TERMS OF REFERENCE FOR CONSULTANCY SERVICES FOR DESIGN REVIEW AND SUPERVISION FOR REHABILITATION OF MAKAMBAKO – SONGEA ROAD (209KM); LOT 3: RUTUKILA - SONGEA SECTION (95.188 KM) AND SONGEA BYPASS (16 KM)

1.0 INTRODUCTION

The Government of the United Republic of Tanzania has received Financing from the World Bank towards the cost of the Tanzania Transport Integration Project and intends to apply part of the proceeds of this Credit to eligible payments under the Contract for Consultancy Services for Design Review and Construction Supervision of Works for Rehabilitation of Makambako – Songea Road (209 km); Lot 3: Rutukila - Songea Section (95.188 km) and Songea Bypass (16 km). The Road Improvement is part of the Government Strategy to develop its road network to support the Socio-economic development of Tanzania.

1.1 The Project is located in Ruvuma Region in the Southern part of Tanzania. The Rutikila - Songea Section (95.188 km) and Songea Bypass (16 km) forms part of T6, which connects Songea with Makambako Town and is a major link between the southern highlands regions and northern regions and passes through agricultural productive areas of Timber/woods, Maize and Tea, bananas, vegetables as well as livestock and dairy products. The road is also a good link between the southern regions to the Central Regions. The road Section starts at Rutikila and ends at Songea Township. The total length of the Project is 111.188 km including the Songea Bypass of 16 km. The implementation of the project is intended to enhance economic growth by reducing transport costs and travel time as well as stimulating tourism, agriculture, forestry, mining and fishery along the project area of influence.

1.2 The construction of the road in its present alignment was completed in 1986 to bitumen standard using 200mm thick lime stabilized base course with double sealed surface dressing wearing course at Makambako - Hagafilo section and 150mm thick lime stabilized base course with single sealed surface dressing wearing course at Hagafilo - Songea section.

1.3 Currently the road has deteriorated drastically due to long age despite of efforts that are carried out by TANROADS in Ruvuma region to maintain and repair it. Typical defects include severe potholes, rutting deformation, corrugations, extensive cracking (alligator cracks) and depressions. The present general condition of the road section varies from fair to poor and is passable throughout the year. The route follows the existing paved trunk road traversing through a number of villages and centres. The maintenance operations carried out at the moment on this road are Routine/Recurrent and Periodic Maintenance, involving vegetation control and de-silting of drainage structures on the existing road alignment.

1.4 Rehabilitation of Rutukila - Songea Section (95.188 km) and Songea Bypass (16 km) to bitumen standard is a key component of the implementation of the Transport Integration Project. The road rehabilitation

will provide an important catalyst in reducing poverty, transport cost and spur economic growth in the project area, The roads also connect areas with variety of potential economic opportunities such as agriculture, livestock, forestry & minerals, and wildlife & tourism.

1.5 The project will consist of rehabilitation and upgrading to Asphalt Concrete, both the carriageway and shoulders on the entire length of road section as follows:

- Rehabilitation of 95.188 km by re-working and stabilizing the existing pavement, placing new crushed aggregate base and 50mm asphalt concrete surfacing;
- Improvement of drainage by replacing some old culverts with new larger size ones, extending some culverts and bridges to cover the improved pavement layers and excavation of a flood diversion channel.
- Appropriate road safety measures to slow down traffic in built-up areas and to allow safe pedestrian crossing.
- Introduction of climbing lanes at terrains with steep gradients.
- Improvement of vertical and horizontal alignments of the road as whole

1.6 The original design was done in 2013 by M/s Beomhan Engineering & Architects Co. Ltd, and the original Environment and Social Assessment (ESIA) and Resettlement Action Plan (RAP) was done in 2014, by an independent firm, **M/s Beza Consulting Engineers Ltd**. Further to fully incorporate and update the recommendations of the Design Review in the ESIA, and RAP TANROADS Safeguards Environment and Social Consultants updated the ESIA and RAP in January, 2019. This RAP and ESIA documents have been disclosed to public and are available on the Bank website.

1.7 The pavement is designed using the Ministry of Works, Pavement and Materials Design Manual 1999 (PMDM) and the South African Mechanistic Pavement Design Method (SAMPDM). The design has resulted into the following pavement including improved subgrade layers: -

- 50mm thick Asphalt Concrete Wearing Course Class SP 12.5 using PG 70-22 performance grade bitumen (maximum aggregate size 12.5mm);
- MC-30 Cut-back bitumen for priming of carriageway and shoulders;
- 150mm Base Course (CRR),
- Stabilized layer, Material Class C2 (150mm thick) for subbase;

- Stabilized layer, Material Class C1 (150mm thick) for subbase;
- Fill as Appropriate

1.8 A qualified Consulting Engineering Firm (the Consultant) will be required to undertake Consultancy Services for Design Review and Construction Supervision for Rehabilitation of Lwagu – Songea Road (209 km); Lot 3: Rutukila - Songea Section (95.188km) and Songea Bypass (16 km) as the Client's Representative pursuant to these Terms of Reference (TOR).

1.9 Tenders for the rehabilitation works are under process and the rehabilitation period is estimated to be 36 months excluding the 12 months Defects Notification Period. The works contract will be implemented under the "General Conditions" which form part of the "Conditions of Contract for Construction for Building and Engineering Works Designed by the Client ("Red book") Second edition 2017" published by the Federation Internationale Des Ingenieurs – Conseils (FIDIC) and "Particular Conditions" which comprise of the Bank's COPA and the amendments and additions to such General Conditions.

2.0 OBJECTIVES OF THE ASSIGNMENT

The objective of this assignment is to undertake Consultancy Services on behalf of the Tanzania National Roads Agency (TANROADS), for the Design Review and Construction Supervision for Rehabilitation of Rutukila - Songea Section (95.188 km) and Songea Bypass (16 km).

The specific objectives of the Consultancy Services are:

(i) to carry out design review to ensure correctness, completeness and compliance with the internationally acceptable standards and update where necessary and also taking into account Safe System Approach concept and Climate resilience perceptive,

(ii) to carry out Supervision of the works contract to ensure that the works comply with the approved design, drawings, specifications, conditions of contract, sound engineering practice; and project environmental, social, and health and safety (ESHS) requirements,

(iii) Review the existing design from the climate resilience perceptive, and

(iv) to carry out the supervision of repair activities as well as the implementation of activities included in the snag list of construction during the Defects Notification Period.

3.0 SCOPE OF SERVICES

The scope of the assignment consists of Design Review and Supervision of Rehabilitation to Asphalt Concrete (AC) standard both the carriageway and shoulders for the entire length of 111.2 km of Rutukila - Songea Section and Songea Bypass.

3.1 Design Review

The Consultant shall perform all the required updates from the finalized design including update of the cost (Engineer's Estimate) and ESIA reports done by **M/s Beomhan Engineering & Architects Co. Ltd** in 2013. In particular the Consultant shall review all the available and relevant documents including Design report, maps, drawings, previous studies if any and perform the updates to the Detailed Engineering Design, Environmental and Social Impact Assessment including an Environmental Management Plan, Resettlement Action Plan (RAP) by taking into account recommendations of the Client, IDA and compliance with the National Environmental Management Council (NEMC) Guidelines and the Land Acts No. 4 and No. 5 of 1999.

The purpose of this review is to ensure that the documents and data are correct, complete and conform to the internationally acceptable standards, IDA and National guidelines. The Consultant shall in particular also review the following: -

(i) survey data on site to verify the correctness of the Survey data and where necessary correct the survey data and the design accordingly,
(ii) carry out a thorough study/review of the terrain and traffic at the major centres and Pavement layers,
(iii) Drainage structures and their climate change adoption, Subsoil drains, Erosion checks for drains,
(iv) geometrical design including Walkways, Bus bays and Truck lay bay areas along the route and Intersections type and design warranted based on, among other factors, the traffic volumes and turning movements at the intersections as provided road in the Geometric Design Manual,
(v) service roads at the major centres for safeguard segregation of traffic, pedestrians and cyclists,
(vi) undertake stage 3 Road Safety Audit
(vii) Signs and Road markings, Kerbs, Speed humps / rumble strips / raised pedestrian crossings, Guardrails in terms of a crash performance based on the design vehicle and length of needs,
(viii) Illumination at the major centres,
(ix) Review climbing lanes and determine appropriate locations for their provisions
(x) The Consultant is also required to incorporate the RSSAT (Road Safety Screening Appraisal Tool) output which will be provided by the TANROADS HQ, and propose mitigation measures for incorporation in the reviewed design,
(xi) Updated Bills of Quantities (BOQ), if any;
(xii) Safeguards Compliance in line with WB ESF requirements,
(xiii) Review the available data and climate change projections for the project area with regards to the hydrological and geological conditions to ensure adequacy of proposed drainage systems,
(xiv) Study effects of climate change including effects of increased rainfall, unusual storms leading to flooding, higher temperature due to global warming etc. on the road profile, road pavement and cross drainage structures during their design life and propose appropriate remedy works. The Consultant is required to consider environmental aspects and the climate change aspects in finalizing the design review,
(xv) Review of the vertical profile in consideration of climate change impacts

particularly from the drainage aspects in terms of minimum longitudinal slope, minimum cross- slope, height of embankment etc,

(xvi) Verify the hydraulic capacity of existing bridges and drainage structures along the project road, and to determine the requirements for the longitudinal drainage system,

(xvii) Review pertinent data and historic rainfall data to determine various risk scenarios based on pertinent aspects such as overall risk of failure for drainage structures. Flood Return periods for the design of culverts and bridges will be taken in accordance with the design standards with particular attention to sections prone to flooding or damage during rainy,

(xviii) Review the catchment area, adopted runoff coefficients based on topography, permeability of soil and vegetation cover, and

(xix) Review the analysis performed to compute design discharge, design HFL and various other hydraulic parameters, i.e. water way, scour depth, free board for bridges, size of roadside drains to guide the runoff to nearby culverts/bridges, etc. given in the detailed design report and compare with the data collected from site investigation and propose appropriate intervention measures.

(xx) Collect NMT data by having accurate data on pedestrians and non-motorized users to support more effective road safety and street function design interventions (including non-motorized transport facilities). The Consultant should also take into consideration counting of the public transport traffic in the road project for purpose of improving provision of public transport facilities in the design.

3.2 Supervision of Rehabilitation Works

The Consultant shall be fully responsible for the supervision of the rehabilitation works in accordance with the FIDIC Conditions of Contract. The Consultant shall, in general, exercise the powers of the Engineer in all matters concerning the contract and the execution of the works. He shall supervise the construction works with due diligence, efficiency and in accordance with sound technical, administrative, financial, socially responsive, environmentally sound and economic practices. He shall perform all duties associated with such tasks to ensure that only the best construction practices are followed and that the final product is in all respects equal to, or better than that specified, at the most economic costs and is carried out in full compliance with the governing specifications.

In particular, the Consultant’s duties and responsibilities shall include but not be limited to:

(i) Locate the camp sites in areas which minimize disruption to local population, fauna and flora, water courses, provide adequate drainage facilities, treatment of sewage and waste disposals. The camp areas should be dismantled and rehabilitated once the construction project is completed;

(ii) Receive, analyze and approve the Contractor’s program of works prior to the commencement of construction activities. The Consultant shall provide appropriate and timely inputs to the program where required to

ensure that construction works are implemented using effective, and realistic plans and schedules.

(iii) Receive and reviews the contents and amounts of all relevant Insurance Certificates submitted by Contractor as required by the Works Contract and advise the Client accordingly

(iv) Check and establish that the contractor mobilizes staff and supplies to the contract all plants, equipment and machinery that have been committed under the Works Contract and ensure that all such items of plants, equipment and machinery are calibrated, as required and remain on the construction site until their release has been authorized;

(v) Receive and verify the Registration Cards of key equipment and plants mobilized on site by Contractor for execution of Works before submitting the same to the Client.

(vi) Study/review the design, ESIA, RAP and contract documents, and other relevant documents prepared by the Contractor and advice the Client of any deficiencies or necessary improvements that are identified or deemed necessary for the successful implementation of the project. All design changes that affect the quality, scope, cost or completion period of the works are subject to prior consultation and approval from the Client.;

(vii) At all times take necessary measures and provide appropriate advice to TANROADS to enable the construction contract to be completed in a timely and cost-effective manner, in conformity with the contract conditions and specifications;

(viii) Satisfy himself thoroughly of the nature and scope of the works, of all information and documents available, the materials and equipment to be used by the contractor in executing the works as to enable him to perform his duties satisfactorily, study and check all documents associated with the projects, foresee possible problems and advise TANROADS appropriately during the construction and repair (Defects Notification) Period;

(ix) Identify and mark all utilities with the help of the responsible authorities and assist TANROADS in effecting the removal/relocation (where necessary) of utilities within the right of way;

(x) Liaise with the respective Regional Authority to ensure that the assessment and compensation of crops and buildings including temporary structures and fences, if any, within the right of way is done before the contractor is given possession of site;

(xi) Identify and locate all beacons and benchmarks, confirm their compatibility with the designs, cause Contractor to re-establish the

missing ones where needed in accordance with the works requirements and agreed specifications and hand over to the contractor before commencement of the works to enable the contractor set out and construct the works;

(xii) Inspect, test and approve all materials and completed works to ensure compliance with technical specification requirements;

(xiii) Review and approve all road safety measures, including road detours/deviations, safety controls and signs, training, and monitoring; and should undertake inspections on adequacy of road safety measures and make recommendations for changes or improvements as needed,

(xiv) Undertake Construction-stage (during roadworks) Road Safety Audits (RSAs) at least four (4) times during the construction period. These RSAs shall be conducted randomly, however, mainly during major roadworks. The RSAs must place special emphasis on safety of vulnerable road-users (e.g., pedestrians, cyclists, etc.) through roadwork sites. The consultant shall notify the Client in advance of conducting the RSAs so that the Client can nominate staff to attend the same. The RSA report shall be prepared by the Consultant and shared with the Client within 15 working days of the completion of the RSA. The consultant shall organize a meeting with the Client and the Contractor to discuss the findings and recommendations of the RSA.

(xv) Keep updated all records including reports, works diaries, correspondence, instructions given to contractor(s), test records, measurement and quantity calculations, payment records and all other relevant documents pertaining to the works operations and supervision contracts;

(xvi) Prepare consolidated monthly reports on physical and financial status, site meetings, contractual matters, etc., with recommendations for action by TANROADS. The reports shall be submitted in hard and soft copies;

(xvii) Review and approve Management Strategies and Implementation Plans (MSIP) to manage the (ESHS) risks and monitor their implementation. The MSIP shall include but not limited to:

a) Traffic Management Plan to ensure safety of local communities from construction traffic;
b) Water Resource Protection Plan to prevent contamination of drinking water and manage the extent of usage by the Contractor for construction purposes. The plan should also outline the process for effluent and water discharge quality monitoring;
c) Chance find procedure that outlines the actions to be taken if previously unknown cultural heritage is encountered;

d) Waste Management Plan to provide guides for reducing, handling, and disposing of waste during construction or land-clearing;
e) Material source, borrow pit and quarry management plan;
f) Boundary Marking and Protection Strategy for mobilization and construction to prevent offsite adverse impacts;
g) Strategy for obtaining Consents/Permits prior to the start of relevant works such as opening a quarry or borrow pit;
h) Gender based violence, sexual exploitation and abuse, and sexual harassment (GBV/SEA/SH) prevention and response action plan;
i) Grievance Redress Mechanism;
j) Health and Safety Management Plan, to ensure health and safety of workers; including use of protective clothing; HIV/AIDS and COVID-19 awareness and prevention, including sensitization and counselling; drug and substance abuse, and avoidance of child labour and child abuse.

(xviii) Management of Labour Influx and use of local labour.

(xix) Direct and monitor the implementation of traffic safety and HIV/AIDS Sensitization campaigns & programs,

(xx) Perform routine and periodic comparison between the works' schedules and the actual progress of works, and cause the Contractor to review the program whenever the previous program is inconsistent with the actual works on site or with the Contractor's obligations

(xxi) Prepare control charts of the main activities and a project master schedule, indicating both past performance and forecasts for completion including time involved in each case;

(xxii) Measure quantities of works satisfactorily carried out and certify monthly and final payment certificates for consideration by TANROADS. Monthly certificates to be submitted to the Client for payment shall include the total cost of the works executed in foreign and local currency;

(xxiii) Record, examine and evaluate all claims submitted by the Contractor and submit timely recommendations thereof for consideration by TANROADS. The Consultant's claims report to the Client is expected to include at least the following information:

(a) Description of the claim

(b) Source and reason of the claim

(c) Consultant's opinion on the legitimacy and the scope of the claim

(d) Consultant's conclusions and recommendations on the claim.

(xxiv) When the implementation of the civil works contract reaches a value of 80% of the initial construction contract, the consultant shall prepare and

submit a detailed progress report with updated cost of the civil works contract, implementation schedules and substantiate any request related to additional funding, is such needed to full completion of the project;

(xxv) Determine the unit rates for new items of Works in the contract and submit to TANROADS for approval;

(xxvi) Once the roadworks for the entire road corridor is on the verge of completion or completed, the consultant, in close collaboration with the Client, shall undertake a pre-opening stage Road Safety Audit (RSA) to identify any road features or deficiencies which may lead to hazardous situation. An RSA report shall be prepared by the consultant and shared with the Client within 15 working days of the completion of the RSA. The consultant shall organize a meeting with the Client and the Contractor to discuss the findings and recommendations of the RSA.

(xxvii) Prepare and submit to the Client the Final Report at Substantial Completion and Final Completion Reports at the end of the Defects Notification Period

(xxviii) Prepare and submit to TANROADS the final account of executed works;

(xxix) Review and approve the as-built drawings;

(xxx) The Consultant may, with prior consultation with TANROADS effect changes that will improve design or specification for the works. Such changes shall not increase the contract time nor shall the increase in contract sum resulting from such changes exceed a percentage to be agreed with TANROADS;

(xxxi) The Consultant shall prepare a Supervision Manual which will lay out procedures to be followed during the execution of the works. The Manual will also serve as a basis for on-the-job training of TANROADS staff if any or any visiting students during the implementation of the works contract;

(xxxii) Maintain a site diary on a daily basis with the contents and format to be agreed with TANROADS;

(xxxiii) Organizing and undertaking on the job training for qualified counterpart engineers. The engineers will be seconded to the Consultant by Client during the execution of the works contract. The training will include apart from others, all aspects of supervision of road works contracts, contract works scheduling, quality control of completed works, setting out and measurement, including preparation of as-built drawings and final report.

(xxxiv) Provide appropriate instructions to Contractor in order to protect, store or secure a part of the completed or on-going works against any serious deterioration, loss or damage

(xxxv) The Consultant shall provide any other additional services if so requested by the Client, at rates and under conditions to be mutually agreed which fall within general ambit of these terms of reference.

(xxxvi) The Consultant shall ensure that the Contractor's ((Environmental, Social, and Health and Safety - ESHS) ESHS performance is in accordance with TANROADS Environmental, Social, and Health and Safety (ESHS) Code of Conduct (accessible through **https://www.tanroads.go.tz/policies**), Contractor's ESHS obligations and good international industry practice. The ESHS related services include but are not limited to: -

a) Review and approve the Contractor's Environment and Social Management Plan (C-ESMP) prior to any construction works, including all updates and revisions (within a reasonable time and prior to any significant works that would be covered by the proposed material changes) in consultation with the Environmental, HS or Social specialists of TANROADS;

b) Monitor the implementation of the Contractor's ESHS requirements, including impact mitigation and monitoring measures, during the construction of the works,

c) Review and approve ESHS provisions of method statements, implementation plans, GBV/SEA prevention and response action plan, drawings, proposals, schedules and all relevant Contractor's documents;

d) Review and consider the potential ESHS risks and impacts of any proposed design change proposals and advise if there are implications for compliance with ESIA, C-ESMP, consent/permits and other relevant project requirements;

e) Undertake audits, supervisions and/or inspections of any sites where the Contractor is undertaking activities related to the Works, to verify the Contractor's compliance with ESHS requirements including its Gender Based Violence (GBV)/ Sexual Exploitation and Abuse (SEA) obligations, with and without contractor and/or client relevant representatives, as necessary, but for GBV related issues not less than once per month,

f) review the Contractor's EHS workers training and related materials and activities related to workers whom predominate language is Swahili,

g) Develop and maintain ESHS checklists and supervision reports related to audits and inspections related to Contractor's ESHS compliance and performance,

h) Routinely review and undertake audits and inspections of Contractor's worker EHS training records, accident logs, community liaison records, EHS inspection and monitoring findings and other ESHS related documentation, as necessary, to confirm the Contractor's compliance with ESHS requirements;

i) Promptly report any identified non-compliance issues to Construction Contractor and TANROADS and work with these entities to define acceptable remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor's ESHS obligations remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor's ESHS obligations;

j) In the case of any significant or material ESHS incident (such as death or seriously accident, significant spill, pandemics like COVID 19 etc.), report within one day of knowledge of such event to TANROADS and work to define acceptable remedial actions to investigate, remediate and prevent such events in the future (see Section 6.1 for related reporting),

k) In relation to all significant material and service providers to the Contractor (such as sites/provides of road base and fill materials, construction waste disposal services and sites), undertake site visit and assessment of such material and service providers in terms of potential significant ESHS issues

l) Ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree appropriate actions to ensure compliance with ESHS obligations;

m) Review and critique, in a timely manner, the Contractor's ESHS documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;

n) Undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ESHS issues

o) On behalf of TANROADS, establish and maintain a grievance redress mechanism with support of the Contractor, including types of grievances to be recorded and how to protect confidentiality e.g. of those reporting allegations of GBV/SEA.

p) Ensure any GBV/SEA instances and complaints that come to the attention of the Consultant are registered in the grievance redress mechanism,

q) Prepare and submit to TANROADS, as part of monthly progress report, issues on ESHS project construction compliance and performance (see Section 6 for details)

r) Upon completion of project construction or closure of any specific work area or camp site, perform an inspection of such site/area to ensure Contractor compliance with ESHS requirements and

whether there are any existing unmitigated ESHS impacts, and if issues are identified then promptly notify the Contractor and TANROADS and work with such entities to define acceptable remedial actions to resolve all issues

3.3 Defects Notification Period

The Consultant shall supervise maintenance of the works (including the administrative aspects of the works) during the Defects Notification period. For the purposes of fulfilling Consultant's obligations during the Defects Notification Period, the Road Safety Engineer is expected to undertake post construction Road safety Audit while the Resident Engineer is expected to carry out inspection of the works and subsequently prepare and issue the final certificate. During this period the Consultant shall be expected to draw the attention of the Contractor to any defects as soon as such defects are noticed and shall supervise the subsequent remedial works. As the Defects Notification Period for the Contract is 12 months, a total of three (3) inspections will be carried out in an interval of 4 month's time intervals during the 12 month period (each inspection visit shall be extended for a maximum period of seven (7) calendar-days consecutively) after Substantial completion of the works and any deficiencies noted along the road and its remedial measures be proposed to the Contractor. Depending on the nature of deficiency, repair work will be carried out under the Consultant's supervision. The Consultant will be required to submit the inspection report to the Client. At the end of the 12 month Notification Period, the Consultant will do inspection and confirm that the Contractor has completed Works ready for joint inspection and handover. A final inspection will be carried out under the supervision of the Resident Engineer who will prepare and sign the Inspection Report and distribute to the Contractor, TANROADS HQ and Regional Manager - Ruvuma Region for joint verification.

3.4 Training

The Consultant shall organize and undertake theoretical and on-the-job training for a maximum of three engineers. The engineers will be seconded to the Consultant by TANROADS during the execution of the works contract. The training will include, among others, all aspects of supervision of road works contracts; construction works scheduling, quality control of works, setting out and measurement, including preparation of as-built drawings and final report.

4.0 CONSULTANT'S PERSONNEL

4.1 Key Staff

The professional staff to be provided by the Consultant is estimated at **364 person-month** covered by the services of: Resident Engineer, Pavement /Materials Engineer, Highway Engineer, Topographical Surveyor, Bridge/Drainage Engineer, Road Safety Engineer, Environmentalist, Sociologist, Hydrologist, Quantity Surveyor and Health and Safety Officers. The Consultant shall provide the above-mentioned key professional staff with academic and professional qualifications and experience to recognize and to deliver good international industry practice with respect to the supervision of civil works, Environment, Social Sexual Exploitation and Abuse (SEA) and Gender Based Violence (GBV) requirements in order to fulfill

the objectives of the services and for which he/she will receive remuneration as specified in the Contract Document.

The Consultant shall employ only such key staff whose CVs have been approved by the Client. In addition to the expert personnel, the Consultant shall determine the support staff to assist with on-site supervision of the works.

The Consultant must provide in the proposal CVs and copies of highest education certificates for all professional and technical staff including the duration in man-months during which the staff will be deployed under the Contract.

The key professional staff input to be provided by the Consultant is estimated at **364 person-months**.

The desirable inputs of Key Staff are provided as follows: -

Stage	**Estimated Staff months Design Review and Supervision for Rehabilitation of Makambako – Songea Road (209 km); Lot 3: Rutukila - Songea Section (95.188 km) and Songea Bypass (16 km)**	
A	**During Design Review**	
	Key Position	**Staff Month**
1.	Team Leader/Resident Engineer	4
2.	Highway Engineer	3
3.	Bridge/Structural Engineer	3
4.	Hydrologist/Drainage Engineer	3
5.	Road Safety Engineer	3
6.	Topographical Surveyor	3
7.	Quantity Surveyor	3
8.	Environmentalist	2
9.	Sociologist	2
	Sub-Total 1	**26**
B	**During Construction Supervision**	
	Key Position	**Staff Month**
1.	Resident Engineer	36
2.	Highway Engineer	34
3.	Pavement/Materials Engineer	35
4.	Bridge/Structural Engineer	28
5.	Road Safety Engineer	35
6.	Topographical Surveyor	35
7.	Environmentalist	30

8.	Sociologist	30
9.	Health and Safety Officer	34
10.		
	Sub-Total 2	**332**
C	**During Defects** Notification **Period**	
	Key Position	**Staff Month**
1	Resident Engineer	3
2	Road Safety Engineer	3
	Sub-Total 3	**6**
	TOTAL	**364**

4.2 Back up Staff

Project Director: The Project Director shall provide overall direction of the project, co-ordinate design review, guide and support the site supervision staff and liaise with the Client for the duration of the project. He shall be based at the Consultant's head office and shall co-ordinate any specialist services that may be required from the Consultant.

4.3 Staff Qualifications and Requirements

4.3.1 Staff Requirement during Design Review

The Design review shall be carried out by the following key professional staff:

(i) Team Leader/ Resident Engineer (K-1):

She/he must be a registered Professional Engineer with a degree in Civil Engineering. Postgraduate qualification in Highway Engineering is added advantage. She/he must have a minimum of fifteen (15) years of cumulative experience related to road/bridge design and construction. She/he must have served as a Team Leader/Resident Engineer or equivalent capacity in at least three (3) road construction projects of similar magnitude and complexity in the last ten (10) years. A working experience in Sub-Sahara countries of at least 3 years is required. She/he should be able to write and speak in English. She/he shall be the head of the site staff and shall be responsible for all technical and administrative aspects on site.

The responsibility of the Team Leader during the design review would include the following:

- Lead the design review task team,
- Ensure all deliverables are prepared in accordance with quality and time constraints,
- Organize the design review meetings with the relevant designers for the verification of design outcomes at each respective stage of completion of the detailed design review,

- Establish appropriate road/bridge construction design standards,
- Manage and supervise the review of all plans including traffic diversion plan, public utility relocation plan, construction plan and safety plan,
- Manage and supervise the review of bridges and other drainage structures,
- Manage and supervise the review of project cost estimates,
- Manage and supervise the review all environmental tasks,
- Manage and supervise the review of all social and resettlement tasks,
- Manage and supervise review of climate resilience adoption, and
- Manage and supervision of the review of road safety issues.

(ii) Highway Engineer (K-2):

She/he must be a registered Professional Engineer with a degree in Civil Engineering. Postgraduate qualification in Highway Engineering is added advantage. She/he must have a minimum of (10) years of cumulative experience related to road/bridge design and Construction. She/he must have served in a similar capacity on at least three (3) roads projects of similar magnitude and complexity in the last 10 years. A working experience in Sub-Sahara countries of at least 3 years is preferred. She/he should be able to write and speak in English. His duties shall comprise road surveys, Construction of pavement structure, measuring of quantities and management of site operations.

The responsibility of the Highway Engineer/Assistant Resident Engineer during the design review would include the following:

- Review engineering design for the road design prepared during detailed design and supplemental study,
- Review available data relating to traffic, axle loads and pavement strength. Assess load carrying capacity of pavements,
- Establish the design criteria and geometric standards for the road design,
- Collect and review all the available existing data and local designs,
- Review and prepare all necessary design drawings for the roads,
- Review and prepare the revised quantities for the roadworks,
- Together with Road Safety Engineer review the detailed design for safety measures of existing design, and
- Assist the Team Leader in the Preparation of Design review Reports

(iii) Bridge/Structural Engineer(K-3):

She/he must be a registered Professional Engineer with a degree in Civil Engineering. Postgraduate qualification in Bridge/Structural Engineering is added advantage. She/he must have minimum of ten (10) years cumulative experience in bridge design and construction. She/he must have served in similar capacity on at least three (3) road/bridge projects of similar magnitude and complexity in the last 10 years. A working experience in Sub-Sahara countries of at least 3 years is preferred. She/he should be able to write and speak in English. She/he shall be responsible for ensuring the bridges and other drainage structures are constructed according to design and conform to the contract specifications.

The responsibility of the Bridge/Structural Engineer during the design review would include the following:

- Review engineering design for superstructure and substructures of bridge prepared during the detailed design,
- Establish the design criteria and conditions for superstructures and substructures of the bridges,
- Collect and review all of the available existing data and local designs,
- Conduct the detailed design for the superstructures of the bridge,
- Review and prepare all necessary design drawings for the superstructures and substructures of the bridge,
- Review and estimate quantities for the superstructures and substructures of the bridge,
- Review and prepare the technical specifications for the superstructures and substructures of the bridge, and
- Assist the Team Leader in the Preparation of Design review Reports

(iv) Hydrologist/Drainage Engineer (K-4):

The Hydrologist shall be a holder of a degree in Applied Sciences or a degree in Civil Engineering or an equivalent qualification. Post-graduate qualification in Hydrology/Hydraulics Engineering is an added advantage. He/She must have at ten (10) years working experience related to water/flood management schemes. The ability to use appropriate flood design models is essential. He/She should have served as a Hydrologist on at least two (2) projects of similar magnitude and complexity within the last 10 years. In addition, He/She must have at least 3 years working experience in Sub Sahara Africa. Fluency in written and spoken English is mandatory.

The responsibility of the Hydrologist/Drainage Engineer during the design review would include the following:

- Review engineering design for drainage structures and river protection measures prepared during detailed design,
- Establish the design standards and conditions for drainage structures and river protection,
- Collect and review all of the available existing data for necessary hydraulic study,
- Review and Conduct the detailed hydraulic analysis and drainage calculation for all drainage structures,
- Review and conduct the detailed design for drainage structures and river protection measures,
- Review and prepare the technical specifications for drainage structure, river protection measure and river trail works, and
- Assist the Team Leader in the Preparation of Design review Reports,

(v) Road Safety Engineer (K-6)

She/he must be a registered Civil Engineer with a respective professional body and with a degree in Civil Engineering or Road Safety Engineering. Postgraduate qualification in Road Safety Engineering is an added advantage. She/he must have

a minimum of twelve (12) years of specific experience in Road Safety Audits/design and construction. She/he must have served as a Road Safety Engineer in at least three (3) road projects of similar magnitude and complexity in the last 10 years. In addition, he/she must have a working experience of at least 3 years in years in developing countries and shall be proficient in written and spoken English.

The responsibility of the Road Safety Engineer during the design review shall be responsible for proper adherence of roads safety aspects in the entire design review assignment. He/she shall be responsible for oversight of road safety data collection, analysis, road safety audit and recommendation and implementation of road safety improvement measures including the following:

- To carry out baseline data collection and undertake road safety audits of the existing design,
- Establish the design criteria and conditions for road safety devices and facilities,
- Collect and review all of the available existing data for road safety facilities works,
- Review and conduct the detailed design for road safety facilities and safety measures,
- Review and prepare the construction plan for traffic control and road safety management during the construction phase,
- Review and prepare all necessary design drawings for installation of road safety facilities,
- Review and estimate quantities for road safety facilities,
- Review and prepare the technical specifications for road safety facilities, and
- Assist the Team Leader in the Preparation of Design review Reports

(vi) Topographical Surveyor(K-7):

She/he must be a recognized Topographical Surveyor with a relevant professional body with a minimum of a diploma in Land Surveying. She/he must have at least ten (10) years cumulative experience in road design and construction. She/he must have served in similar capacity on at least three (3) road construction projects in the last 10 years. A working experience in Sub-Sahara countries of at least 3 years is preferred. Fluency in written and spoken English is mandatory.

The responsibility of the Topographical Surveyor during the design review would include the following:

- Evaluate/analyze investigated and surveyed data,
- Collect and review all of the available existing data,
- review of survey data, establish new topographic survey data,
- review the correctness of references survey points (geodetic reference points and national benchmarks) and analyse the data to determine the actual location of boundary lines and record the results of the survey, verify the accuracy of data, and prepare plans, maps, and reports,
- Review and mark all properties to be affected by road alignment and feed the same to the Sociologist,
- Review and establish control points, benchmarks and reference beacons as required in the detailed design, and
- Assist the Team Leader in the Preparation of Design review Reports.

(vii) Environmentalist(K-8):

She/he must be a registered Environmental Expert with a degree in Environmental Management Studies. A Post graduate qualification in Environmental and Social Management is an added advantage. She/he must have sound knowledge of environmental issues, initiatives and implementation of mitigation measures related to civil engineering infrastructure projects. He/she must have a minimum of ten (10) years working cumulative experience related to environmental impact assessment for development projects. She/he must have served as an Environmental Specialist/Expert on at least three (3) projects of similar magnitude and complexity. She/he should be able to write and speak in English. Fluency in Swahili is an added advantage. A working experience in Sub-Sahara countries of at least 3 years is preferred.

The responsibility of the Environmentalist during the design review would include the following:

- Review Environmental Impact Assessment (EIA) and revise/update ESMP to conform with environmental and social Regulations, policies and guidelines,
- Prepare the technical specifications and Bill of Quantities (BOQ) for ESMP,
- Review the compliance requirements of the Project with conditions set on EIA approval, and
- Assist the Team Leader in the Preparation of Design review Reports.

(viii) Sociologist(K-9):

She/he must be a holder of Degree in Sociology, Social work, Community Development or related discipline. A Post graduate qualification in related disciplines including law, is an added advantage. She/he must have sound knowledge of environmental and social issues, initiatives and implementation of mitigation measures related to civil engineering infrastructure projects. He/she must have a minimum of ten (10) years working experience related to social assessment for development projects. She/he must have served as Social Specialist/Expert on at least three (3) projects of similar magnitude and complexity. She/he should, ideally, have knowledge of GBV, SEA, stakeholder engagement and labor management, including labour influx issues in relation to linear infrastructure projects. She/he must have experience in undertaking social impact assessment and management of Health and Safety issues in accordance with the requirements of Occupational Health and Safety Authority (OSHA) or international recognized institution for the same. She/he should be able to write and speak in English. Fluency in Swahili is an added advantage. A working experience in Sub-Sahara countries of at least 3 years is preferred.

The responsibility of the Environmentalist during the design review would include the following:

- review of social issues in the revised design to conform with environmental and social Regulations, policies and guidelines,
- Review existing Resettlement Action Plan (RAP) and make necessary revision/updates of RAP,

- Review and identify the Entitled PAPs,
- Review socioeconomic survey, and
- Assist the Team Leader in the Preparation of Design review Reports

(ix) Quantity Surveyor(K-10):

She/he must be a registered Quantity Surveyor with degree in Building Economics or Quantity Surveying. A Postgraduate qualification in related fields is an added advantage. She/he must have a minimum of (10) years of cumulative experience related to infrastructure design and/or construction. She/he must have served in similar capacity in at least three projects of similar magnitude and complexity within the last 10 years. A working experience in Sub-Sahara countries of at least 3 years is preferred. She/he should be able to write and speak in English.

The responsibility of the Environmentalist during the design review would include the following:

- Review construction plans and prepare quantity requirements,
- Review project costs prepared during the Detailed design,
- Review the unit price analysis for each work item,
- Review and update the cost estimates of the overall project cost with breakdowns as per the work item specified in BOQ, and
- Assist the Team Leader in the Preparation of Design review Reports,

4.3.2 Staff Requirement during Construction Supervision

The Construction Supervision shall be carried out by the following Key Professional staff:

(i) Resident Engineer (K-1):

She/he must be a registered Professional Engineer with a degree in Civil Engineering. Postgraduate qualification in Highway Engineering is added advantage. She/he must have a minimum of fifteen (15) years of cumulative experience related to road/bridge design and construction. Experience in contract administration under FIDIC Conditions of Contract in at least two (2) projects. She/he must have served as a Resident Engineer or equivalent capacity in at least three (3) road construction projects of similar magnitude and complexity in the last ten (10) years. A working experience in Sub-Sahara countries of at least 3 years is required. She/he should be able to write and speak in English. She/he shall be the head of the site staff and shall be responsible for all technical and administrative aspects on site.

(ii) Highway Engineer (K-2):

She/he must be a registered Professional Engineer with a degree in Civil Engineering. Postgraduate qualification in Highway Engineering is added advantage. She/he must have a minimum of (10) years of cumulative experience related to road/bridge design and Construction. She/he must have served in a similar capacity on at least three (3) roads projects of similar magnitude and complexity in the last 10 years. A working experience in Sub-Sahara countries of at least 3 years is preferred. She/he should be able to write and speak in English.

His duties shall comprise road surveys, Construction of pavement structure, measuring of quantities and management of site operations.

(iii) Bridge/ Structural Engineer(K-3):

She/he must be a registered Professional Engineer with a degree in Civil Engineering. Postgraduate qualification in Bridge/Structural Engineering is added advantage. She/he must have minimum of ten (10) years cumulative experience in bridge design and construction. She/he must have served in similar capacity on at least three (3) road/bridge projects of similar magnitude and complexity in the last 10 years. A working experience in Sub-Sahara countries of at least 3 years is preferred. She/he should be able to write and speak in English. She/he shall be responsible for ensuring the bridges and other drainage structures are constructed according to design and conform to the contract specifications.

(iv) Pavement/Materials Engineer (K-5):

She/he must be a registered Civil Engineer with at least a BSc. in in Civil Engineering or Pavement or Materials Engineering. Postgraduate qualification in Pavement or Materials Engineering is an added advantage. She/he must have a minimum of ten (10) years of specific experience in Pavement/Materials matters related to road works. She/he must have served in at least two (2) road projects of similar magnitude and complexity in the Last 10 years. She/he shall be responsible for ensuring the quality of all materials to be incorporated in the works, as well as the completed works, conform to the contract specifications. In addition, he/she must have a working experience of at least 3 years in Sub-Sahara countries. Proficiency in written and spoken English is mandatory.

(v) Road Safety Engineer (K-6)

The Road Safety Engineer will be responsible for monitoring of day today implementation of Road Safety issues under the Project and ensure compliance by the Contractor with all Road Safety issues and plan. He/she will be responsible for conducting Road Safety Audit for the Project during construction and post construction stages and prepare reports. He/She shall engage with key stakeholders to identify sections of the road where accidents are on the rise and conduct crash investigations. Conduct Road Safety Audits according to approved audits plan and prepare a report with findings and recommendations for improvements Keep track of road accidents/other significant incidents on the project road during construction period. He/She shall be responsible for oversight of the safety of the motorized traffic and NMT during construction

She/he must be a registered Civil Engineer with a respective professional body and with a degree in Civil Engineering or Road Safety Engineering. Postgraduate qualification in Road Safety Engineering is an added advantage. She/he must have a minimum of twelve (12) years of specific experience in Road Safety Audits/design and construction. She/he must have served as a Road Safety Engineer in at least three (3) road projects of similar magnitude and complexity in the last 10 years. In addition, he/she must have a working experience of at least 3 years in years in developing countries and shall be proficient in written and spoken English.

(vi) Topographical Surveyor(K-7):

She/he must be a recognized Topographical Surveyor with a relevant professional body with a minimum of a diploma in Land Surveying. She/he must have at least ten (10) years cumulative experience in road design and construction. She/he must have served in similar capacity on at least three (3) road construction projects in the last 10 years. A working experience in Sub-Sahara countries of at least 3 years is preferred. Fluency in written and spoken English is mandatory. The Topographical Surveyor shall be responsible for supervising the survey team in day to day surveying activities. He/she will be responsible for planning of the fieldwork, select known survey reference points, and determine the precise location of important features in the survey area. He/she shall be responsible for searching legal records, look for evidence of previous references survey points (geodetic reference points and national benchmarks) and analyse the data to determine the location of boundary lines and record the results of the survey, verify the accuracy of data, and prepare plans, maps, and reports. The Surveyor has to mark all properties to be affected by road alignment.

(vii) Environmentalist (K-8):

She/he must be a registered Environmental Expert with a degree in Environmental Management Studies. A Post graduate qualification in Environmental and Social Management is an added advantage. She/he must have sound knowledge of environmental issues, initiatives and implementation of mitigation measures related to civil engineering infrastructure projects. She/he must have served as an Environmental Specialist/Expert on at least three (3) projects of similar magnitude and complexity. She/he should be able to write and speak in English. Fluency in Swahili is an added advantage. A working experience in Sub-Sahara countries of at least 3 years is preferred.

(viii) Sociologist (K-9):

She/he must be a holder of Degree in Sociology, Social work, Community Development or related discipline. A Post graduate qualification in related disciplines including law is an added advantage. She/he must have sound knowledge of environmental and social issues, initiatives and implementation of mitigation measures related to civil engineering infrastructure projects. He/she must have a minimum of ten (10) years working experience related to social assessment for development projects. She/he must have served as Social Specialist/Expert on at least three (3) projects of similar magnitude and complexity. She/he should, ideally, have knowledge of GBV, SEA, stakeholder engagement and labor management, including labor influx issues in relation to linear infrastructure projects. She/he must have experience in undertaking social impact assessment and management of Health and Safety issues in accordance with the requirements of Occupational Health and Safety Authority (OSHA) or international recognized institution for the same. She/he should be able to write and speak in English. Fluency in Swahili is an added advantage. A working experience in Sub-Sahara countries of at least 3 years is preferred.

She/he shall be responsible for supervision of implementation of the project as per environmental and social laws, regulations, policies and guidelines; monitoring of

the Social issues in the project in order to minimize any negative impacts from the project on the people in the project area in particular women, persons with disabilities and other members of vulnerable groups and monitor implementation of the Resettlement Action Plans (RAP) to address the resettlement impacts during project implementation as well as monitor the implementation of the Stakeholder Engagement Plan (SEP), LMP, GBV/SEA/SH Action Plan, and other ESF instruments for the project.

(ix) Health and Safety Officer (K-10):

She/he must be a registered with OSHA for practicing the Health and Safety Mitigation measures in work place and must be a holder of Degree or Advanced Diploma in Health Science, Social work, Community Development or related discipline. A Post graduate qualification in Health and Safety related disciplines is an added advantage. She/he must possess at least five (5) years of cumulative experiences in monitoring of Health and Safety issues in work place, initiatives and implementation of mitigation measures related to roads/airports infrastructure projects. She/he must have served as Health and Safety Expert on at least three (3) projects of similar magnitude and complexity within the last ten (10) years. She/he must have at least 3 years working experience in developing countries and must be proficient in written and spoken English.

She/he shall be responsible for monitoring of day to day implementation of the environmental health and safety (EHS) issues under the project and ensure compliance by the Contractor with all EHS Plans in order to help avoid, minimize, mitigate and remediate if necessary any negative related to EHS impacts and risks around the project.

(x) Support Staff:

In addition to the key personnel designated above, the Consultant shall determine the support and back-up staff deemed necessary to assist in the successful execution of this assignment. These staff shall include the Project Director, who shall guide and support the site supervision staff for the duration of the project for both Lots. He shall be based at the Consultant's head office and shall co-ordinate any specialist services that may be required from the Consultant. Other Support staff include the following:

(i) Climate Resilience Expert (1No),
(ii) Road Inspectors - Road Works – (3 Nos.),
(iii) Road Inspectors – Drainage and Structures – (1No.),
(iv) Materials Technicians - (3 Nos),
(v) Assistant Topographical Surveyor - (1No),
(vi) Draftsman (1 No),
(vii) Civil Technician (1 No),
(viii) Electrical Technician (1 No),
(ix) Secretary – (1No) except Office attendants and housekeepers who shall be provided under the Works Contract.

Note: *CVs for Support Staff will not be evaluated. However, evidence of professional registration and academic certificates for Key staff should be submitted and will be evaluated*

4.3.3 Staff Requirement during Defects Notification Period

The Consultant shall assign at least two staff; one of them shall be a Resident Engineer to conduct the inspection during the DNP as described above and an experienced Inspector who will supervise the outstanding works as per snag/punch list for at least 6 months after taking over of the project.

4.3.4 Additional Requirements for the Consultant's Staff

The Consultant's staff shall:

(a) Be available to move to the Works site upon the commencement of the contract; and

(b) Accord officials from TANROADS and the Ministry of Works and Transport the opportunity to inspect the works and the related documentation.

5.0 ADDITIONAL SERVICES

The Consultant shall provide any other additional services (an overarching "catch all" but "reasonable or minor design modifications") if so requested by the Client, at rates and under conditions to be mutually agreed which fall within the general ambit of these Terms of Reference.

6.0 DATA, SERVICES AND FACILITIES TO BE PROVIDED BY THE CLIENT

TANROADS will provide liaison with the Government Ministries, Departments and Agencies (MDA) in order to introduce the Consultant to them. However, the Consultant shall be fully responsible for collecting data and information from various departments/agencies.

6.1 The Client will make available to the Consultant the following:

(a) Study reports, including appendices, etc. relevant to the assignment, that have been carried out by or for the Client and any other relevant data available, which are necessary for the proper execution of the design review and supervision of the construction works.

(b) Under the Works Contract and during supervision of the Works Contract, the Consultant shall be provided with office and laboratory accommodation and equipment, housing for staff, transportation and airtime on mobile phones for Engineer's key personnel and Client's Project Engineer. These facilities are included in the Works Contract and detailed in the special specifications and bills of quantities. Note that, these facilities will not be provided by the Contracting Authority during design review and pre-contract services. The Consultant shall be deemed to have included the cost of providing these facilities in his Financial Proposal.

6.2 The Client will assist the Consultant to:

(a) Obtain formal consent from independent authorities or persons having rights or powers in connection with the works or the site thereof;

(b) Obtain ministerial orders, sanctions, licenses and permits in connection with the works;

(c) Register a non-Tanzanian firm and key staff with the Engineers Registration Board or equivalent bodies. Any associated cost will be borne by the Consultant.

6.3 The Consultant Responsibilities/Obligations

The Consultant inputs are enumerated as follows:

(a) The Consultant shall ensure that his supervision staff provide organized training and instructions to counterpart personnel assigned to the Project, monitors their performance and submits a quarterly progress report on each individual. Training program and reporting should be defined in the Consultants proposal and agreed with TANROADS during pre-contract discussion.

(b) The Consultant shall ensure that all professional EHS and one Social Specialist providing services under this Supervision Contract have background training related to potential worker health and safety risks associated with this work, and provided all the necessary health and safety equipment, including applicable personnel protective equipment, to fulfill their duties. The Consultant shall also ensure that all non-ESHS personnel providing services under this Supervision contract are provided basic training relate the Project ESHS requirements and potential significant ESHS related impacts and risks.

(c) In the conduct of this work, the Consultant shall cooperate fully with relevant Government Ministries and Departments. The Client will provide the Consultant with data and services outlined above. The Consultant shall be solely responsible however, for the analysis and interpretation of all data received and for the conclusions and recommendations based thereon.

(d) The consultant shall comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Experts and any other person.

(e) The Consultant shall be responsible for arranging for his support staff who will not be accommodated in the multiple accommodations provided under the works contract.

7.0 REPORTING

The required reports shall be submitted three (3) copies to TANROADS Headquarters and one (1) copy will be sent direct to the TANROADS Regional Manager's Office – Ruvuma Region both in hard copies (i.e. full color prints and perfect binding type) in four (4) copies together with softcopy through Electronics Documents Management System (EDMS) and Ms Word/Excel saved in USB Flash; the design drawings shall be in DXF or DWG formats. All reports and

documents relevant to the services, including maps, field survey notes, computer programs, shall become the property of Client.

7.1 Design Review Report

The Consultant shall prepare a Draft Design Review Report four (4) months after the commencement date of the Consultancy services. This report shall include results of the review of the design, drawings, and ESIA reports including an Environmental Management Plan, Resettlement Action Plan (RAP) reports. The draft design review report shall be submitted to TANROADS (6 copies) and one copy submitted to IDA for review within time indicated below. The final design review report incorporating comments and approved design improvement should be submitted in six (6) copies to the Client. The final design review report incorporating comments and approved design improvement should be submitted within one (1) month after receiving comments.

The following time frame/schedule (in months) shall be adhered to in carrying out the Design Review Services. As such the various deliverables shall be submitted not later than the dates shown below:

Signing/Effective Date of Contract	M	0
Commencement of Services	M	1
Submission of acceptable Draft Design Review Report	M	3
Comments on the Draft Design Review Report +updated BoQ by Client	M	3.5
Submission of acceptable Final Design Review Report +updated BoQ	M	4

7.2 Reporting During Construction Period

7.2.1 ESHS Reports

a) The Consultant shall provide immediate notification to the Client should any incident in the following categories occur while carrying out the Services. Full details of such incidents shall be provided to the Client within three (3) calendar days.

   (i) Immediately notify the Client of any failure by the Contractor to comply with its SEA and SH obligations;
   (ii) Immediately notify the Client of any allegation, incident or accident, which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Client's Personnel, Contractor's Personnel or Experts. In case of SEA and/or SH, while maintaining confidentiality as appropriate, the type of allegation (sexual exploitation, sexual abuse or sexual harassment), gender and age of the person who experienced the alleged incident should be included in the information. The Consultant shall provide full details of such incidents or accidents to the Client within the timeframe agreed with the Client,

(iii) confirmed or likely violation of any law or international agreement;

(iv) any fatality or serious (lost time) injury;

(v) significant adverse effects or damage to private property (e.g. vehicle accident); or

(vi) any allegation of Gender Based Violence (GBV), Sexual Exploitation or Abuse (SEA), sexual harassment or sexual misbehavior, rape, sexual assault, child abuse or defilement, or other violations involving children.

b) Ensure that contractor immediate notifications on ESHS aspects are shared with the Client immediately;

c) Immediately inform and share with the Client any immediate notification related to ESHS incidents provided to the Consultant by the Contractor, and as required of the Contractor as part of the Progress Reporting; and

d) Share with the Client in a timely manner the Contractor's ESHS metrics, as required of the Contractor as part of the Monthly Progress Reports*.*

7.2.2 Inception Report

This report shall include the results of study/review of the design and contract documents, any modification or improvements deemed necessary, results of the review of the contractor's work program, any modifications thereto, status of the consultant and contractor's mobilization, ESHS Contractor requirements or other ESHS plans or documents and any other matter requiring the Client's action. This report shall be submitted in 10 copies to TANROADS one month after commencement of works contract. One copy will be sent to TANROADS Regional Manager Office – Ruvuma.

7.2.3 Progress Report

(a) The Consultant shall prepare separate monthly progress reports throughout the duration of the contract starting one month after submission of the inception report up to and including one month after substantial completion. These are to be submitted in ten (10) copies and should reach TANROADS not later than fifteen (15) days after the end of the month being reported on. One copy will be sent to TANROADS Regional Manager Office – Ruvuma.

(b) The format and the content of the monthly progress reports shall be as agreed with TANROADS. They will include but not limited to the following:

- Useful information regarding the implementation of the project allowing a technical and financial follow up of the project;
- Mention of any changes on the original envisaged technical solutions;
- Major changes of quantities compared to contractual Bill of quantities;
- suggestions for resolving any technical and other problems which occur and those affecting the progress of the works; (a separate section will be given to cover issues, problems and solutions)

- Financial status of both construction and Supervision of the Works;
- Progress charts including percentages of completion of individual main work items and overall project;
- Weather information and charts,
- Construction and supervision data;
- Summary progress of the works, both physical and financial status;
- Record of working units (number of equipment and labour) used for the various types of works and total number of working hours of every item of equipment and labour category; and
- Details of claims if any, made by the respective Contractor.

7.2.4 Road Safety Audit Report

The Consultant shall undertake a total of four (4) Road Safety Audits spread equally over the duration of the construction phase of the Project. Another Road Safety Audit shall be undertaken 6 months after Substantial completion of the Project. The Consultant shall prepare Report each time he would undertake Road Safety Audit. These are to be submitted and should reach TANROADS not later than 15 days after the end of each Road Safety Audit. One copy will be sent to TANROADS Regional Manager's Office in Ruvuma, four copies to TANROADS HQ.

7.2.5 Detailed Progress Report

When the implementation of the civil works contract reaches a value of 50% of the initial construction cost, the consultant shall prepare and submit a detailed progress report within one months with updated cost of the civil works contract, implementation schedules and substantiate any request related to additional funding, needed for full completion of the project. The report in ten (10) copies submitted to TANROADS Headquarters and one copy will be sent to TANROADS Regional Manager – Ruvuma. The Consultant shall make an update of detailed progress report when 80% of works contract has been completed.

7.2.6 Report after Construction Period (Final Report)

a) Project Completion Report

The Consultant shall prepare and submit Project Completion Report within 30 days after the Substantial Completion of Construction Works in ten (10) copies submitted to TANROADS Headquarter, one (1) copy to the TANROADS Regional Manager Office - Ruvuma. The report shall include among other things, as built drawings, type, quality and quantity of materials used for construction of various sections and structures of the project road and other relevant information that would enable TANROADS to apply for future maintenance or new construction works.

The report shall also include a summary of the principal difficulties encountered during construction and the means employed to overcome them, changes (if any) made in the original designs, modifications to specifications and conditions of contract, all variation orders, assessment of claims by the Contractor, utilization of provisional and price variation and

physical contingencies sums, cumulative monthly payments to the Contractor designated by date and number of payment certificate and break down into foreign and local currencies and including a similar payment schedule for supervision services. The details of the overall project costs (construction and supervision) with justification for any significant differences with the original shall be given in the Final Report.

b) Final Completion Report

The Consultant shall prepare and submit Final Completion Report and Final Account within three (3) months after the issuance of the Defects Notification Period and Final Payment Certificate in ten (10) copies to TANROADS and one (1) copy sent to the TANROADS Regional Manager Office - Ruvuma. The Final Completion Report shall include a separate volume on maintenance proposal of the respective road section.

8.0 DURATION OF THE ASSIGNMENT

The duration for Design Review is **4 months** and that for Construction Supervision and is **36 months** while that for Defects Notification Period is **12 months**. The engagement shall be deemed to have started on execution of the Agreement for the Services and shall terminate when the final inspection of the works at the completion of the Defects Notification Period has been done and the Consultant has fulfilled all of his obligations.

9.0 PAYMENT TO THE CONSULTANT

9.1 General

(a) payments for undertaking the assignments as described in these Terms of Reference shall be made on monthly basis and cover remuneration for approved personnel and respective reimbursable expenses;

(b) the Consultant's remuneration shall be deemed to cover his statutory liabilities, travel costs and support of his Head Office including obligations other than additional services not covered by the Terms of Reference under consideration.

(c) The costs shall be invoiced to cover the Consultant's performance of his duties described in the Terms of Reference including the following:

(i) monthly remuneration and subsistence allowances for expatriate personnel;

(ii) monthly remuneration and subsistence allowances for local personnel;

(iii) transportation of foreign-based key personnel and local travel costs;

(iv) reimbursable expenses concerned with the design review, production and printing reports, including associated secretarial expenses as described on paragraph 6 above;

(v) shipment of personal effects that are appropriate for the assignment; and

(vi) other relevant contractual costs which must be specified by the Consultant.

9.2 Payments to the Consultant During the Design Review Services

The Consultant shall build up the costs for carrying out the assignment using the forms provided in the Request for Proposal (RFP).

Payment (Lump-sum) under Design Review shall be claimed under reimbursable expenses and shall be subject to review and confirmation during the pre-contract negotiations.

Payment of all Provisional sums shall be supported with relevant confirmation attachments.

9.3 Payments to the Consultant During Construction Supervision Services

Payments will be made monthly for undertaking the assignments described in these Terms of Reference to cover fees for approved personnel and reimbursable.

The costs shall be quoted to cover the Consultant's performance of his duties described in ToR.

10.0 LEAVE

The Consultant's key Staff engaged in the Supervision of the Construction Works will be entitled to 28 days leave per calendar year. In connection with leave, the key Staff are entitled for one round trip international travel per year, for which the Consultant will be reimbursed. Man-months during annual leave will not be paid. During the absence of leave the Staff's duties shall be handed over to an appropriate Staff approved by the Client.

11.0 PROJECT COORDINATION

The Consultant will be accountable to the Chief Executive, TANROADS for all contractual issues and shall work closely with the Director of Projects at Headquarters for all technical guidance enabling successful accomplishment of specific contractual tasks.

In the course of executing the assignment, the Consultant's Resident Engineer shall report to the respective TANROADS Regional Manager – Ruvuma Region and obtain support liaison services in relation to the assignment; simultaneously the incumbent shall take charge of the operations and acceptable performance of duties and responsibilities of all Key and Support Staff as described on Section 4.0 above.