**CONSULTANCY SERVICES FOR DETAILED ARCHITECTURAL AND ENGINEERING DESIGNS AND CONSTRUCTION SUPERVISION OF THE CONSTRUCTION OF LILONGWE INLAND EXAMINATION CENTRE**

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1. BACKGROUND

The Government of Malawi (GoM) has obtained a credit and grant from the International Development Association (IDA) under the Southern Africa Trade and Connectivity Project (SATCP), P164847, to support efforts in increasing regional trade coordination, reducing trade costs and time, developing regional value chains and improving access to improved infrastructure in targeted corridors of Malawi and Mozambique. The project commenced on 1st July 2021 is being implemented over a period of 6 years.

Trade and regional integration are central to southern Africa's recovery from the impacts of the COVID-19 pandemic. As the world experiences a crisis of unprecedented proportions, the region is being affected by supply disruptions and declines in trade flows, export prices, fiscal shortfall and capital outflows. Malawi and Mozambique are no exceptions. The Gross Domestic Product of both countries is expected to decline, pushing more Malawians and Mozambicans into abject poverty.

For Mozambique and Malawi, it is particularly important to strengthen regional trade and economic links through a spatial focus on Mozambique's economic corridors by reducing trade costs. The corridors of Beira and Nacala connect central and northern Mozambique with Malawi, Zimbabwe, Zambia and, by extension, Botswana and the Democratic Republic of Congo. These two corridors can be considered fundamental, and government has emphasized the need to focus on improving logistics and rail access and expanding aggregation and export processing. For Malawi, these two corridors feature the closest and potentially cheapest routes to the sea. These are therefore critical options for access to regional and global markets. Strengthening regional integration can increase trade and investment, contributing in turn to structural transformation, job creation and poverty reduction in southern Africa.

Reducing trade costs and improving the road network will facilitate the development of value chains by improving access to global and regional markets. There is substantial economic potential for increasing regional trade, especially with regard to agribusiness, light manufacturing, and services including logistics and tourism and attracting private investment in these sectors.

The main project components, to meet the above objectives, are:

* Component 1: Reducing trade costs through trade facilitation, including border infrastructure and regulatory framework reforms.
* Component 2: Strengthening regional coordination and supporting Project implementation.
* Component 3: Increasing investment in regional value chains; and
* Component 4: Improving the transport infrastructure of market access.

1. PROJECT DESCRIPTION FOR THE CONSULTANCY SERVICES

The construction of the Lilongwe Inland Examination Centre (IEC) is expected to bring efficiency in terms of inspection of containerized imports providing a faster and cheaper service for the private sector in the clearance of goods. These Terms of Reference have been prepared to procure consultancy services to develop a detailed architectural and engineering design that will support a fit for purpose IEC based on best practice physical examination procedures, scientific analysis of the volumes and requirements, professional support to develop the tender for a preferred contractor, and the subsequent supervision of the works for the construction of the IEC. An IEC is a legally established customs and border agency examination facility that enables Government officials to open, unpack, mark, weigh, unload any container or goods presented for import or export, at a designated location away from the prescribed land borders and airports. The center will be owned and operated by the Malawi Revenue Authority but will facilitate the services of other relevant agencies once constructed.

The future IEC aims to adopt a professionally run facility that adopts best practices for the examination of goods, that fits seamlessly within the MRAs coordinated border management approach, and its new risk management model to focus on the physical examination of high-risk consignments, whilst expediting the clearance and release of low-risk goods and compliant traders. To deliver this requirement the MRA requires assistance to help develop an optimal future IEC process together with the right-sized IEC facilities and tools that will affect an efficient government facility that delivers consistent and professional compliance activities required for trade regulation in balance with cost-efficient and timely supply chains.

1. PROJECT SITE

The Lilongwe IEC will be constructed next to Lilongwe Port of the Malawi Revenue Authority along the Lilongwe – Mchinji M012 Road in the City of Lilongwe. The land is fully owned by MRA and has been obtained from part of the land owned by Agricultural Research and Extension Trust (ARET).



Figure 1 Location of the Project Area along M012 Road in Lilongwe City

1. OBJECTIVES OF THE ASSIGNMENT

The Roads Authority requires the services of a consulting firm to develop detailed architectural and engineering designs, support tender and contract administration for a contractor, and supervise construction including the quality assurance of construction works and implementation and ensuring compliance monitoring of the project’s Environmental and Social Management Plan (ESMP).

The assignment shall be performed in three phases for design, contracting, and supervision with phases 1 and 2 based on a lump sum terms, whilst phase three will be renumerated on a time-based assignment.

## SPECIFIC OBJECTIVES

### Phase 1: Architectural and Engineering Designs

The objectives under Phase 1 is to develop the architectural and detailed engineering designs that are acceptable tothe client to be used for tender of the main building contractor. Thereafter, the design consultants will bear the professional liability for the accuracy of the design, which will be covered by this contract. The design shall include but not limited to the following tasks:

1. Undertake business analysis to support the definition of future IEC business model, and the optimum fit for purpose size and specifications for the IEC facilities;
2. Develop a future IEC operating model that will predict the number, frequency and duration of activities to be undertaken consignments to be examined at the IEC
   * 1. Perform analysis of container volumes and expected growth scenarios for the Lilongwe IEC and project future
     2. Confirm a new IEC operating model taking into account the new MRA Risk Management Operating Model, and the application of best practice procedures for the physical examination of cargo at the IEC.
3. Confirm IEC future staffing model from the border regulatory agencies to be housed at the IEC, in alignment to the future IEC operating model, and consider requirements for examination bays, warehousing requirements, office space, front office service provisions to manage engagement with trade (drivers and clearing agents), and supporting office service facilities including ablutions, kitchen areas etc.
4. Develop the future requirements scope and size to inform the IEC facilities design requirements (examination bays, warehousing, offices, and services) that will support the optimal future operating model, and project a scenario for agencies that will allow sufficient operational capacity to efficiently inspect peak flow of consignments [[1]](#footnote-2)to the IEC, whilst balancing scale with efficient use of capital and sustainable operational costs for running the facility.
5. Develop architectural design and detailed engineering designs for the IEC facility, including access roads, site security, staff and truck parking, inspection bays, warehousing including defined storage areas for the handing of hazardous, and prohibited and restricted goods, the office building complex and design of all auxiliary areas. The design must incorporate universal access and disability-friendly requirements and include structural calculations to ensure compliance with national and international codes of standard and best practices.;
6. Carry out the necessary investigations to identify the location of all existing public utilities within the facility. The existing public utilities which may affect construction of the access road include water pipes, internet fiber cables and electricity lines;
7. Prepare Engineer’s estimates of the works to be carried out and provide a confidential cost estimate (estimates should also include costs related to implementation of environmental and social management plan).

Key Features of the Detailed Architectural and Engineering Design

It is expected that the following minimum detailed design activities will be carried out by the design consultant;

* Designs for an office complex comprising of executive management offices, offices for staff, conference room, canteen/kitchen for staff, washrooms for staff and driver and first aid room.
* Warehouses that include sufficient square metres to manage goods under examination, those pending payment and clearance, as well as detained goods, and facilities to manage hazardous goods, and secure prohibited and restricted goods
* Shaded offloading and inspection bays to manage processing of peak traffic without queues and congestion
* Designate separate space the for construction of a truck scanner and associated control room on entrance to the IEC design and aligned to the site and process flow.
* Detailed access designs for entry and exit gates that include a dedicated channel for commercial vehicles, and a separate access for staff and other visitors
* Facility process and lay-out designed to limit queuing of vehicles on public access roads prior to entering the facility
* Detailed design of a junction to allow heavy vehicles to access and exit the facility without hindrances to other road users along the M012 road
* Design of the parking area to accommodate the projected volume of articulated trucks
* Design of a Waste Transfer Area
* Design for all informatory signage relevant to the IEC
* Preparation of electrical, water supply and plumbing, sanitation, fire detection and suppression drawings

It is expected that the facility shall operate principally with power from the main electricity grid, supported by backup power from both generator and solar power.

### Phase 2: Assistance during tendering period

The specific objective is to provide technical review on the tender documents and advise the Malawi IEC tender committee members, independently or together, on client considerations during the tendering stage.

### Phase 3: Supervision of works

The specific objective is to provide construction supervision during construction of the works to ensure technical quality control and quality assurance, and compliance monitoring of environmental, Occupational Health and Safety, and social safeguards including implementation of ESMP.

Note: Award of Phase 3 is subject to satisfactory performance of Phase 1 and 2 and will only be triggered upon signing of the civil works contract.

1. SCOPE OF CONSULTING SERVICES

## SCOPE OF CONSULTING SERVICES - PHASE 1 (DETAILED DESIGN)

### General

The consultant shall perform all services and carry out any additional necessary investigations to enable detailed design of the Lilongwe IEC as per the future operational and staffing model defined. The consultant shall prepare the following;

* Review of operational model for the IEC to establish the business requirements for the scope of detailed design.
* Develop detailed engineering designs, bill of quantities, and cost estimates.

The consultant shall conduct the initial site assessment to establish previous or current use taking into consideration history of the site including the likelihood of asbestos and/or other contaminants or underground voids; the area of the site and whether any restrictions apply; the topography of the site (shape and features, runoff and drainage management on site to reduce impacts to receiving environment, etc.); and what the ground conditions are like. The assessment will also need to consider non-construction activities on the site and works at the site, i.e. the nature of the surrounds and proximity to roads, footpaths, railway, waterways, schools, hospitals, shops, or industrial facilities; the means of safe access and safe egress from the site and any services or servitudes on the property (including outside of the existing building and response to Emergency Events).

The Roads Authority (RA) shall wherever possible assist the consultant in obtaining information and data to enable the execution of the services described herein affectively. However, the consultant shall be solely responsible for executing the works, analysis and interpretation of all data received and for their findings, making appropriate conclusion and recommendations. The consultant shall ensure that data is accurate and available for ease of supervision of the works. The following codes will be used;

Table 1 List of Codes of Practice

|  |  |
| --- | --- |
| Element of Design | Codes |
| Buildings – Structural | 1. British Standard 8110 – Structural Concrete 2. British Standard 5950 – Structural Steel 3. British Standard 5368 – Structural Timber 4. British 8004 - Foundations |
| Bridges and Culverts | 1. British Standard 5400 2. SATCC- Draft Code of Practice for the Design of Road Bridges and Culverts (September 1998 (Reprinted July 2001) 3. The South African National Roads Agency Limited, Drainage Manual, 5th Edition 4. Standard Specifications for Roads & Bridge Works (Metric Edition) Ministry of Works and Supplies 1978 5. WRB No TP12 Malawi, Guideline for Peak Flood Estimate for Design of Culverts and Bridges |
| Pavement | 1. SATCC- Draft Code of Practice for the Design of Road Pavement (September 1998 (Reprinted July 2001) 2. South African Pavement Engineering Manual, Chapter 10, Pavement Designs 3. The Overseas Road Note 31, A Guide to the Structural design of bitumen- Surfaced roads in tropical and sub- tropical countries |
| Geometry | 1. Addendum to SATCC Code of Practice for the Geometric Design of Trunk Roads (Roads Authority, 2014) 2. SATCC- Draft Code of Practice for the Geometric Design of Trunk Roads (September 1998 (Reprinted July 2001) 3. The Overseas Road Note 6, A Guide to Geometric Design |
| Traffic Counts | The Overseas Road Note 40, A Guide to Axle load surveys and traffic counts for determining traffic loading on pavements |
| Road Safety | World Bank Road Safety Engineering Manual (February 2014) |

The languages of all drawings, documents and reports shall be English.

All drawings, documents and reports produced by the consultant under the contract shall become the property of the Roads Authority upon completion of the consultancy services.

### Detailed Design of the Lilongwe IEC

The Consultant shall carry out the following activities;

#### Topographic surveys

The Consultant shall undertake topographic surveys of the existing site, pertinent existing features, benchmarks and setting out beacons. Any survey marks, benchmarks or beacons shall be sufficiently permanent as agreed with the Roads Authority and Malawi Revenue Authority.

The Consultant shall confirm that the coordinates of all benchmarks and setting out beacons are tied to the National Survey Grid and levels related to the National Benchmarks.

#### Geotechnical investigations

The Consultant shall undertake all necessary geotechnical investigations in order to determine the existing material properties such as soil classification, soil bearing strength for determination of foundations of structures and pavement design for all access roads.

#### Hydrological Surveys

The Consultant shall carry out hydrological survey of the project site in order to design the storm water drainage system.

#### Volume Surveys

The Consultant shall undertake a survey to calculate the volume of commercial traffic that is estimated to be routed into the IEC, using the data from Mchinji, Dedza, Chiponde and Songwe Borders and the historical IEC activity. The consultant shall then establish the future operation model, bearing in mind planned risk management improvements that will reduce the levels of consignments sent for physical inspection by the MRA. The consultant should also identify and propose key performance standards for the new IEC examination processes, for example in time and work-effort outcomes.

#### Physical Examination process modelling

The consultant shall consider the future IEC operating model and flow of trucks, considering the limitations of the plot of land, whilst also considering the future IEC examination processes including the use of technology and equipment such as forklift trucks to optimize the process. The survey should consider the different types and durations of examination activities to be performed at the IEC, including x-ray scanning, sampling, and full-unpack physical examination, across relevant border agencies to be housed at the IEC.. The work should inform the scale of facilities, the time to be spent per truck per activity, the future flow of traffic through the facility and used to determine the truck capacity requirements of the parking area to prevent any queuing of vehicles entering the facility from public access roads.

#### Road Safety Considerations

The Consultant shall ensure that road safety considerations are undertaken on the designs for the access roads as well as the parking area including reticulation of vehicles inside the premises, fire and spill containment measures (including closed stormwater management to prevent contamination to local water resources).

#### Preparation of architectural and structural drawings

The Consultant shall prepare architectural drawings for the required design elements and any corresponding structural drawings and ensure that all drawings are complete and that the structural analysis/calculations are adequate. The design elements include design of the office complex, design of warehouses, design of entry and exit gates for trucks and staff vehicles.

#### Detailed Design of Access Road and Parking Area

The Consultant shall carryout detailed engineering designs for the access road and parking area. All elements of the designs in terms of the geometric, pavement, storm water management, and road safety shall be prepared to conform to the requirements of the respective SATCC design codes.

During the pavement design, the Consultant shall verify the traffic loading, sub-grade condition and confirm the availability and sources of suitable materials proposed for use in the construction of pavement layers. The Materials Investigation Report shall include location and description of all borrow pits, quarries and water sources.

The consultant shall ensure that the hydrological and hydraulic study and design parameters (such as information on flow rates, water surface elevations, stability against scouring) have been obtained and all information is available to enable sound structural design of the hydraulic structures.

The designs shall include structures to manage storm water, hazardous waste management facility including oils and other hazardous confiscated materials, parking areas for vehicles with hazardous chemicals. The drainage system for the project shall be based on conventional positive collection methods to collect, transport and dispose of all surface and ground water. This goal is achieved by the provision of channels, pipes and ditches, draining, sumps, and protection in order to mitigate impacts to the receiving environment. Drainage management should consider nature-based solutions.

In addition, other site safety measures should be considered and incorporated into the design, including:

* Pedestrian/vehicle separation (footways, footpaths, barriers, etc.).
* Universal access especially location of steps, bathrooms, dropped curbstones width of doorways, etc. (staff and visitors with mobility challenges e.g. wheelchairs, walking aids, prams etc.)
* Access control and junction improvement, cognizant of potential for multiple vehicles to arrive at the facility at one time and the need to avoid multiple vehicle queuing to enter the facility.
* Pavement markings.
* Regulatory signs.
* Warning signs.
* Pedestrian signs.
* Waste collection points during construction and operation of the sites and easy access for removal of waste without hindering commercial activities
* Location of fire/spill containment units during construction and operation of the site, including Emergency Assembly Point.

### Bidding Document, Bill of Quantities and Cost Estimate

#### Bidding Documents

Procurement will be done based on the World Bank’s “Procurement Regulations for IPF Borrowers” dated November 2020 (“Procurement Regulations”). The consultant shall prepare a project procurement strategy document that includes a construction market analysis of potential bidders to justify the cost estimate, and package.

Bidding document shall be prepared fully in accordance with the latest World Bank Standard Procurement Documents.

The consultant shall review the technical specifications used in the bidding document for completeness.

#### Bill of Quantities

Calculated quantities for the items of work to be executed shall be based on the finalized construction drawings. Where items don’t fall within the standard specifications, these shall be clarified in the Particular Specifications, based on the final detailed engineering design. A breakdown of quantities calculations will be supplied to the client in electronic form.

#### Cost Estimate

The Consultant shall prepare an estimate of the construction cost based on the final bills of quantities. The cost estimates will be based on unit price analysis of each item using basic cost elements: labour, materials, equipment, tolls, overheads, profit and supervision etc. but excluding and showing separately the cost of all taxation (direct or indirect). The estimate shall also incorporate provisional sums of Environmental, Social, Health and Safety considerations.

### Key Professional Staff

The following expertise will be required to carry out the consultancy services. For each expert proposed, curriculum vitae of no more than four pages shall be submitted. The Client has estimated the key professional staff input of approximately 20 man-months as detailed below. However, the Consultant has to provide their estimated staff input based on the requirements of the ToR.

Table 2 Key Staff Time Input – Detailed Design Phase

|  |  |  |
| --- | --- | --- |
| Item | Description | Man Month |
| 1 | Architect/Team Leader | 4 |
| 2 | Structural Engineer | 3 |
| 3 | Electromechanical Engineer | 2 |
| 4 | Customs Consultant | 2 |
| 5 | Highway Engineer | 2 |
| 6 | Pavement Design Engineer | 2 |
| 7 | Hydrologist | 1 |
| 8 | Contract & Procurement Specialist | 2 |
| 9 | Road Safety Specialist | 1 |
| 10 | Engineering Surveyor | 1 |
|  | Total Man-months | 20 |

Minimum requirements for the key professional staff are as indicated below;

* + - 1. **Team Leader/Architect**

The Team Leader/Architect shall have a minimum of a Bachelor’s degree in architecture and shall be a Registered Architect of not less than 15 years’ general experience and shall have undertaken at least 5 projects as an Architect in assignments of similar complexity in the last 10 years. A postgraduate qualification in a relevant field will be an added advantage. The Team Leader shall have experience in working in, and managing consultancy teams working on complex design projects in the sub-Sahara region. The Team Leader will take over charge of the assignment in addition to being a lead designer. Fluency in written and spoken English is mandatory.

* + - 1. **Structural Engineer**

The Structural Engineer shall have a minimum of a Bachelor’s degree in Civil/Structural Engineering and shall be a Registered or Chartered Engineer with at least 10 years’ general experience and shall have undertaken at least 5 design projects as a Structural Engineer in the last 10 years. He/she shall also have been involved in complex infrastructure projects within the sub-Sahara region. Fluency in written and spoken English is mandatory.

* + - 1. **Electromechanical Engineer**

The Electromechanical Engineer shall have a minimum of a Bachelor’s degree in Electronic or Mechanical Engineering and shall be a Registered or Chartered Engineer with at least 10 years’ general experience and shall have undertaken at least 3 projects as an Electromechanical Engineer in the last 5 years. The engineer shall be responsible for all electrical and mechanical requirements. Fluency in written and spoken English is mandatory.

* + - 1. **Customs Consultant**

The Customs Consultant shall have a minimum of a bachelor’s degree in economics or any related field and a trade and customs related professional qualification and shall have at least 10 years’ knowledge in custom clearance process including cross border trade and must have participated in at least 1 project related to border or inland designs in the last 5 years. Expertise is required in designing and implementing a modern risk management approach in a Customs and border management context, including application of best practices procedures for the inspection and examination of goods, and modern inspections facilities and tools including use of x-ray scanners, application of sampling techniques, use of images and scans, expertise in tariff classification, valuation and origin of goods, and requirements for detaining and seizure of goods within a states warehouse, including understanding of facilities for the storage of hazardous and prohibited and restricted goods. Fluency in written and spoken English is mandatory.

* + - 1. **Highway Engineer**

The Highway Engineer shall have a minimum of a bachelor’s degree in Civil/Highway Engineering and shall be a Registered or Chartered Engineer with at least 10 years’ general experience and shall have undertaken at least 5 projects as a Highway Engineer in the last 10 years. He/she shall also have been involved in road design and construction projects. Fluency in written and spoken English is mandatory.

* + - 1. **Pavement Design Engineer**

The Pavement Design Engineer shall have a minimum of a bachelor’s degree in Civil engineering and shall be a Registered or Chartered Engineer with at least 10 years’ general experience and shall have undertaken at least 5 projects as a Pavement Design Engineer in the last 10 years. He shall also have been involved in road design and construction projects. Fluency in written and spoken English is mandatory.

* + - 1. **Hydrologist**

The Hydrologist shall have a minimum of a bachelor’s degree in Civil engineering or hydrology with at least 10 years’ general experience and shall have undertaken at least 3 projects as a hydrologist in the last 5 years. Fluency in written and spoken English is mandatory. The Hydrologist shall be responsible for carrying out hydrological modeling to inform the design.

* + - 1. **Contract & Procurement Specialist**

The Contract & Procurement Specialist shall have a minimum of a civil engineering or quantity surveying degree and be a qualified and competent chartered or registered professional civil engineer or quantity surveyor with a degree in civil engineering or equivalent qualification and with a minimum of 10 years’ general experience and shall have undertaken at least 5 projects as a Contract & Procurement Specialist in the last 10 years. The Contract & Procurement Specialist will be in charge of cost estimates and bid document preparation including Bills of Quantities. Fluency in written and spoken English is mandatory.

* + - 1. **Road Safety Specialist**

The Road Safety Specialist shall have a minimum of a bachelor’s degree in Civil Engineering and shall have a minimum of 10 years’ general experience and shall have undertaken at least 2 projects as a Road Safety Specialist in the last 5 years.

* + - 1. **Engineering Surveyor**

The Surveyor shall have a minimum of a bachelor’s degree in surveying or civil engineering with a minimum of 5 years’ relevant experience in topographic surveys in major infrastructural projects using computerized survey software for analyzing survey details and shall have undertaken at least 5 complex projects as a surveyor in the last 10 years.

### Reporting Requirements

The Consultant shall prepare and submit the following reports and documents, in English, in an approved format to the Client. The comments of the Client shall be incorporated in the final version of the reports and documentation. The Consultant shall also present to the client in power point the Draft Detailed Design Report at a meeting with relevant stakeholders to be arranged in consultation with the RA.

1. **Inception Report**

The inception report shall be submitted within 4 weeks of the commencement of the assignment. It shall contain as a minimum:

* Status of the consultant’s mobilization
* Reporting on all activities
* A implementation programme for scope of the consultancy activities to be provided, and detailed timeline for fulfilment.

The consultant shall show the internal quality assurance system that will ensure both completeness and the quality of the assignment.

The report submission shall include: Ten (10) hard copies of the complete report including any appendices. Ten (10) CD - ROM or DVD - ROM soft copies of the report containing: Copies of all word, excel, or other similar files used in compiling the report

One complete copy of the report and all appendices contained in a single PDF file per volume.

1. **Draft Detailed Design Report and Bidding Documents**

The consultant shall submit a draft detailed engineering design report comprising all architectural and structural designs including all related drawings and bidding documents. This report will include the future IEC examination process models for examination processes and operational staff model that informs the final design. The draft report should be submitted after 10 weeks from the date of commencement of the services. Ten (10) hard copies and one (1) soft copy of each of the reports/documents shall be sent to the Client. In addition, copies of all Word, Excel, AutoCAD or other similar files used in compiling the reports shall be submitted.

1. **Final Detailed Engineering Design Report and Bidding Documents**

After approval of the draft detailed design report, the consultant shall submit the final detailed engineering design report complete with drawings and bidding documents and Engineer’s Confidential Cost Estimate, acceptable to the Client. This detailed engineering design report shall be submitted within 2 weeks after receipt of the client’s comments.

Ten (10) hard copies and one (1) soft copy of each of the reports/documents shall be sent to the Client. In addition, copies of all Word, Excel, AutoCAD or other similar files used in compiling the reports shall be submitted. In addition, ten (10) sets of the final bidding documents in hard copy shall also be provided. Four sets shall be provided with A1 size drawings and six sets with A3 size drawings.

### Duration

The duration of Phase 1 is six months

## SCOPE OF CONSULTING SERVICES - PHASE 2 (PRE- CONTRACT)

## Tender Period

During the tender period, the consultant shall assist the Client in the conduct of a site visit and pre-bid meeting of the project site. The consultant shall also assist the Client in drafting responses to Bidders’ requests for clarifications and in the preparation of any amendments that may be required to the bidding documents. After award of the works contract the consultant shall assist the Client in the conduct of contract negotiations.

## Expertise Required

The Consultant shall provide a Contract Documentation Specialist to carry out the services under phase 2. The Contract Documentation Specialist shall be the same one that will provide the services under phase 1. The estimated time input under phase 2 is 1 man-month.

The Consultant shall be responsible for ensuring the key expert is provided with such head office support as may be required for the execution of the services.

## Duration

The duration of Phase 2 is two months.

## SCOPE OF CONSULTING SERVICES - PHASE 3 (SUPERVISION)

### General Requirements

1. The Consultant shall undertake full time project administration during the contract and act as the Employer’s representative in the Works’ Contract. They shall appoint a Team Leader acceptable to the Employer and the Financing Agency for the continuous on-site construction monitoring of the project.
2. The Consultant shall review and approve the qualifications of the proposed substitutes key personnel of the Contractor and make appropriate recommendation to the Employer;
3. The Consultant shall receive from the Contractor, review compliance with contract requirements and recommend for the approval all performance bonds, insurance certificates or policies and guarantees relating to the contract, before submitting them to the Employer for acceptance;
4. The Consultant’s supervision teams shall work in close co-operation with the Roads Authority. The team is to operate from the consultant’s offices on site.
5. The Road Authority will provide all relevant information available. Interpretation of such information will, however, be the sole responsibility of the Consultant. Any additional data will be collected by the consultant.
6. Accommodation of the Consultants site teams will be the responsibility of the Consultant.
7. The provision of support staff and transport for the Consultant inclusive of fuel and drivers will also be the responsibility of the Consultant.
8. The consultant shall be responsible for providing office space and facilities, accommodation, transport and support staff for the supervision teams for the period of the services.
9. The Roads Authority will provide through the works contract, laboratory and survey facilities for use by the consultant.
10. Preparation of minor designs that may be required can be covered by using standard drawings available from the Road Authority. Where standard drawings are not available for a particular item, the Consultant is to prepare such drawings.

### Administrative/Technical Tasks

#### Supervision Key Professional Staff

The Consultant shall undertake full time supervision, E&S and OHS compliance supervision, and contract administration during the construction works and shall provide the full- time supervision team listed under section 5.1.4.

#### Contract Preliminaries and General

1. The Resident Engineer shall review the qualifications of the proposed key site management personnel of the Contractor and make appropriate recommendations to the Client;
2. The Resident Engineer shall receive from the Contractor, check for compliance with Contract requirements, approve and forward to the Client all performance bonds, insurance certificates and policies and guarantees relating to the Contract before submitting to the Client for acceptance.
3. During the mobilization of contractor’s equipment, camp and personnel, the Resident Engineer shall monitor the contractor’s progress against the approved program.
4. The Resident Engineer shall prepare and compile detailed works specific forms and check lists relevant to the nature of works. These shall be used and maintained by the inspectors for monitoring work activities. These forms shall always be available for inspection by the Client.

#### Work Programme

1. The Resident Engineer shall review the program submitted by the Contractor for the execution of the Works to establish whether the methods, arrangements, order and timing of the activities are realistic and coherent in relation to the conditions pertaining on Site.
2. The Resident Engineer shall identify from the approved program the information needed by the Contractor for the execution of the works and ensure that such information is made available to the Contractor in a timely manner. The requirement for detailed drawings and information related to the works should be given adequate consideration.

#### Quality Assurance Management

1. The Resident Engineer shall review and approve the Quality Assurance and Quality Control Procedures submitted by the Contractor.
2. The Resident Engineer shall ensure that all material tests results are kept secure preferably backed by a cloud-based data repository for future retrieval and use.

#### Review of Work, Rejection of Defective Work and Tests

The Resident Engineer using the resources of the supervision Teams shall:

1. Conduct on-site observation of the work in progress to determine if the work is proceeding in accordance with the contract schedule, and that the completed work conforms to the contract’s technical specifications;
2. Ensure the contractor’s compliance to all Environmental and social safeguards as contained in the project ESMP and MSIPSs, Contractors’ Environmental and Social Management Plan (C-ESMP), Stakeholder Engagement Plan (SEP) and Labour Management Procedures (LMP)
3. Carry out quality control of construction materials through testing on site or in the laboratory, for compliance with the relevant clauses in the technical specifications in line with the agreed Quality Assurance and Quality Control procedures. Soils and materials testing records shall be kept on site, with comments in the monthly report. The onus for all testing and control rests entirely on the Consultant.
4. Verify that selection and use of materials is in accordance with the design specifications. Establish procedures, criteria, and testing methods to verify the quality of the materials;
5. Inform the Contractor when work is to be corrected or rejected or to be uncovered for observation, or special testing, inspection or approval and ensure that defective work is properly corrected in a timely manner;
6. Suggest or review and approve substitute materials when necessary. Estimate the cost of such materials and make appropriate adjustments in the specifications in consultation with the Client.
7. Inspect and test the works including testing of materials for incorporation in the works and ensure compliance with the relevant clauses in the Technical Specifications. Soils and materials testing records shall be kept on site, with comments in the monthly report.
8. Advise the Contractor of the necessity for special inspection and testing of materials and plant to be supplied for incorporation in special maintenance requirements.
9. Receive, review and approve or recommend revisions as necessary the Contractors Traffic Management Plan and monitor that once approved this is implemented as proposed.
10. The Consultant is to monitor all aspects of health and safety during the execution of the works and ensure that the relevant regulations and requirements are complied with by the Contractor
11. The Consultant is to report on all incidents or accidents on the site of the works or associated with the implementation of the works and liaise as necessary with the local authorities and/or police and promptly provide the client with copies of such reports;
12. Accompany visiting Inspectors representing public or other agencies having jurisdiction over the project, and record the outcomes of these inspections and report as appropriate
13. Ensure the contractor’s compliance to all Environmental and social safeguards as contained in the project ESMP and MSIPSs, Contractors’ Environmental and Social Management Plan (C-ESMP), Stakeholder Engagement Plan (SEP) and Labour Management Procedures (LMP)
14. Oversee the implementation of the Grievance Redress Mechanism (GRM) for both community and workers by the contractor and/or sub-contractors at project implementation level.

#### Interpretation of Contract Documents

The Resident Engineer shall:

1. Maintain liaison with contractor, working principally through the contractor’s senior personnel and assist them as necessary in understanding the intent of the contract documents.
2. Issue in good time additional details and drawings necessary for the proper execution of the contract;
3. Provide interpretations necessary for the proper execution and progress of work, with reasonable promptness and in accordance with agreed time limits;
4. Provide written recommendations within a reasonable time, on all claims, disputes and other matters in question relating to the execution or progress of work or the interpretation of the contract documents.
5. Instruct the contractor to immediately stop in the event that an activity commences before the contractor has made appropriate submissions and obtained necessary approvals.
6. Issue written instructions to the contractor as required.
7. Recommend suspension of work when the contractor consistently fails to comply with instructions or to perform the work in accordance with the contract and recommend appropriate action.

#### Claims Control

The Resident Engineer shall:

1. Conduct regular meetings with the Contractor to identify issues of design, technical and commercial challenges that may give rise to delays or claims. Ensure that measures are put in place to address these.
2. Ensure that the Client is kept fully informed of all issues that the consultant believes may result in claims.
3. Identify any correspondence from the Contractor that may be construed as early warning of a claim and ensure proper record keeping is in place to monitor the issue.
4. Review the Contractor’s ‘early warnings’ submissions and claim submissions and make recommendations in accordance with the requirements of the Contract.

#### Modifications of Contract

The Resident Engineer shall:

1. Consider and evaluate the Contractor’s suggestions for modifications in drawing or specifications and report them to the Client with recommendations;
2. Examine Contractor’s proposals for changes in construction and provide recommendations to the Client for approval when changes affect cost or quality. Changes which do not affect cost, or quality may be approved on-site and recorded in the monthly progress reports. Such changes shall be effected by written orders issued by the Consultant; and
3. Prepare any further design and drawings necessary for the information of the Contractor to enable him to carry out the Works. In particular, the Consultant shall issue all instructions related to the works for which the Contract contains only provisional items.

#### Surveying, Setting Out and Measurements (where applicable)

The Resident Engineer using the resources of the supervision team shall:

1. Indicate to the contractor the location of all survey control points established during the design stage and where necessary re-establish any points that have been lost or disturbed.
2. Check all alignment and elevation control points provided to the Contractor;
3. Check all setting out of the works undertaken by the Contractor; and
4. Compile necessary field measurements and calculate quantities of materials incorporated in the works.
5. Check the setting out of the alignment and elevations and maintain the corresponding documentation. Continuous control of pavement levels, culvert levels and levels of any other structures;

#### Measurement of Works

The Resident Engineer through the Measurement Engineer shall:

1. Carry out measurement of the works certified as complete on site together with the Surveyor to be used in checking contractor’s payment and progress claims; and
2. Maintain a record of measured works on site.

#### Payment Certificates

The Resident Engineer with assistance of the Measurement Engineer shall review monthly interim payment applications submitted by the Contractor in accordance with the conditions of contract and the Resident Engineer shall certify these for payment or return them to the Contractor for revision. Upon certification the Resident Engineer will forward five copies of the approved payment certificates plus all supporting measurements sheets and supporting documentation within two weeks of receipt from the Contractor to the Client, who will forward these for payment to the Road Fund Administration.

The interim payment certificates shall detail the actual quantities of work items completed to date compared with the total billed quantity for each item together with the contract unit rates for each work item, materials on site, details of Dayworks, price adjustments, any other payments to which the Contractor may be entitled to under the contract, and deductions for retentions and advance repayments.

Any matters of dispute on the extent of payments shall be resolved between the Resident Engineer and the Client and any agreed adjustments advised to the Contractor by the Resident Engineer and included as adjustments in the subsequent month’s certification.

#### Keeping Records

The Resident Engineer shall:

1. Maintain at the project office files for correspondence, reports, minutes of meetings, product and material submissions, additional drawings issued subsequent to the execution of the Contract, as well as Consultant’s clarifications and interpretations of the documents, progress reports and other related documents;
2. Keep a diary or logbook, recording Contractor’s staff hours on job site, equipment availability/ operation (including vehicle inspection logs and maintenance), weather conditions, data relative to questions of extras or deductions, list of visiting officials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and
3. Maintain a set of drawings (As-built drawings) recording all details of the work as actually executed.
4. Follow up and document complaints and grievances and their resolution of non-compliance or recurrent problems with respect to overall environmental and social issues (including, but not limited to employment and labour; economic and environment; OHS and public safety; and, access to project benefits and opportunities; sexual harassment and or abuse; children exploitation; incidence of HIV/AIDS); and any other social conflicts.
5. Maintain an Incidents/ Accidents Log/ Register containing brief description of the incident, cause/s, affected party, date and time of occurrence, corrective action take, and required follow-on action/s.

#### Monthly Progress Meetings

The Resident Engineer shall:

1. Arrange monthly progress meetings with site inspections and notify those expected to attend. In arranging these meetings, he is expected to circulate the meeting agenda and to subsequently maintain and circulate minutes thereof;
2. Prepare monthly progress reports recording the contractor’s and the consultant’s activities, Environmental Social Health and Safety (ESHS), physical and financial progress in relation to the contractor’s program, quality of materials and workmanship, and comment on any unusual occurrences. Eight copies of the reports are to be submitted to the Client within 10 days following the month reported.

#### Health, Safety, Social and Environmental Management

The Resident Engineer shall ensure that the Contractor delivers its E&S obligations under its contract. This includes, but is not limited to the following:

1. Review the Contractor’s Environment and Social Management Plan (C-ESMP), including all updates and revisions at frequencies specified in the Contractor’s contract (normally not less than once every 6 months);
2. Review all other applicable contractor’s documents related to E&S aspects including MSIPs, the health and safety manual, security management plan and GBV/SEA/SH prevention and response action plan;
3. Review and consider the E&S risks and impacts of any design change proposals and advise if there are implications for compliance with ESIA, ESMP, consent/permits, MSIPs, and other relevant project requirements;
4. Undertake, as required, audits, supervisions and/or inspections of any sites where the Contractor is undertaking activities under its contract, to verify the Contractor’s compliance with E&S requirements (including relevant requirements on GBV/SEA/SH, and offsite requirements e.g. quarries and borrow pits);
5. Undertake audits and inspections of Contractor’s accident logs, community liaison records, monitoring findings and other E&S related documentation, as necessary, to confirm the Contractor’s compliance with E&S requirements (including relevant requirements on GBV/SEA/SH);
6. Determine remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor’s E&S obligations;
7. Ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree appropriate actions to ensure compliance with E&S obligations;
8. Ensure that the Contractor’s actual reporting (content and timeliness) is in accordance with the Contractor’s contractual obligations;
9. Review and critique, in a timely manner, the Contractor’s E&S documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;
10. Undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential E&S issues;
11. Establish and maintain a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g. of those reporting allegations of SEA and/or SH.
12. carry-out the following activities consistent with the Works contract to be supervised, including but not limited to the following:
    * 1. support the Works of the employer to organize GBVSEA/SH conference, ensure appropriate representation in the conference and follow-up on any agreed actions by the attendees;
      2. monitor contractor’s compliance with its GBV/SEA/SH Prevention and Response Obligations in the Works contract, and take appropriate contractual actions if non-compliance is identified, including upon identification of potential non-compliance by a dispute board;
      3. ensure that any allegation of GBV/SEA / SH that are received by the Consultant are documented
      4. maintaining appropriate confidentiality, and promptly submitted to the Employer and the Contractor;
      5. prior to its engagement for the Works, verify that, any proposed subcontractor not named in the contract, is qualified in accordance with the provisions of the GBV /SEA/ SH performance declaration for sub-contractors;
      6. provide appropriate support and relevant documents that a dispute board may need in reviewing SEA/SH contractual compliance;
13. Ensure that the contractor complies with all national labour, health and safety rules and all health and safety requirements of the contract documents as per the local legal and regulatory requirements as well as the LMP;
14. Ensure that all contractor’s staff are properly equipped with personal protective equipment and implement requirements to ensure the PPE is worn, e.g. no PPE no pay strategy;
15. Ensure that the contractor carries sufficient training of his personnel to ensure a safe working environment;
16. Ensure that Serious and Severe incidents and accidents are promptly reported to RA, World Bank and appropriate Government authorities in compliance with local regulations within 24 – 48 hours after occurrence and secure the safety of workers, public, and provide immediate care during any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers, including, inter alia, cases of sexual exploitation and abuse (SEA), sexual harassment (SH), and accidents that result in death, serious or multiple injuries. Ensure that investigations on the root causes are carried out providing sufficient detail regarding the scope, severity, and possible causes of the incident or accident, indicating immediate measures taken or that are planned to be taken to address it, and any information provided by the contractor to prevent recurrence;
17. Monitor the contractor’s implementation of his traffic accommodation to ensure safety of road users including pedestrians and non-motorized traffic during the rehabilitation works;
18. Ensure that the contractor has appointed all safety personnel required by the contract documents, trained them and set up systems to allow them to function properly as required by local legal and regulations as well as the World Bank EHS Guidelines;
19. Conduct regular safety meetings with the Contractor’s nominated health and safety officers;
20. Ensure that daily health and safety toolbox meetings are conducted within all worksites prior to commencement of work;
21. Ensure that an HIV and AIDS awareness program is implemented in accordance with the requirements of the works contract;
22. Monitor HIV and AIDS awareness activities to ensure that the program is being implemented as required by the works contract;
23. Check that the contractor has put in place environmental and Social management procedures compliant with the contract Environmental and Social Management Plan and MSIPs;
24. Ensure that Contractor prepares Standard Operating Procedures (SOPs) for each work site and that these are translated in a language understandable by local workforce and are displayed in visible and accessible locations within worksites;
25. Ensure that the Stakeholder Engagement Plan (SEP) and Labour Management Procedures (LMP) are implemented by the constructor;
26. Review and approve the contractor’s site-specific construction Contractors Environmental, Health, Safety and Social Management Plan (C-EHSSMP), Health and Safety, Labor Management Plans and Traffic Management Plans and other MSIPs together with the PIU;
27. Monitor compliance with the Environmental and Social Management Plan, MSIPs, and the C-EHSSMP;
28. Report on environmental and social compliance in the Monthly Progress Report;
29. Instruct the contractor(s) to take remedial actions within a specified timeframe, and carry out additional monitoring, if required, according to the contractual requirements and procedures in the event of non-compliances or complaints;
30. Instruct the contractor(s) to stop activities which generate adverse impacts, and/or when the contractor(s) fails to implement the ESMP requirements / remedial actions; and
31. Refer to Annex 1 for a detailed description of monitoring the implementation of ESHS Management Strategies and Implementation Plans (ESHS-MSIP)

#### Financial Progress Monitoring

The Resident Engineer shall:

1. Ensure that the Contractor provides regular cash flow updates in accordance with the works contract;
2. Monitor actual cash flows against programme;
3. Maintain a “Final Job estimate” which shall be published at least once per quarter and shall contain the base estimate of the final job cost taking into account changes in quantities, variation orders, and claims.

#### Completion of Works

The Resident Team Leader shall:

1. Inspect the works in the company of representatives of the Client, the Contractor and the Sub-contractor, if any, prior to handing over of any section of the works;
2. Prepare a final snag list of items to be completed or replaced together with a time schedule for remedying of the same;
3. Verify that all items on the final snag list have been completed or corrected; and
4. Prior to the commencement of the Defects Notification Period for any section, provide written affirmation that the works have been completed in accordance with the requirements of the contract, plans and specifications, and issue a Taking-Over Certificate.
5. The Consultant shall maintain and keep updated a set of ‘As-Built Drawings’. The As-Built drawings shall be finalized for submission with the final report before the end of the Defects Notification Period

#### Required Input During Defects Notification Period

1. Immediately prior to the expiration of the Defects Notification Period for any section of the works for which a Taking-Over Certificate has been issued, the Resident Engineer shall in the company of the Client, and the Contractor inspect the said section and provide written affirmation that the works have been completed and maintained in accordance with the contract, and issue a Maintenance Certificate for the relevant section subject to the approval of the client.
2. Upon receipt from the Contractor within 56 days of the issue of the Maintenance Certificate for the last section for which the defects notification period has expired, the Resident Engineer shall prepare in co-operation with the Contractor the Final Account for the contract.

### Contract Duration

The duration for this phase is estimated at a total of 12 months based on the anticipated durations of the works contracts plus a Defects Notification Period of Twelve (12) months.

### Team Composition

The following expertise will be required to carry out the consultancy services. For each expert proposed, curriculum vitae of no more than four pages shall be submitted.

Table 3 Key Staff Time Input – Construction Phase

| Item | Key Personnel | Person Month |
| --- | --- | --- |
| 1 | Resident Team Leader | 13 |
| 2 | Clerk of Works | 12 |
| 3 | Social Expert | 12 |
| 4 | Environmental Expert | 6 |
| 5 | Occupational Health and Safety Expert | 12 |
| 6 | Architect | 4 |
| 7 | Structural | 4 |
| 8 | Materials Engineer | 4 |
| 9 | Quantity Surveyor | 3 |
| 10 | Highway/Pavement | 3 |
| 11 | Engineering Surveyor | 4 |
| 12 | Material Technician | 6 |
| 13 | Inspector of Works | 6 |
|  | TOTAL A | 89 |

The consultant's personnel, nominated for this project, shall be suitably qualified and experienced. As a guide, the following is an indication of the minimum level of training and experience expected of the key members of the Consultants supervision team:

1. **Resident Team Leader**

The Resident Team Leader shall head the site staff and shall be responsible for all technical and administrative aspects on the site.

Resident Team Leader must have an educational background of a minimum of a Bachelor’s Degree in Architecture or its equivalent and must be a registered/member with a relevant professional regulatory body and have a current practicing certificate in Architecture. A postgraduate qualification in Project Management or Project Monitoring will be an added advantage. He/she must have a minimum of fifteen (15) years of extensive experience as a resident team leader and must have supervised five major buildings one of which must have been a Multi – Purpose Facility. He/she must have worked in sub–Saharan Africa and shall be fluent in written and spoken English.

1. **Clerk of Works**

The Clerk of Works shall be responsible for supervising construction of buildings, roads and other infrastructure for the IEC.

The Clerk of Works must have a minimum of a Diploma in Civil Engineering or equivalent qualification and must have a minimum of ten (10) years’ experience in infrastructure projects. He/she must have served in similar capacity in at least three (3) building projects of similar magnitude and complexity in last 10 years. He/she must have worked in sub–Saharan Africa and shall be fluent in written and spoken English.

1. **Social Expert**

The Social Expert shall be responsible for monitoring and evaluating the social impacts in the corridor of impact and prepare review mitigation plans and Resettlement Action Plan (RAP) in order to minimize any negative impacts that the project implementation will have on the people along project area. Furthermore, the Sociologist will be responsible for proposing measures to prevent vendors from the common practice of encroaching the Customs area at the borders.

The Social Expert must have a minimum of a bachelor’s degree in the field of Social Science e.g sociology, economics, physical planning. They must have a minimum of seven (7) years’ experience in infrastructure projects of similar nature. He/she must have served as a Social officer in at least three (3) construction projects of similar nature . He/she must have a working experience in sub–Saharan Africa and shall be fluent in written and spoken English.

1. **Environmental Expert**

The Environmental Expert shall be responsible for carrying out an environmental impact assessment of the project and compile an Environmental and Social Management Plan (ESMP) in order to avoid, minimize or mitigate any negative impacts that the construction will have on the environment and adjacent areas.

The Environmental Expert must have a minimum of a BSc. degree in Environment Management, environmental engineering, or natural resources management. He/she must have a minimum of seven (7) years’ experience in infrastructure projects. They must have served as an Environmental specialist in at least three (3) building construction projects of similar nature in the last three (3) years. They must have a working experience of at least three (3) years in sub–Saharan Africa and shall be fluent in written and spoken English.

1. **Occupational Health and Safety Expert**

The OHS Expert shall be responsible for ensuring a safe working environment for workers as well as community safety by reviewing contractor’s OHS SOPs and related documents; monitor and audit the sites OHS systems; advise on good OHS practices; ensure appropriate Task Risk Assessments are done and control measures are in place. The expert is also required to identify any Standard Operating Procedures required to be implemented during the course of the project.

They must have an international certification or a degree in Occupational Health and Safety from a reputable institution. They must have a minimum of seven (7) years’ experience in infrastructure projects. He/she must have served as an Occupational Health and Safety Expert in at least three (3) building construction projects of similar nature in the last three (3) years. He/she shall be fluent in written and spoken English

1. **Architect**

He/she shall be responsible for ensuring the office buildings, rest rooms, generator house and related buildings are constructed according to design and conform to the contract specifications.

He/she must have a minimum of a degree in Architecture or equivalent qualification. He/she must have a minimum of ten (10) years’ experience in building construction supervision. He/she must have served as the Architect or equivalent capacity in at least three (3) building construction projects of similar magnitude and complexity in last ten (10) years. He/she must have a working experience in sub–Saharan Africa and shall be fluent in written and spoken English

1. **Structural Engineer**

The proposed Civil Engineer shall have an educational background of a minimum of Bachelor’s Degree in Engineering (Civil) or its equivalent. He/she must have a minimum of five (5) years’ experience in infrastructure projects especially road works as a structural engineer. He/she must have supervised at least three (3) road works projects as a Civil Engineer. He/she must have a working experience in sub–Saharan Africa and shall be fluent in written and spoken English.

1. **Materials Engineer**

The proposed Civil Engineer shall have an educational background of a minimum of Bachelor’s Degree in Engineering (Civil) or its equivalent. He/she must have a minimum of five (5) years’ experience in infrastructure projects especially road works. He/she must have supervised at least three (3) road works projects as a materials engineer. He/she must have a working experience in sub–Saharan Africa and shall be fluent in written and spoken English.

1. **Quantity Surveyor**

The Quantity Surveyor shall be responsible for ensuring that all measurements and evaluation of executed works submitted for payment by the contractor in connection with the construction of civil works, supply of the equipment, and other buildings conform to actual quantities executed on site and are in line with the approved design and contract specifications.

He/she must have a degree in Quantity Surveying, Building Economics or equivalent qualification. He/she must have minimum of ten (10) years’ experience in building economics. He/she must have served as the Quantity Surveyor or equivalent capacity in at least three (3) building construction projects of similar magnitude and complexity in last ten (10) years. He/she must have a working experience in sub–Saharan Africa and shall be fluent in written and spoken English.

1. **Highway/Pavement Engineer**

The proposed Civil Engineer shall have an educational background of a minimum of Bachelor’s Degree in Engineering (Civil) or its equivalent. He/she must have a minimum of five (5) years’ experience in infrastructure projects especially road works. He/she must have supervised at least three (3) road works projects as a highway and/or pavement engineer. He/she must have a working experience in sub–Saharan Africa and shall be fluent in written and spoken English.

1. **Engineering Surveyor**

The proposed Engineering Surveyor shall have an educational background of a minimum of Bachelor’s Degree in Surveying or its equivalent. He/she must have a minimum of seven (7) years’ experience in topographic profiles for existing and new alignments during which he/she must have been involved in at least three (3) road projects as a surveyor. He/she must have a working experience in sub–Saharan Africa and shall be fluent in written and spoken English.

1. **Materials Technician**

The Proposed Materials Technician shall have an educational background of a minimum of Diploma in Engineering (Civil) or its equivalent with experience in field soil engineering survey, analysis and testing of soils samples for road and building works. The proposed Materials Technician shall have more than 10 years of professional experience in the field of assignment.

1. **Inspector of Works**

A minimum qualification of either a Diploma in Civil Engineering and 5 years’ experience in a site capacity on road works in the region or a NCIC Grade II Roads Foremanship Certificate or Ministry of Works Certificate with at least 10 years of working experience in road works.

1. **Supporting Staff**

In addition to the expert personnel designated above, the Consultant shall determine the support and back-up staff deemed necessary to assist on the site- supervision. These include home office back-up specialists, such as IT Specialist as required. The CV for experts other than the key experts are not examined prior to the signature of the contract, therefore they need not be included in the proposal.

1. **Supporting Staff during Defects Liability Period**

The Consultant shall assign at least one of his key personnel to conduct the inspection during the Defect Liability Period.

### Reporting Requirements and Time Schedules for deliverables

The following reports shall be submitted:

#### Construction Inception Report

This report shall include results of the review of the contractor's work program, any modifications thereto, status of the Consultant’s and contractor's mobilization and any other matter requiring the Employer's action. This report shall be submitted not later than one month after effective date of contract. This report shall be submitted in five (5) copies to be distributed as follows: Three (3) copies to RA HQ, one (1) copy each to Ministry of Trade and MRA HQ

#### Monthly Progress Reports

The Resident Team Leader shall submit comprehensive monthly reports on the progress of the works, the Contractors’ Performance Assessment Reports and Environmental and Social Monitoring Forms by the 10th of the month following the month reported.

The Resident Team Leader shall furnish the client with project progress photographs for each contract in a CD together with the monthly reports.

This report shall be submitted in five (5) copies to be distributed as follows: Three (3) copies to RA HQ and one (1) copy to MRA HQ.

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

1. Summary progress of the works, both physical and financial;
2. Contractor’s performance assessment against agreed benchmarks;
3. Mention of any changes on the original envisaged technical solutions;
4. Major changes of quantities compared to contractual Bill of quantities;
5. Record of working units (number of equipment and labor) used for various types of works and total number of working hours of every item of equipment and labor category;
6. 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;
7. Financial status of both works and consultancy contracts;
8. Progress charts including percentages of completion of individual main work items and overall project;
9. Traffic management issues;
10. Implementation against ESMP, MSIPs, and C-ESMP;
11. Progress on implementation of Health and Safety requirements;
12. Weather information and charts, and
13. Construction and supervision data.

#### Minutes of Meetings

The Resident Team Leader shall issue comprehensive minutes of regular and special meetings and submit three copies to Roads Authority and one (1) copy to MRA HQ. Minutes of the regular meetings may be attached to the Monthly Progress Reports or, depending on the circumstances, may be submitted separately.

#### Accident Reports

A report of the circumstances of accidents occurring on the site shall be forwarded to the Client with all due dispatch, as per the Incident Notification Procedure (Including Environment and Social Incident Response Toolkit (ESIRT) including root cause analysis) developed in the ESMP.

#### Environment and Social reporting

The Consultant shall:

1. Immediately notify the Client of any failure by the Contractor to comply with its SEA and SH obligations;
2. 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.
3. Immediately inform and share with the Client notifications on E&S incidents or accidents provided to the Consultant by the Contractor, and as required of the Contractor as part of the Progress Reporting;
4. Share with the Client in a timely manner the Contractor’s E&S metrics, as required of the Contractor as part of the Progress Reports.
5. In compliance with the National Laws and requirements, report all serious and severe incidents and accidents to the District Labour Officer and relevant Ministry of Labour and Safety.

#### Final Report

Within 28 days of the issuance of the Taking Over Certificate, the Resident Team Leader shall prepare a Final Report, which shall highlight all major points of interest that arose during the Contract including E&S mitigation measures. Ten (10) copies of the Final report shall be submitted to RA HQ. The report should enable the Client in the future to know the type, quality and quantity of materials used and all information which together with the as built drawings (3 originals and 5 copies) and specifications will help the Client in the maintenance of the road or structure.

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. Others include cumulative monthly payments to the Contractor, 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 variation from the original shall be given in the final report. The report shall also include “as built drawings.”

#### Final Completion Report:

Upon issuance of the defects liability and the final payment certificates, the Consultant shall prepare within 30 days a Final Completion Report shall be submitted in twelve (12) copies to be distributed as follows: - Six (6) copies to RA HQ, three (3) copies each to the Ministry of Industry and Trade and MRA HQ. The report shall include a separate volume on proposed future maintenance activities for the road and structures.

All reports shall be submitted to:

**Director of Major Projects, Roads Authority, Functional Building, Off Paul Kagame Highway, Private Bag B346, Lilongwe, Malawi.**

1. ASSISTANCE TO THE CONSULTANT BY THE CONTRACTING AUTHORITY

The Contracting Authority will make available the following information and support to the consultant:

1. Introduction letters to facilitate the access of the consultants’ staff to Ministries, Government administrations, public organizations, authorities and agencies, etc. whose activities and roles are relevant to the consultancy assignment.
2. Senior Staff of the Roads Authority when necessary and relevant.
3. WORKPLAN

On the basis of the activities outlined in 3.3.2 of these Terms of Reference, the consultants will prepare a work plan in the form of a Gantt chart for the assignment and include this in their technical proposal as well as state the approach to be taken in carrying out the assignment. The work plan should set out the consultants’ approach to the following activities and include:

* 1. Organization of the Project team and interrelations between the members of the team;
  2. Description of tasks and duties of each member of the Project team
  3. Mobilization of the Team and deployment of each expert;
  4. Bar-charts displaying activities to be carried out on site, period of holidays of each expert indicative dates for short term missions of each expert, etc.;
  5. Reporting

1. START-UP MEETING

The successful Consultant shall attend together with all their proposed key supervision staff to a meeting with the Client to be held before the commencement of the supervision services. The client or his representative shall elaborate the expected inputs and deliverables from each level of staffing. The client shall not be responsible for the costs incurred by the consultant in attending this meeting.

1. PRESENCE OF SITE SUPERVISION STAFF ON SITE

In order to satisfactory perform the tasks it is a requirement that the all-site supervision staff are present on site at all times while the works are in progress.

1. LEAVE, RESIGNATIONS, TRANSFERS AND REPLACEMENTS

The Consultant's staff shall arrange their annual leave to coincide with the Contractor's annual recess. Should a staff member however be granted special leave outside the Contractor's annual close-down, the Consultant shall provide at no additional cost to the Employer an equally qualified person to stand in for the period that the permanent site staff member is on special leave.

The special leave of a permanent site staff member as well as the person relieving a permanent site staff member shall be approved by the Client prior to such leave being taken. The Consultant shall not transfer any staff without prior written permission of the Client and shall replace personnel, if deemed necessary by the Client and fill vacancies which are created for whatever reason, e.g. resignation, illness, non-performance etc., at no additional costs to the Employer, with equally or better qualified persons approved by the Client.

The remuneration to be paid for any of the Personnel provided as a replacement shall not exceed the remuneration which would have been payable to the Personnel replaced. In case of lesser qualifications and working experience, the client shall have either the right to reject the proposed replacement or to negotiate reduced remuneration.

1. FACILITIES TO BE PROVIDED BY THE CONSULTANT

The Consultant shall be responsible for the provision of all facilities required to undertake the efficient and effective site supervision of road works with the exception of laboratory and survey facilities which will be provided through the works contract.

With respect to transport, the consultant shall provide five (5) motor vehicles for the supervision of the works and the measurement unit for the transport shall be “vehicle-months”.

1. DATA, SERVICES AND FACILITIES TO BE PROVIDED BY THE CLIENT

The Client shall provide the consultant with all requested and available data. The Client will also assist in the facilitation for the co-operation of other government ministries and agencies, departments and other agencies as required for carrying out the works and in liaison as necessary for the same purpose. The Client will give the Consultant assistance to gain access to all information required for the proper conduct and completion of the studies.

1. OBLIGATIONS OF THE CONSULTANT

The consultant’s obligations shall include, but not be limited to the following:-

* + - * 1. The Consultant shall employ well qualified and competent professional staff at all times in the execution of this study.
        2. The Consultant shall make his own arrangements for all necessary office and living accommodations, transportation, office and other supplies, computers, computer software, survey equipment, engineering investigations, materials testing , printing of reports and drawings etc. in connection with the services to be provided. All costs have to be included in the Financial Proposal.
        3. Prior to commencement of the actual services, the Consultant shall formulate a quality management system and procedures for implementation of these services in accordance with these Terms of Reference and accepted professional practice.

1. CONTACT PERSON
2. The Consultant’s liaison person shall be the Resident Engineer and as necessary the stated representative of the Consultants firm in the Head or Regional Office;
3. The Clients liaison person on this project shall be the designated Project Engineer in the Roads Authority.
4. PAYMENTS TO THE CONSULTANTS

## Payments

Payments will be made monthly depending on key personnel input.

## Costs

The costs shall be quoted to cover the Consultant’s performance of his duties described above (including VAT calculated at 16.5% of fees and withholding tax calculated at 10% of costs) in accordance with the following:

1. Monthly costs and subsistence allowances for expatriate personnel;
2. Monthly costs and subsistence allowances for local personnel
3. Cost of producing and printing reports as described above including secretarial expenses;
4. Shipment of personal effects;
5. Local Transport
6. Accommodation of staff.
7. Material testing and quality control

## Advance Payment

An advance payment of not more than **15%** of the total cost (excluding contingency allowance) may be provided to cover initial mobilization costs upon submission of acceptable Bank guarantee.

The advance payment shall be recouped by deductions from the Consultant’s first **five** invoices in the same currencies in which the advance was made at a rate of **20%** of the advance payment.

## Reimbursable

Reimbursable, which cover all out-of-pocket expenses, will be made against acceptable documentary evidence, as agreed with the Client.

## Other payments

No other payments will be made to the Consultant under this contract.

1. Consignments include import high risk consignments routed from the border for inspection and consignments moving inland under MRA transit procedures into designated bonded warehouses, MRA may wish to consider uses of IEC for export controls. [↑](#footnote-ref-2)