for new bids.

37 Contract Effectiveness

- 37.1 The Contract will be effective only upon signature of the Agreement between the Contractor and the Employer.

SECTION 5: QUALIFICATION CRITERIA

SECTION 5: QUALIFICATION CRITERIA

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

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Qualification Criteria		Compliance Requirements					Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
1. Eligibility							
1.1	Eligibility	Nationality in accordance with Sub-Clause 4.1.	Must meet requirement	Existing or intended JV must meet requirement	Must meet requirement	N / A	Section 7, Schedule 1
1.2	Conflict of Interest	No conflicts of interest in Sub-Clause 4.2.	Must meet requirement	Existing or intended JV must meet requirement	Must meet requirement	N / A	Section 7, Schedule 1
1.3	Employer Ineligibility	Not having been declared ineligible by the Employer, as described in Sub-Clause 4.3.	Must meet requirement	Existing JV must meet requirement	Must meet requirement	N / A	Section 7, Schedule 1
1.4	Incorporation & Registration	Pursuant to sub-clause 4.1 the following shall be provided; - Certified Copy of Certificate of incorporation to show that the applicant is a registered company and legally authorised to do business in Kenya - Proof of registration with the National Construction Authority in Class NCA 5 - NCA 6 - Pin Certificate - Vat Certificate -Tax Compliance Certificate	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Section 7, Schedule 1

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Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
2. Historical Contract Non-Performance							
2.1	History of Non-Performing Contracts	Non performance of a contract did not occur within the last three (3) years prior to the deadline for application submission based on all information on fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract, and where all appeal instances available to the applicant have been exhausted.	Must meet requirement by itself or as party to past or existing JV	N / A	Must meet requirement by itself or as party to past or existing JV	N / A	Section 7, Schedule 7
2.2	Pending Litigation	All pending litigation shall in total not represent more than fifty percent (30%)] of the Applicant's net worth and shall be treated as resolved against the Applicant.	Must meet requirement by itself or as party to past or existing JV	N / A	Must meet requirement by itself or as party to past or existing JV	N / A	Section 7, Schedule 11

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Qualification Criteria		Compliance Requirements					Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
3. Financial Situation							
3.1	Financial Performance	Submission of audited financial statements or if not required by the law of the applicant's country, other financial statements acceptable to the Employer, for the last three [3] years to demonstrate: (a) the current soundness of the applicants financial position and its prospective long term profitability, and (b) capacity to have a cash flow amount of min Kshs 8 Million equivalent working capital	Must meet requirement (a) Must meet requirement (b) Must meet requirement	N / A (a) N / A (b) Must meet requirement	Must meet requirement (a) Must meet requirement (b) N / A	N / A (a)N / A (b) N / A	Section 7, Schedule 10
3.2	Average Annual Construction Turnover	Minimum average annual construction turnover of KShs.20 Million [Twenty Million], calculated as total certified payments receipt for contracts in progress or completed, within the last three [(3)] years	Must meet requirement	Must meet requirement	Must meet ((100-50)/(n-1))% of the requirement where n= number of joint venture members	Must meet fifty (50%) percent of the of the requirement	Section 7, Schedule 10

CONSTRUCTION OF MUNYU BRIDGE

Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
4.1	General Construction Experience	Experience under construction contracts in the role of contractor, subcontractor, or management contractor for at least the last three [3] years prior to the applications submission deadline	Must meet requirement	N / A	Must meet requirement	N / A	Section 7, Schedule 7
4.2(a))	Specific Construction Experience	Participation as contractor, management contractor or subcontractor, in at least one (1) contract (bridge or box culvert) within the last three (3) years, with a value of at least KShs. 15 Million (Fifteen Million) , that has been successfully and substantially completed and that are similar to the proposed works. The similarity shall be based on the physical size, complexity, methods/technology of constructing a drainage structure such as a bridge or a box culvert or other characteristics as described in Section 6, Scope of Works	Must meet requirement	Must meet requirement	N / A	Must meet requirement for one contract	Section 7, Schedule 7
4.2(b))		b) In addition to the contracts executed during the period stipulated in 4.2(a) above, a minimum construction experience in at least one	Must meet requirements	Must meet requirement	N / A	Must meet requirement	Section 7, Schedule 7

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Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
		Bridge construction.					
4.3	Work Methodology	Submission of a brief work methodology in accordance with subclause 5.3	Should demonstrate understanding of the scope of works and other general requirements	Should demonstrate understanding of the scope of works and other general requirements	N/A	N/A	Section 7, Schedule 7
5. Current Commitments							
5.1	On-going contracts	The total value of outstanding works on the on-going contracts must not exceed KShs. (50) Fifty Million	Must meet requirements	Must meet requirements	Must meet $((100-50)/(n-1))\%$ of the requirement where n= number of joint venture members	N/A	Section 7, Schedule 8
6. Site Staff							

CONSTRUCTION OF MUNYU BRIDGE

Qualification Criteria		Compliance Requirements					Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
	Senior Foreman Site Surveyor Foremen	The site staff shall possess minimum levels set below; Qualification = H.N.D. Civil Eng General Experience = 5 yrs Specific Experience = 3 Yrs Qualification = H.N.D.Survey General Experience = 5 yrs Specific Experience = 2 Yrs Qualification = Dip. Civil Eng General Experience = 4 yrs Specific Experience = 2 Yrs	Must meet requirements	Must meet requirements	N/A	N/A	Section 7, Schedule 12

7 Schedule of the Major Items of Plant to Be Used On the Proposed Contract.

The Bidder must indicate the core plant and equipment considered by the company to be necessary for undertaking the project together with proof of ownership. (* Mandatory minimum number of equipment required by the Employer for the execution of the project that the bidder must make available for the Contract).

Item No.	Equipment Details	Minimum Number Required for the Contract Execution	No of Equipment Owned by the Bidder	No. of equipment to be hired or purchased by the Bidder	No. of equipment to be made available for the Contract by the Bidder
1	A) General Plant				
	1. Primary/Secondary Crusher Unit/Power Screen Min capacity – 60t/hr.	0			
	2. Concrete batching plant Min Cap 20 m ³ /hr	1			
	3. Asphalt Concrete batching plant	0			
2	B) Bituminous Plants				
	1. Bitumen Pressure distributor	0			
	2. Asphalt concrete paver	0			
3	C) Compactors				
	3. Vibrating compaction plate 300 mm wide	0			
	4. Vibrating compaction plate 600 mm wide	1			
4	D) Mobile Compressors				
	1. Single tool (1.8 m ³ /min)	0			
	2. Two tool (2.8 – 7.3m ³ /min)	0			
	3. Four tool (11.3 – 25.3 m ³ /min)	0			
	4. Medium rock drill (1.5 m ³ /min)	2			
	5. Heavy rock drill (2.4 m ³ /min)	1			
5	E) Concrete Equipment				
	1. Mobile concrete mixers	2			
	2. Truck mounted mixers	Optional			
	3. Concrete vibrators	4			
6	F) Transport (Tippers, dumpers, water tankers)				
	1. 4 x 2 tippers payload 7 – 12 tonnes	Optional			
	2. 6 x 4 tippers payload 16 – 20 tonnes	2			
	3. 8 x 4 tippers payload 16 – 20 tonnes	Optional			
	4. Articulated trailers	Optional			

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Item No.	Equipment Details	Minimum Number Required for the Contract Execution	No of Equipment Owned by the Bidder	No. of equipment to be hired or purchased by the Bidder	No. of equipment to be made available for the Contract by the Bidder
	5. Dump trucks	2			
	6. Flat bed lorries	Optional			
	7. Water tankers				
	-8,000lts capacity	1			
	-12,000lts capacity	0			
7	G) Earth – Moving Equipment				
	1. Tracked dozers with dozer attachment (D6-D9 equivalent)	1			
	2. Tracked loaders	1			
	3. Wheeled loaders	Optional			
	4. Motor scappers	Optional			
	5. Motor graders (120 - 205kW)	1			
	6. Trench excavator	0			
	7. Pulvimixer	0			
8	H) Diesel Generators				
	1. Diesel generators (15 – 200Kva)	1			
9	I) Excavators				
	1. Hydraulic crawler mounted (7 – 10 tonnes) – 0.25 – 0.4 m ³ SAE bucket.	1			
	2. Hydraulic crawler mounted (10 – 16 tonnes) – 0.40 – 0.60 m ³ SAE bucket.	0			
	3. Hydraulic wheel mounted (7 – 10 tonnes) – 0.25 – 0.4 m ³ SAE bucket.	0			
	4. Hydraulic wheel mounted (10 – 16 tonnes) – 0.40 – 0.6 m ³ SAE bucket.	0			
	5. Hydraulic wheel mounted backloader (7 – 10 tonnes) – 0.25 – 0.4 m ³ SAE bucket.	0			
10	J) Rollers				
	1. Self propelled single drum vibrating (various types)	1			
	2. Pneumatic rubber tyre (1-2 tonnes/wheel)	0			
	3. Sheep's foot roller	1			
	4. Double drum vibrating pedestrian rollers	0			

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Item No.	Equipment Details	Minimum Number Required for the Contract Execution	No of Equipment Owned by the Bidder	No. of equipment to be hired or purchased by the Bidder	No. of equipment to be made available for the Contract by the Bidder
Item No.	Equipment Details	Minimum Number Required for the Contract Execution	No of Equipment Owned by the Bidder	No. of equipment to be hired or purchased by the Bidder	No. of equipment to be made available for the Contract by the Bidder
1	K) General Plant 1. Primary/Secondary Crusher Unit/Power Screen Min capacity – 60t/hr. 2. Concrete batching plant Min Cap 20 m3/hr 3. Asphalt Concrete batching plant	0 1 0			
2	L) Bituminous Plants 5. Bitumen Pressure distributor 6. Asphalt concrete paver	0 0			
3	M) Compactors 7. Vibrating compaction plate 300 mm wide 8. Vibrating compaction plate 600 mm wide	0 1			
4	N) Mobile Compressors 6. Single tool (1.8 m3/min) 7. Two tool (2.8 – 7.3m3/min) 8. Four tool (11.3 – 25.3 m3/min) 9. Medium rock drill (1.5 m3/min) 10. Heavy rock drill (2.4 m3/min)	0 0 0 2 1			

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Item No.	Equipment Details	Minimum Number Required for the Contract Execution	No of Equipment Owned by the Bidder	No. of equipment to be hired or purchased by the Bidder	No. of equipment to be made available for the Contract by the Bidder
5	O) Concrete Equipment 4. Mobile concrete mixers 5. Truck mounted mixers 6. Concrete vibrators	2 Optional 4			
6	P) Transport (Tippers, dumpers, water tankers) 8. 4 x 2 tippers payload 7 – 12 tonnes 9. 6 x 4 tippers payload 16 – 20 tonnes 10. 8 x 4 tippers payload 16 – 20 tonnes 11. Articulated trailers 12. Dump trucks 13. Flat bed lorries 14. Water tankers -8,000lts capacity -12,000lts capacity	Optional 2 Optional Optional 2 Optional 1 0			
7	Q) Earth – Moving Equipment 8. Tracked dozers with dozer attachment (D6-D9 equivalent) 9. Tracked loaders 10. Wheeled loaders 11. Motor scappers 12. Motor graders (120 - 205kW) 13. Trench excavator 14. Pulvimixer	1 1 Optional Optional 1 0 0			
8	R) Diesel Generators 2. Diesel generators (15 – 200Kva)	1			

CONSTRUCTION OF MUNYU BRIDGE

Item No.	Equipment Details	Minimum Number Required for the Contract Execution	No of Equipment Owned by the Bidder	No. of equipment to be hired or purchased by the Bidder	No. of equipment to be made available for the Contract by the Bidder
9	S) Excavators	1			
	6. Hydraulic crawler mounted (7 – 10 tonnes) – 0.25 – 0.4 m3 SAE bucket.	0			
	7. Hydraulic crawler mounted (10 – 16 tonnes) – 0.40 – 0.60 m3 SAE bucket.	0			
	8. Hydraulic wheel mounted (7 – 10 tonnes) – 0.25 – 0.4 m3 SAE bucket.	0			
	9. Hydraulic wheel mounted (10 – 16 tonnes) – 0.40 – 0.6 m3 SAE bucket.	0			
	10. Hydraulic wheel mounted backloader (7 – 10 tonnes) – 0.25 – 0.4 m3 SAE bucket.	0			
10	T) Rollers				
	5. Self propelled single drum vibrating (various types)	1			
	6. Pneumatic rubber tyre (1-2 tonnes/wheel)	0			
	7. Sheep's foot roller	1			
	8. Double drum vibrating pedestrian rollers	0			

We hereby certify that notwithstanding the list of plant detailed above, we will provide sufficient, suitable and adequate plant in good working order for the successful completion of works.

.....
(Signature of Contractor)

.....
(Date)

SECTION 6: CONDITIONS OF CONTRACT

SECTION 6A CONDITIONS OF CONTRACT PART I:

GENERAL CONDITIONS OF CONTRACT (GCC)

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 6B: 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:

(a) (i) The “Employer” is the Kenya Rural Roads Authority represented by the Director General, Kenya Rural Roads Authority.

(ii) The “Engineer” is the General Manager (Design and Construction) Kenya Rural Roads Authority.

(b) (i) Insert in line 2 after the Bills Of Quantities”, the following, “the rates entered by the Contractor (whether or not such rate be employed in computation of the Contract Price),”

Amend subparagraph (b) (v) of Sub-clause 1.1 by adding the following words at the end:

The word “BID” is synonymous with “bid” and the word “Appendix to BID” with “Appendix to Bid” and the word “BID 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

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.

CONSTRUCTION OF MUNYU BRIDGE

- (a) 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 Drawings;
- (9) The priced Bills of Quantities
- (10) Other documents as listed in the Appendix to form of Bid

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 60 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 Engineer 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 Taking-Over Certificate of the last section of the structure and road. The security shall be returned to the Contractor within 14 days of expiration.

SUBCLAUSE 10. 3- Claims under Performance Security

Delete the entire sub-clause 10.3.

SUBCLAUSE 10. 4- Cost of Performance Security

The cost of complying with the requirements of this clause shall be borne by the Contractor.

CONSTRUCTION OF MUNYU BRIDGE

SUBCLAUSE 11. 1- Inspection of Site

In line 17 after “affect his BID” 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.

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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 Programme to be Submitted

The time within which the programme shall be submitted shall be as specified in the Appendix to the Form of Bid.

This detailed programme shall be based upon the programme submitted by the Contractor as part of his BID, where this was required, and shall in no material manner deviate from the said programme.

The programme 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 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 works within the time limits specified in the Contract.

The Contractor shall allow in his programme for the following public holidays per calendar year during which the Contractor shall not be permitted to work.

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- New Years Day (1st January)
- Good Friday
- Easter Monday
- Labour day (1st May)
- Madaraka Day (1st June)
- Idd Ul Fitr
- Mashujaa Day (20th October)
- Jamhuri day (12th December)
- Christmas Day (25th December)
- Boxing day (26th December)

The Contractor shall also allow per calendar year for a further two 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 14.3- Cash Flow 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 seven (7) 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."

Add the following Sub-clause 15.2

Sub clause 15.2- Language Ability and Qualifications of Contractor's Authorised Agent

The Contractor's Agent or Representative on the site shall be a Professional Engineer as registered by the Engineer's Board of Kenya in accordance with the Laws of Kenya Cap 530 or have equivalent status approved by the Engineer and shall be able to read and write English fluently.

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:

SUBCLAUSE 16.3 - Qualification and Language Ability of Superintending Staff

The Contractor's superintending staff shall meet the following minimum qualifications:

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- (a). 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.
- (b) 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.
- Senior Foreman
 - Site Surveyor
 - Foremen
- (c) The key staff listed below must have minimum experience set out in Section 5, Part 6:
- - Senior Foreman
 - Site Surveyor
 - Foremen
- (d) 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 Kenyan 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 of 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.

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- (iii) Long traffic diversion roads shall be avoided so as to minimize the effect of dust on the surrounding environment. In any case all diversions shall be kept damp and dust free.
- (iv) Spillage of oils, fuels and lubricants shall be avoided and if spilt, shall be collected and disposed off in such a way as not to adversely affect the environment.
- (v) Rock blasting near settlement areas shall be properly coordinated with the relevant officers of the Government so as to minimize noise pollution and community interference.

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:
 - (i) could not have reasonably foreseen, or
 - (ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures:
 - (A) prevent loss or damage to physical property from occurring by taking appropriate measures or
 - (B) insure against such loss or damage

SUBCLAUSE 21.1 - Insurance of Works and Contractor's Equipment

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"

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:"

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-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.

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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 25.6, 25.7

SUBCLAUSE 25.6 – 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 25.7 – 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.”

SUBCLAUSE 29.1 – Interference with Traffic

Supplement Sub-Clause 29.1 by adding the following sentence at the end:

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“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 at 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 Departments in consultation with the appropriate wage fixing authority and generally recognized by other employees

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in the district whose general circumstances in the trade or industry in which the Contractor is engaged are similar.

- (b) In the absence of any rates of wages, hours or conditions of labour so established the Contractor shall pay rates of wages and observe hours and conditions of labour which are not less favourable than the general level of wages, hours and conditions observed by other Employers whose general circumstances in the trade or industry in which the Contractor is engaged are similar.
- (c) Where the absence of established rates of wages, hours and conditions of labour or the dissimilarity of the general circumstances in the trade or industry in which the Contractor is engaged prevent the Contractor from observing rates of wages, hours and conditions of labour ascertained under sub-paragraph (a) and (b) above the Contractor in fixing the rates of wages, hours and conditions of labour of his employees shall be guided by the advice of the Labour Department.
- (d) The Contractor shall recognize the freedom of his employees to be members of trade unions.
- (e) The Contractor shall maintain records in English of the time worked by, and the wages paid to, his employees. The Contractor shall furnish to the Engineer or Employer, if called upon to do so, such particulars of the rates, wages and conditions of labour as the Employer or Engineer may direct.
- (f) The Contractor shall at all times during the continuance of the contract display, for the information of his employees in every factory, workshop or place occupied or used by him for the execution of the Contract, a copy of this clause together with a notice setting out the general rates of wages, hours and conditions of labour of his employees.
- (g) The Contractor shall be responsible for the observance of this clause by sub-Contractors employed in the execution of the works.

SUBCLAUSE 34.4 – Breach of Fair Wages Clause

Any Contractor or Sub-Contractor who is found to be in breach of Fair Wages Clause shall cease to be approved as a Contractor or Sub-Contractor for such period as the Employer 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 employment at the time of the acceptance of the BID shall be

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recruited by the Contractor from the Labour Exchange or Exchanges nearest to the site or sites of the work.

SUBCLAUSE 34.6 – Compensation for Injury

The Contractor shall in accordance with the Workmen's Compensation Act of the Laws of Kenya and any other regulations in force from time to time pay compensation for loss or damage suffered in consequence of any accident or injury or disease resulting from his work to any workman or other person in the employment of the Contractor or any Subcontractor.

SUBCLAUSE 34.7 – Labour Standards

- (a) the Contractor shall comply with the existing local labour laws, regulations and labour standards
- (b) the Contractor shall formulate and enforce an adequate safety program with respect to all work under his contract, whether performed by the Contractor or subcontractor. The Contractor has assurance from the Employer of cooperation where the implementation of these safety measures requires joint cooperation.
- (c) Upon written request of the Employer the Contractor shall remove or replace any of his employees employed under this Contract.

Add the following Sub-Clause 35.2 and 35.3.

SUBCLAUSE 35.2 – Records Of Safety and Health

The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.

SUBCLAUSE 35.3 – Reporting of Accidents

The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means. The Contractor shall also notify the relevant authority whenever the Laws of Kenya require such a report.

SUBCLAUSE 41.1 – Commencement of Works

Amend Sub-Clause 41.1 as follows:

Delete the words "as soon as is reasonably possible" in the first sentence and replace with "within the period stated in the Appendix to Bid".

SUBCLAUSE 43.1 – Time for Completion

Amend Sub-Clause 43.1 as follows:

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Delete the words “within the time” to “such extended time” and substitute “by the date or dates stated or implied in Clause 14 of these Conditions of Particular Application.

SUBCLAUSE 44.1 – Extension of Time For Completion

Add at the end of Sub-Clause 44.1 the following:

“Neither rains falling within the rainy seasons as occurs in Kenya nor floods caused by such rains shall be deemed exceptional weather conditions such as may fairly entitle the Contractor to an extension of time for the completion of the work.”

SUBCLAUSE 45.1 – Restriction on Working Hours

Add at the end of Sub-Clause 45.1 the following:

“If the Contractor requests permission to work by night as well as by day, then if the Engineer shall grant such permission the Contractor shall not be entitled to any additional payments for so doing. All such work at night shall be carried out without unreasonable noise or other disturbance and the Contractor shall indemnify the Employer from and against any liability for damages on account of noise or other disturbance created while or in carrying out night work and from and against all claims, demands, proceedings, costs, charges and expenses whatsoever in regard or in relation to such liability.

“In addition the Contractor will be required to provide, for any work carried out at night or recognized days of rest, adequate lighting and other facilities so that the work is carried out safely and properly.

“In the event of the Engineer granting permission to the Contractor to work double or rotary shifts or on Sundays, the Contractor shall be required to meet any additional costs to the Employer in the administration and supervision of the Contract arising from the granting of this permission.”

SUBCLAUSE 47.2 – Reduction of Liquidated Damages

Add the following paragraphs at the end of this Sub-Clause:

“There shall be no reduction in the amount of liquidated damages in the event that a part or a section of the Works within the Contract is certified as completed before the whole of the Works comprising that Contract.

The Employer shall pay no bonus for early completion of the Works to the Contractor.

The sum stated in the Appendix to Bid as liquidated damages shall be increased by a sum equivalent to any additional amount payable by the Employer to the Contractor under clause 70.1 in respect of an increase in costs in such a period that would not have been incurred by the Contractor if the works had been completed by the due date for completion prescribed by Clause 43.”

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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.

Modification to Clause 52(3)

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 – Contractors 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.

SUBCLAUSE 55.2 – Omissions 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: – Certificates and Payments

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

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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 Subclause 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 30 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.

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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 subclause, 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.

Bank Retention Guarantees shall be accepted in lieu of cash retentions

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.

- (a) Any further sums which the Contractor considers to be due; and
- (b) 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 SubClause 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

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draft final statement with supporting documents showing in detail, in the form approved by the Engineer;

- (a) The final value of all work done in accordance with the Contract
- (b) 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:

- (a) The final value of all work done in accordance with the Contract;
- (b) 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

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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.
- (ii) 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.
- (iii) 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 bank lending rates obtained from 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

"The Employer will make an interest free advance payment to the contractor for the cost of mobilization in respect of the Works, in a lump sum of equivalent to a maximum of ten (10) percent of the Contract Price named in the Letter of Acceptance. Payment of such advance amount will be due under a separate certification by the Engineer after:

- a) Provision by the Contractor of the Performance Security in accordance with Clause 10 of the Conditions of Contract, and
- b) Provision by the Contractor of a Bank Guarantee 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.

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.

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 amount of the contract. It shall have been completed by the time 80% of this amount is reached.

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The amount to be repaid by way of successive deductions shall be calculated by the means of the formula:

$$RI = \frac{A(x-X)}{80-20}$$

Where:

RI = the amount to be reimbursed.

A = the amount of the advance which has been granted.

x = the amount of proposed cumulative payments as a percentage of the original amount of the contract. This figure will exceed 20% but not 80%.

X = the amount of the previous cumulative payments as a percentage of the original amount of the Contract. This figure will be below 80% but not less than 20%.

With each reimbursement the guarantee will be reduced accordingly.

SUBCLAUSE 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;

- (a) No credit shall be given unless the following conditions shall have been met to the Engineers satisfaction
 - (i) The materials are in accordance with the specifications for the works;
 - (ii) The materials have been delivered to site and are properly stored and protected against loss, damage or deterioration;
 - (iii) 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;
 - (iv) 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;
 - (v) The materials are to be used within a reasonable time.
- (b) 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;
- (c) 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 67.1 – Engineer’s Decision

Delete the entire subclause 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) days 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 on which he received notice of such decision, or on or before the 28th (twenty eighth) day after 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 subclause 67.2 and add the following;

CONSTRUCTION OF MUNYU BRIDGE

“Where notice to of intention to commence adjudication as to a dispute has been in accordance with subclause 67.1, the parties shall attempt to settle such dispute 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 – Arbitration

Delete all the words from line 6 onwards beginning with the words "unless otherwise" up to line 8 ending with the words "... under such rules", and substitute with the following:

"by an arbitrator to be agreed upon between the parties or failing agreement to be nominated on the application of either party by the appointee designated in the form of Tender for the purpose and any such referee shall be deemed to be a submission to arbitration within the meaning of the Arbitration Laws of the Republic of Kenya.

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 Director General,
Kenya Rural Roads Authority,
P.O.BOX 48151 – 00100,
NAIROBI.
- b. The Engineer's address is:
General Manager (Design and Construction)
Kenya Rural Roads Authority
P.O.BOX 48151 - 00100
NAIROBI.

SUBCLAUSE 68.4 – Correspondences

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.

CLAUSE 69 – Default of Employer

Delete in Sub-Clause 69.1 (a) the words ("28 days") and insert the words "ninety (90) days".

Delete Sub-Clause 69.1 (c)

CONSTRUCTION OF MUNYU BRIDGE

Delete in Sub-Clause 69.4 line 4 the words “(28 days)” and insert the words “sixty (60) days”.

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

Delete clause 70 in its entirety and substitute the following.

There shall be no variation of price.

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

CONSTRUCTION OF MUNYU BRIDGE

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 To Be 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 7: SCHEDULES OF SUPPLEMENTARY INFORMATION

SECTION 7: SCHEDULES OF SUPPLEMENTARY INFORMATION

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CONSTRUCTION OF MUNYU BRIDGE

SCHEDULE 1: CONFIDENTIAL BUSINESS QUESTIONNAIRE

This Confidential Business Questionnaire of the Government of Kenya shall be completed by the Bidder.

CONSTRUCTION OF MUNYU BRIDGE

REPUBLIC OF KENYA

CONFIDENTIAL BUSINESS QUESTIONNAIRE

You are requested to give the particulars indicated in Part 1 and either Part 2 (a). 2(b) or 2(c) whichever applies to your type of business.

You are advised that it is a serious offence to give false information on this Form.

Part 1 - General:

Business name

.....

Location of business premises

.....

Plot No.Street/Road

Postal Address.....Tel No.

Nature of business.....

.....

Current Trade Licence No.Expiring date

Maximum value of business which you can handle at any one time:

Kshs.....

Name of your bankers

Branch.....

Are you an agent of the Kenya National Trading Corporation? YES/NO

Part 2(a) - Sole Proprietor:

Your name in full

.....

Age.....

NationalityCountry of origin

*Citizenship details

Part 2(b) - Partnership:

Give details of partners as follows:

Name	Nationality	Citizenship Details*	Shares
------	-------------	----------------------	--------

CONSTRUCTION OF MUNYU BRIDGE

1.....

2.....

3.....

4.....

5.....

Part 2(c) - Registered Company:

Private or public

State the nominal and issued capital of the company-

Nominal Kshs.

Issued Kshs.

Give details of all directors as follows:

Name	Nationality	Citizenship Details*	Shares
------	-------------	----------------------	--------

1.....

2.....

3.....

4.....

5.....

Part 2(d)- Interest in the Firm:

Is there any person / persons in the Kenya Rural Roads Authority who has interest in this firm? Yes /No**

.....

Date

.....

Signature of Bidder

- Attach proof of citizenship (Compulsory)

** Delete as necessary

SCHEDULE 2: FORM OF WRITTEN POWER OF ATTORNEY

The Bidder shall state here below the name(s) and address of his representative(s) who is/are authorized to receive on his behalf correspondence in connection with the Bid.

.....
(Name of Bidder's Representative in block letters)

.....
(Address of Bidder's Representative)

.....
(Signature of Bidder's Representative)

Alternate:

.....
(Name of Bidder's Representative in block letters)

.....
(Address of Bidder's Representative)

.....
(Signature of Bidder's Representative)

*To be filled by all Bidders.

CONSTRUCTION OF MUNYU BRIDGE

SCHEDULE 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 Construction of MUNYU BRIDGE and the approach roads.**

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.

CONSTRUCTION OF MUNYU BRIDGE

SCHEDULE 5: KEY PERSONNEL

DESIGNATION	NAME	NATIONALITY	SUMMARY OF QUALIFICATIONS AND EXPERIENCE		
			Qualifications	General Experience (Yrs)	Relevant Experience (Yrs)
Headquarters Partner/Director or other key staff (give designation)					
Site Office Site Agent Deputy Site Agent/Site Engineer. Senior Foreman Construction supervisors Site Surveyor Other Key Staff Foremen (i) Earthworks (ii) Concrete (iii) Pavement					

Note: The Bidder shall list in this schedule the key personnel he will employ from the Contractor's headquarters and from the Contractor's site office to direct and execute the work together with their qualifications, experience, position held and nationality in accordance with Clause 15.2 and 16.3 of the Conditions of Contract Part II (where required, use separate sheets to add extra data for column 4). Bidders shall attach signed and certified CVs of all key staff.

I certify that the above information is correct.

.....
(Signature of Bidder)

.....
(Date)

CONSTRUCTION OF MUNYU BRIDGE

SCHEDULE 6: SCHEDULE OF DRAINAGE WORKS CARRIED OUT BY THE BIDDER IN THE LAST THREE YEARS

DESCRIPTION OF WORKS	NAME AND ADDRESS OF CLIENT	VALUE OF WORKS (KSHS) *	YEAR COMPLETE D/REMARKS
<u>A) Non-completed Works</u>			
<u>B) Completed Works</u>			
<u>C) Specific Construction Experience</u>			

I certify that the above works were successfully carried out by me (the bidder).

.....
(Signature of Bidder)

.....
(Date)

*Value in Ksh using Central Bank of Kenya mean exchange rate at a reference date 7 days before date of BID opening.

CONSTRUCTION OF MUNYU BRIDGE

SCHEDULE 7: SCHEDULE OF ONGOING PROJECTS

DESCRIPTION OF WORKS	NAME AND ADDRESS OF CLIENT	DATE OF COMMENCEMENT	DATE OF COMPLETION	VALUE OF WORKS (KSHS)	VALUE COMPLETED UP TO DATE %	PHYSICALLY COMPLETED UP TO DATE %

I certify that the above works are being carried out by me and that the above information is correct.

.....
(Signature of Bidder)

.....
(Date)

SCHEDULE 8: SCHEDULE OF LOCAL LABOUR BASIC RATES

The rates inserted in this schedule will be those used in determining changes in cost of local labour as provided in Clause 70.1 of the Conditions of Contract Part 2.

LABOUR CATEGORY	MONTH/SHIFT/HOUR	UNIT	RATE SHS

NOTE: Categories to be generally in accordance with those used by the Kenya Building Construction Engineering and Allied Trade Workers Union

I certify that the above information is correct.

.....
Date

.....
Signature of Bidder

SCHEDULE 9: FINANCIAL STANDING

- 1 Submit copies of audited profit and loss statements and balance sheet for the last five calendar years and estimated projection for the next two years with certified English translation where appropriate.
- 2 Give turnover figures for each of the last five (5) financial years. Quote in millions and decimal thereof.

	Year	Year	Year	Year	Year
	Ksh.	Ksh.	Ksh.	Ksh.	Ksh.
Roadworks					
Other Civil Engineering Works					
Other (specify)					
Total					

SUMMARY OF ASSETS AND LIABILITIES OF THE AUDITED FINANCIAL STATEMENTS OF THE LAST THREE (3) FINANCIAL YEARS

	Year	Year	Year
	KShs.	KShs.	KShs.
1. Total Assets			
2. Current Assets			
3. Bank Credit Line Value			
4. Total Liabilities			
5. Current Liabilities			
6. Net Worth (1-4)			
7. Working capital (2+3-5)			

- (a) Name/Address of Commercial Bank providing credit line

.....

.....

- (b) Total amount of credit line KShs.....

Attach certified copies of financial bank statements of the last three years.

Attach a certified copy of Undertaking of the Bank to providing the credit.

SCHEDULE 10: OTHER SUPPLEMENTARY INFORMATION

1. Financial reports for the last three years, balance sheets, profit and loss statements, auditors' reports etc. List them below and attach copies.

.....

.....

.....

.....

2. Evidence of access to financial resources to meet the qualification requirements. Cash in hand, lines of credit etc. List below and attach copies of supporting documents

.....

.....

.....

.....

3. Name, address, telephone, telex, fax numbers of the Bidders Bankers who may provide reference if contacted by the Contracting Authority.

.....

.....

.....

CONSTRUCTION OF MUNYU BRIDGE

4. Information on current litigation in which the Bidder is involved.

OTHER PARTY (IES)	CAUSE OF DISPUTE	AMOUNT INVOLVED (KSHS)

I certify that the above information is correct.

.....
Date

.....
Signature of Bidder

SCHEDULE 11: WORK METHODOLOGY

Give a brief description of how you intend to carry out the work including traffic management, quality assurance of works and any designs to be carried out by the Bidder, in not less than five (5) pages and not more than fifteen (15) pages.

SECTION 8: FORM OF AGREEMENT

CONSTRUCTION OF MUNYU BRIDGE

SECTION 8: FORM OF AGREEMENT

THIS AGREEMENT is made on the day of 20
..... between the Director General, Kenya Rural Roads Authority of P.O.BOX
48151 – 00100, Nairobi, Kenya hereinafter called "the Employer" of the one part and
..... hereinafter called
"the Contractor" of the other part.

WHEREAS the Employer is desirous that certain works should be executed, viz.

CONSTRUCTION OF MUNYU BRIDGE AND APPROACH ROADS

and has accepted a Bid by the Contractor for the execution, completion and
maintenance of such works **NOW THIS AGREEMENT WITNESSETH** as follows:

In this agreement words and expressions shall have the same meanings as are
respectively assigned to them in the Conditions of Contract hereinafter referred to.
The following document shall be deemed to form and be read and construed as
part of this Agreement, viz.:

- The said BID dated
- The Conditions of Contract
- The Standard and Special Specification
- The Priced Bill of Quantities
- The Letter of Acceptance
- Schedules of Supplementary Information
- The Drawings
- Other documents as may be agreed and listed

All aforesaid documents are hereinafter referred to as "The Contract".

CONSTRUCTION OF MUNYU BRIDGE

In consideration of the payment to be made by the Employer to the Contractor, the Contractor hereby covenants with the Employer to execute, complete and maintain the works in conformity in all respects with the provisions of the Contract.

The Employer hereby covenants to pay the Contractor in consideration of the execution, completion and maintenance of the works the Contract Price at the times and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties hereto have caused their respective common seals to be hereto affixed (or have hereunto set their respective hands and seals) on the day and year first above written.

SIGNED AND DELIVERED

By the said Employer:
(Director General, Kenya Rural Roads Authority)
For and on behalf of the said Employer.

In the presence of:
(Name and Designation of Witness)
.....
(Signature of Witness)
.....
(Address of witness)

By the said Contractor:

In the presence of:
(Name and Designation of Witness)
.....
(Signature of Witness)
.....
(Address of witness)

**SECTION 9: FORMS OF PERFORMANCE BANK GUARANTEE
AND ADVANCE PAYMENT GUARANTEE
(UNCONDITIONAL)**

CONSTRUCTION OF MUNYU BRIDGE

PERFORMANCE BANK GUARANTEE

To:

Director General,
Kenya Rural Roads Authority,
P.O. Box 48151 - 00100,
NAIROBI

WHEREAS (hereinafter called “the Contractor”) has undertaken in pursuance of Contract No RDDatedto execute the **Construction of MUNYU BRIGDE and approach roads,** (hereinafter called the “Contract”)

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified in the Appendix to Form of Bid as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of

Kshs.....(amount in figures)

Kshs.....

.....(amount in words)

and we undertake to payment to you, upon your first written demand and without cavil or argument, any sum or sums within and up to the limits as aforesaid without your needing to prove or show grounds or reasons for the sum specified therein.

We hereby waive the necessity of you demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract Documents which may be made between you and the Contractor shall in any way

CONSTRUCTION OF MUNYU BRIDGE

release us from any liability under this Guarantee and we hereby waive notice of any such change, addition or modification
This Guarantee shall be valid until 28 days after issuing of the Taking Over Certificate.

SIGNATURE AND SEAL OF BANK

Name of
Signatory.....

Name of
bank.....

Address.....Date.....

CONSTRUCTION OF MUNYU BRIDGE

BANK GUARANTEE FOR ADVANCE PAYMENT

To: The Director General,
Kenya Rural Road Authority,
P.O.BOX 48151 – 00100,
NAIROBI.

CONSTRUCTION OF MUNYU BRIGDE AND APPROCH ROADS

CONTRACT No. KeRRA

Gentlemen:

In accordance with the provision of the Conditions of Contract, sub-clause 60.12
("Advance

Payment") of the above – mentioned
contract,.....

.....
(hereinafter called the "Contractor") shall deposit with the Director General, Kenya
Rural Roads Authority a Bank Guarantee to guarantee his proper and faithful
performance under the said Clause of the contract in an amount equal to ten (10) %
of the contract price, i.e.

Kshs.....(amount in
figures)

Kshs.....

.....(amount
in words)

We, as
instructed by the Contractor, agree unconditionally and irrevocably to guarantee as
primary obligator and not as Surety merely, the payment to the Director General,
Kenya Rural Roads Authority on his first demand without whatsoever right of
objection on our part and without his first claim to the contractor, in the amount
not exceeding,

Kshs.....(amount in
figures)

CONSTRUCTION OF MUNYU BRIDGE

Kshs.....

.....(amount
in words)

We further agree that no additional to or other modification of the terms of the Contract or of the Works to be performed there under or of the Contract documents which may be made between the Director General, Kenya Rural Roads Authority and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any change or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the contract until the Director General, Kenya Rural Roads Authority, Nairobi, Kenya receives full payment of the same amount from the Contractor.

This guarantee shall be reduced pro rata with the deductions from the down payment made on the Interim Certificates in Accordance with Sub – Clause 60.2 of the Conditions of Contract.

Any dispute over the interpretation of the conditions of this letter of Guarantee shall be subject to the Laws of the Republic of Kenya.

After expiry, this document shall be returned to us for cancellation.

SIGNATURE AND SEAL OF BANK:

.....

Name of
Signatory.....

Name of
bank.....

Address.....Date.....

SECTION 10: STANDARD SPECIFICATIONS

SECTION 10: STANDARD SPECIFICATIONS

The Standard Specifications referred to in this document is the *Standard Specifications for Road and Bridge Construction, 1986 Edition* published by the Ministry of Transport and Communications. This document shall form part of the Contract.

Work shall be carried out in accordance with the Standard Specification except as supplemented or revised in the Special Specification.

SECTION 11: SPECIAL SPECIFICATIONS

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CONSTRUCTION OF MUNYU BRIDGE

SECTION 1 - GENERAL

101 Special Specifications.

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

102 Location and Extent of Site.

The proposed bridge is located in Migori County on Masara- Chungni Road (Uncl)
The proposed bridge lies across a perennial river. The road traverses hilly terrain with the main economic activity being coffee farming, tea and maize farming in addition to livestock being reared in the community.

103 Extent of Contract.

The Major Works to be executed under the Contract comprise mainly of but are not limited to the following:

1. Site clearance where necessary.
2. Substructure works which comprise 2No. Abutments.
3. Construction of reinforced concrete approach slabs
4. Construction of a 15m long concrete slab.
5. Construction of a box culvert and several ring culverts.
6. Construction of 2km approach roads to gravel standards.
7. River Training as directed by the Engineer.
8. Installation of protection works.

104 Programme of Execution of the Works

The contractor shall provide the works programme, required under clause 14 of the Conditions of Contract, within 28 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.

CONSTRUCTION OF MUNYU BRIDGE

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

Taking over certificate shall be issued upon completion of construction of the bridge and the 1000 metres of approach roads of the bridge.

109 Notice of Operations

Add the following sub- Clause.

Notification Terms

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

Explosive and Blasting

- (a) 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.
- (b) No explosives of any kind shall be used without prior written consent of the Engineer.
- (c) 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.

117 Health, Safety and Accidents

Insert Sub-clause (i):

In accordance with the laws of Kenya, the Contractor shall make arrangement for awareness programme for public health education and particularly for HIV/AIDS as detailed under Section 26 of this specification.

121 Diversion of Services

- a) The Contractor shall acquaint himself with the location of all existing services such as telephone lines, electricity cables, water pipes, sewerlines etc., before

CONSTRUCTION OF MUNYU BRIDGE

execution of any works that may affect the services. The cost of determining the location of the existing services together with making good or repairing of any damage caused all to the satisfaction of the Engineer shall be included in the BID rates.

- b) Subject to the agreement with the Engineer, the Contractor shall be responsible for removal of alteration and relocation of existing services.
- c) The Contractor shall indemnify the Employer against claims originating from damage to existing services or works.

123 Liaison with Government and Police Officials

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

124 Land For All Camps Sites And For The Contractor's Own Purposes, Including Temporary Works.

Notwithstanding Clause 124 of the Standard Specification all requirements of land for temporary works and construction purposes shall be to the approval of the Engineer but the Contractor will make all necessary arrangements with the property owners concerned and pay all charges arising there from. 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.

125 Water Supply

The water source proposed for the project road is the river across Masara- Chungni road. However, it should be known that the source is used by the local communities and as such the Contractor will be required to make appropriate arrangements with the local communities before their use.

Notwithstanding the above limitations, the contractor is expected to supply clean water as in indicated in clause 125 of standard specification and take due consideration of these in his rates.

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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 signboards on the site as directed. The Engineer shall, as shown in the Drawings, direct the minimum dimensions of the boards. The boards shall be prepared, primed and painted cream and lettered in black. The boards shall be of stout construction, resistant to the effects of weather.

132 Housing Accommodation for the Resident Engineer and His Staff and Office Furniture

132.4 Main Office

The contractor shall provide a furnished and equipped main office of plan area not smaller than 155 metre squares that is equivalent of the MOR Standard Resident Engineer's Office. This office shall be of weatherproof construction, provided with mosquito proof and burglar-proof windows and lockable doors and suitably insulated against heat and cold, all to the satisfaction of the Engineer. The room to be occupied by the Engineer's Representative and its front office shall be provided with a floor carpet to be approved by the Engineer. All other floors shall be given a PVC tile finish using approved adhesive including 150mm wood skirting or superior finish. The windows shall be fitted with curtains and blinders.

A two way radio call with a minimum of five handsets shall also be provided for the Resident Engineer's office for his exclusive use. All the charges and fees related to the installation and maintenance of the radio call system shall be

CONSTRUCTION OF MUNYU BRIDGE

deemed to have been included in the rates for providing and maintaining the Main Office.

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

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

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

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

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:

- | | | |
|--|--|-----------|
| a) | <u>Digital Photocopying Machine</u> | 1No. |
|
Digital copier with the following minimum specifications:
Color: Black & white and colored
Copy Speed A4: 41-50 PPM
Print Speed A3: 15 PPM
Resolution: 600x600 dpi
2 x 500 sheet paper cassettes standard
200 sheets Multipurpose bypass standard
Copier Memory 512MB Standard (Max 1GB) + 80 GB Standard
Printer Memory 512MB Standard (Max 1Gb) + 80 GB Shared with copier
25% - 400% Zoom
Paper size A6 –A3
Recommended monthly volume 6000 copies | | |
|
(b) |
<u>Personal Computer (PC)</u> |
2 No. |

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

1. Processor Intel Core i5 – 3.2 GHZ or higher
2. Ram DDR SDRAM 1GHz speed, 4GB (minimum)
3. Hard Disk SATA, Min 300 GB, and Min 7200 RPM
4. Display 17'' TFT Colour SVGA with n VIDIA or Radeon graphics accelerator with min 1 GB video RAM
5. Motherboard FSB speed: 1GHz
6. Expansion slots 4No.
7. Ports 6 USB ports (minimum)
8. Operating systems Windows 7 or XP Professional
9. Fully multimedia 4 speed CD ROM 52X (minimum) with sound card and two external speakers 10W minimum
10. Network card 3Com or Compaq, and Wi-Fi
11. TV/FM CARD
12. Blu-Ray Drive, not anything less than DVD superdrive
13. Three years warranty
14. Dedicated Sound Card: Soundblaster

(c) **Laptop**

2No.

1. Processor Intel Core i5 or higher
2. RAM DDR SDRAM 1GHz speed, 4GB (minimum)
3. Disk Cache 1024 MB (minimum)
4. Double Hard Disk SATA, Min 300 GB, and Min 7200 RPM
5. Display 17'' TFT Colour SVGA with n VIDIA or Radeon graphics accelerator with min 2GB video RAM
6. Keyboard 101 Keyboard
7. Floppy drive 3.5'' disk drives (either in-built or external)
8. Expansion slots 4No.
9. Ports 4 USB ports (minimum)
10. Operating systems Windows 7 or XP Professional
11. Fully multimedia Integrated sound card and two external speakers 400W minimum
12. Network card 3Com or Compaq, Wi-Fi
13. TV/FM CARD
14. Blu-Ray Drive, not anything less than DVD superdrive
15. Three years warranty
16. Battery life: min 6 hours
17. Screen resolution: 1280 x 800
18. Video Card: Intel GMA MDH or better
19. Built-in webcam min 2 MP
20. Windscreen
21. Memory card reader 7-in-1

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

Laser jet Printer- 1No.

Specifications

- | | |
|------------------|--|
| 1. Speed | 20ppm |
| 2. Memory | 32MB expandable to 80MB |
| 3. Resolution | 1200Xx1200dpi |
| 4. Compatibility | MS Windows 95/98/2000/XP/Vista/Windows 7 |
| 5. Power input | 220-240V |
| 6. | |

UPS specifications

- | | |
|---------------------|--|
| 1. Rating | 650 VAC (minimum) |
| 2. Input Voltage | 220-240V (minimum) |
| 3. Output | 220-240V (minimum) |
| 4. Output frequency | 50-60HZ |
| 5. Battery module | minimum 25 minutes backup time on 50% rated
a. Sealed Lead-acid
b. Short recharge time (max. 5 hours for 100%) |
| 6. Protection | Output overload
Input output short-circuit |

Software

1. Windows 7 with licence
2. Antivirus Norton (Latest Version)

The Personal Computers, Laptops printers and Photocopying Machine shall revert to the Employer at the end of the Contract. The Contractor shall be paid for these items under appropriate bill items in the BoQ.

CONSTRUCTION OF MUNYU BRIDGE

LIST OF FURNITURE FOR ENGINEER'S OFFICE

ITEM	DESCRIPTION	No.
1	Executive office desk	1
2	Executive office chair	1
3	Conference table 10 seater	1
4	Standard office desk 3x2 lockable drawers	1
5	Standard office chairs	1
6	Office desks 3x1 lockable drawers	5
7	Office chairs	12
8	Office desks 3x1 drawers	2
10	Filing cabinets 6 drawers	3
11	Filing cabinets 4 drawers	1
12	Curtains	As applicable
13	Office cupboard	1
14	Water Filter	1
15	Dust bins	3
16	Stapling machine (ofrex) and pins	3
17	Paper punch	3
18	Scientific calculator	5
19	Fully equipped first Aid Kit	1
20	Electric heater fans	2
21	Wall clocks battery powered	2
22	Filing trays	7
23	Waste paper baskets	4

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

137 Attendance upon the Engineer and His Staff

The Contractor shall pay wages (including all overtime) use all attendant staff to fulfil the requirements of Clause 137 of the Standard Specification. The number of staff required for these duties shall be about: 1 (one) No. Office attendant, 3 (three) No. chainmen and 2 No. labourers. 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.

138 Vehicles and Drivers for the Engineer and His Staff and Method of Payment

The Contractor shall when instructed to do so provide and maintain in serviceable condition for the exclusive use of the Engineer and his staff throughout the contract, three brand new fully loaded vehicles, right hand drive, minimum 2800cc diesel propelled engine and fitted with air conditioner, CD/mp3 music player, SRS Air bags,

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power windows and mirrors, central locking system, alloy wheels and power steering. The vehicles shall be fitted with two way radio call communication system. The Engineer will approve the type of vehicle and confirm the number of each type to be provided.

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

Should any vehicle supplied not be in road worthy condition, the Contractor shall provide an acceptable equivalent replacement vehicle until such time as the original vehicle is repaired to the satisfaction of the Engineer and returned for use.

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

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

139 Receipted Accounts

The Contractor maybe instructed by the Engineer to make payments of general miscellaneous accounts for such items as stationery, 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.

142 Liquidated Damages

Liquidated Damages at the rate of Ksh. 70,000/- per day shall apply in the event of the work not being completed within the time for completion plus any extension of time which may be determined by the Engineer.

143 Environmental Protection

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

Within four (4) weeks 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

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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.

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- (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 will be under appropriate items in the BoQ

CONSTRUCTION OF MUNYU BRIDGE

SECTION 2 - MATERIALS AND TESTING OF MATERIALS

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

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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.

- 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.

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SECTION 4- SITE CLEARANCE AND TOP SOIL STRIPPING

401 Site Clearance

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

402 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.

403 Removal of Structures, Fences and Obstructions

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

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SECTION 5 - EARTHWORKS

504 Preparation Prior To Forming Embankment

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

Excavations 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 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 of organic matter (such as topsoil, material from swamps, mud, logs, stumps and other perishable material)
- (ii) All material with a swell of more than 3% (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 insitu 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.

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Embankment repair:

Where directed by the Engineer, any localized filling in soft, hard or natural; selected material requirements shall be executed in accordance 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 specific instructions to the contrary are issued by the Engineer.

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).

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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.

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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.

Paragraph 4, last line: - Replace "95%" with "100%".

704: PROTECTIONS FROM WATER

704(a) Scope of work

The contractor shall be responsible for dealing with water whether from existing drainage systems, water courses, underground springs, precipitation or any other source or cause. The contractor shall provide all dams, cofferdams, pumping, piling, shoring, temporary drains, sumps etc required for the purposes of dealing with water.

704(b) Measurement and Payment

The provision of water exclusion methods shall be considered as temporary works and incidental to other works such as excavation to foundations, fixing of steel and concreting.

No separate measurements and payments shall be made for the provision of those works.

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 Excavations 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

Stone pitching to drains, inlets and outlets of culverts to embankments and around structure shall consist of sound un weathered rock approved by the Engineer.

The stone as dressed shall be roughly cubical in shape with minimum dimensions of 150 x 150mm for normal thickness of stone pitching. Grouting will be done for all stone pitching areas and the top line of the stone pitching should be grouted/sealed with concrete class 15/20.

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

In areas where stone pitching has been damaged, the Contractor shall identify such areas and notify the Engineer for his agreement of the extent of the Works required and his approval and instructions to proceed with the Works. Stone Pitching Repair and Reconstruction shall be carried out in accordance with Clause 710 of the Standard Specifications.

711 Gabions

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

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

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

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.

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The rock fill shall be placed in layers not less than 0.50 m in compacted thickness, each compacted to refusal by vibrating roller, finished with non-plastic fines as specified in the standard specification till all voids in the layer have been filled which will be indicated by appearance of no more swallow holes under vibrating roller at refusal, prior to placing of the next layer all to Engineer's approval.

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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: -

- Installation of 600mm, 900mm and 1200mm diameter pipe culverts
- Construction of associated inlet and outlet structures to specifications and/or instructions

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. The void left by removal of these pipes shall be carefully preserved in order to accommodate replacement 1200mm 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%".

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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 0.2m³ 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 15/40 and the pipes shall be bedded on 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

- 1). Delete paragraph 6 "for pipe culverts depth of 150mm", entirely.
- 2). 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.

814.1 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

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compacted stabilised gravel and surfaced with hot asphalt or a surface dressing as instructed by the Engineer.

814.2 Filter Fabric to Subsoil Drains

A filter fabric shall be placed under, around and over rock fill of the subsoil drains. The provisions and placing of the fabric shall be in accordance with manufacturer's instructions and complying with Clause 804 and 814 of the Standard Specification. Payment shall be in metre square of the fabric used.

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 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.
- (c) Shaping the drains to free flowing condition as directed by the Engineer.

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. 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.

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817.3 Spoil Material

The contractor shall be responsible for removal from site of all materials excavated in the course of undertaking works in this section of the specification, 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 De-silting of Pipe Culverts

Where instructed, the Contractor shall de-silt 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.

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SECTION 9 - PASSAGE OF TRAFFIC

901 Scope of the Section

The Contractor shall so arrange his work to ensure the safe passage of the Traffic at all times and if necessary construct and maintain an adequate diversion for traffic complete with all the necessary road traffic signs.

The Contractor shall provide to the satisfaction of the Engineer adequate warning signs, temporary restriction signs, advance warning signs, barriers, temporary bumps and any other device and personnel equipped with two way radios to ensure the safe passage of traffic through the works.

When carrying out the Works the Contractor shall have full regard for the safety of all road users.

The Contractor shall also provide sign posts and maintain to the satisfaction of the Engineer all deviations necessary to complete the works. The contractor should allow for the costs of complying with the requirements of this clause in his rates.

The contractor will be deemed to have inspected the site and satisfied himself as to the adequacy of his bid for these works and no additional payments will be made to the Contractor for any expenditure on traffic control or the provision of deviations. The employer shall not be liable for inadequate prior investigations of this nature by the Contractor.

904 CONSTRUCTION OF DEVIATIONS

a) **General**

In addition to requirement of this clause, the maximum length of deviation road shall be restricted to 5 kms at any given time unless otherwise instructed. The Contractor shall construct and complete deviations to the satisfaction of the Engineer before commencing any permanent work on the existing road.

Also during these works the Contractor is supposed to provide a detour of adequate pipe culverts for pedestrian and traffic crossing where there is bridge works.

b) **Geometry**

The carriageway width of the deviations shall not be less than 6m wide and suitable for 2-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

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

In addition to provision of this clause, Contractor is required to sprinkle water at least 4 times a day 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 arrange for passage of traffic through the works during construction whenever it is not practicable to make deviations. The cost of doing so shall be deemed to have been included elsewhere in his rates and no separate payment shall be made for this. To this end, the Contractor shall be deemed to have inspected the site for himself and noted any locations where this may apply.

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

907 Signs, Barriers and Lights

Contractor shall provide signs, barriers and lights as shown in the drawing in Book of Drawings at the locations where the traffic is being carried off the existing road to the deviation and back again to existing road. The Contractor shall provide ramps and carry out any other measures as instructed by the Engineer to safely carry traffic from the road to deviation.

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

909 Assistance to Public

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

912 Measurement and Payment

(a) Passage of traffic through the works

Payment shall be made on Lump Sum basis.

(b) Construct Deviation

(i) Road Deviation

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The Contractor shall be paid only 50% of the rate for this when he completes deviation road to the satisfaction of the Engineer. The balance shall be paid in equal monthly instalments over the contract period, as he satisfactorily maintains the deviation (as per clause 904 and 905 above) when it is in operation.

(ii) Deviation using Pipe Culverts

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

(c) 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.

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SECTION 10 – MATERIAL REQUIREMENTS FOR GRAVEL WEARING COURSE

In addition to the requirements of the Standard Specifications, the material for gravel wearing course shall be subject to prior approval of the Engineer and shall meet the following requirements.

Grading

Grading of compacted gravel layer shall be within the following grading envelope:-

Sieve Size (mm)	% By Weight Passing
37.5	-
28	100
20	95-100
14	80-100
10	65-100
5	45-85
2	30-68
1	25-56
0.425	18-44
0.0075	12-32

Plasticity and bearing strength

1. Plasticity Modulus
Minimum 200, maximum 1200
2. Plasticity Index
Minimum 10, maximum 30
3. Bearing strength
CBR at 95% MDD (Modified AASHTO) and 4 days soak: minimum 20

Measurement and payment

Unit: m³ of gravel wearing course placed and compacted.

The volume of gravel wearing course shall be calculated as the product of the sectional area of the compacted gravel wearing course multiplied by the length of road gravelled as instructed.

The rate of gravel wearing course shall include for the cost of acquisition and provision of land for borrow pits, excavation and winning of gravel material, haulage, spreading, watering and compaction (including mixing and compaction with any existing or in-situ gravel material) as directed.

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SECTION 17 – CONCRETE WORKS

1703 (B) REINFORCING BARS OF BRIDGES

i. Description

This work shall consist of furnishing, fixing and placing in the concrete of the deck slab, pier heads, pier stems, pier bases and beams reinforcing bars of the quality, type and size in accordance with these specifications and in conformity with the requirements shown on the drawings.

ii. Material

Reinforcing bars shall be deformed and shall meet the requirements of BS 4461, unless otherwise called for in the drawings or approved by the Engineer.

No reinforcing bar shall be delivered without a certificate guaranteeing the yield stress. The reinforcing bar shall be kept off the ground, free from dirt, oil, grease, or avoidable rust and stored within a building or provided with suitable covers. If it is necessary for the Engineer to ascertain the quality of the reinforcing bars, the Contractor shall test the reinforcing bars, at his own expense, by means as directed by the Engineer.

iii. Construction Method

The Engineer shall provide the Contractor with bending schedule showing the location, types, sizes, bending dimensions and cut lengths of the reinforcing bar required to be fixed in the works.

Cutting and Bending:

Only qualified men shall be employed for the cutting and bending, and proper application shall be provided for such work. Bars shall be cut and bent cold to the dimensions indicated and with equipment and methods approved by the Engineer.

Placing:

Reinforcing bars shall be accurately placed in proper position, and so that they be firmly held during placing of concrete. Bars shall be tied at all intersections by using annealed iron wire 0.9mm or larger diameter, or suitable clips. Distances from the forms shall be maintained correct by means of metal hangers, metal blocks, metal supports or other supports approved by the Engineer.

Reinforcing bars shall be inspected by the Engineer after placing. When a long time has elapsed after placing reinforcing bars, they shall be cleaned and inspected again by the Engineer before placing concrete.

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Splicing and joint:

When it is necessary to splice reinforcing bars at points, position and methods of splicing shall be determined based on strength calculations and approved by the Engineer. In lapped splices, the bars shall be lapped by the required length, and wired together at several points by using annealed iron wire larger than 0.9mm.

iv. Measurement and Payment

Bending and installation of reinforcing bar of the bridge deck shall be measured in terms of tons. The length of steel bar of each size will be shown on the drawings and bar bending schedule. In computing the weight to be measured, the theoretical weights of bars of the cross-section shown on the Drawings or authorised shall be used. These weights are given in the following table:

Bar Type and cross-section in millimetres	Weight of bar in kilogram per 12m length of bar
Y10	7.40
Y12	10.66
Y16	18.95
Y20	29.60
Y25	46.30
Y32	75.76

1703 (C) FORMWORK FOR CULVERT WALLS AND SLABS AND BRIDGES

This work shall consist of all temporary moulds for forming the concrete for culvert walls and slabs and bridge works together with all temporary construction required for their support. Unless otherwise directed by the Engineer all formworks shall be removed on completion of the structural elements constructed.

(a) Materials

Forms shall be made of wood or metal and shall conform to the shape, lines and dimensions shown on the Drawings.

All timber shall be free from holes, loose material, knots, cracks, splits and warps or other defects affecting the strength or appearance of the finished structure.

Release Agents – Release agents shall be either neat oils containing a surface activating agent, cream emulsions, or chemical agents to be approved by the Engineer.

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(b) Construction Method

(i) Formworks

Formworks shall be designed to carry the maximum loads that may be imposed, and shall be rigidly constructed as to prevent deformation due to load, drying and wetting, vibration and other causes. After forms have been set in correct location, they shall be inspected and approved by the Engineer before the concrete is placed.

If requested, the contractor shall submit to the Engineer working drawings of the forms and also, if requested, calculations to certify the rigidity of the forms.

Unless otherwise described in the Contract, all form joints for exposed surfaces of concrete shall form a regular pattern with horizontal and vertical lines continuous throughout each structure and all construction joints shall coincide with these horizontal and vertical lines. PVC pipes of 100mm diameter for weep holes shall be arranged as shown on the Drawings.

Unless otherwise specified, formwork shall be designed to form chamfers at all external corners whether or not such chamfers are shown on the Drawings to prevent cracks and other damage from arising.

The inside surface of forms shall be cleaned and coated with a releasing agent to prevent adhesion of the concrete. Release agents shall be applied strictly in accordance with the manufacturer's detailed instructions. The release agent shall be applied to the formwork prior to erection. Release agent must not come into contact with reinforcement. Immediately before concrete is placed, the forms shall be thoroughly cleaned and freed from sawdust, shavings, dust, mud or other debris by hosing with water. Temporary openings shall be provided in the forms to drain away the water and rubbish.

(ii) Scaffolding

All scaffolding required to support the forms shall be designed and constructed to provide necessary rigidity to support the loads without appreciable deflection or deformation.

Details, plans and structural and flexural calculations for scaffolding shall be submitted to the Engineer for approval, but shall not relieve the contractor of his responsibility to construct the formwork by use of these plans, for construction of the structures as specified.

(iii) Removal of formwork

The time at which the formwork is truck shall be the Contractor's responsibility and the forms shall not be removed until the concrete strength has reached at least 20N/mm².

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(c) Measurement and Payment

Payment shall be made according to Section 17 of the Standard Specification for Road and Bridge Construction.

1703 (D) CONCRETE WORKS (CLASS 25/20) FOR CULVERT WALLS AND SLABS AND CLASS (30/20) FOR BRIDGEWORKS

This work shall consist of furnishing, mixing, delivering and placing of the concrete for the construction of box culverts and bridge works in accordance with these Specifications and in conformity with the requirements shown on the Drawings.

Concrete class 25/20 shall be used for culvert walls and slabs, while concrete class (30/20) shall be used for bridge works.

(a) Concrete Materials

(i) **Cement:** Cement shall be of Portland type cem 42.5N/mm² and shall conform to the requirements of BS 12 or equivalent.

The contractor shall select only one type or brand of cement. Changing of type or brand of cement will not be permitted without a new mix design approved by the Engineer. All cement is subject to the Engineer's approval; however, approval of cement by the Engineer shall not relieve the Contractor of the responsibility to furnish concrete of the specified compressive strength.

Conveyance of cement by jute bags shall not be permitted. Storage in the Contractor's silo or store house shall not exceed more than two (2) months requirements and age of cement after manufacture at mill shall not exceed more than four (4) months. The contractor shall submit to the Engineer for his approval the results of quality certificate testing carried out by the manufacturer.

Whenever it is found out that cement has been stored too long, moist, or caked, the cement shall be rejected and removed from the project.

(b) Aggregates

Fine and coarse aggregates must be clean, hard, strong and durable, and free from absorbed chemicals, clay coating, or materials in amounts that could affect hydration, bonding, strength and durability of concrete.

Grading of aggregates shall conform to the following requirements:

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(i) Grading of fine Aggregates

Sieve Size	Percentage by Weight Passing
10 mm	100
5 mm	89 – 100
2.5 mm	60 – 100
1.2 mm	30 – 100
0.6 mm	15 – 54
0.3 mm	5 – 40
0.15 mm	0 - 15

(ii) Grading of Coarse Aggregates

Size of Coarse Aggregate	Amounts finer than each standard sieve percentage by weight							
	40	30	25	20	15	10	5	2.5
	100	-	-	90 – 100	-	30 – 69	0 – 10	-

Other requirements for aggregates are as follows:

(iii) Fine Aggregates

Fitness Modulus:	AASHTO M-6 2.3 – 3.1
Sodium Sulphate Soundness:	AASHTO T104 Max. 10% loss
Content of Friable Particles:	AASHTO 112: Max. 1% by weight
Sand Equivalent:	AASHTO T176: Min. 75

(iv) Coarse Aggregate

Abrasion:	AASHTO T96: Max. 40% loss
Soft Fragment and shale:	AASHTO M80: Max. 5% by weight
Thin and elongated Pieces:	AASHTO M80: Max. 15%

(v) Water

All sources of water to be used in concrete production shall be approved by the Engineer. Water shall be free from injurious quantities of oil, alkali, vegetable matter and salts as determined by the Engineer.

(vi) Admixture

Only admixtures, which have been tested and approved in the site laboratory through trial mixing for design proportions shall be used.

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Before selection of admixture, the Contractor shall submit to the Engineer the specific information or guarantees prepared by the admixture manufacturer. The contractor shall not exclude the admixture from concrete proportions.

Concrete class 25/20 and concrete class 30/20

Concrete class 25/20 shall be used for box culvert walls and slabs and concrete class 30/20 shall be used for bridge works.

The requirements of concrete class 25/20 and concrete class 30/20 are provided as follows unless otherwise specified by the Engineer who will designate any alteration.

Design compressive strength (28 days: 25N/mm²
Maximum Nominal size coarse aggregates: 20mm
Maximum water/cement ratio of 45% with slump of 50mm

Concrete class 30/20 shall be used for bridgeworks.
Design compressive strength (28 days: 30N/mm²
Maximum Nominal size coarse aggregates: 20mm
Maximum water/cement ratio of 45% with slump of 50mm

(c) Proportioning Concrete

The Contractor shall consult with the Engineer as to mix proportions at least thirty (30) days prior to beginning the concrete work. The actual mix proportions of cement, aggregates, water and admixture shall be determined by the Contractor under supervision of the Engineer in the site laboratory.

The Contractor shall prepare the design mix proportions which have target strength based on the formula: target strength = 1.64xstandard deviation.
A standard deviation of 5 shall be used unless directed otherwise by the engineer.
No class of concrete shall be prepared or placed until its design-mix proportions have been approved by the Engineer.

(d) Concrete Work

(i) Batching

Batching shall be done by weight with accuracy of:

Cement:	½ percent
Aggregate	½ percent
Water Admixture:	1 percent

Equipment shall be capable of measuring quantities within these tolerances for the smallest batch regularly used, as well as for larger batches.

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The accuracy of batching equipment shall be checked every month in the presence of the Engineer and adjusted when necessary. The cost of such checking shall be borne by the contractor.

(ii). Mixing and delivery

Slump of mixed concrete shall be checked and approved at an accuracy of +25mm against designated slump in these specifications.

(iii) Concrete in hot weather

No concrete shall be placed when the ambient air temperature is expected to exceed thirty three degrees Celsius (33°C) during placement operations).

(iv). Concreting at night

No concrete shall be mixed, placed or finished when natural light is insufficient, unless an adequate approved artificial lighting system is operated; such night work shall be subject to approval by the Engineer

(v) Placing

In preparation of the placing of concrete, the interior space of forms shall be cleaned and approved by the Engineer prior to placing concrete. All temporary members except tie bars to support forms shall be removed entirely from the forms and not buried in the concrete. The use of open and vertical chute shall not be permitted unless otherwise directed by the engineer.

The Contractor shall provide a sufficient number of vibrators to properly compact each batch immediately after it is placed in the forms.

(e) Measurement and Payment

Measurements for the Concrete of class 30/20 for bridge works shall be made in cubic metres for the structure actually constructed, measured from the dimensions shown on the Drawings or instructed by the Engineer.

Payment for class 25/20 concrete for culvert walls and slabs and class 30/20 for bridgeworks shall be the full compensation for furnishing all materials of the concrete mixing, delivering, placing and curing the concrete, equipment and tools, labour and other incidentals necessary for the completion of the work in accordance with the Drawings and these Specifications and as directed by the Engineer.

1732: PRECAST CONCRETE

1732 (a) Scope of work

The works shall consist of supply of all materials i.e. cement, fine aggregates, coarse aggregates, water, admixtures and any other material component necessary for the production of the precast beams, placing, compacting, curing, lifting and installation of the precast beams into position.

1732 (b) Storage and handling

The precast units shall be transported, handled and stored in such a manner that will prevent damage to the precast units. Precast units that will be damaged due to poor handling shall be replaced or repaired to the engineer's satisfaction.

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1732 (c) Fabrication

The design dimensions shall be verified with those at the field before commencement of fabrication. Any discrepancies in dimensions must be brought to the engineer's attention for directions.

Formwork shall be accurately constructed to produce the precast units to dimension, shape configuration and profile indicated in the drawing or as shall be directed by the engineer.

Anchors, lift devices and accessories: provide concrete inserts, anchors, brackets and fasteners as indicated or as required for fabrication and installation. The contractor shall select the lift devices and shall be responsible for their performance and for any damage resulting from their use. Lift devices shall not be visible on exposed faces of precast members. Provide a minimum of four for each unit.

Concrete reinforcement, lifting reinforcement, and concrete inserts and anchorage devices shall be placed and secured against movement.

The precast units shall be labeled in such a manner that will allow identification of their final location.

1732(d) Measurement and payment

The payment for the precast beams shall be made by the volume of compacted concrete in the beams, weight of steel fixed in the beams and surface area of the form work.

The payment rate for lifting and installation shall be paid as a separate item. The unit rate for the lifting and installation shall include transport, lifting and installation equipments including any radio communications, operators, skilled and unskilled labour, fuel, maintenance, mobilization and demobilization and any other item incidental to the process of installation. The unit rate shall be per precast beam fixed into position.

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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 POSTS

Edge marker posts shall be provided as directed by the Engineer and in compliance with the requirements of 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 reflectorised 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.

2006 GUARDRAILS

Contrary to the Standard Specification, guardrail posts shall be concrete 200 mm diameter set vertically at least 1.2m into the shoulder as directed by the Engineer. Spacer blocks shall also be made of concrete.

Beams for guardrails shall be "Armco Flexbeam" or similar obtained from a manufacturer approved by the Engineer.

2007 KERBS

(a) Vertical Joints

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Vertical joints between adjacent kerbs shall not be greater than 5 mm in width and shall 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 and shall occur within a length of 2.0m.

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 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 class 20/20 200mm diameter reinforced concrete bollards concreted 300mm into the ground.

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SECTION 21 – MISCELLANEOUS BRIDGE WORKS

2102 TESTING OF BRIDGE BEARINGS

The testing of bearings if instructed by the Engineer shall be carried out as specified in BS 5400 part 9 Section 9.2: 1983 clause 7.2 'Testing of complete bearings.

The Contractor shall supply to the Engineer, the results of Prototype tests, Production tests and Acceptance tests carried out for the specified bearings together with a sample of the bearings for approval prior to purchase and supplying of the bearings to site.

The bearings to have a minimum vertical load capacity of 3000kN.

2104 STEEL PARAPETS ON BRIDGE DECKS

Steel parapets on bridge decks shall be as specified on the drawings. The steel parapets complete with base plates to posts shall be hot deep galvanized to Bs 639 in work shop subassemblies designed and sized in total length for ease of hoisting and erection in top assembly on site by bolting and erection in top assembly on site by bolting to Engineers approval. Fixing nuts and bolts shall be sheradized.

The fixing nuts on bolts at site joints in top assembly shall be spot welded to the bolt shafts to minimise disassembling of the parapets through vandalism on completion and hand over of the bridges. Site spot welded nuts shall be cleaned of any slug and receive one priming coat, one undercoat and one finishing coat of approved paint.

The contractor shall prepare and submit shop drawings of the parapets workshop subassemblies plus drawings of the parapets in top assembly for Engineers approval prior to fabrication of the parapet subassemblies.

Measurement of the completed parapet in top assembly for payment shall be per linear metre of parapet.

2106 SURFACING TO BRIDGES

The surface finish of bridge decks on which surfacing shall be laid shall be floated class UF1 ridged finish formed using a stiff wire brush laterally across the carriageway.

The surface dressing to bridge deck shall be concrete applied with concrete hardener to the approval of the engineer.

2105 EXPANSION JOINTS

2105.1 Description

This work shall consist of fabrication and placing of expansion joints as indicated on the drawing and conforming to these specifications or as directed by the Engineer.

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2105.2 General

The expansion joints shall be designed and duly approved by the Engineer. They shall cater for the expected movement and rotation of the structure at the joints and provide smooth riding surface. They shall also be easy for inspection, maintenance and replacement.

Expansion joints shall be robust, durable, watertight and replaceable. Site fabricated expansion joints shall be prohibited. Expansion joints shall be obtained by the Engineer either directly or through the Contractor from approved manufacturers and be of proven type.

Vehicular traffic shall not be allowed over expansion joints after its construction for such period as may be determined by the Engineer.

Proprietary type deck joints offered by the Contractor in lieu of the type specified shall comply in all respects with the manufacturer's specifications and meet the required range of movements and rotations and be fit for the purpose of ensuring satisfactory long term performance in the bridge.

Where alternative type proprietary deck joints are proposed by the Contractor, the following information shall be provided:

- Name and location of the proposed manufacturer
- Dimensions and general details of the joint including material specifications, holding down bolt or anchorage details and installation procedures
- Evidence of satisfactory performance under similar environmental conditions of similar joints being produced by the manufacturer.

Any acceptance of alternative types will be at the sole discretion of the Engineer.

Such deck joints shall be installed in accordance with the manufacturer's recommendations and to the general requirements of this Specification.

No expansion joint shall be provided only for the width of the carriageway.

It shall follow the profile including the kerb and the footway and fascia, if provided. The type of expansion joint for the latter may be made different from that used for the carriageway expansion joint.

2105.3 Requirements

(a) Criterion

The requirement criterion will be separately applicable for the expansion joint proper and the transition zone of attachment to the deck.

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(b) Types of Performance

There are two types of performance requirements for the expansion joint proper namely from the necessity of the bridge and from the road users such as man, animal and vehicle.

(c) Performance Requirement with Respect to Bridges

The expansion joint shall:

- Withstand the imposed load including the impact load from live load and other sources
- Allow expansion and contraction movement due to temperature, creep, shrinkage, pre-stressing and structural deformations
- Permit relative rotation in elevation and plan due to the causes as noted above,
- Be waterproof

Bridge deck expansion joint seals play a critical role in preventing the degradation of the structural components of the bridge system. Without effective joint seals, water passes through the bridge deck and works harmfully to corrode steel components and cause deterioration of the concrete. Rainwater gathers various corroding additives from the atmosphere and also from the carriageway.

- Ensure sealing

In case bridge deck joints are not sealed, apart from loss of waterproofing, grit and other forms of road debris may enter the joint. Debris, when impacted with the joint can seriously restrict the movement instead of facilitating the same. In the case of proprietary joints being accepted for adoption, the sealing shall be as directed by the Engineer.

- Ensure long life by being resistant to corrosion
- Be easy to install
- Be easy to maintain and replace
- Be resistant to the materials likely to collect/spill over the deck in its normal service.

(d) Performance Requirement with Respect to User

The expansion joint shall:

- Provide smooth continuity at the top of the deck for riding comfort
- Be of skid resistant surface
- Re- non-damaging to the rubber tyre
- Make minimum noise during vehicular crossing
- Ensure that animal paws and hooves should not get entangled where bridges are used by animal drawn traffic

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- Permit passing of bullock cart steel tyre for bridges where bullock carts ply, and
- Look good aesthetically.

(e) Performance Requirement for Transition Zone

This is the zone of connection of joint assembly and the adjoining deck.

The expansion joint shall:

- Permit transfer of generated forces without distress without getting uprooted.
The purpose will not be served if the bonding is with the wearing coat only.
Anchorage must be provided with the deck structural element.
- Ensure that surface in the transition zone stays undisturbed during long term service.

2105.5 Filler Joints

The components of this type of joint shall be at least 2 mm thick corrugated plate placed slightly below the wearing coat, 20 mm thick compressible board, to protect the edges. Twenty (20) mm thick pre-moulded joint filler shall fill the gap up to the top level of the wearing coat sealed with a joint sealing compound.

The material used for filling expansion joint shall be bitumen impregnated felt, elastomer or any other suitable material, as specified on the drawings. Impregnated felt shall conform to the requirements of IS: 1838, and shall be approved by the Engineer. The joint filler shall consist of large pieces and assembly of small pieces to make up the required size shall be avoided.

Expansion joint materials shall be handled with care and stored under cover by the Contractor to prevent damage. Any damage occurring after delivery shall be made good to the satisfaction of the Engineer and at the expense of the Contractor.

Joint gaps shall be constructed as shown on the drawings. Surfaces of joint grooves shall be thoroughly cleaned with a wire brush to remove all loose materials, dirt and debris, then washed or jetted out.

Pre-moulded expansion joint filler shall not be placed in position until immediately prior to the placing of the abutting material. If the two adjacent surfaces of the joint are to be placed at different times, this type of joint filler shall not be placed until the second face is about to be placed.

Sealants shall be installed in accordance with the manufacturer's recommendations and all appropriate requirements for joint face priming.

Sealants shall be finished approximately 3 mm below the upper surfaces of the joint

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Joint materials spilt or splashed onto finished surfaces of the bridge during filling operations shall be removed and the surfaces made good to the Engineer's approval.

No joint shall be sealed until inspected by the Engineer and approval is given to proceed with the work.

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SECTION 22-DAYWORKS

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 of such items of plant 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 25 – HIV/ AIDS, GENDER ISSUES, SOCIAL ISSUES AND LOCAL PARTICIPATION

2501 SCOPE

This specification sets out the Contractor's obligations with regard to on-site HIV/ AIDS awareness campaign and preventive measures which are to be instituted.

2502 INTERPRETATION AND DOCUMENTATION

The following documents shall inter-alia be read in conjunction with this specification:

- The Instruction to Bidders;
- The Conditions of Contract;
- The drawings;

2503 GENERAL REQUIREMENTS

(a) HIV/ AIDS Awareness Campaign

The Contractor shall institute an HIV/ AIDS awareness campaign amongst his workers for the duration of the Contract. As part of the campaign the Contractor will be required to display AIDS awareness posters in all buildings frequented by workers employed on the contract, where such buildings fall under the control of the Contractor. In addition, at least ten (10) of the Contractor's vehicles, regularly used on site shall display HIV/ AIDS awareness posters. The posters shall be printed on gloss paper and shall be at least A1 size on buildings and A3 size, or other approved size on vehicles. The message on the posters shall be supplied by the Employer through the Engineer before the posters are printed.

Aids awareness shall also be included in the orientation process of all workers employed on the contract.

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(b) AIDS Prevention Campaign

The Contractor shall institute an HIV/ AIDS prevention campaign amongst his workers for the duration of the contract. As part of the campaign the Contractor will be required to make condoms available to workers. The condoms shall be from an approved manufacturer and comply with the current ISO Standards or WHO/UNAIDS Specifications and Guidelines for Condoms, 1998, or any more recent publication. The Contractor shall make available at least 4,000 condoms every month, through dispensing machines or other approved method of distribution. The Contractor shall at all times keep the site adequately supplied with condoms.

(c) HIV/ AIDS Training

Introduction

HIV/ AIDS is having a significant and increasing impact in Kenya. Interventions that stimulate the movement of people increase both the exposure to the HIV virus and the spread of the virus. Road construction has been identified as one such intervention.

The Government's policy is to integrate HIV/ AIDS awareness and prevention into all road construction and rehabilitation programmes. This is in accordance with the Third National Strategic Plan (2000-5) for HIV/ AIDS prevention and control as approved by the Government of Kenya, International Bank for Reconstruction and Development (IBRD) and other organizations.

The project will involve both local labour and other contractor's labour. It is a contractual requirement for the Contractor to carry out HIV/ AIDS awareness and prevention activities during the construction period as stipulated in this specification.

Objective

The objective of the HIV/ AIDS training programme is to reduce the risk of exposure to and spread of the HIV virus in the area influenced by the construction. The target group will be local labourers and their supervisors employed by the works contractors. The wider community will benefit indirectly through their normal day-to-day interaction with the target group.

Scope of activities

Activities for HIV/ AIDS awareness and prevention will be broad-based, targeting both individuals and groups. They may consist of:

- (i) Information posters in public places, both on and offsite (eating houses, bars, guest houses etc.) and on contractor's vehicles.
- (ii) Availability of socially marketed condoms.
- (iii) Peer educators (reference people) drawn from the local labour and educated in HIV/ AIDS issues for discussions with colleagues (estimate 1 per 50 employees).
- (iv) Small focus group discussions to disseminate information covering key issues.
- (v) Theatre groups and video presentations.
- (vi) Promotional events (such as football matches) to encourage openness and discussion of HIV/ AIDS issues.
- (vii) Promotional bill boards to raise awareness of the integration of construction and HIV/ AIDS activities.

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- (viii) Inclusion of HIV/ AIDS activities at site meetings with the District Aids Committee and other approved representatives.
- (ix) Availability of promotional materials such as T-shirts, caps, bumper stickers, key rings, etc.

The scope of activities may be tailored as required to meet the perceived needs and priorities of the labourers, and should involve participatory approaches to ensure that they are appropriate and have a public health impact. The scale and frequency of activities may also be adjusted to suit requirements of the target group. Education will cover:

- (a) Preventive behaviours including partner reduction, condom use, awareness and appreciation of the importance of treatment of sexually transmitted infections (STIs)
- (b) Skills including negotiating safer sex, correct condom use, purchase of condoms without embarrassment; and
- (c) Referral to local health centres and available services.

Tasks to be undertaken to support the above activities include:

- (a) Establishing the status and focus of all current and planned HIV/ AIDS activities in the area to ensure complementary and determining potential involvement in project activities.
- (b) Carrying out a brief review of regional activities combining road construction with HIV/ AIDS campaigns to determine options, best practice key issues, constraints, etc.
- (c) Reviewing of Information, Education and Communication (IEC) materials available and their relevance to road construction, making recommendations for future development of IEC materials.
- (d) Providing supervision for peer educators to ensure sustained quality of education. Incentives for their continual work may be small promotional items such as T-shirts, caps etc.
- (e) Providing mechanisms for the social marketing of condoms and distribution of materials.
- (f) Monitoring activities regularly to assess effectiveness and impact. This should include an initial, interim and final assessment of basic knowledge, attitude and practices (KAP) taking account of existing data sources and recognizing the limitations due to the supported by qualitative information from focus group discussions.

Collaboration

HIV/ AIDS activities are co-ordinated nationally by the National Aids Control Council (NACC). KeRRA, in consultation with NACC and the Ministry of Health (MOH), will co-ordinate with the provincial, district and local representatives. Representatives of local health authorities will be invited to attend training and communication activities. Activities on the construction site will be linked as far as possible with ongoing HIV/ AIDS awareness and prevention in the area. This will ensure complementary of approaches, reinforcing education and minimizing duplication. In addition, these

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links will ensure that the target group will have access to continued information after the end of the construction period.

Contractor Responsibilities

The Contractor will employ and designate a qualified HIV/ AIDS expert fulltime, to be approved by the Engineer, who will work closely with the Client, MOH and other implementing agencies to support the HIV/ AIDS awareness and prevention activities. This will ensure maximum effectiveness and integration with construction activities. Specific, but not exclusive, issues to be addressed by the Contractor are:

- (i) Scheduling appropriate timing and durations of the implementation of HIV/ AIDS activities as part of work plan for labourers and supervisors. Designated rest times such as lunch breaks and pay days should be excluded.
- (ii) Identification of suitable individuals from recruitment records for education with the implementing organization.
- (iii) Provision of suitable sites for communication activities and for condom distribution.
- (iv) Monitoring of the implementation of peer educator activities
- (v) Provision of support as necessary to the implementing organization.

Inputs

An organization experienced in the provision of HIV/ AIDS awareness and prevention activities will be selected as a subcontractor to provide the above scope of activities on behalf of the main Contractor.

Reporting

The implementing organization will produce the following reports to be submitted to the Contractor, the Engineer, KeRRA and EACC:

- Monthly progress briefs for inclusion in site meetings.
- Quarterly reports detailing activities carried out, issues, follow up, etc.
- A review report of activities in the road construction sector,
- A review report of existing IEC materials with recommendations for development of materials specifically for the road sector.
- A final report detailing the methodology and activities carried out under this project including lessons learnt, impact, liaison with the Contractor and other parties, etc.

In addition, a report with the recommended approach for integration of HIV/AIDS awareness and prevention activities in the road construction sector will be produced. This will be a synthesis of project activities including contractual approaches, communication activities, availability of materials, liaison with existing organizations, etc. it will be developed with all parts involved in the construction activities to ensure the wide range of views and experiences is gained.

The final report and recommended approach will be presented to KeRRA, NACC and other interested organizations including private sector, funding agencies and NGO's/

Timing

Activities shall commence at the start of the construction period and continue throughout the 24 months to ensure a sustained impact. Reporting and dissemination activities

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shall continue for three months after the project is completed to ensure integration into current practice.

2504 MEASUREMENT AND PAYMENT

The payment items in this clause shall include full compensation for all work associated with the provision of HIV/ AIDS related services as specified.

Item: Instituting an HIV/AIDS awareness and prevention campaign

Unit: Months

The unit of measurement shall be the calendar month or part thereof, measured over the duration of the campaign. The tendered rate shall include full compensation for equipment, labour, materials including the procurement and distribution of condoms and full compensation for transport, meals, accommodation and any other reasonable allowances for the participation of local health authorities, provincial director of health and NACC and other resources required for the provision of the service in compliance with clause 2503 (a) and (b) above.

Item: Instituting an HIV/AIDS Training – Engagement of specialist HIV/ AIDS sub contractor

Unit: Provision Sum

Compensation for HIV/AIDS Specialists and resources for the implementation of Clause 2503 (c). any amount required under this item will be paid as per the programme approved by the engineer and the Client prior to expenditure.

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SECTION 12: BILLS OF QUANTITIES

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PREAMBLE TO BILL OF QUANTITIES

1. The Bills of Quantities forms part of the Contract Documents and are to be read in conjunction with the Instructions to Bidders, Conditions of Contract Parts I and II, Specifications and Drawings.
2. The brief description of the items in the Bills of Quantities is purely for the purpose of identification, and in no way modifies or supersedes the detailed descriptions given in the conditions of Contract and Specifications for the full direction and description of work and materials.
3. The Quantities set forth in the Bills of Quantities are estimated , representing substantially the work to be carried out, and are given to provide a common basis for bidding and comparing of Bids. There is no guarantee to the Contractor that he will be required to carry out all the quantities of work indicated under any one particular item or group of items in the Bill of Quantities. The basis of payment shall be the Contractor's rates and the quantities of work actually done in fulfilment of his obligation under the Contract.
4. The prices and rates inserted in the Bills of Quantities will be used for valuing the work executed, and the Engineer will only measure the whole of the works executed in accordance with this Contract.
5. A price or rate shall be entered in ink against every item in the Bills of Quantities with the exception of items that already have Provisional sums affixed thereto. The bidders are reminded that no “nil” or “included” rates or “lump-sum” discounts will be accepted. The rates for various items should include discounts if any. Bidders who fail to comply will be disqualified.
6. Provisional sums (including day works) in the Bills of Quantities shall be expended in whole or in part at the discretion of the Engineer.
7. The price and rates entered in the Bills of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Constructional plant to be used, labour, insurance, supervision, compliance testing, materials, erection, maintenance of works, overheads and profits, taxes and duties together with all general risks, liabilities and obligations set out or implied in the Contract, transport, electricity and telephones, water, use and replenishment of all consumables, including those required under the contract by the Engineer and his staff.
8. Errors in the pricing of the Bills of Quantities will be corrected in accordance with Clause (28) of instructions to bidders.

SECTION 13: DRAWINGS

(See the Book of Drawings)

**BILL OF QUANTITIES
SUMMARY**

BILL NO.	DESCRIPTION	AMOUNT Kshs.
1	GENERAL	
4	SITE CLEARANCE	-
5	EARTHWORKS	-
7	EXCAVATION AND FILLING FOR STRUCTURES	-
10	GRAVEL WEARING COURSE	-
17	CONCRETE WORKS	-
20	ROAD FURNITURE	-
21	MISCELLANEOUS BRIDGE WORKS	-
22	DAYWORKS	-
25	HIV/AIDS	-
SUBTOTAL 1		-
Add 5% of Subtotal 1 for contingencies to be expended in whole or in part or delete as directed by the Engineer.		-
SUBTOTAL 2		-
Add 16% of Subtotal 3 for VAT		-
TOTAL TENDER SUM		-

BILL NO. 1 - GENERAL

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Kshs.	AMOUNT Kshs
1.01	Allow P.C Sum of Kshs 500,000 for R.E's miscellaneous account for supervision and material testing.	P.C SUM	500,000.00	1	500,000.00
1.02	Allow for contractor's cost and profit in Item 1.01	% of 1.01			
1.03	Provide publicity signs 2No on either side of the crossing as directed by the Engineer.	No	2		
1.04	Allow P.C sum of Kshs 1,000,000 for the allowances to the R.E and his supervision staff.	P.C SUM	1,000,000.00	1	1,000,000.00
1.05	Allow for contractor's cost and profit in Item 1.04 above.	% of 1.04			
1.06	Allow for P.C Sum of Kshs 1,200,000 for geotechnical investigations	P.C SUM	1	1,200,000.00	1,200,000.00
1.07	Allow for contractor's cost and profit in Item 1.04	% of 1.06			
Total carried forward to summary page					2,700,000.00

BILL NO. 4- SITE CLEARANCE

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Kshs.	AMOUNT Kshs
4.01	Clear site including removal of all debris, bushes and shrubs as necessary for preparation of execution of works.	Ha	1.5		
4.02	Remove top soil to an approved depth and stockpile for reuse as directed by the Engineer.	M3	1,000.00		
TOTAL CARRIED FORWARD TO SUMMARY					-

BILL NO. 5 - EARTH WORKS

ITEM	DESCRIPTION	UNIT	QTY	RATE Kshs.	AMOUNT Kshs.
5.01	Widen,Excavate to Level and compact approach roads to gravel standards including dozing, grading and compacting as may be necessary for road formation and adequate drainage as directed by Engineer.	M2	30,000.00		
Total of Bill carried forward to summary					-

BILL NO.7- EXCAVATION AND FILLING FOR STRUCTURES

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Kshs.	AMOUNT Kshs
7.01	Allow for the provision and removal of cofferdams or other measures for the exclusion of water from site and for protection of works against floods.	L/Sum	1		
7.02	Excavate for the foundation of the structure in soft material partly to spoil and partly to return and compacted to 95% MDD (AASHTO T99) and as instructed by the Engineer.	M ³	600		
7.03	Extra over item 7.02 for excavation in hard material.	M ³	120		
7.04	Backfill with selected material on the back of the structure as instructed by the Engineer.	M ³	1,500		
7.05	Fill with approved selected fill material around the structure and compact in layers not exceeding 150mm compacted to a minimum of 95% MDD (AASHTO T99).	M ³	250		
7.06	Excavate for gabions as instructed by the Engineer.	M ³	100		
7.07	Provide gabions (1x1x2) and fix into position as instructed by the Engineer.	M ²	400		
7.08	Provide and place into position and rock fill to gabion boxes.	M ³	40		
	NOTE No separate payment shall be made for haulage of surplus material. Such material should be included in the rates.				
TOTAL CARRIED FORWARD TO SUMMARY					-

**BILL OF QUANTITIES: No.10
GRAVEL WEARING COURSE**

ITEM	DESCRIPTION	UNIT	QTY	RATE Kshs.	AMOUNT Kshs
10.01	Provide and compact gravel wearing course (GWC) to the approaches as directed by the Engineer, compacted to 95%MDD AASHTO T180 .	M ³	1500		
Total of Bill carried forward to summary					-

BILL NO. 17- CONCRETE WORKS

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Kshs.	AMOUNT Kshs
	<u>CONCRETE</u> Provide, place and compact the following classes of concrete as specified.				
17.01	Class 15/40 for blinding	m ³	18		
17.02	Class 25/20 concrete for base, slabs walls and aprons.	m ³	300		
17.02	Class 30/20 concrete for superstructure	m ³	100		
	<u>FORMWORK</u> Provide, erect and afterwards dismantle and remove all the FORMWORK as specified by the Engineer.				
17.03	Formwork Class F1 Finish	M ²	400		
17.04	Formwork Class F3 Finish	M ²	750		
	<u>REINFORCEMENT</u> Provide, bend and fix into positions high yield steel bars to BS4461 the following steel reinforcements as directed and as shown on the drawings.				
17.08	Reinforcement bars of high yield strength to BS 4461, size 16mm and above.	Ton	30		
17.09	Reinforcement bars of high yield strength to BS 4461, size 12mm and below.	Ton	10		
TOTAL CARRIED FORWARD TO SUMMARY					-

BILL NO. 20 - ROAD FURNATURE

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Kshs.	AMOUNT Kshs
20.01	Provide and erect flexbeam guard rails according to the standard specifications and as directed by the Engineer .	M	40		
20.02	Provide materials, prefabricate and erect metal hand-rails as shown in the drawings and as directed by the Engineer.	M	40		
TOTAL CARRIED FORWARD TO SUMMARY					-

BILL NO. 21- MISCELLANEOUS BRIDGEWORKS

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Kshs.	AMOUNT Kshs
21.01	Provide and place PVC pipes of diameter 100mm for weepholes inclusive of filter fabric, as per Standard Specifications.	No	100		
21.02	Provide and place into position Elastomeric laminated rubber bearings of size 406mmx356mmx54mm	No.	8		
21.03	Provide and apply as directed by the Engineer approved bituminous waterproof coating to the sides of the abutments.	M ²	300		
21.04	Provide and erect flexbeam guard rails according to the standard specifications and as directed by the Engineer .	M	40		
21.05	Provide materials, prefabricate and erect metal hand-rails as shown in the drawings and as directed by the Engineer.	M	40		
21.06	Movement joints at abutments and piers including dowels	m	20		
21.09	25mm thick 'flex cell' or similar approved low compression joint filler at expansion joint	m	50		
21.1	Provide and fix 100mm dia PVC service ducts on deck	m	30		
TOTAL CARRIED FORWARD TO SUMMARY					-

BILL NO. 22 - DAY WORKS

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Kshs.	AMOUNT Kshs
	<u>PLANT</u>				
22.01	Compressor of capacity 70m ³ /min complete with all tools	Hr	40		
22.02	7 Tonne tipper lorry	Hr	50		
22.03	Concrete mixer 10/7	Hr	40		
22.04	17 Tonne pneumatic self propelled roller.	Hr	20		
22.05	Motor grader Cat 14 or equivalent with scarifier.	Hr	24		
22.06	1.7 m ³ excavator with loader attachments	Hr	16		
22.07	Shovel Komatsu W90 equivalent.	Hr	20		
0	<u>LABOUR</u>				
22.08	Unskilled labour	Hr	400		
22.09	Artisans	Hr	150		
22.1	Watchman	Hr	400		
	<u>MATERIALS</u>				
	All material are to comply with the specification. The rates inserted herein are to include delivery to the site, storage, handling overheads, and profits				
22.11	Ordinary portland cement	Ton	3		
22.12	Coarse Aggregates (Chippings)	Ton	10		
22.13	Mild Steel (any diameter from 5 - 25 mm)	Tonne	1		
22.14	High Yield Steel (any diameter 5-32mm)	Tonne	1		
Total carried forward to Summary					

BILL NO. 25 -HIV/AIDS

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE Kshs.	AMOUNT Kshs
25.01	Implement HIV/AIDS awareness campaign amongst the workers for the duration of the contract	Months	12		
25.02	Allow for the availability of condoms to workers and staff for the duration of the contract	Months	12		
25.03	Allow for participation of representatives of Local Health Authorities, Provincial Director of Health and National AIDS Council to train and communicate with workers. Allowance to include transport, Meals, accomodation and any other reasonable allowances, associated expenses and equipment expenses	Months	4		
25.04	Allow for preparation and submission of Monthly reports on HIV/AIDS awareness and prevention activities. Reports to be tabled at site meetings	Months	12		
Total carried forward to Summary					-