

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WORKS, TRANSPORT AND COMMUNICATION



Good roads for national development

CONSTRUCTION OF THE KIGONGO – BUSISI BRIDGE (3,200 M) AND ITS ASSOCIATED APPROACH ROADS (1.66 KM), LOCATED IN MWANZA, TENDER NO. AE/001/2018-19/HQ/W/101

Clarification No. 2 to the Tender Documents

Date: 25th February 2019

Clarification No. 2 to the Tender Documents is issued in accordance with Clause 8.2 of the Instructions to Tenderers (ITT) of the Tender Documents for Construction of Kigongo – Busisi Bridge (3,200m) and its Associated Approach Roads (1.66 Km) Located in Mwanza, Tender No. AE/001/2018-19/HQ/W/101

QUESTION NO. 1:

(Previous Question No. 6 of Clarification No. 1)

According to SCC Clause 22, Recovery of Advance Payment, 20% of the amount of monthly Interim Payment Certificate beginning with the second certificate will be recovered. The bidder would like to know whether the advance payment shall be deemed as the first Interim Payment?

Response to Question No. 1

Response to Question No. 6 of Clarification No. 1 is hereby withdrawn and replaced with the following:

The advance payment is not deemed as interim payment certificate.

QUESTION NO. 2:

(Previous Question No. 18 of Clarification No. 1)

Is it allowed for bidder to design the temporary bridge by himself at bidding stage?

Response to Question No. 2

Response to Question No. 18 of Clarification No. 1 is hereby withdrawn and replaced with the following:

Refer response to Question No. 58 (of Clarification No. 1).

QUESTION NO. 3:

(Previous Question No. 40 of Clarification No. 1)

Please clarify if the Employer will provide the site office and construction camp for Engineer and contractor, if so what is the land location and area. Or the contractor has to rent the land by himself?

Response to Question No. 3

Response to Question No. 40 of Clarification No. 1 is hereby withdrawn and replaced with the following:

It is the responsibility of the Bidder to identify suitable location for site office, and construction camp for Engineer and contractor, in consultation with the Engineer. In case of renting, Bidders will have to obtain the approval of the Employer. Bidders' attention is also drawn towards Sub-Clause 1215 of the Standard Specifications.

QUESTION NO. 4:

(Previous Question No. 42 of Clarification No. 1)

In the BOQ item 12.01, there is a provisional sum for land acquisition. Please clarify whether it is the Employer or Contractor who will be responsible for the land acquisition. In case the Contractor has responsibility for land acquisition:

1) If acquisition of necessary land takes more than expected period, it will affect the commencement of the work. Who will be the responsible party if the land acquisition work delayed the project?

2) We doubt whether the Contractor is eligible for enforcement of negotiation with land owner. If not, land acquisition by the Contractor will be impossible.

Land for permanent works shall be provided by the Employer after all conditions cleared. So we think the scope of land acquisition shall be removed from BOQ. Please clarify it."

Response to Question No. 4

Response to Question No. 42 of Clarification No. 1 is hereby withdrawn and replaced with the following:

It is the responsibility of the successful Bidder to acquire land for borrow pits, contractor's camp, Engineer's facilities, etc., in consultation with the Engineer. If necessary, the successful Bidder can engage the services of a local Sub-contractor to assist with land acquisition matters. Bidders' attention is also drawn towards Sub-Clause 1215 of the Standard Specifications.

QUESTION NO. 5:

(Previous Question No. 73 of Clarification No. 1)

BOQ Item SS67.01: The quantity of structural steel in respect of temporary bridge is 49,190 t, which far exceeds the estimated quantity from the calculation of our company. Could you please check and confirm quantities?

Response to Question No. 5

Response to Question No. 73 of Clarification No. 1 is hereby withdrawn and replaced with the following:

As for the quantity of structural steel in temporary bridge, there are various conditions such as type of deck and girder, pile length etc. Considering longitudinal and transverse direction,

unit weight per area of temporary bridge is 1.16 ton/m² which is reasonable quantity in this type.

Based on response to Question No. 58, Bidders are allowed to propose under Option B alternative temporary bridge to suit their method of working.

QUESTION NO. 6:

(Previous Question No. 82 of Clarification No. 1)

Where is the specific location of quarry, borrow land and disposal area provided by the Employer? Have land use certificate been applied and relevant fees been paid?

Response to Question No. 6

Response to Question No. 82 of Clarification No. 1 is hereby withdrawn and replaced with the following:

Locations of quarries and borrow pits are shown in VOLUME 3A: Materials Report (For Information Only). It is, however, the responsibility of the successful Bidder to identify sources of suitable construction materials. It is also the responsibility of the Contractor to identify suitable disposal areas.

Regarding payments, these include:

- payment for land acquisition, which is refunded through BOQ Item 12.01. and*
- royalty fees for sand, aggregates, etc, about 3% of the value of these materials, which is payable by the Contractor to the respective authorities.*

For applicable royalty fees, Bidders are advised to contact the Mining Commission, to confirm the rates, using the following contacts:

Email: info@tumemadini.go.tz

Website: tumemadini.go.tz

Tel: +255 262 320 051

QUESTION NO. 7:

(Previous Question No. 85 of Clarification No. 1)

Temporary bridge not detailed in the Tender Documents. Will the successful Bidder be allowed to submit the drawings after contract award?

Response to Question No. 7

Response to Question No. 85 of Clarification No. 1 is hereby withdrawn and replaced with the following:

Yes.

QUESTION NO. 8:

(Previous Question No. 103 of Clarification No. 1)

Is the contractor allowed to change the construction method? e.g. temporary bridge.

Response to Question No. 8

Response to Question No. 103 of Clarification No. 1 is hereby withdrawn and replaced with the following:

Refer response to Question No. 58 (of Clarification No. 1).

QUESTION NO. 9:

(Previous Question No. 9 of Clarification No. 1)

(i) According to ITB 18.4, the Tender Security shall be in accordance with the Form of the Tender Security included in Section IX or another form approved by the PE. However, ITB 18.3 specifies that the Tender Security shall be in the form of: unconditional bank guarantees. Please clarify.

(ii) According to ITB 18.3, the Tender Security can be issued by a reputable bank in any eligible country. Please confirm whether the tender security issued in China is acceptable.

Response to Question No. 9

(i) Yes, the Bid Security shall be in the form of unconditional bank guarantee only. Also refer to response to Question No. 10 herewith.

(ii) A bid security issued by a reputable Bank in China complying with our format is acceptable.

QUESTION NO. 10:

(Previous Question No. 84 of Clarification No. 1)

The bank guarantee issued by many banks in China has its own fixed format, can you accept it? (Refer to format below of bank guarantee).

Form of Bid Security (Bank Guarantee)

[Guarantor letterhead or SWIFT identifier code]

Beneficiary:

[Insert name and address of the Employer]

Invitation for Bids No: *[Insert reference number for the Invitation for Bids]*

Date: *[Insert date of issue]*

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

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

We have been informed that *[insert name of the Bidder, which in the case of a joint venture shall be the name of the joint venture (whether legally constituted or prospective) or the names of all members thereof]* (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its bid (hereinafter called "the Bid") for the execution of *[insert description of contract]* under Invitation for Bids No. *[insert number]* ("the IFB").

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

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

(a) has withdrawn its Bid during the period of bid validity specified by the

Applicant in the Letter of Bid, or any extension thereto provided by the Applicant; or

(b) having been notified of the acceptance of its Bid by the Beneficiary during the period of bid validity,

- (i) fails to execute the Contract Agreement or
- (ii) fails to furnish the performance security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document.

This guarantee will expire: (a) if the Applicant is the successful Bidder, upon our receipt of copies of the contract agreement signed by the Applicant and the performance security issued to the Beneficiary upon the instruction of the Applicant; and (b) if the Applicant is not the successful Bidder, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the bidding process; or (ii) twenty-eight days after the Validity Period, which date shall be established by presentation to us of copies of the Letter of Bid and any extension(s) thereto, accompanied by the bidding document; or (c) three years after the date of issue of this guarantee

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

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

[signature(s)]

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

Response to Question No. 10

The format of the Bid Security (Bank Guarantee) provided in Section IX – Tender Forms, of the Tender Documents has been amended by adding the wording "This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758." – refer to **Item No. 1 of Addendum No. 3**. Bidders should adopt the amended format for Bid Security (Bank Guarantee). No other format will be accepted.

QUESTION NO. 11:

(Previous Question No. 129 of Clarification No. 1)

During processing of Bid Security, one important declaration was not found in the format provided in the tender documents according to the previous experience, i.e. "**The guarantee is subject to the Uniform Rules for Demand Guarantee, ICC Publication No. 758**". Therefore, should we add this paragraph?

Response to Question No. 11

Refer response to Question No. 10.

QUESTION NO. 12:

(Previous Question No. 133 of Clarification No. 1)

Concerning the tender security of this project, could you please clarify whether we can issue a tender security in the form that we have attached? (refer **Form of Bid Security as proposed by Bidder**).

Form of Bid Security as proposed by Bidder

[The Bank/Tenderer shall fill in this Bank Guarantee form in accordance with the instructions indicated in brackets.]

[insert bank's name, and address of issuing branch or office]

Beneficiary:

The Chief Executive,
Tanzania National Roads Agency (TANROADS),
Ali Hassan Mwinyi/Kawawa Roads Junction,
3rd Floor, Airtel House,
P. O. Box 11364
Dar es Salaam,
Tanzania.

Date: *[insert date]*

TENDER GUARANTEE No.: *[insert number]*

We have been informed that *[insert name of the Tenderer]* (hereinafter called "the Tenderer") has submitted to you its tender dated *[insert date]* (hereinafter called "the Tender") for the execution of *[insert name of Contract]* under Invitation for Tenders No. *[insert IFT number]* ("the IFT").

Furthermore, we understand that, according to your conditions, Tenders must be supported by a Tender Guarantee.

At the request of the Tenderer, we *[insert name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in figures expressed in the currency of the PE's Country or the equivalent amount in an international freely convertible currency]* (*[insert amount in words]*) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Tenderer is in breach of its obligation(s) under the tender conditions, because the Tenderer:

- (a) have withdrawn or modified our Tender during the period of tender validity specified in the Form of Tender;
 - (b) Disagreement to arithmetical correction made to the tender price;
- or

- (c) having been notified of the acceptance of our Tender by the BENEFICIARY during the period of tender validity, (i) failure to sign the contract if required by the BENEFICIARY to do so or (ii) fail or refuse to furnish the Performance Security or to comply with any other condition precedent to signing the contract specified in the tendering documents., in accordance with the ITT.

This Guarantee shall expire: (a) if the Tenderer is the successful Tenderer, upon our receipt of copies of the Contract signed by the Tenderer and of the Performance Security issued to you by the Tenderer; or (b) if the Tenderer is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of your notification to the Tenderer that the Tenderer was unsuccessful, or (ii) twenty-eight days after the expiration of the Tenderer's Tender. BUT IN ANY CASE, THIS GUARANTEE SHALL EXPIRE NOT LATER THAN 17/7/2019

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before THE EXPIRY.

Upon expiry, this Guarantee shall automatically become null and void whether or not it is returned to s for cancellation.

This Bond/Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 revision, ICC Publication No. 758.

[signature(s) of authorized representative(s)]

Response to Question No. 12

Refer response to Question No. 10.

QUESTION NO. 13:

(Previous Question No. 164 of Clarification No. 1)

The drawing for temporary bridge diagram (Page 31 of K7 Drawings) only shows the working area in the water during construction of the approach bridge, there are no details of the drilling platform and the quantity of works. Shall we design the drilling platform by ourselves, and should we add the cost of drilling platform in pile foundation construction cost or trestle construction cost?

Response to Question No. 13

Drilling platform is a part of temporary bridge (=trestle bridge). Hence, the cost of drilling platform is supposed to be included in the temporary bridge.

QUESTION NO. 14:

(Previous Question No. 177 of Clarification No. 1)

The estimated quantity of the Nyakasanga stone quarry, 8.6km away from the bridge start point, is 400,000m³ in the sub-clause 3.3.1 of "3A-Materials report" of page 8, while in the "DRAWING NO. 5 OF 5" of the "Appendix C borrow areas sketch map", the distance is 7km and the quantity is 135,000m³. The description of the estimated quantity for the same quarry between the two documents differs greatly. Please confirm which data should be adopted.

Response to Question No. 14

The quantity 135,000m³ is erroneously taken as quantity of borrow material but is actually the area of the borrow pit. Thus considering the area of 135,000m² and depth range of between 1.0 m and 3.0 m, the estimated quantity is 400,000m³.

Bidders' attention is also drawn towards Sub-Clause 3404 (b), 2nd paragraph of the Standard Specifications which stipulates as follows: "If, at any time during construction, it appears that the quality or quantity of material available in a borrow pit or quarry is inadequate or insufficient, the Contractor shall locate and make use of other borrow or quarry areas approved by the Engineer, irrespective of whether or not such other areas are shown on the plans for borrow pits or quarries."

QUESTION NO. 15:

(Previous Question No. 178 of Clarification No. 1)

Refer to the Bank Guarantee Format (See Question No. 84): Can you accept our Bank's request to add the words "This guarantee is subject to URDG758" to the text?

Response to Question No. 15

Refer response to Question No. 10.

QUESTION NO. 16:

Please provide the specifications of permanent pile casings (BOQ Item No. 61.27 a & b).

Response to Question No. 16

Refer response to Question Nos. 21 and 22 of Clarification No. 1.

QUESTION NO. 17:

Please provide the detail drawings of Access (BOQ Item No. 61.03a).

Response to Question No. 17

Refer to Clause 6104 ACCESS AND DRAINAGE of the Standard Specifications.

QUESTION NO. 18:

Please clarify whether or not if the quantity of BOQ Item SS67.01 a) ii) Temporary bridge, includes quantity for work platforms and access bridges of pile and pier construction.

Response to Question No. 18

The quantity is inclusive of the quantities for work platforms and access bridges of pile and pier construction as shown in the Drawings No. T004/DS/K7 025-036.

QUESTION NO. 19:

According to BOQ Item No. SS61.35 d), the Dynamic Load Test weight is 200KN. We consulted the domestic testing institutions and they have indicated that the weight is too big. We, therefore suggest that the drop weight be decreased to 20KN. Kindly confirm.

Response to Question No. 19

Refer to page 52 [Clause SS6113(vii)(3)] of the Special Specifications. The Dynamic Load Test weight of 200KN is correct.

QUESTION NO. 20:

According to BOQ Item No. SS61.35 f), the loading test weight is 10,000KN – D2500, which we consider to be too big. Please clarify.

Response to Question No. 20

Refer response to Question No. 122 of Clarification No. 1.

QUESTION NO. 21:

Refer to sub-clause 3.6 "..... Foreign firms shall be required to submit confirmation of eligibility from Tanzania statutory body at the time of submission." Of point 3 Eligibility of Tenderers, A. INTRODUCTION, IN SECTION II: INSTRUCTIONS TO TENDERERS, the required confirmation of eligibility only can be issued upon awarding letter of a specific contract, informed by the Contractors Registration Board (CRB). Please clarify if this confirmation shall only be submitted by successful foreign tenderer.

Response to Question No. 21

Refer response to Question No. 118 of Clarification No. 1.

QUESTION NO. 22:

BOQ Item No. 25.01 b): The quantity of grouted stone pitching (for Concrete chutes) is 8m². The quantity is considered to be insufficient to cover the work mentioned in the drawings. Please clarify.

Response to Question No. 22

Bidders should price as per the quantity provided in the BOQ.

QUESTION NO. 23:

BOQ Section 6500 – Prestressing:

(i) Please provide detailed drawings for jacking force and strands for the prestressed beams.

(ii) Please clarify on the unit of "MN-M" instead of using the unit of "N".

Response to Question No. 23

(i) Refer response to Question No. 47 of Clarification No. 1.

Jacking force is 0.8 fpu (1488MPa).

(ii) Refer response to Question No. 150 of Clarification No. 1.

QUESTION NO. 24:

BOQ Item No. 62.01 b) ii): The quantity of the formwork for Pier footings (Pier 1, 2, 65) is considered to be extremely large. Kindly clarify if there is a specific method for construction of the pier footings.

Response to Question No. 24

We have discovered that the query has arisen due to the incorrect description for the BOQ Item indication 3 piers instead of 65 piers. The error has been amended accordingly – refer **Item No. 2 of Addendum No. 3**. The BOQ quantity is for all the 65 piers and not 3 piers.

QUESTION NO. 25:

BOQ Section 7000: Testing and Quality Control (Included in Other Items): No items are mentioned in the BOQ concerning this section. However, it is mentioned in the Grand Summary. Kindly clarify if there is any missing items in the BOQ.

Response to Question No. 25

Refer response to Question No. 65 of Clarification No. 1.

QUESTION NO. 26:

BOQ SECTION 3800: STABILIZATION; Item 38.02

Shall the rate for the subbase course include the ordinary Portland cement or it's excluded to be priced in item 38.03? (Same case in Section 4100 and 4200).

Response to Question No. 26

(i) The bid rates for Item 38.02 (b) shall include the full cost for procuring, breaking down, placing, spreading and mixing the stabilizing agent, curing the stabilised sections, any extra water required, and all materials, supervision, labour, plant, equipment, tools and incidentals, compacting, testing the material and including the protection and maintenance of the layer.

The Bid rate for Item 38.03 (b) shall be for Ordinary Portland cement.

(ii) The BOQ Items SS41.01 and 41.03 are clear.

(iii) Similar explanation as provided under (i) above applies to BOQ Items 42.02 a) and b).

QUESTION NO. 27:

BOQ SECTION 5200: GUARDRAILS,
Item 52.04: End Units.

(i) Please clarify whether the end units are at the ends of the bridge on in the intersections.

(ii) Kindly mention the drawing for this item.

Response to Question No. 27

(i) The location of the end units is at the end of bridge on the median.

*(ii) Refer to drawings T004/DS/C-001 and Revision 02 of drawing T004/DS/Y-005 – Refer **Appendix 1 of Clarification No. 2** attached herewith. Drawing also issued in softcopy – pdf format.*

QUESTION NO. 28:

BOQ SECTION 6100: FOUNDATIONS FOR STRUCTURES

Is it acceptable to install the pile casing till it reaches the upper level of the rocks then cast the rest of the pile without casing?

Response to Question No. 28

In order to secure the stability of casing before casting concrete of pile, steel casing is required to penetrate rock. The penetration depth of casing depends on the quality of the

rock. Therefore, the Contractor shall get an approval for the penetration depth by the Engineer. The casting of piles without steel casing is not allowed.

QUESTION NO. 29:

T004-DS-ROADS: BOOK OF DRAWINGS

T004/DS/Y-005: Positioning detail at bridge

Please clarify what the 'End Block' refer to, as there are no details for this part of the bridge.

Response to Question No. 29

Refer response to Question No. 27.

QUESTION NO. 30:

SECTION III: TENDER DATA SHEET

ITB 34.1, Availability of Essential Equipment

(i) Item 34; Concrete pump truck with stinger; 60m³/hour

Please clarify if it is a pump or Batch plant.

(ii) Item 35; Concrete pump with stinger; 90 – 100 m³/hour

Please clarify if it is a truck pump or stationary pump or Batch plant.

Response to Question No. 30

(i) Item 34 is concrete pump truck with stinger; 60m³/hour.

(ii) Item 35 is concrete pump truck with stinger; 90 – 100 m³/hour.

QUESTION NO. 31:

Please clarify if the Contractor constitutes a joint venture, consortium or other unincorporated grouping of two or more persons it is acceptable to submit two bid securities on behalf of each part which corresponds with the percentage of participation.

Response to Question No. 31

Refer response to Question No. 173 of Clarification No. 1

QUESTION NO. 32:

BOQ Item SS65.01 c): Please provide the ultimate strength value of the vertical tendons (stress bar).

Response to Question No. 32

The ultimate strength of the vertical stress bar is 1030 MPa.

QUESTION NO. 33:

BOQ Item SS64.02 b): Please confirm whether the precast house for placing concrete of pile cap could be replaced with steel house.

Response to Question No. 33

At the bidding stage, the alternative is not allowed. However, the Contractor can change the type of PC-House, which has an equivalent or higher performance than original one, subject to approval of the Engineer.

QUESTION NO. 34:

Please consider the temporary support of the end segments as presented in drawing T004/DS/K7 019. For the temporary support to be executed, provision of piles and structures connecting to the PC House is required, but these are not included in the drawings. Also, the provisional access may not be enough for the operation. Please inform which pay item applies to these works if they will be required.

Response to Question No. 34

The value of the works should be included in the rates of the relevant Bill Items.

QUESTION NO. 35:

Referring to your Clarification No. 1 and Addendum No. 2 which we received on 19th February 2019, we found a lot of items should be taken into consideration during the study process to meet all your requirements. With consideration we had requested our clarifications on the pre-bid meeting and site visit on 21st January 2019. We therefore, by this letter request a time extension of 30 calendar days to get the opportunity to enhance our study to produce our best competitive offer.

Response to Question No. 35

The original submission deadline was extended from 19th February 2019, at 10:00 Hours to 5th March 2019, at 10:00 hours. Any further extension of the deadline for submission of tenders is not possible – Refer Section III: Tender Data Sheet, ITB 22.3.

QUESTION NO. 36:

We request you to consider an extension of the Bid Submission deadline to 4th April 2019. This is due to the fact that some issues are still to be clarified from you. Also we need more time to submit a reasonable method statement and price proposal.

Response to Question No. 36

Refer response to Question No. 35.

QUESTION NO. 37:

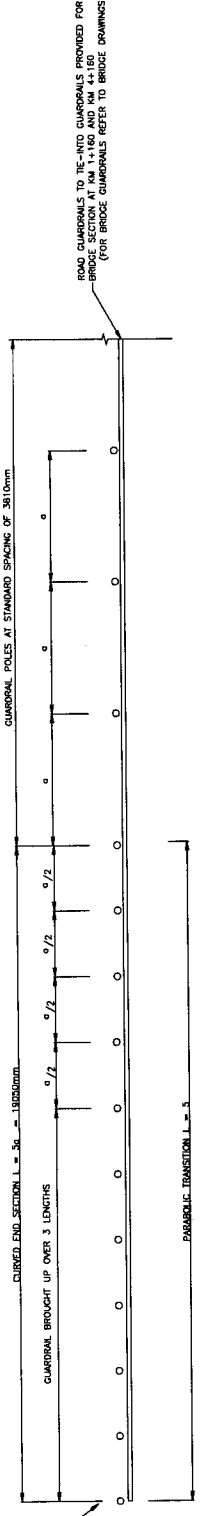
Due to the big magnitude and complexity of this project, and in order to prepare the most competitive proposal, we hereby kindly request for an extension of two (2) weeks of the Bid Submission Deadline for the project, to March 2019.

Response to Question No. 37

Refer response to Question No. 35.

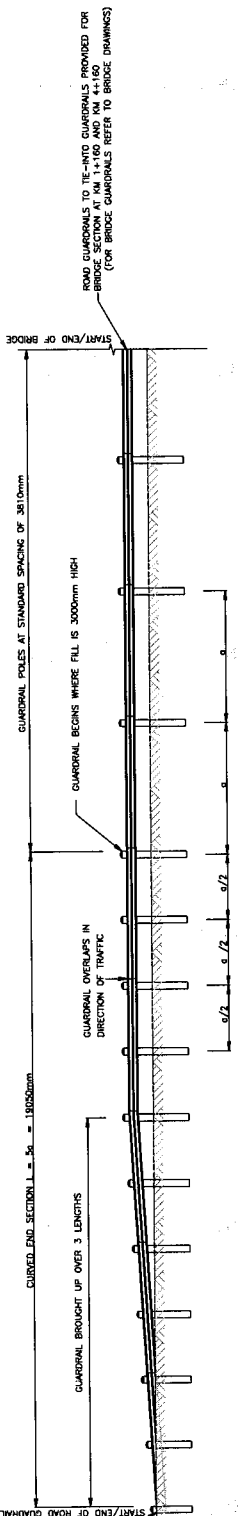
Appendix 1 of Clarification No. 2

NOTES:
 1. $\sigma = 3810\text{mm}$ (NORMAL SPACING OF POLES)
 2. GUARDRAILS TO BE OFFSET BEHIND BACK OF ROAD KERBS



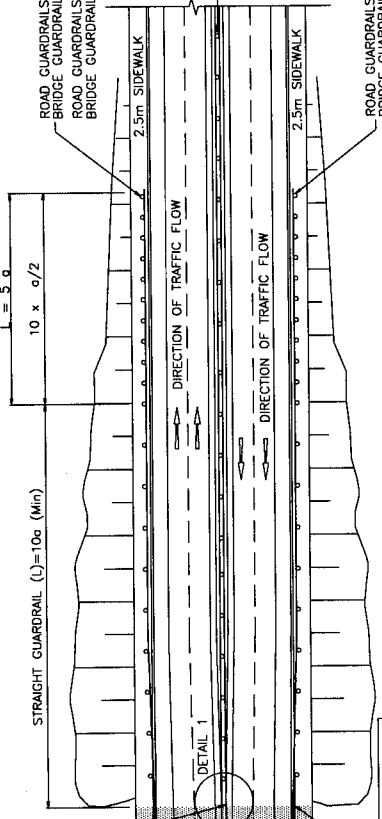
PLAN: TYPICAL DETAIL OF BEGINNING AND END OF ROAD GUARDRAILS ON HIGH FILLS
 SCALE 1:50

NOTES:
 1. $\sigma = 3810\text{mm}$ (NORMAL SPACING OF POLES)
 2. GUARDRAILS TO BE OFFSET BEHIND BACK OF ROAD KERBS



FRONT ELEVATION OF ROAD GUARDRAILS
 SCALE 1:50

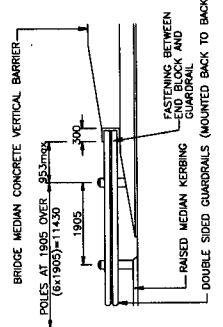
ROAD GUARDRAILS TO TIE WITH BRIDGE GUARDRAILS
 TIE MEDIAN BACK TO BACK GUARDRAILS TO START OF BRIDGE MEDIAN VERTICAL CONCRETE BARRIER AT KM 1+160 AND END OF BRIDGE KM 4+160 (SEE DETAIL 1)



NOTES:
 1. $\sigma = 3810\text{mm}$ (NORMAL SPACING OF POLES)
 2. ROAD GUARDRAILS APPLICABLE ONLY WHERE FILL IS HIGHER THAN 3000mm AND THROUGHOUT THE ROAD MEDIAN
 3. ROAD MEDIAN GUARDRAILS (DOUBLE SIDED) TO TIE-INTO BRIDGE MEDIAN VERTICAL CONCRETE BARRIER
 4. ROAD GUARDRAILS TO BE OFFSET BEHIND ROAD KERB

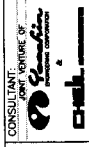
DUAL CARRIAGEWAY ROAD
 SCALE 1:250

MIN LENGTH OF GUARDRAIL (EXCLUDING THE END SECTION)	DESIGN SPEED	MIN LENGTH	BS
100	100	100	BS



DETAIL 1: ROAD MEDIAN (DOUBLE SIDED) GUARDRAILS TIE-INTO BRIDGE MEDIAN VERTICAL CONCRETE BARRIER
 SCALE 1:40

CLIENT: THE UNITED REPUBLIC OF TANZANIA
 MINISTRY OF WORKS, TRANSPORT, AND COMMUNICATION
 TANZANIA NATIONAL ROADS AGENCY (TANROADS)



CONSULTANT SERVICES FOR FEASIBILITY STUDY, ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT, DETAILED ENGINEERING DESIGN AND PREPARATION OF TENDER DOCUMENTS FOR CONSTRUCTION OF KICONGO/BUSISI BRIDGE (3.200m) AND ITS APPROACH ROADS IN MWANZA, CONTRACT NO. TRD/HQ/1017/2016/17

Rev.	Date	Modification	Designed	Drawn	Checked	Approved
01	14/12/2016	FOR CONSTRUCTION	S.S.S.S.S.	S.S.S.S.S.	K. M. M. M. M.	M. M. M. M. M.
02	21/02/2019	REVISED DETAILS				

GUARDRAIL ERECTION DETAILS
 DRAWING No: TOA/05/7-005
 SCALE: AS SHOWN
 DATE: 21 FEBRUARY, 2019