Tender Document

TENDER NO. BCG/TNR/36/2017/2018

TENDER NAME: - ISANTA FOOTBRIDGE

FINANCIAL YEAR 2017/2018

BARINGO COUNTY GOVERNMENT

P. O. Box 53 - 30400

KABARNET

Tel:053 22115

CLOSING DATE: 15TH DECEMBER, 2017

TIME: 12.00 NOON (EAST AFRICAN TIME)
INSTRUCTIONS TO TENDERERS

SECTION A

A. Supply Chain Management Unit (at the Office of the Governor) upon payment of non-refundable fees of Kshs. 1,000/= (Kenya Shillings One Thousand Only) in cash or Bankers cheque payable to The Governor, Baringo County Government.

B. Tenderers shall be required to furnish the procuring Entity with the following information as a minimum criterion for submission of a bid for this works, supported by the relevant documents:

1. Proof of works of similar magnitude and complexity undertaken in the last five years.
2. Adequate equipment and key personnel for the specified types of works.
3. Sound financial standing and adequate access to bank credit line.
4. Litigation History of the Company (both court and arbitration cases, if any).
5. Tender Form and Confidential Business Questionnaire dully filled and signed by an authorized person.
6. Proof of Registration as a Contractor eligible to undertake Civil Works (Road Works) with the relevant Authority (i.e. NCA 6 and Above).
7. PIN, VAT and Tax Compliance Certificates.
8. Evidence of the on-going projects regardless of the total value of the outstanding works;
9. Power of attorney for the person authorized to sign on behalf of the company;
10. A copy of CR12

C. The tenderer shall furnish, as part of the tender, a Tender Security for a sum of Kshs. Fifty thousand only (50,000.00). This shall be in the form of a bank draft, bank guarantee or Insurance from an established and reputable bank or insurance firm approved by the Employer and PPOA in the format provided in the Tender Documents to remain in force for a period of One Hundred and Fifty (150) days from the closing date of the tender.

D. A successful Tenderer (Candidate) upon award of contract shall be required to furnish the Procuring Entity with a Performance Guarantee (Security) of 5% (Five Percent) of the Contract Sum before signing the Contract Agreement and commencement of the works.

E. Prices quoted should be net inclusive of all taxes and delivery must be in Kenya Shillings and shall remain valid for One Hundred and Twenty (120) days from the closing date of the tender.

F. A prospective tenderer requiring any clarification of the tender documents may notify the Employer in writing or by cable, telex, facsimile or e-mail at the address given here-below. The Employer will only respond to requests for clarification received earlier than seven days prior to the deadline for submission of tenders. Copies of the Employer’s response will be forwarded to all persons issued with tendering documents, including a description of the inquiry, but without identifying its source.

Address for Clarifications: THE DIRECTOR-SUPPLY CHAIN MANAGEMENT, COUNTY GOVERNMENT OF BARINGO, P.O. BOX 53-30400
KABARNET.

G. Completed tender documents (Original and Copy) are to be enclosed in plain sealed envelopes marked with tender reference number and be deposited in the Tender Box at the Ground Floor of the Office of the Governor, Baringo County Government (along Hospital Road) or be addressed to The Office of the Governor, Baringo County Government, P. O. Box 53 - 30400, Kabarnet so as to be received on or before Tuesday 15th December, 2017 12.00 noon (East African Time).

H. Tenders will be opened publicly immediately thereafter in the presence of the Candidates or their representatives who choose to attend at Baringo County Government Offices (along Hospital Road), Kabarnet.

I. The Government reserves the right to reject any tender without giving reasons for the rejection and does not bind itself to accept the lowest or any tender.

J. Please confirm receipt of this letter immediately in writing by mail, email, cable/facsimile or telex.
FORM OF TENDER

TO: __________________________ [Name of Employer] ____________ [Date]

________________________ [Name of Contract]

Dear Sir,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct, install and complete such Works and remedy any defects therein for the sum of Kshs.________________________ [Amount in figures] Kenya Shillings________________________________________

________________________ [Amount in words]

2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Project Manager’s notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Appendix to Conditions of Contract.

3. We agree to abide by this tender until ________________ [Insert date], and it shall remain binding upon us and may be accepted at any time before that date.

4. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us.

5. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this _______________ day of ______ 20__

Signature __________________ in the capacity of __________________
duly authorized to sign tenders for and on behalf of ______________________________[Name of Tenderer]
of______________________________ [Address of Tenderer]

Witness; Name______________________________________

Address__________________________________________

Signature_________________________________________

Date__________________________________________
FORM OF AGREEMENT

THIS AGREEMENT, made the _________________ day of _______ 20 ______
between______________________________________________
(hereinafter called “the Employer”) of the one part AND
_____________________________________________________
(hereinafter called “the Contractor”) of the other part.

WHEREAS THE Employer is desirous that the Contractor executes
_____________________________________________________
(name and identification number of Contract) (hereinafter called “the Works”) located
at______________________________[Place/location of the Works] and the Employer has accepted
the tender submitted by the Contractor for the execution and completion of such Works and the
remedying of any defects therein for the Contract Price of
Kshs___________________________[Amount in figures], Kenya
Shillings__________________________________________ ___[Amount in words].

NOW THIS AGREEMENT WITNESSETH as follows:

1. 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.

2. The following documents shall be deemed to form and shall be read and construed as part of
this Agreement i.e.

(i) Letter of Acceptance
(ii) Form of Tender
(iii) Conditions of Contract Part I
(iv) Conditions of Contract Part II and Appendix to Conditions of Contract
(v) Specifications
(vi) Drawings
(vii) Priced Bills of Quantities

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

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

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The common Seal of ______________________________

Was hereunto affixed in the presence of ______________________

Signed Sealed, and Delivered by the said __________________

Binding Signature of Employer ____________________________

Binding Signature of Contractor ___________________________

In the presence of (i) Name _____________________________

Address_________________________________________

Signature________________________________________

Signed (i) Name ___________________________________

Address_________________________________________

Signature________________________________________

Signed (i) Name ___________________________________

Address_________________________________________

Signature________________________________________

Counter signed (i) Name ______________________________

Address_________________________________________

Signature________________________________________
FORM OF TENDER SECURITY

WHEREAS ....................................................(hereinafter called “the Tenderer”) has submitted his tender dated ............................ for the construction of .......................................................... (name of Contract)

KNOW ALL PEOPLE by these presents that WE ........................ having our registered office at .................(hereinafter called “the Bank”), are bound unto ........................................ (hereinafter called “the Employer”) in the sum of Kshs............................... for which payment well and truly to be made to the said Employer, the Bank binds itself, its successors and assigns by these presents sealed with the Common Seal of the said Bank this ............... Day of ...........20...........

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 tenderer, having been notified of the acceptance of his tender by the Employer during the period of tender validity:
   (a) fails or refuses to execute the form of Agreement in accordance with the Instructions to Tenderers, if required; or
   (b) fails or refuses to furnish the Performance Security, in accordance with the Instructions to Tenderers;

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 one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the said date.

___________________________  ______________________ ________
[signature of the Bank]  [date]

___________________________  _____________________ _________
[witness]  [seal]
PERFORMANCE BANK GUARANTEE

To: _________________________ (Name of Employer)           __________(Date)  
__________________________ (Address of Employer)

Dear Sir,

WHEREAS ______________________ (hereinafter called “the Contractor”) has undertaken, in pursuance of Contract No. ___________ dated _____ ____ to execute ________________ (hereinafter called “the Works”);

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognised bank for the sum specified therein 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 of Guarantee in figures) Kenya Shillings______________________ (amount of Guarantee in words), and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of Kenya Shillings _______________________ (amount of Guarantee in words) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

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

We further agree that no change, addition 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 release us from any liability under this Guarantee, and we hereby waive notice of any change, addition, or modification.

This guarantee shall be valid until the date of issue of the Certificate of Completion.

SIGNATURE AND SEAL OF THE GUARANTOR __________________

Name of Bank _____________________________________________

Address ________________________________________________

Date ____________________________________________________
BANK GUARANTEE FOR ADVANCE PAYMENT

To: ________________________ [name of Employer] ____________(Date)
________________________[address of Employer]

Gentlemen,

Ref: ________________________________[name of Contract]

In accordance with the provisions of the Conditions of Contract of the above-mentioned Contract, We, __________________________________________[name and Address of Contractor] (hereinafter called “the Contractor”) shall deposit with ________________________[name of Employer] a bank guarantee to guarantee his proper and faithful performance under the said Contract in an amount of Kshs._____________[amount of Guarantee in figures] Kenya Shillings_____________________________________[amount of Guarantee in words].

We, ________________________[bank or financial institution], as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to ________________________[name of Employer] 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 of Guarantee in figures] Kenya Shillings___________________________________________________ __________[amount of Guarantee in words], such amount to be reduced periodically by the amounts recovered by you from the proceeds of the Contract.

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 ________________________[name of Employer] and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

No drawing may be made by you under this guarantee until we have received notice in writing from you that an advance payment of the amount listed above has been paid to the Contractor pursuant to the Contract.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until ____________________________________________ (name of Employer) receives full payment of the same amount from the Contract.

Yours faithfully,

Signature and Seal ________________________________ __________________

Name of the Bank or financial institution ______________________________

Address __________________________________________ ____________________
| Date: ___________________________________________ |
| Witness: |
| Name: __________________________________________ |
| Address: ________________________________________ |
| Signature: ______________________________________ |
| Date: __________________________________________ |
APPENDIX TO INSTRUCTIONS TO TENDERERS

The following information regarding the particulars of the tender shall complement/supplement or amend the provisions of the instructions to tenderers. Wherever there is a conflict between the provision of the instructions to tenderers and the provisions of the appendix, the provisions of the appendix herein shall prevail over those of the instructions to tenderers.
APPENDIX TO FORM OF BID

This Appendix to Form of Agreement forms part of the Agreement.
(Note 1: with the exception of the items for which the Employer’s requirements have been inserted, the Contractor shall complete the following information before submitting his offer.)
(Note 2: Form of Agreement is attached separately in the Contract File)

<table>
<thead>
<tr>
<th>Item</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time for Completion</td>
<td>90 days</td>
</tr>
<tr>
<td>Law of Contract</td>
<td>Laws of the Republic of Kenya</td>
</tr>
<tr>
<td>Language</td>
<td>English</td>
</tr>
<tr>
<td>Provision of Site</td>
<td>On Commencement Date</td>
</tr>
<tr>
<td>Name and address of Employer</td>
<td>BARINGO COUNTY government Address: P.O. BOX 53-30400 KABARNET</td>
</tr>
<tr>
<td>Authorised Person</td>
<td>County Secretary, Baringo County Government P.O. Box 53-30400 KABARNET</td>
</tr>
<tr>
<td>Name and address of Engineer</td>
<td>Chief Officer, Ministry of Transport &amp; Infrastructure Baringo County Government P.O. Box 53-30400 KABARNET</td>
</tr>
<tr>
<td>Name and Address of Engineer’s Representative</td>
<td>County Engineer, Baringo County</td>
</tr>
<tr>
<td>Penalty to the Contractor for Employer paying workers on his behalf</td>
<td>10% of the amount paid to the workers.</td>
</tr>
<tr>
<td>Performance Security Amount</td>
<td>Required for works exceeding 5% of the Bid Sum</td>
</tr>
<tr>
<td>Bid Security</td>
<td>Kshs. 100,000.00 in the Invitation to Bid (Advert) As per the advert</td>
</tr>
<tr>
<td>Form</td>
<td></td>
</tr>
<tr>
<td>Programme Time of Submission Form of Programme</td>
<td>Within 14 days of Commencement Date Bar chart*</td>
</tr>
<tr>
<td>Interval Updates</td>
<td>One (1) Month</td>
</tr>
<tr>
<td>Liquidated Damages Amount payable due to failure to</td>
<td>0.01% of Contract Price per Day to a limit of 1% of Contract Price.</td>
</tr>
<tr>
<td>Item</td>
<td>Data</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Period of notifying defects</td>
<td>30 days calculated from the date stated in the notice under sub clause 8.2*</td>
</tr>
<tr>
<td>Form of Guarantee for Advance Payment</td>
<td>Bank Guarantee or Insurance Bond</td>
</tr>
<tr>
<td>Valuation of Works</td>
<td>Re-measurements with Bills of Quantities</td>
</tr>
<tr>
<td>Minimum Amount of Interim Payment</td>
<td>40% of the Contract Price excluding contingencies*</td>
</tr>
<tr>
<td>Currency of Payment</td>
<td>Kenya Shilling</td>
</tr>
<tr>
<td>Rate of Interest</td>
<td>Simple Interest at a rate of 2% above mean Base Lending Rate as issued by the Central Bank of Kenya.</td>
</tr>
<tr>
<td>Insurance</td>
<td>Required</td>
</tr>
<tr>
<td>The Works, materials plants &amp; fees</td>
<td>Amount of Cover</td>
</tr>
<tr>
<td>Contractor’s Equipment</td>
<td>The Contract Price stated in the Agreement</td>
</tr>
<tr>
<td>Third party injury to persons and damage to property</td>
<td>Full replacement cost.</td>
</tr>
<tr>
<td></td>
<td>10% per third party with number of occurrences unlimited.</td>
</tr>
<tr>
<td>Workers compensation</td>
<td>Contractor to indemnify employer against claims by those in employment of the contractor</td>
</tr>
<tr>
<td>Other cover</td>
<td>**</td>
</tr>
<tr>
<td>Arbitration</td>
<td>**</td>
</tr>
<tr>
<td>Rules</td>
<td>CAP 49 of the Laws of Kenya</td>
</tr>
<tr>
<td>Appointing Authority</td>
<td>Chairman Chartered Institute of Arbitrators, Kenya Branch. Baringo County Headquarters</td>
</tr>
<tr>
<td>Place of Arbitration</td>
<td>**</td>
</tr>
</tbody>
</table>

* Employer to fill as appropriate

** Contractor to fill as appropriate

Signature of Bidder .................................................................................. Date
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INSTRUCTIONS TO TENDERERS.

1. General

1.1 The Employer as defined in the Appendix to Conditions of Contract invites Tenders for the Works Contract as described in the Tender Documents.

1.2 Tenderers shall include the following information and documents with their Tenders, unless otherwise stated:
   a) Duly certified Certificate from Treasury for works in YW&D Category  
   b) evidence of access to lines of credit and availability of other financial resources  
   c) financial predictions for the current year and the two subsequent years, including the effect of known commitments  
   d) work commitments  
   e) current litigation information; and  
   f) availability of critical equipment  
   g) Registration with National Construction Authority for the applicable class valid at the date of tender submission  
   h) Certificate of Incorporation  
   i) PIN & VAT Registration Certificate  
   j) Valid current Tax compliance certificate valid as closing date  
   k) Address of the Principal place of Business (business permit)  
   l) Authority to seek references from Tenderer's Bankers  
   m) Authority for person signing the Tender

1.3 The Tenderer shall bear all costs associated with the preparation and submission of the Tender.

1.4 The Tenderer, at the Tenderer's own expense, responsibility and risk, shall visit and examine the Site of the Works and its surroundings, to obtain all information that may be necessary for the preparation of the Tender and entering into a Contract for the Works as defined in the Specifications (to be annexed during contract signing). Attendance at a pre-tender site meeting arranged by the Engineer shall be mandatory for the submission of an eligible tender. Each tenderer must dully complete a Declaration of Tenderer's Knowledge of site.

1.5 Eligible Tenderers

   a) The Invitation to Tender is open to all Tenderers qualified in accordance with to the conditions of the Press Advertisement or otherwise indicated by the Employer. Only Tenders from qualified Tenderers will be accepted.  
   b) A Tenderer debarred from participating in Public Procurement by the Public Procurement Regulatory Authority shall not be eligible to submit a Tender.  
   c) If the Employer has not undertaken the prequalification of Tenderers, all Tenderers shall include the information required to satisfy the qualification criteria as determined by the Employer.

2. Tender Documents

2.1 The complete set of Tender documents comprises the documents listed below and any addenda issued in accordance with paragraph 2.4

   (i) Instructions to Tenderers  
   (ii) Form of Tender  
   (iii) Bills of Quantities/Schedule of Rates (whichever is applicable)  
   (iv) Other documents/materials required by the Employer to be completed and submitted in accordance with these Instructions and Conditions
2.2 The Tenderer shall examine all Instructions, Forms and Specifications (to be annexed during contract signing) in the Tender documents. Failure to furnish all information required by the Tender documents may result in the rejection of the Tender.

2.3 A Tenderer requiring any clarification of the Tender documents may notify the Employer in writing or by electronic means at the address indicated in the letter of Invitation to Tender. The Employer shall respond to any request for clarification received earlier than seven days prior to the deadline for submission of Tenders. Copies of the Employer’s response will be forwarded to all persons issued with Tender documents, including a description of the inquiry, but without identifying its source.

2.4 Before the deadline for submission of Tenders, the Employer may modify the Tender documents by issuing addenda. Any addenda thus issued shall be part of the Tender documents and shall be communicated in writing or by electronic means to all Tenderers. Tenderers shall acknowledge receipt of each addendum in writing to the Employer.

2.5 The Employer may extend, as necessary, the deadline for submission of Tenders in accordance with paragraph 4.5 below, to take account of any addenda issued.

2.6 The timescale given for the Completion of Works has been based on the optimum use of labour-based construction.

3. Preparation of Tenders

3.1 All documents relating to the Tender and any correspondence shall be in the English Language.

3.2 The Tender submitted shall comprise the following:-
(a) The Form of Tender;
(b) Tender Security (as instructed in the Form of Invitation to Tender)
(c) Standard Forms and Schedules of Supplementary Information,
(d) Priced Bill of Quantities initialed on each page, or Schedule of Rates (whichever is applicable)
(e) Any other documents/materials required by the Employer to be completed and submitted by Tenderers.

3.3 The Tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities/Schedule of Rates. Items for which no rate or price is entered shall be deemed covered by the other rates and prices in the Bill of Quantities/Schedule of Rates.

3.4 The unit rates and prices shall be in Kenya Shillings.

3.5 Tenders shall remain valid for a period of a period of Ninety (90) days from the Commencement Date. However, the Employer may request the Tenderers to extend the period of validity for a specified additional period. Such a request and the Tenderers’ responses shall be made in writing.

3.6 The Tenderer shall prepare one original of the Tender documents as described in these Instructions to Tenderers, and one copies if required by the Invitation to Tender.

3.7 The original shall be typed or written in indelible ink and shall be signed by a person or persons duly authorised to sign on behalf of the Tenderer who shall initial all pages of the Tender where alterations or additions have been made.

4. Submission of Tenders

4.1 The Tender duly bound, completed and sealed in an envelope shall:-
(a) be addressed to the Employer at the address provided in the Invitation to Tender;
(b) bear the name and identification number of the Tenderer as defined in the Invitation to Tender; and
(c) provide an instruction not to open before the specified time and date for Tender opening.

(d) If the envelope is not sealed and marked as instructed above, the Employer will assume no responsibility for the misplacement or premature opening of the tender.

4.2 Tenders shall be delivered to the Employer at the address specified not later than the time and date specified in the Invitation to Tender.

4.3 The Tenderer shall not submit alternative offers unless they are specifically required in the Tender documents. Each Tenderer may submit only one Tender. Any Tenderer who fails to comply with this requirement will be disqualified.

4.4 Any Tender received after the deadline for submission will be returned to the Tenderer un-opened.

4.5 The Employer may extend the deadline for submission of Tenders by issuing an amendment in accordance with paragraph 2.5 in which case all rights and obligations of the Employer and the Tenderers previously subject to the original deadline will then be subject to the new deadline.

4.6 The Tender Security shall be valid at least twenty Eight (28) days beyond the tender validity period. Any tender not accompanied by an acceptable Tender Surety will be rejected by the Employer as non-responsive.

5. Tender Opening

5.2 The Tenders shall be opened in the presence of those Tenderers’ representatives who choose to attend at the time and in the place specified in the Invitation to Tender.

5.2 The name of the Tenderer, the total amount of each Tender and the status of the Tender Security shall be read out and recorded in a Tender Opening register, a copy of which may on request be made available to any Tenderer. Minutes of the Tender opening, including the information disclosed to those present shall also be prepared by the Employer.

6. Tender Evaluation

6.1 Information relating to the examination, clarification, evaluation and comparison of Tenders and recommendations for the award of the Contract shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the award to the successful Tenderer has been announced. Any effort by a Tenderer to influence the Employer’s officials, processing of Tenders or award decisions will result in the rejection of the Tender.

6.2 Prior to the detailed evaluation of Tenders, the Employer shall determine if each Tender:-

a) Meets the eligibility criteria defined in paragraphs 1.2 and 1.5.
b) Has been properly signed;
c) Is accompanied by the required Securities;
d) Is substantially responsive to the requirements of the Tender documents.

6.3 The Employer will reject any Tenders deemed to be non-responsive on the above criteria.

6.4 A substantially responsive Tender is one which conforms to all the terms, Conditions and Specifications (to be annexed during contract signing) of the Tender documents, without material deviation or reservation. A material deviation or reservation is the 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 Tender documents, the Employer’s rights or the Tenderer’s obligations under the Contract;

c) whose rectification would affect unfairly the competitive position of other Tenderers presenting substantially responsive Tenders.
6.5 Tenders determined to be substantially responsive and within the Engineers Estimate will be checked for any arithmetic errors. Errors will be corrected as follows:

(a) where there is a discrepancy between the amount in figures and the amount in words, the amount in words shall prevail;

(b) where there is a discrepancy between the arithmetically correct line item Amount, resulting from the multiplication of the Unit Rate and the Quantity, and the Amount entered, the latter shall prevail and the Unit Rate shall be adjusted accordingly.

(c) for Lumpsum items, only the Amount will be considered, disregarding any filled in unit rate.

(d) where there is a discrepancy between the Tender Price as stated in the Form of Tender and the Tender total in the main Summary of the Bills of Quantities, the Tender Price shall prevail. The Employer shall notify the Tenderer and request that the Tenderer agrees to the Tender Price. The Unit Rate for the Items where the discrepancy occurs shall be adjusted by the Engineer. If the Tenderer fails to accept the corrected figure the Tender shall be rejected and the Tender Security shall be forfeit. Any discrepancy greater than 15% of the corrected figure shall result in rejection of the Tender and the forfeit of the Tender Security.

6.6 The Employer at his discretion may request any Tenderer for clarification of the Tender, including a breakdown of Unit Rates. The request for clarification and the response shall be in writing or electronic means.

7. Award of Contract

7.1 Criteria of Award: Subject to ITT Clause 35 and 36, the Procuring Entity will award the Contract to the Tenderer whose Tender has been determined to be substantially responsive to the Tendering documents and who has offered the lowest Evaluated Tender Price, provided that such Tenderer has been determined to be:

a) Eligible in accordance with the provisions of ITT Clause 3;

b) Is determined to be qualified to perform the Contract satisfactorily;

c) Successful negotiations have been concluded.

7.2 Clarifications: Clarifications may be undertaken with the lowest evaluated Tenderer relating to the following areas:

a) A minor alteration to the technical details of the statement of requirements;

b) Reduction of quantities for budgetary reasons, where the reduction is in excess of any provided for in the Tendering documents;

c) A minor amendment to the Contract Data Sheet;

d) Finalizing payment arrangements;

e) Mobilization arrangements;

f) Agreeing final delivery or work schedule to accommodate any changes required by the Procuring Entity;

g) The methodology or staffing; or

h) Clarifying details that were not apparent or could not be finalized at the time of Tendering.

7.3 Maximum value of award per bidder: No bidder will be awarded more than two (2) contracts.

7.4 Procuring Entity’s Right to Accept any Tender and to Reject any or all Tenders: The Employer reserves the right to accept or reject any or all Tenders and to cancel the Tendering process at any time prior to the award of the Contract without thereby incurring any liability to the affected Tenderer or Tenderers or any obligation to inform the affected Tenderer(s) of the grounds for the action.

7.5 Procuring Entities Right to Vary Quantities at the Time of Award: The Procuring Entity reserves the right at the time of
contract award to increase or decrease the quantity of goods or related services originally specified in these Tendering documents (BoQ), without any change in unit price or other terms and conditions of the Tender and Tendering documents.

7.6 **Notification of Award:** The Tenderer whose Tender has been accepted will be notified of the award prior to the expiration of the Tender validity period in writing or by electronic means. This notification (called the “Letter of Acceptance”) will state the sum (called the “Contract Price”) which the Employer will pay the Tenderer in consideration of the execution, completion, and maintenance of the Works as set out in the Contract. The Letter of Acceptance will constitute a binding Agreement, prior to the Tenderer signing the Contract Agreement.

7.7 **Signing of Contract:** The Contract Agreement will incorporate all agreements between the Employer and the Tenderer. It will be signed by the Tenderer, not earlier than 14 days following the date of the Letter of Acceptance, and thereafter returned to the Employer within 7 days for signature.

7.8 **Completion:** After completion of the work, the Contractor will serve a written notice to the Engineer in Charge to this effect. The Engineer in Charge upon receipt of this notice shall conduct a complete joint survey of the work within seven (7) days and enable the appointed Inspection and Acceptance Team to visit and make recommendations.
**TECHNICAL EVALUATION CRITERIA**

This Section shall apply to tenderers whose bids have been determined to be responsive and have met all the Qualification Criteria as per the instruction to bidders.

It contains all the factors, methods and criteria that the Procurement Entity shall use for the technical evaluation. The information to be provided in relation to each factor and the definitions of the corresponding terms are included in the respective supplementary information Forms (Schedules).

The Technical Evaluation Committee shall examine tender documents and score them based on their validity, accuracy and quality. Where the bidder fails to meet the requirement, the bidder shall be disqualified.

### 7.1 Qualification Checklist for Completeness and Responsiveness

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Completeness and responsiveness criteria</th>
<th>References</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Form of Bid</td>
<td>Schedules/Standard Form</td>
<td>Amount must be indicated, Properly fill and sign</td>
</tr>
<tr>
<td>2</td>
<td>Bid Security</td>
<td>Invitation Letter</td>
<td>At least thirty (30) days beyond the tender validity period in the form prescribed</td>
</tr>
<tr>
<td>3</td>
<td>Eligibility</td>
<td>ITT, Schedules &amp; Standard Form</td>
<td>Copies of National ID or passport for all directors - Certified copy of Form CR12 - Proof of registration with the National Treasury or the respective County Treasury (for C,D,E - YW&amp;D Group)</td>
</tr>
<tr>
<td>4</td>
<td>Confidential Business Questionnaire</td>
<td>ITT, Schedules &amp; Standard Form</td>
<td>Properly fill and sign and Provide all information requested</td>
</tr>
<tr>
<td>5</td>
<td>Conflict of Interest</td>
<td>ITT, Schedules &amp; Standard Form</td>
<td>State explicitly</td>
</tr>
<tr>
<td>6</td>
<td>Tax Compliance Certificate; Certificate of Incorporation; VAT &amp; PIN registration</td>
<td>ITT clause 1.2</td>
<td>Certified copies by commissioner of Oaths, Valid as at the date of Tender opening</td>
</tr>
<tr>
<td>7</td>
<td>Registration with N.C.A.</td>
<td>ITT clause 1.2</td>
<td>Class 7 and above, Certified copies by commissioner of Oaths</td>
</tr>
<tr>
<td>8</td>
<td>Form of Power of Attorney</td>
<td>ITT, Schedules &amp; Standard Form</td>
<td>Properly fill and sign</td>
</tr>
<tr>
<td>9</td>
<td>All Schedules (Major Items of Plant; Key Personnel; Roads Works Completed; Ongoing works; Litigation status and History of Non-performance; and other supplementary and financial standing) in required formats and timelines</td>
<td>ITT, Schedules &amp; Standard Form</td>
<td>Fill properly in the format given and sign</td>
</tr>
<tr>
<td>10</td>
<td>Work Execution Programme</td>
<td>ITT, Schedules &amp; Standard Form</td>
<td>Must be provided in the format given, brief and to the point</td>
</tr>
<tr>
<td>11</td>
<td>Priced Bill of Quantities</td>
<td>ITT, Schedules &amp; Standard Form</td>
<td>Fill all rates, prices and amounts</td>
</tr>
<tr>
<td>12</td>
<td>Preparation of the Tenders</td>
<td>ITT, Schedules &amp; Standard Form</td>
<td>The Forms, BOQ and Schedules provided in the tender documents to be properly filled without exception</td>
</tr>
<tr>
<td>13</td>
<td>Serialization</td>
<td>ITT 3.2 (e)</td>
<td>Duly serialized tender document <em>(Every page of the bid document must be serialized)</em></td>
</tr>
</tbody>
</table>

Terms: Must have met all above
7.2 Technical Evaluation Criteria

This Section shall apply to tenderer whose bids have been determined to be responsive and have met all the Qualification Criteria as per the instruction to bidders.

It contains all the factors, methods and criteria that shall be used for the technical evaluation. The information to be provided in relation to each factor and the definitions of the corresponding terms are included in the respective supplementary information Forms (Schedules). Schedules not complying with the format attract half marks.

<table>
<thead>
<tr>
<th>Qualification Criteria</th>
<th>Submission Requirement</th>
<th>Compliance and Documentation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractors Capability to supervise and perform the work</td>
<td>Bidder to submit the following in accordance with: - Ownership list and proof of required equipment and/or Authorization letter of hiring from M&amp;T or reputable hiring company</td>
<td>Schedules &amp; Standard Form</td>
<td>20</td>
</tr>
<tr>
<td>Key Personnel</td>
<td>Provide List of professional and technical staff and their resume in accordance General Experience (CV), Certified Qualification Certificate,</td>
<td>Schedules &amp; Standard Form</td>
<td>15</td>
</tr>
<tr>
<td>Past relevant work Experience</td>
<td>Bidder to submit the following in accordance with Completion certificate, Taking Over Certificate and/or Substantial Completion Certificate of relevant work in the previous 2 years</td>
<td>Schedules &amp; Standard Form</td>
<td>15</td>
</tr>
<tr>
<td>Contractual misconducts and litigation</td>
<td>Record of contractual misconduct in the previous 1 year ITT and Schedules Record of litigation in the previous 1 year. Attach affidavit</td>
<td>Schedules &amp; Standard Form</td>
<td>5</td>
</tr>
<tr>
<td>Financial Capability</td>
<td>Bidder to submit the following in accordance with ITT and Schedules Certified audited accounts for the last Two [2] and projection of next 1 (One) years Banks statement (last 3 months)</td>
<td>ITT 1.2, Schedules &amp; Standard Form</td>
<td>15</td>
</tr>
</tbody>
</table>

Sub Total Score 70

For companies or firms that are registered or incorporated within the last one calendar year of the Date of the Tender Document, they should submit certified copies of bank statements covering a period of at least six months prior to the date of advertisement. The copies should be certified by the Bank issuing the statements. The certification should be original.

All Agreements and Authorization letters must have been renewed within the last six (6) months from the date of advertisement.

Equipment Holding & Line of Credit, Cash flow statement will be exempted for YW&D Category *
WEP not complying with the format below attracts half marks.

TENDER NO. BCG/TNR/45/17/18
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Subject</th>
<th>Submission Requirement</th>
<th>Compliance Requirement</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization Management plan</td>
<td>Bidder to submit the following Proposals: Site layout plan and material mobilization Site Organization Chart Equipment management plan Personnel mobilization</td>
<td>Schedule 9</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Quality and Quantity Management</td>
<td>Bidder to submit the following Proposals: Methodology Proposals on material testing Proposal on measurements Photograph plan</td>
<td>Schedule 9</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Working Schedule and Projected Cash flow.</td>
<td>Bidder to submit the following Proposals: Signed work programme chart Signed Cash flow plan during the contract period.</td>
<td>Schedule 9</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Work safety management</td>
<td>Bidder to submit the following Proposal; Proposals on traffic control workers safety &amp; accident prevention</td>
<td>Schedule 9</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Environmental and social management</td>
<td>Bidder to submit the following Proposals; Proposal on environmental and social mitigation measures</td>
<td>Schedule 9</td>
<td>5</td>
</tr>
</tbody>
</table>

**Technical Proposal and comments Sub Total Score**  
30

**GRANT TOTAL TECHNICAL SCORE**  
100

Bidders whose shall **score 85%** and above shall proceed to financial evaluation stage.
SECTION B:

CONDITIONS OF CONTRACT
PART I: GENERAL CONDITIONS OF CONTRACT

PART II: CONDITIONS OF PARTICULAR APPLICATION

1 GENERAL PROVISIONS
1.1 Definitions
1.2 Interpretation

4 THE CONTRACTOR
4.1 General Obligations
4.1.1 R2000 Strategy
4.1.2 Approval of Equipment
4.1.3 Recruitment of Labour
4.1.4 Employment of Young Persons and Children
4.1.5 Conditions of Employment of Labour
4.1.6 Reporting Requirements
4.1.7 Non-payment of Wages by Contractor
4.1.8 Contract with Employees
4.1.9 Water for the Works
4.1.10 Environment
4.1.11 HIV/AIDS

4.2 Performance Security

7 TIME FOR COMPLETION
7.1 Execution of the Works
7.1.1 Progress Review Meetings
7.2 Programme
7.2.1 Intended Construction Procedures, Order and Methods
7.2.2 Programme Updating

10 VARIATIONS AND CLAIMS
10.2 Permitted Variations

11 CONTRACT PRICE AND PAYMENT
11.1 Valuation of the Works
11.1.1 Price Adjustment
11.1.2 Exclusion of Price Adjustment for Late Completion of Works
11.1.3 Dayworks
11.2 Interim Payments
11.2.1 Advance Payment
11.2.2 Deductions for Re-payment of Advance Payment
11.2.3 The Minimum Amount of Interim Payment.
PART I: GENERAL CONDITIONS OF CONTRACT


The General Conditions of Contract are linked with the Conditions of Particular Application, referred to as Part II, by the consecutive numbering of the Clauses, so that Part I and II together comprise the Conditions governing the rights and obligations of the Parties. In case of any inconsistency between the Conditions contained in Part I and those in Part II, the Conditions contained in Part II shall prevail.

The Tenderer is deemed to have read and fully complied with the General Conditions of Contract.
PART II: CONDITIONS OF PARTICULAR APPLICATION

The Conditions of Particular Application amplify the FIDIC Short Form of Contract so as to be, together, applicable to the Contract.

1 GENERAL PROVISIONS

1.1 Definitions

Add new Paragraph to sub-clause 1.1.8

1.1.8 (a) "Week" means a period of seven (7) consecutive days

1.1.8 (b) "Month" means calendar month

Add new paragraph to sub-clause 1.1.20 to 1.1.25

1.1.20 “Appendix” as referred to in the Conditions of Contract means Appendix to Form of Agreement.

1.1.21 “Labour-Based Methods” means work methods whereby activities are carried out using labour where technically and economically viable and appropriate equipment is only used when labour alone will not achieve the required standards.

1.1.22 “Task” means the amount of work to be done by one individual worker or a gang in order to earn one day’s wage.

1.1.23 “Young Person” means an individual male or female, who has attained the age of 16 years but has not attained the age of 18 years.

1.1.24 “R2000 Strategy” means an initiative by the Government of Kenya to improve the maintenance of the country’s Road Network by giving priority to maintenance through network approach, using appropriate technology, labour-based methods, local resources and increased usage of small-scale entrepreneurs.

1.2 Interpretation

Add sub-clause 1.2.1 as follows

1.2.1 Words having the same meaning

In the Contract Documents the Employer's Representative is generally designated as the Engineer.

4 THE CONTRACTOR

4.1 General Obligations

Add. In particular the following obligations shall apply

Add the following new sub-Clauses:

4.1.1 R2000 Strategy

The Works shall generally be carried out using the R2000 Strategy and work approach, with its predominant emphasis on the use of labour-based construction methods where they are technically and economically viable. Intermediate equipment, as agreed by the Engineer may be used in other appropriate circumstances.

4.1.2 Approval of Equipment

The Contractor shall submit for the Engineer’s approval within seven days prior to the commencement date a list of equipment, which is intended for use on site. He shall notify the Engineer prior to bringing in equipment and shall further obtain the Engineer’s approval prior to removing any equipment from site.
4.1.3 Recruitment of Labour

4.1.3.1 The Contractor shall ensure that there is a sufficient and suitable deployment of labour at all times throughout the Contract.

4.1.3.2 All general workers employed by the Contractor shall, to the extent possible, be recruited from the surrounding population. Exceptions may be made if sufficient local labour cannot be recruited and only with the approval of the Engineer. There shall be no discrimination in recruitment based on tribe, religion, political affiliation, age, disability or gender, and the recruitment system shall be fair and transparent.

4.1.3.3 The Contractor shall take particular note of the Government policy regarding the employment of women and youth in the recruitment process and shall take all possible steps to attain the targets of 30% of the labour force for each group.

4.1.4 Employment of Young Persons and Children

The Contractor shall comply with the Employment Act Chapter CAP 226 concerning the Employment of Young Persons and Children.

4.1.5 Conditions of Employment of Labour

The Contractor shall observe and fulfil the following conditions in respect of all persons employed by him in the execution of the Contract:

a) Where possible, labour shall be employed on a daily task basis. The size of the daily task shall be that which can reasonably be expected of a worker during a normal working day (8 hours), and all task rates shall be approved by the Engineer.

b) The Contractor shall pay wage rates and observe hours and conditions of employment of labour as established by Kenyan Labour Laws and by agreement between Employers or other recognized authorities and trades unions for similar trades or industries in the District where the Contract Works are to be carried out.

c) The Contractor shall recognize the freedom of employees to be members of trades unions. The Contractor’s attention is drawn to the requirements of the Trade Unions Act (CAP 233), which states that if at least 25% of the employees are members of a particular Trade Union Organisation, then the Contractor is legally bound to recognise and negotiate with the Organisation.

4.1.6 Reporting Requirements

The Contractor shall, when required by the Engineer, submit labour returns in such form and detail and at prescribed intervals showing the staff and the number of the several classes of labour employed by the Contractor.

4.1.7 Non-payment of Wages by Contractor

(a) The Employer may demand from the Contractor reasonable proof of payment of wages to the employees.

(b) The Employer may, upon the Contractor defaulting in payment, pay the money due, out of any funds due or which may become due to the Contractor under the Contract.

(c) In such an event, the Contractor shall co-operate with the Employer in processing the payment of the correct amounts of money due to the labour force by submitting the relevant muster rolls, workday reports and pay-sheets, and the Contractor shall be represented at the time payments are made.

(d) Direct payment to workers by the Employer shall attract a penalty as stated in the Appendix to cover expenses incurred in the administration of such labour payments.

4.1.8 Contract with Employees

(i) Working days
The Contractor shall recognize gazetted non-working days and allow in the Works Programme for those days on
which labour is not expected to work.

(ii) Provision of Hand Tools

The Contractor shall provide his labour force with a sufficient number of hand tools of good quality and shall make the necessary provisions to maintain the tools in a good and safe working condition. The Engineer may instruct the Contractor to replace worn out, faulty or unsafe hand tools.

(iii) Safety and Health

(a) The Contractor shall be responsible for the safety of all workers. In collaboration with, and to the requirements of the local health authorities, the Contractor shall ensure that first aid equipment and medical stores are available on the Site at all times throughout the period of the Contract, and shall also designate a Health and Safety Officer from amongst the staff.

(b) The Contractor shall be responsible for the provision of potable water for the workers at appropriate locations on the Site.

(c) In the event of any outbreak of illness of an epidemic nature the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same.

(iv) Contractor to Preserve Peace

The Contractor shall take all reasonable measures to ensure that all personnel on site comply with the Statutes, Ordinances, Laws, Regulations and By-Laws in force in Kenya, and to prevent accidents or any riotous or unlawful behaviour by or amongst the employees on or in connection with the Works, and for the preservation of the peace.

4.1.9. Water for the Works

The Contractor shall supply all water for the Works.

4.1.10. Environment

The Contractor shall take all reasonable measures to protect the environment on the Site and to avoid damage or nuisance to persons and property. In particular, the Contractor shall carry out all activities in a manner that ensures:

a) Minimum soil erosion on slopes and sedimentation deposition in the drainage works;

b) Maximum preservation of trees and shrubbery;

c) No entrance or accidental spillage of solid matters, debris and other pollutants and waste into water courses

d) The safe disposal of rubbish and waste.

4.1.11. HIV/AIDS

The Contractor shall institute on-site HIV/AIDS awareness and prevention campaigns for the duration of the Contract. This shall include the siting of information posters, the issue of condoms and also informative meetings on site for the employees. The meetings shall be arranged with the assistance of the local health authorities and AIDS Campaign personnel, and shall be during working hours without loss of pay.

4.2. Performance Security

Add the following at the end of this clause.

The Performance Security shall be valid until the date of issue of the Employer’s notice under sub-Clause 8.2 (Taking Over Notice). The Employer shall return the Security to the Contractor within 14 days thereafter. A Performance Security in the form an Insurance Bond shall only be allowed from an Insurance Company approved by the Public Procurement Oversight Authority (PPOA) and in a Form also approved by the PPOA.
7. TIME FOR COMPLETION

7.1 Execution of the Works

Add new sub-clause to 7.1.1:

7.1.1 Progress Review Meetings
Regular progress review meetings between the Employer and the Contractor shall be held at times decided by the Engineer.

7.2 Programme

Add two new paragraphs under this Sub-Clause

7.2.1 Intended Construction Procedures, Order and Methods
The Contractor shall show in the Programme of Works, the procedure, order and methods proposed for carrying out Works with specific emphasis on the labour requirements, equipment utilisation and productivity.

7.2.2 Programme Updating
Within the intervals stated in the Appendix or as required by the Engineer the Contractor shall submit an updated Programme of Works.

10. VARIATIONS AND CLAIMS

Add the following sub-clauses:

10.2 Permitted Variations
(d) The Engineer shall not be permitted to issue Variations to a value greater than the Tender Sum without approval from the Procurement Entity. The limit of approved Variations shall be + 15% of the Tender Sum.

11. CONTRACT PRICE AND PAYMENT

11.1 Valuation of the Works

Add the following sub-clauses:

11.1.1 Price Adjustment
The Contract shall not normally be subject to Price Adjustment. However, in exceptional and clearly identifiable economic circumstances, the Employer may consider a request from the Contractor for Price Adjustment where taxes, duties and/or basic costs for labour and specified materials have significantly increased since the commencement of the Works, as set out below,

(a) Local Labour

For the purpose of this Sub Clause:

(i) “Local Labour” means skilled, semi-skilled workers of all trades engaged by the Contractor on the Site for the purpose of or in connection with the Contract or engaged full time by the Contractor off the site for the Purpose of or in connection with the Contract (by way of illustration but not limitation: workers engaged full time in any office, store, workshop or quarry).
The Engineer shall compile a Schedule of Basic Prices, upon which any claim for Variation shall be based, prior to the award of the Contract. The Contractor shall be entitled to a copy of the Schedule upon request to the Engineer.

(iii) “Current Prices” means the prices for the specified materials prevailing on any date subsequent to the date 28 days prior to the latest date set for the submission of Tenders, by reason of any National or State Statute or Ordinance.

(c) Overheads and Profits Excluded

In determining the amount of any adjustment to the Contract Price pursuant to this Sub-Clause no account shall be taken of any overheads or profits.

(d) Adjustments

The net amount of difference between the basic price and the current price payable by the Contractor when the specified services are provided or materials are bought shall, as the case may be, be paid to the Contractor.

(e) Notice and Records

The Contractor shall keep such books, accounts, invoices, receipts, time sheets and other documents and records as are necessary to enable any adjustment under this Clause to be made and shall at the request of the Employer furnish these duly verified in such a manner as the Employer may require for examination and checking.

11.1.2. Exclusion of Price Adjustment for Late Completion of Works

In the event of the Contractor failing to complete the Works within the Time of Completion as defined under Clause 7, or extension of the Contract period granted, the provisions of Clause 11 shall cease to apply.

Any part of the Works executed after the expiry of the Time for Completion shall be valued at a price levels prevailing at the contractual date of Completion.

11.1.3. Dayworks

The Contractor shall not execute any work on a Dayworks basis except by written order of the Engineer

Unless otherwise adjusted, payments for Dayworks shall be subject to price adjustment in accordance with the provisions of Clause 11.1.1

11.2. Interim Payments

Add the following sub-clauses:

11.2.1. Advance Payment
The Employer may make Advance Payment to the Contractor on application after signing the Contract, against a Bank Guarantee, or approved Insurance Bond, in the form set out in the Tender Documents.

This Advance Payment shall be up to a maximum amount stated in the Appendix.

11.2.2. Deductions for Re-payment of Advance Payment

Reimbursements of Advance Payment shall be made according to the schedule as stated in the Appendix.

11.2.3. The Minimum Amount of Interim Payment.

The minimum amount of an Interim Payment shall be stated in the Appendix.
STANDARD FORMS

CONTENTS:

(i) Letter of Acceptance
(ii) Tender Questionnaire
(iii) Form Of Written Power Of Attorney
(iv) Confidential Business Questionnaire
LETTER OF ACCEPTANCE

[letterhead paper of the Employer]

[date]

To: _______________________

[title of the Contractor]

[address of the Contractor]

Dear Sir,

This is to notify you that your Tender dated ______________________ for the execution of

[name of the Contract and identification number, as given in the Tender documents] for the Contract Price of

Kshs. ____________________________ [Amount in figures] Kenya Shillings _______________________

[Amount in words]

in accordance with the Instructions to Tenderers is hereby accepted.

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract documents.

Authorized Signature

Name and Title of Signatory

Attachment
TENDER QUESTIONNAIRE

Please fill in block letters.

1. Full name of Tenderer;

2. Full address of Tenderer to which Tender correspondence is to be sent (unless an agent has been appointed below);

3. Telephone number (s) of Tenderer;

4. Facsimile of Tenderer;

5. Name of Tenderer’s representative to be contacted on matters of the Tender during the Tender period;

6. Details of Tenderer’s nominated agent (if any) to receive Tender notices (name, address, telephone, telefax);

(Signature of Contractor) (Date)
FORM OF WRITTEN POWER OF ATTORNEY

(Name of Bidder's

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 Tender.
Representative in block letters)

(Address of Bidder's Representative)

(Name of Bidder's

(Signature of Bidder’s Representative)

Alternate:
Representative in block letters)

(Address of Bidder's Representative)

(Signature of Bidder’s Representative)

*To be filled by all Bidders.
CONFIDENTIAL BUSINESS QUESTIONNAIRE
This Confidential Business Questionnaire of the Government of Kenya shall be completed by the Bidder or by each member of a Joint venture if the Bidder is a Joint-venture.

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 also 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 License No .......................................................... Expiring Date

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

Name of your Bankers.......................................................................................................................

Branch ...............................................................................................................................................

Part 2(a) - Sole Proprietor:

Your Name in full ............................................................................................................................... 

Age: ................ Nationality........................................ Country of Origin.....

*Citizenship details.............................................................................................................................

*Attach CR12 and Copy of Citizenship (Compulsory).
**Part 2 (b) - Partnership**

Give details of partners as follows:

<table>
<thead>
<tr>
<th>Name in full</th>
<th>Nationality Citizenship Details</th>
<th>Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Attach CR12 and proof of citizenship (Compulsory)

**Part 2 (c) - Registered Company**

Give details of directors as follows:

Private or public .................................................. ..........

State the nominal and issued capital of the company-

Nominal Kshs..................................................

Issued Kshs.

<table>
<thead>
<tr>
<th>Name in full</th>
<th>Nationality Citizenship Details</th>
<th>Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Attach CR12 and proof of citizenship (Compulsory)

**Part 2 (d) Interest in the Firm:**

Alongside as necessary.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

(Signature of Contractor) (Date)
## SCHEDULES OF SUPPLEMENTARY INFORMATION

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MAJOR ITEMS OF CONSTRUCTION PLANT AND EQUIPMENT</td>
<td>33</td>
</tr>
<tr>
<td>2</td>
<td>KEY PERSONNEL</td>
<td>34</td>
</tr>
<tr>
<td>3</td>
<td>SCHEDULE OF ROADWORK’S CARRIED OUT IN THE LAST TWO YEARS</td>
<td>35</td>
</tr>
<tr>
<td>4</td>
<td>SCHEDULE OF ONGOING PROJECTS</td>
<td>36</td>
</tr>
<tr>
<td>5</td>
<td>SCHEDULE OF LOCAL LABOUR BASIC RATES</td>
<td>37</td>
</tr>
<tr>
<td>6</td>
<td>SCHEDULE OF FINANCIAL ASSESSMENT</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>SUMMARY OF ASSETS AND LIABILITIES OF THE AUDITED FINANCIAL STATEMENTS OF THE LAST TWO (2) FINANCIAL YEARS</td>
<td>38</td>
</tr>
<tr>
<td>7</td>
<td>OTHER SUPPLEMENTARY INFORMATION</td>
<td>39</td>
</tr>
<tr>
<td>8</td>
<td>DECLARATION OF TENDERER’S KNOWLEDGE OF SITE</td>
<td>40</td>
</tr>
<tr>
<td>9</td>
<td>WORK EXECUTION PROGRAMME</td>
<td>41</td>
</tr>
<tr>
<td>10</td>
<td>ANTI-CORRUPTION DECLARATION COMMITMENT/ PLEDGE</td>
<td>44</td>
</tr>
</tbody>
</table>
SCHEDULE 1: MAJOR ITEMS OF CONSTRUCTION PLANT AND EQUIPMENT

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in **Schedule of the Major Items of Plant to Be Used On the Proposed Contract**. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Tenderer. The Tenderer shall provide all the information requested below, to the extent possible.

The Bidder must indicate the main plant and equipment considered by the company to be necessary for undertaking the project together with proof ownership.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Equipment Details</th>
<th>Minimum Number Required</th>
<th>No of owned/Leased by the Bidder</th>
<th>No of to be availed for the project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Motor Graders</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Dozer D6 or equivalent</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Front end loaders</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tipper, 7 Tonnes</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Rollers</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Water tankers 5,000 litres</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Excavator</td>
<td>1 (optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Concrete Mixers</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Poker vibrator</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Pedestrian Roller</td>
<td>1 (Optional)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I/We certify that the above information is correct and include attachments as per Schedule 1.

(Date)

(Signature of Contractor)
**SCHEDULE 2: KEY PERSONNEL**
The Bidder shall list in this schedule the key professional and technical personnel he will employ, providing Proof of qualifications, experience, position held and nationality.

<table>
<thead>
<tr>
<th>DESIGNATION</th>
<th>NAME</th>
<th>NATIONALITY</th>
<th>Experience</th>
<th>EXPERIENCE</th>
<th>AND EXPERIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Yrs)</td>
<td>(Yrs)</td>
<td>General</td>
</tr>
<tr>
<td><strong>Headquarters</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Relevant</td>
</tr>
<tr>
<td>Partner/Director or other key staff (give designation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Site Office</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Agent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deputy Site Agent/Site Engineer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior Foreman</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction supervisors Site Surveyor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Key Staff</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foremen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Earthworks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Concrete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) Concrete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) Pavement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(v) Drainage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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 (where required, use separate sheets to add extra data for column 4).

Bidders shall attach academic certificates of qualifications, CV’s of key personnel which should be signed by the staff on or after the date of invitation of bid and certified by a Commissioner of Oaths.

I certify that the above information is correct.

(Signature of Contractor)  (Date)

**Note:** Please attach Certified Copies of Highest Qualification Certificates ONLY
<table>
<thead>
<tr>
<th>DESCRIPTION OF WORKS</th>
<th>CLIENT'S NAME</th>
<th>VALUE OF WORKS (KShs) *</th>
<th>YEAR COMPLETED</th>
<th>REMARKS</th>
</tr>
</thead>
</table>

I certify that the above works were successfully carried out (Attach Completion Certificates / Substantial completion certificate).

I certify that the above works were successfully carried out by this Contractor.

(Signature of Contractor)  
(Date)

Name of Signatory:
SCHEDULE 5: SCHEDULE OF LOCAL LABOUR BASIC RATES

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>DATE OF COMMENCEMENT</th>
<th>DATE OF COMPLETION</th>
<th>VALUE OF WORKS (KSHS)</th>
<th>VALUE COMPLETE D UP TO DATE %</th>
<th>PHYSICALLY COMPLETED UP TO DATE %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

(Signature of Contractor)       (Date)
SCHEDULE 5: 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 4.1.3 of the Conditions of Contract Part 2.

Variation of price on Labour not payable.

<table>
<thead>
<tr>
<th>LABOUR CATEGORY</th>
<th>MONTH/SHIFT/HOUR</th>
<th>UNIT</th>
<th>RATE (KShs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled Labour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-Skilled Labour</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

I certify that the above information is correct.

(Signature of Contractor)   (Date)

Name of Signatory:
SCHEDULE 6: SCHEDULE OF FINANCIAL ASSESSMENT

1. Submit copies of audited profit and loss statements and balance sheet for the last two calendar years and estimated projection for the next one (1) year with certified English translation where appropriate.

2. Give turnover figures for each of the last two (2) financial years. Quote in millions and decimal thereof.

<table>
<thead>
<tr>
<th>Type of Work</th>
<th>Year 20 ......</th>
<th>Year 20 ......</th>
<th>Projection Year 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road works</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other civil engineering works</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SUMMARY OF ASSETS AND LIABILITIES OF THE AUDITED FINANCIAL STATEMENTS OF THE LAST TWO (2) FINANCIAL YEARS

<table>
<thead>
<tr>
<th></th>
<th>Year 20 ......</th>
<th>Year 20 ......</th>
<th>Projection Year 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total Assets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Current Assets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bank credit Line Value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Total Liabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Current Liabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Net worth (1-4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Working capital (2+3-4)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Total amount of credit line Kshs .................................................................

(Append a certified copy of the current Letter of Line of credit from the Bank.)

(b) Attach certified copies of financial bank statements of the last three (3) months.

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

I certify that the above information is correct.

(Signature of Contractor) (Date)

Name of Signatory:
SCHEDULE 7: OTHER SUPPLEMENTARY INFORMATION

1. Financial reports for the last two years and projection of next 1 year, 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. Lines of Credit should be supported by credit ratings from a recognised Credit Rating Bureau approved by the Central Bank of Kenya(Otherwise they will be assumed to be invalid).

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

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

<table>
<thead>
<tr>
<th>OTHER PARTY (IES)</th>
<th>CAUSE OF DISPUTE</th>
<th>AMOUNT INVOLVED (KShs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: (Provide a sworn affidavit for both (a) and (b) ).

I certify that the above information is correct

(Signature of Contractor)           (Date)
This is to certify that [Name/s of representative]

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

M/s ..........................................................................................................................................................

has undertaken the inspection of site in accordance with the instruction to Bidders, for purposes of bidding for

routine maintenance of ................................................................................................................................

1. Having studied the tender document, I carefully examined the site to make myself familiar with the local

   conditions likely to influence the works and cost thereof.

2. I further certify that I am satisfied with the description of the works and I understand perfectly the scope of

   the works as specified and implied in the performance of the contract.

3. That I or our representatives have visited the site visit.

4. Signed and Stamped

   (Bidder’s Representative)

NOTE: This form Must be completed and duly signed.
SCHEDULE 9: WORK EXECUTION PROGRAMME

Give a brief description of how you plan to carry out the works within the contract period. The Works execution programme should include all relevant information to the project. The information given should be clear, not flawed description and compliance to standard and special specification in Tenderers Letterhead.

Note: Works Execution programme is different from form “programme of works referred in FIDIC and Standard Specification for Roads and Bridge Construction. The said “programme of works” is but part of Works Execution Programme (WEP).

The Content s of Works Execution Programme shall include:

i. General information
   a) Project data &
   b) Scopes of works: A brief description of the project which includes major work items

ii. Mobilization Management Plan
   - The Plan should show, the location of site office and site organization chart, Personnel management plan & Equipment management plan

iii. Work execution schedule:
   - Signed Programme of works: It is desirable that work execution schedule includes time frame of each activity such as in bar chart format.

iv. Quality and Quantity Management
   - Method statement: This includes Work procedures, order and methods for execution.
   - Proposal on material testing: Material and structural test methods and test laboratory
   - Proposal on measurements
   - Photograph plan: The bidder shall provide a photograph plan to record the progress and proof of quality control, measurement and any event that may arise.

v. Safety management plan
   - This includes but not limited compliance with safety rules and regulation, traffic control and detour plans, emergency contact list.

vi. Environmental plan
   - When the negative impacts on third parties during the execution are predicted, the management and mitigation plans should be included in WEP. Soil erosion on slopes and sedimentation deposition on the drainage works; Preservation of trees and shrubbery

Note:
Works Execution Programme to be submitted by the bidder shall not be less than five (5) pages covering all the above stated items.
Adjudicator’s Agreement

Identification of Project: (the “Project”)

Name and address of the Employer: (the “Employer”)

Name and address of the Contractor: (the “Contractor”)

Name and address of the Adjudicator: (the “Adjudicator”)

Whereas the Employer and the Contractor have entered into a Contract (“the Contract”) for the execution of the Project and wish to appoint the Adjudicator to act as adjudicator in accordance with the Rules for Adjudication [“the Rules”].

The Employer, Contractor and Adjudicator agree as follows:

1. The Rules and dispute provisions of the Contract shall form part of this Agreement.

2. The Adjudicator shall be paid:

   A retainer fee of ................................................................................. per calendar month
   (where applicable)

   A daily fee of.........................................................................................

   Expenses (including the cost of telephone calls, courier charges, faxes and telexes incurred in connection with his duties; all reasonable and necessary travel expenses, hotel accommodation and subsistence and other direct travel expenses).

   Receipts will be required for all expenses.

3. The Adjudicator agrees to act as Adjudicator in accordance with the Rules and has disclosed to the Parties any previous or existing relationship with the Parties or others concerned with the Project.

4. This Agreement shall be governed by the laws of Kenya ............................................

5. The Language of this Agreement shall be English ...................................................

SIGNED BY ........................................................................................................

For and on behalf of the Employer in the presence of

Witness .............................................................................................................

Name ...................................................................................................................

Address .............................................................................................................

Date ...................................................................................................................

SIGNED BY ........................................................................................................

For and on behalf of the Contractor in the presence of

Witness .............................................................................................................

Name ...................................................................................................................

Address .............................................................................................................

Date ...................................................................................................................

SIGNED BY ........................................................................................................

For and on behalf of the Adjudicator in the presence of
I/We/Messrs. .........................................................................................................................
of Street, Building, P O Box ....................................................................................................

Contact/Phone/E mail .............................................................................................................
declare that Public Procurement is based on a free and fair competitive Tendering process which should not be open
to abuse.

I/We ...........................................................................................................................................
declare that I/We will not offer or facilitate, directly or indirectly, any inducement or reward to any public officer,
their relations or business associates, in connection with

Tender/Tender No ....................................................................................................................

for or in the subsequent performance of the contract if I/We am/are successful.

(Signature of Contractor) (Date)

Name and Title of Signatory .................................................................................................
APPLICATION NO.......................... OF.......................... 20

BETWEEN

                        APPLICANT

AND

.................................................. RESPONDENT (Procuring Entity)

Request for review of the decision of the.............................................................................. (Name of the Procuring Entity) of ......................dated the........day of...............20 ...... in the matter of

Tender No......................................................................................................................of.............. 20.....

REQUEST FOR REVIEW

I/We..............................................,the above named Applicant(s), of address: Physical

address...................... Fax No......... Tel. No......... Email ...................... , hereby request the Public

Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the

following grounds , namely:-

1. 

2. 

etc.

By this memorandum, the Applicant requests the Board for an order/orders that: -

1. 

2. 

etc

SIGNED ...................... (Applicant) Dated on ............day of ......./....../20....

FOR OFFICIAL USE ONLY

Lodged with the Secretary Public Procurement Administrative Review Board on day of / ....../20

SIGNED Board

Secretary
PREAMBLE TO BILLS OF QUANTITIES

1. The Bills of Quantities form part of the Contract Documents and are to be read in conjunction with the Conditions of Contract, Specifications and the Drawings.

2. The rates and prices inserted in the Bills of Quantities are to be the full inclusive costs of the works, described under the items, complete in place and in accordance with the specifications, including costs, expenses and profits which may be required in and for the construction of the works described, together with any temporary works and installations which may be necessary and all general risks, liabilities and obligations set forth or implied in the documents on which the contract

3. The quantities set forth in the Bills of Quantities are believed to represent the works to be carried out. There is no guarantee to the Contractor that he will be required to carry out the quantities of work indicated under any one particular item or groups of items in the Bills 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 brief descriptions of items given in the Bills of Quantities are purely for the purpose of identification and in no way modify or supersede the detailed descriptions given in the Conditions of Contract, Standard or Special Specifications.

5. A price or rate shall be entered in ink against every item in the Bill of Quantities with the exception of items, which already have provisional sums, affixed thereto. The Tenderers 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. Tenderers who fail to comply will be disqualified.

6. Please note that all prices quoted should be inclusive of all Government taxes, duties and VAT.
### BILL NO.1 GENERAL AND PROVISIONAL SUMS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QNTY</th>
<th>RATE</th>
<th>KSH.</th>
<th>CTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/01</td>
<td>Provide and erect project 2 No. signboards to Engineer’s approval.</td>
<td>SUM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/05</td>
<td>Include percentage of P.C sum in item 1/04 for the contractors’ cost and profit.</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Carried to collection page

### BILL NO.2 SUB-STRUCTURE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QNTY</th>
<th>RATE</th>
<th>KSHS.</th>
<th>CTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/01</td>
<td>(All provisional) Site preparation</td>
<td>SUM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/01</td>
<td>Cut down trees, grub up roots and stumps; including cutting into small logs.</td>
<td>SUM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/02</td>
<td>Excavations</td>
<td>SM</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/02</td>
<td>Excavate over site top soil average 200mm deep: remove from site</td>
<td>SM</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2/03  Excavate for column bases starting from stripped level not exceeding 1.5 metres deep.  

2/04  Ditto for pits from reduced level over 1.50 metres but not exceeding 3.00 metres deep including planking and strutting of sides of excavations

2/05  Ditto for pits from reduced level over 3.00 metres but not exceeding 6.00 metres deep including planking and strutting of sides of excavations

2/06  Extra over excavations for breaking up/excavating in rocks. Class I

2/07  Allow for keeping excavations free from mud and all water including springs and running water by pumping, bailing or other approved means

**Disposal and Filling**

2/08  Load surplus excavated material and spread on site as directed by Engineer

2/09  Return fill and ram excavated material around foundations.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QNTY</th>
<th>RATE</th>
<th>KSHS.</th>
<th>CTS.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Concrete</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Carried to collection page

MINISTRY OF TRANSPORT, INFRASTRUCTURE AND ENERGY

BILL NO.2 SUB-STRUCTURE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QNTY</th>
<th>RATE</th>
<th>KSHS.</th>
<th>CTS.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Concrete</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Unit</td>
<td>Quantity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------</td>
<td>------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/10</td>
<td>50 mm thick concrete blinding under foundations. (Grade 10/20)</td>
<td>SM</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/11</td>
<td><strong>Insitu Vibrated Reinforced Concrete:</strong> Grade 25 (20mm aggregate): in-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foundation Bases</td>
<td>CM</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/12</td>
<td>Column</td>
<td>CM</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>High yield square twisted bar reinforcement to BS 4449:</strong> including bends, hooks, binding wire, distance blocks and spacers supporting all in position.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/13</td>
<td>20mm diameter</td>
<td>Kg</td>
<td>710</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/14</td>
<td>16 mm diameter</td>
<td>Kg</td>
<td>1673</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/15</td>
<td>8mm diameter</td>
<td>Kg</td>
<td>79</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Sawn formworks</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/16</td>
<td>Sides of foundations bases</td>
<td>SM</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/17</td>
<td>Vertical sides of columns</td>
<td>SM</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Carried to collection page

MINISTRY OF TRANSPORT, INFRASTRUCTURE AND ENERGY

COLLECTION PAGE

BILL. 2: SUBSTRUCTURE

Brought forward from Page -03
MINISTRY OF TRANSPORT, INFRASTRUCTURE AND ENERGY

BILL NO.3 SKELETAL STEEL STRUCTURE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QNTY</th>
<th>RATE</th>
<th>KSHS.</th>
<th>CTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All work in this section shall be executed in accordance with the structural steel specifications 1973, and amendments thereafter, rates to include for all materials, labour, stiffeners, welding, cutting, shaping, drilling all gusset plates fastenings and connection and all other items necessary for satisfactory incorporation into the works.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bridge structure members:

Steel trusses fabricated forming modular units to make up 36 metre span hoisted approximately 4 metres above river valley

Safety Cage Top and Bottom Members

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QNTY</th>
<th>RATE</th>
<th>KSHS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/01</td>
<td>Fabricate and assemble in</td>
<td>LM</td>
<td>144</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/02</td>
<td>Fabricate and assemble in</td>
<td>100 x 100 x 4 mm SHS including welding and bolting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
<td>Unit</td>
<td>Qty</td>
<td>Rate</td>
<td>KSHS.</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------------------</td>
<td>-------</td>
<td>-----</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>3/08</td>
<td>Deck Cross Bearers</td>
<td>LM</td>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MINISTRY OF TRANSPORT, INFRASTRUCTURE AND ENERGY

BILL NO.3 SKELETAL STEEL STRUCTURE

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Qty</th>
<th>Rate</th>
<th>KSHS.</th>
<th>CTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/03</td>
<td>40 x 40 x 4 mm L sections including welding and bolting</td>
<td>Kg</td>
<td>348</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Safety Cage Diagonal members</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/03</td>
<td>Fabricate and assemble in</td>
<td>LM</td>
<td>167</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50 x 50 x 4 mm SHS including welding and bolting</td>
<td>Kg</td>
<td>339</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/04</td>
<td>50 x 50 x 4 mm SHS sections including welding and bolting</td>
<td>Kg</td>
<td>339</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/05</td>
<td>Fabricate and assemble in</td>
<td>LM</td>
<td>176</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/06</td>
<td>50 x 50 x 6 mm L sections including welding and bolting</td>
<td>Kg</td>
<td>279</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/07</td>
<td>Deck Level Wind Bracing</td>
<td>LM</td>
<td>86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/07</td>
<td>Fabricate and assemble in</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/07</td>
<td>60 x 40 x 3 mm RHS including welding and bolting</td>
<td>Kg</td>
<td>348</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Carried to collection page
<table>
<thead>
<tr>
<th>3/09</th>
<th>100 x 50 x 4 mm RHS sections including welding and bolting at 1,500mm c/c</th>
<th>LM</th>
<th>72</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/10</td>
<td>50 x 50 x 4 mm SHS sections including welding and bolting at 500mm c/c</td>
<td>Kg</td>
<td>239</td>
</tr>
<tr>
<td></td>
<td>Fabricate and assemble in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/11</td>
<td>Holding down bolts 20mm diameter including head, nuts and washer grade 4.6 and 250mm long embedded in concrete.</td>
<td>NO</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Bolts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/12</td>
<td>500 x 500 x 18mm Anchor plate c/w boltholes</td>
<td>NO</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Plates; The following are MS plates to be used in members Connections.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/15</td>
<td>The following are mild steel chequered plates of 6 mm thick for decking including 2 No. 10 mm drain holes at 1200 mm centres.</td>
<td>SM</td>
<td>72</td>
</tr>
<tr>
<td>3/16</td>
<td>Prepare and apply one primer coat and two coats of gloss paint to general surfaces of metal as per clause 1911(11) on paint works and as directed by the Engineer.</td>
<td>SM</td>
<td>209</td>
</tr>
</tbody>
</table>

Carried to collection page
MINISTRY OF TRANSPORT, INFRASTRUCTURE AND ENERGY

COLLECTION PAGE

BILL. 3: SKELETAL STEEL STRUCTURE

| Brought forward from Page -06 |
| Brought forward from Page -07 |
| Total for Skeletal Steel Structure |
| Carried to Summary |

BILL NO.4: APPROACH WORKS & ABUTMENT PROTECTION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QNTY</th>
<th>RATE</th>
<th>KSHS.</th>
<th>CTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/01</td>
<td>Gabions</td>
<td>NO</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide 1.0x1.0x2.0m gabion baskets manufactured from heavy-duty galvanized (zinc coated) steel wire of double twist hexagon weave, having a nominal mesh opening of 60mm x 80mm, mesh wire size min 2.5mm dia and selvedge wire min 3.2mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/02</td>
<td></td>
<td>NO</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide 2.0x2.0x0.3m gabion mattresses manufactured from heavy-duty galvanized (zinc coated) steel wire of double twist hexagon weave, having a nominal mesh opening of 60mm x 80mm, mesh wire size min 2.5mm dia and selvedge wire min 3.2mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/03</td>
<td></td>
<td>CM</td>
<td>134</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide rock fill to gabions. Shall be of minimum rock size of 100 mm and the maximum rock size of 250 mm. and be dense, hard, clean and durable stone as quarried or naturally occurring rounded stone to BS 5628-3:2001. as specified and approved by the Eng</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BCG/TNR/36/17/18
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>KSHS.</th>
<th>CTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approach ramp footpath</strong></td>
<td>Provide hand packed hardcore on approach ramp as directed by the Engineer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/04</td>
<td></td>
<td>CM 18</td>
<td></td>
</tr>
<tr>
<td>4/05</td>
<td>Provide 100mm thick well compacted murram layer on approach ramp.</td>
<td>SM 28</td>
<td></td>
</tr>
<tr>
<td><strong>Stone pitching</strong></td>
<td>Construct grouted stone-pitching /rip rap revetment as directed by the Engineer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/06</td>
<td></td>
<td>SM 35</td>
<td></td>
</tr>
</tbody>
</table>

Carried to summary page

**MINISTRY OF TRANSPORT, INFRASTRUCTURE AND ENERGY**

**SUMMARY**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>KSHS.</th>
<th>CTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary:</strong></td>
<td>BILL No. 1</td>
<td>......</td>
<td>....</td>
</tr>
<tr>
<td></td>
<td>BILL No. 2</td>
<td>......</td>
<td>....</td>
</tr>
<tr>
<td></td>
<td>BILL No. 3</td>
<td>......</td>
<td>....</td>
</tr>
<tr>
<td></td>
<td>BILL No. 4</td>
<td>......</td>
<td>....</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>1..................</td>
<td>......</td>
<td>....</td>
</tr>
<tr>
<td></td>
<td>Allow 5% Contigencies.</td>
<td>Sum</td>
<td></td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>2..................</td>
<td>......</td>
<td>....</td>
</tr>
<tr>
<td></td>
<td>Add 16% VAT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------</td>
<td>------------------------------------</td>
<td>------------------------------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td><em>GRAND TOTAL CARRIED TO FORM OF TENDER</em></td>
<td>* Prices inclusive of all taxes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CONTRACTOR'S**  
**NAME:**..............................................................................................................  
**ADDRESS:**..................................................................................................................  
**SIGNATURE:**....................................................................................................................  
**DATE:**..............................................................................................................................
DRAWINGS
FIGURE C.1 - CULVERT ENTRY / EXIT STRUCTURE TYPES

TYPE 1 (ENTRY AND EXIT)  TYPE 3 (ENTRY AND EXIT)

B1  B1

TYPE 2 (ENTRY ONLY)  TYPE 4 (ENTRY AND EXIT ON ACCESS)

B1  B2

NOTE:

Coding system has been used in describing the standardised designs of the various culvert entry and exit structures. The code names consist of a number to specify shape and function as elaborated in above while the used construction materials are identified through an alphabetic symbol as follows:

A = Concrete block
B = Stone masonry
C = Dressed stones

An example code of “B2” would therefore stand for a drop inlet type structure to be built in stone masonry.
FIGURE C.6 - HEADWALL TYPE 4 (FOR ACCESS CULVERTS)
**Figure C.7: Bedding and Manhole Profiles Types I & II**

**Profile I (Concrete)**

<table>
<thead>
<tr>
<th>Diameter (D)</th>
<th>450 (mm)</th>
<th>600 (mm)</th>
<th>900 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>0.15</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>b</td>
<td>0.1</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>c</td>
<td>0.86</td>
<td>1.12</td>
<td>1.48</td>
</tr>
<tr>
<td>d</td>
<td>0.56</td>
<td>0.72</td>
<td>1.06</td>
</tr>
<tr>
<td>e</td>
<td>0.14</td>
<td>0.18</td>
<td>0.27</td>
</tr>
<tr>
<td>f (mm³)</td>
<td>0.34</td>
<td>0.45</td>
<td>0.68</td>
</tr>
<tr>
<td>g</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>h</td>
<td>0.24</td>
<td>0.33</td>
<td>0.42</td>
</tr>
<tr>
<td>i</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Concrete Volume in (m³/m)**

<table>
<thead>
<tr>
<th>Diameter (D)</th>
<th>450 (mm)</th>
<th>600 (mm)</th>
<th>900 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>0.16</td>
<td>0.3</td>
<td>0.48</td>
</tr>
</tbody>
</table>

**Application**
- Fair subgrade condition;
- Overtill > 1/4 Diameter;
- Seasonal waterflow only.

**Remarks**
- Use gravel material for backfill.

**Profile II (Concrete)**

<table>
<thead>
<tr>
<th>Diameter (D)</th>
<th>450 (mm)</th>
<th>600 (mm)</th>
<th>900 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>0.15</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>b</td>
<td>0.1</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>c</td>
<td>0.86</td>
<td>1.12</td>
<td>1.48</td>
</tr>
<tr>
<td>d</td>
<td>0.56</td>
<td>0.72</td>
<td>1.06</td>
</tr>
<tr>
<td>e</td>
<td>0.14</td>
<td>0.18</td>
<td>0.27</td>
</tr>
<tr>
<td>f (mm³)</td>
<td>0.28</td>
<td>0.36</td>
<td>0.54</td>
</tr>
<tr>
<td>g</td>
<td>0.24</td>
<td>0.43</td>
<td>0.68</td>
</tr>
<tr>
<td>h</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>i</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Concrete Volume in (m³/m)**

<table>
<thead>
<tr>
<th>Diameter (D)</th>
<th>450 (mm)</th>
<th>600 (mm)</th>
<th>900 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>0.3</td>
<td>0.51</td>
<td>0.69</td>
</tr>
</tbody>
</table>

**Application**
- Fair to poor subgrade condition;
- Overtill > 1/4 Diameter;
- Seasonal waterflow only.

**Remarks**
- Use gravel material for backfill.
### FIGURE C.8 - REDUCE AND LAUNCH PROFILES TYPES III & IV

#### PROFILE III
- **Concrete**

#### PROFILE IV
- **Concrete**

<table>
<thead>
<tr>
<th>Diameter (D)</th>
<th>450 (mm)</th>
<th>600 (mm)</th>
<th>900 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>b</td>
<td>0.1</td>
<td>0.13</td>
<td>0.13</td>
</tr>
<tr>
<td>c</td>
<td>0.66</td>
<td>1.13</td>
<td>1.68</td>
</tr>
<tr>
<td>d</td>
<td>0.56</td>
<td>0.72</td>
<td>1.08</td>
</tr>
<tr>
<td>e</td>
<td>0.42</td>
<td>0.54</td>
<td>0.81</td>
</tr>
<tr>
<td>(min.)</td>
<td>0.25</td>
<td>0.5</td>
<td>0.45</td>
</tr>
<tr>
<td>h</td>
<td>0.52</td>
<td>0.69</td>
<td>0.96</td>
</tr>
<tr>
<td>f</td>
<td>0.26</td>
<td>0.47</td>
<td>0.71</td>
</tr>
</tbody>
</table>

**Concrete:**
- Volume in ft³/100: 0.26, 0.47, 0.71

#### Application
- Fair to poor subgrade condition;
- Overfill > 1/3 Diameter;
- Seasonal water flow only.

#### Remarks
- Use gravel material for backfill/overfill.

---

<table>
<thead>
<tr>
<th>Diameter (D)</th>
<th>450 (mm)</th>
<th>600 (mm)</th>
<th>900 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>0.15</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>b</td>
<td>0.1</td>
<td>0.18</td>
<td>0.15</td>
</tr>
<tr>
<td>c</td>
<td>0.45</td>
<td>1.12</td>
<td>1.65</td>
</tr>
<tr>
<td>d</td>
<td>0.56</td>
<td>0.72</td>
<td>1.06</td>
</tr>
<tr>
<td>e</td>
<td>0.42</td>
<td>0.54</td>
<td>0.81</td>
</tr>
<tr>
<td>(min.)</td>
<td>0.23</td>
<td>0.5</td>
<td>0.45</td>
</tr>
<tr>
<td>h</td>
<td>0.52</td>
<td>0.69</td>
<td>0.96</td>
</tr>
<tr>
<td>f</td>
<td>0.28</td>
<td>0.45</td>
<td>0.71</td>
</tr>
</tbody>
</table>

**Concrete:**
- Volume in ft³/100: 0.28, 0.45, 0.71

#### Application
- Fair to poor subgrade condition;
- Overfill > 1/3 Diameter;
- Seasonal water flow only.

#### Remarks
- Use gravel material for backfill/overfill.
### Profile III
**Concrete**

<table>
<thead>
<tr>
<th>Diameter (D)</th>
<th>450 (mm)</th>
<th>600 (mm)</th>
<th>900 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>0.15</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>b</td>
<td>0.1</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>c</td>
<td>0.86</td>
<td>1.12</td>
<td>1.48</td>
</tr>
<tr>
<td>d</td>
<td>0.56</td>
<td>0.72</td>
<td>1.28</td>
</tr>
<tr>
<td>e</td>
<td>0.42</td>
<td>0.54</td>
<td>0.81</td>
</tr>
<tr>
<td>f (min.)</td>
<td>0.23</td>
<td>0.3</td>
<td>0.49</td>
</tr>
<tr>
<td>g</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>h</td>
<td>0.25</td>
<td>0.69</td>
<td>0.96</td>
</tr>
<tr>
<td>i</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Concrete**

- Volume in (m³/m³)
  - 0.26
  - 0.47
  - 0.71

**Application**

- Fair to poor subgrade condition;
- Overfill > ½ Diameter;
- Seasonal water flow only.

**Remarks**

- Use gravel material for back/overfill.

### Profile IV
**Concrete**

<table>
<thead>
<tr>
<th>Diameter (D)</th>
<th>450 (mm)</th>
<th>600 (mm)</th>
<th>900 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>0.15</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>b</td>
<td>0.1</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>c</td>
<td>0.86</td>
<td>1.12</td>
<td>1.48</td>
</tr>
<tr>
<td>d</td>
<td>0.56</td>
<td>0.72</td>
<td>1.28</td>
</tr>
<tr>
<td>e</td>
<td>0.42</td>
<td>0.54</td>
<td>0.81</td>
</tr>
<tr>
<td>f (min.)</td>
<td>0.23</td>
<td>0.3</td>
<td>0.49</td>
</tr>
<tr>
<td>g</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>h</td>
<td>0.25</td>
<td>0.69</td>
<td>0.96</td>
</tr>
<tr>
<td>i</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Concrete**

- Volume in (m³/m³)
  - 0.57
  - 0.41
  - 0.92

**Application**

- Fair to poor subgrade condition;
- Overfill > ½ Diameter;
- Seasonal water flow only.

**Remarks**

- Use gravel material for back/overfill.
### Quantities Table

<table>
<thead>
<tr>
<th>Cross section</th>
<th>Dimensions</th>
<th>RED</th>
<th>Stone masonry (m³)</th>
<th>150mm GROUTED STONE PITCHING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>400 300 200 1800 4000</td>
<td>2.50</td>
<td>1.50</td>
<td>41.55</td>
</tr>
<tr>
<td>B</td>
<td>4000 3000 2000 1800 4000</td>
<td>50.50</td>
<td>1.42</td>
<td>20.53</td>
</tr>
<tr>
<td></td>
<td>3000 2000 1800 1800 4000</td>
<td>7.00</td>
<td>1.20</td>
<td>18.50</td>
</tr>
<tr>
<td></td>
<td>2000 2000 1800 1800 4000</td>
<td>10.00</td>
<td>1.30</td>
<td>25.50</td>
</tr>
</tbody>
</table>