

Section 7. Terms of Reference

CONSULTANCY SERVICES FOR CONSTRUCTION SUPERVISION OF KENOL-SAGANA-MARUA HIGHWAY IMPROVEMENT PROJECT: LOT 1 –DUALLING OF KENOL-SAGANA (A2) ROAD

1. BACKGROUND

The Government of Kenya has applied for financing from the African Development Fund towards the cost of **Kenol-Sagana-Marua Highway Improvement Project; Lot 1 –Dualling of Kenol-Sagana (A2) road**. The Kenya National Highways Authority - the implementing agency of the Government of Kenya intends to apply a portion of the proceeds of this loan to eligible payments under the contract for Consultancy Services for Construction Supervision of **Lot 1 –Dualling of Kenol-Sagana (A2) road**.

The road is approximately 48km in length located in the Central Region, in Murang'a, Embu, Machakos and Kirinyaga Counties approximately 55kms from Nairobi the capital city of Kenya. The project starts at the Kenol/Murang'a junction (A2/B25) at Kenol town and traverses through trading centers of Makuyu, Makutano and ends at Sagana Town.

The site of the works shall be within the proposed road reserve and any other places as may be designated in the contract.

The works entails the construction of a dual carriageway consisting of four lanes. The works will also entail construction of a grade separated junction at the A2/B24 junction at Makutano, construction of major and minor drainage structures

The consultant will also be required by the client to design access roads, roadside/social amenities which include but not limited to; market sheds, bus park/lorry parks, bodaboda sheds, low-rise building for Sagana Trauma centre and any other amenity deemed necessary and as indicated in the works bidding document for operationalization of the road. These design tasks have to be completed within the first four (4) months of the assignment.

The project shall also involve relocation of services including but not limited to waterlines, Fiber optic Cables and Power lines.

The consultant shall be required to render all technical support relevant to the assignment. The detailed description of the consulting services to be performed is described in these Terms of Reference (TOR).

2. OBJECTIVE(S) OF THE ASSIGNMENT

The objective of the Consultancy services is to conscientiously fulfill, to the highest professional standards, the role of the Engineer (as set out in the works contract) to, supervise construction of the Works (on behalf of the Employer) throughout the entire construction period, including the one (1) year Defects Notification Period. The consultant shall ensure that the following are achieved for the works:

- i. Any necessary design and design reviews are executed in accordance with current accepted national and international engineering standards.
- ii. The construction is in accordance with the General and Special Conditions of Contract, the Technical Specifications and Engineering Drawings or any amendments thereto and meet the standard quality of end product;
- iii. The Contract Price and Time for Completion allowed under the Contract or any agreed amendments thereto.
- iv. Optimize the use of available material resources to minimize costs to the Employer and/or to maximize the quality of the Works or expedite construction.
- v. Minimize environmental and social impacts and maximizing the positive impacts, as provided in the Environmental and Social Management Plan (ESMP) for the project and that environmental and social safeguards including resettlement are carried out in accordance with GoK/AfDB requirements.

3. SCOPE OF SERVICES, TASKS (COMPONENTS) AND EXPECTED DELIVERABLES

The Consultant shall be responsible for the supervision of the construction in accordance with the African Development Banks Harmonized Edition of the FIDIC Conditions of Contract for Construction. The Consultant shall, in general, exercise the powers of the Engineer contained in the Works Contract in all matters concerning the contract and in the execution of the works as delegated in the services contract with proper interpretation of the duties and responsibilities of the Engineer. He shall supervise the construction works with due diligence and efficiency and in accordance with sound technical, administrative, financial 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 at the most economic costs and is carried out in full compliance with the governing specifications.

The scope of the Services shall include all the services necessary to achieve the objectives described in Section 2 above and, in so doing, the Consultant shall expeditiously execute not less than the following tasks.;

- (i) Modification and/or amendment where necessary of the following within four (4) months after commencement of the consultancy contract:
 - ✓ Adequacy of all designs including but not limited to; geometric, pavement, structural and hydrological designs.
 - ✓ Adequacy of all survey data including but not limited to; topographical survey and setting out data and where necessary carryout all survey work necessary for design review and implementation of the works
 - ✓ Adequacy of construction drawings
 - ✓ Optimization of the design including but not limited to the review adapting of the median width on the dual carriageway sections to fit the existing right of way
 - ✓ Geotechnical investigation reports including confirmatory tests whenever required. (A provisional sum has been allowed under the works contract for

undertaking of the confirmatory tests, in case required and financial contingency in the services contract will cater for any additional inputs that may be required as a result of this task).

- ✓ The proposed NMT facilities along the project road.
- ✓ Kenol Town CBD and adjacent built up sections along the road, and develop low cost improvement measures for both the traffic congestion, NMT and road crash problems with due attention to all utilities.
- ✓ Re-map existing utilities and ensure that relocation undertaken with minimum disruption.
- ✓ The contractor's traffic management plan.
- ✓ The project cost by appraising the cost and advising the Employer accordingly.

After approval by the Employer the Consultant shall make, any necessary amendment to the design documents. In addition to this, the consultant shall continue review of the design, in relation to site conditions, during the whole construction period and timely propose necessary changes to the employer and shall make necessary amendments

- (ii) Design access roads, roadside/social amenities which include but not limited to; market sheds, bus park/lorry parks, bodaboda sheds, low-rise building for Sagana Trauma Centre and any other amenity deemed necessary and as indicated in the works bidding document for operationalization of the road. These design tasks have to be completed within the first four (4) months of the assignment
- (iii) Incorporate recommendations of the Road Safety Audit Report in the design review, in particular:
- ✓ Suitability of the location of the proposed bus laybys, roadside markets taking cognizance of the potential of high population concentration.
 - ✓ Safety and access into the interchanges, U-turns, roadside markets, service roads and on-going/proposed commercial and residential developments along the road.
 - ✓ Adequacy and safety of the pedestrian crossings in built up areas
 - ✓ Adequacy, accessibility and safety of weaving/merging traffic including NMT at the proposed inter-changes.
 - ✓ Assess the adequacy for matatu termini in consultation with the county government.
- (iv) The consultant shall review and familiarize themselves with the Resettlement Action Plan (RAP) of the specific contract, as well as, the Government of Kenya's and AfDB's policies, regulations and laws of resettlement and ensure their proper implementation.

- (v) Liaise, where necessary, with Lands Department and the respective County Administration to ensure that the assessment and compensation of property and all project affected persons is on schedule as the Contractor is given possession of site.
- (vi) Issue the Contractor with all necessary copies of the Engineering Drawings, Technical Specifications and timely provide any such supplementary information requested by the Contractor, necessary for the Contractor to carry out the Works
- (vii) Review the survey of existing utility services and make additional survey if found to be necessary and liaise closely with authorities concerned on the proposed relocation of such services. All official dealings with any service agencies shall be done in consultation with the Client.
- (viii) Identify and locate all beacons and benchmarks stations which have been established by the design consultant, verify the accuracy of the survey stations and re-establish any damaged or missing stations to enable the Contractor to set out and perform the Works and verify the setting-out by the Contractor including the checking and approval of any adjustments to line and level that may be required.
- (ix) Organize and coordinate “Environmental and social (HIV/AIDS, Safety) Awareness Workshop, in collaboration with the Employer, during the mobilization phase at major centers/towns along the project road. The participants of the workshop will be local officials, the Contractor’s management and workforce (mainly operators), representatives of project affected persons (PAPs) and selected key actors in road planning and implementation. In addition, the Consultant shall be required to supervise offsite tree planting in the mountains (forest blocks) which shall be started earlier within the first 6 months of the contract period

Obligations and Supervision Responsibilities

In addition, the Consultant’s duties and responsibilities shall comprise inter-alia:

- (1) Supervision of all the construction works of the project and assign experienced resident staff to this work and to ensure successful completion of the project.
- (2) Reviewing the adequacy of the pavement designs and bituminous mix designs including the factual geotechnical and materials reports and making proposals for modification where necessary with prior approval by the Client.
- (3) Reviewing the adequacy of the geometrical and hydrological designs and making proposals for modification where necessary with prior approval by the Client
- (4) Routinely and at not more than quarterly intervals, advise the Employer of the estimated total cost in the different contract currencies to completion and expected completion time of the Works.
- (5) Reviewing, within four (4) months from commencement of works, the adequacy of the environmental and social mitigation measures incorporated in the works contract and coordinating the preparation of a detailed environmental mitigation plan to a standard acceptable by the Bank and the Government of Kenya (GoK).

- (6) Reviewing existing land acquisition plans and the Resettlement Action Plan including preparation of updated RAP reports prior to commencement of the works or as may be directed by the Client.
- (7) Verify drawings, Specifications and work schedules prepared prior to or modified during the implementation of the works. Prepare design changes as required and/or to suit field conditions including improvement of alignments. In particular, supervise the ground investigation activities at the bridge sites and major structures, carried out by the Contractor, review and modify as necessary the design of the structures.
- (8) Carry out inspection of all working areas during the execution of the Works, inspect manufactured items and carry out tests on materials and plant to ensure that they conform to the Specifications.
- (9) Review the Contractor's Works Programme and associated work method statements, physical and financial progress of the works for compliance with the provisions of the contract. The work program should also include the soft components and resource mobilization schedule.
- (10) Review and check the Contractor's Payment Applications and, after verifying the accuracy of the measurement and costing calculations and the sufficiency of the supporting documentation and submit interim payment certificates within fourteen (14) days to the Employer on receipt of the contractor's application for payment;
- (11) Check and approve contractor's arrangements made during the construction of the Works to ensure smooth and safe traffic flow;
- (12) Make all necessary arrangements for official site visits and site meetings including preparing minutes of the meetings, project briefs and progress reports;
- (13) Carry out material source investigations and tests; conduct all necessary and advisable inspection, sampling, testing and analysis for compliance with the Technical Specifications and approve or reject the use;
- (14) Routinely or as requested by the Contractor, inspect the Works both under construction and completed, for compliance with the Specifications and the agreed method of working, as a basis for payment.
- (15) Monitor the payment process and alert the Employer when Delayed Payments are likely to attract interest charges and when the Employer is in default.;
- (16) Thoroughly review and analyze the Contractor's applications for extensions of time or Claims for additional payment expeditiously and furnish the Employer with the detailed analysis, within timelines in strict compliance with the provisions of the works contract. Subject to the Employer's approval, advise the Contractor accordingly. Prepare Engineer's Instructions (EI) and Variation Orders (VO) as recommended or necessary complete with the associated measurement and payment instructions. Issue such EI's and VO's to the Contractor in writing - whilst advising the Employer of such EI's and VO's and of the associated implications. (The Particular Conditions of Contract may require the Employer's approval prior to issue of some instructions or variations).

- (17) In the event of adjudication or arbitration, provide the necessary personnel and expertise to advise and assist the Employer in any such process and prepare any further analysis of the Contractors claims submissions as may be necessary to assist the Employer in the presentation of his case.
- (18) Take and maintain monthly digital color progress photographs throughout the duration of the contract starting from pre- intervention captioned with: reference number, time date, precise location, subject and description. The data should be stored in retrievable record system, together with copies of the caption and handed over to the Employer at the end of the contract. The capturing of sites digitally shall include areas, which are environmentally important and attractive, both before and after construction works. These shall include environmentally responsive road design elements, adverse or negative impacts of the road construction on the environment, like for instance, failed structures, slope failure, mismanaged road areas and overall management of road corridor. Pictures of active material sites and the reinstated ones shall be taken and included in the quarterly E&S report.
- (19) Submit progress reports, final reports and records, and other hard outputs regarding construction progress and the status of the Works Contract and the consulting services contract in accordance with reporting section of this TOR.
- (20) Immediately prior to commencement of works and subsequent twelve (12) months intervals and prior to final hand-over/acceptance of the whole of the Works, conduct two (2) days twenty-four (24) hour and five (5) days 12 hours' traffic counts at count/survey station locations agreed with KeNHA. The results and analysis shall be presented in the inception report, annual Reports and the Project Completion Report.
- (21) Maintain up – to – date detailed daily Site Diary, correspondences file (making them available for inspection by the Employer or his representatives when requested to do so) with records of all work progress, stoppages or delays (showing the start and end time and full details or the resources employed per activity); accidents on site, weather records, official visitors to site, Contractor's equipment on Site (date of arrival or removal from site, condition, availability and utilization).;
- (22) Review the ESIA report of the project, familiarize with the National Government's and AfDB's Environmental Policies and Guidelines. Ensure the contractor provides detailed Environmental and Social Management Plan (ESMP) with action timelines.
- (23) Review and familiarize the ESIA report of the project, GOK's HIV/AIDS Policy and Strategy, prevention and control and follow up and report in the monthly reports on how the contractor is implementing the alleviation program for Site staff and labor in respect of HIV/AIDS.
- (24) Monitor the following environmental, social and safety protection during implementation of the project: -
 - Minimize water and soil pollution by directing runoff waters into tailing ponds.
 - Minimize noise and dust levels.
 - Enforce installation of fire extinguishers and first aid kits on site.
 - Shape and landscape all borrow pits and quarries on completion of works.

- Minimize the risk of soil erosion by grassing the embankments; stabilize bridge sites and the inlets and outlets of culverts on sandy soil with gabions or stone pitching.
 - Ensure camp sites are located to an area which minimizes disruption to local population, fauna and flora and water courses; provide adequate drainage facilities and treatment of sewage and waste disposals. Camp areas should be dismantled, if no longer required for any other use as approved by the Employer, and rehabilitated once construction is completed. Pictures of the sites before and after the construction need to be taken and documented in order to compare the camping effects on the natural environment.
 - Avoid spillage of oil, fuel, and lubricants. If spilt, they shall be collected and disposed of in such a way that it will not affect the natural environment.
 - Ensure trees are planted simultaneously with the commencement of the works along the road, on landscapes and offsite in the mountains (identified forest blocks) as per the contract.
 - Rock blasting near settlement areas shall be properly coordinated with the relevant officers of the Employer's Government Authorities in an attempt to minimize levels of noise pollution and community interference
 - Enforce implementation of the ESMP and provide liaison between the Contractor, the local community, KeNHA, NEMA, the regional Environmental Officers, County Officers and County Planning Officers.
- (25) Formally arrange joint inspections with the Contractor, in the presence of the Employer, of completed sections of the Works for acceptance and/or identification of defects, for Taking-over inspections, prepare a snag lists and the "Taking over Certificate" before commencement of "Defects Notification Period."
- (26) At latest within one month following final inspection and taking over of completed works, agree with the contractor the final measurements of the works, and prepare the final statement of accounts payment certificate for submission to the Employer.
- (27) Review, approve and submit two full sets of as-built drawings within two months of completion of the Works detailing all alignment and level information, position and sizes of drainage structures, services information, and structural drawings (including type and positions of reinforcement).
- (28) Prepare comprehensive project completion report (PCR) within one (1) month of receipt of comments on the Draft PCR.

Duration of the Services

- (29) The duration of the Services is to extend from the effective date of this Contract to the end of the Defects Liability Period of the last section of the Works. This is envisaged to be a period of **36 months** of construction and **12 months** of the Defects Notification Period, subject to actual contract completion.
- (30) During the Contractor's mobilization period, the Consultant shall operate with a skeletal staff agreed with KeNHA. During the 12 months Defects Notification Period, when construction of the whole of the works has been substantially

completed, the Consultant shall reduce the construction supervision staff accordingly. Staff mobilization and demobilization plans are to form part of the Consultant's technical proposal and related financial proposal.

Additional Responsibilities of the Consultant

- (31) The provisions of the Services are all to be executed in Kenya in the project area, with the sole exception of: (a) finalization of the Final Report to incorporate the Employer's and Bank's comments together with preparation and submission of the Consultant's final invoice, (b) some of the Consultant's headquarters back-up services if formally agreed and approved by the Employer, and (c) The reproduction and binding of the finalized as built drawings.
- (32) Under the terms and conditions of the Civil Works Contract, the Consultant shall be provided site offices and laboratory facilities, site accommodation, site transport and other site facilities, equipment, utilities and consumable necessary for the complete execution of the services.
- (33) The Consultant is strongly advised to inspect the works bidding documents in preparing his financial proposal regarding the site facilities transport and equipment to be provided to him by the works contract. Anything, which is not covered by the works contract, is deemed to be included in the financial proposal of the consultant. During the period of the Construction Supervision Services the Consultant and all the Consultant's billable staff employed for the provision of the Services are required to reside permanently on site and, during working hours, shall only leave site on official business. None of the Consultant's billable staff shall reside in Nairobi or elsewhere off the Site, except during the period of construction of the Engineer's Facilities on Site, when the Contractor will provide temporary housing or accommodation in the vicinity of the Works.
- (34) In the event the Consultant wishes to establish and utilize additional off-site office facilities, accommodation, transport, equipment, utilities and consumable, and any other resources deemed necessary for the complete execution of the Services, in Nairobi or elsewhere, then the cost of provision of such facilities and the related additional staffing shall be detailed in the Consultant's proposal.

4. TEAM COMPOSITION & QUALIFICATION REQUIREMENTS FOR THE KEY EXPERTS

PERSONNEL AND SUPPORT STAFF FOR SUPERVISION OF THE WORKS

KEY PERSONNEL

The Consultant shall provide competent personnel for the services, who shall be managed by the Resident Engineer.

All the Consultant's personnel shall be fluent in the full use of the contract language, English. In addition, all the key staff shall be computer literate.

The Consultant shall provide the following key personnel with the following qualifications and experience:

i) Resident Engineer – Team Leader (37 man months)

He/She must possess BSc. Degree in Civil Engineering or equivalent and with at least Twenty (20) years professional experience. He/She must be a Registered Engineer with Engineers Board of Kenya or equivalent such as Member of the Institution of Civil Engineers (U.K.).

He/She must have least fifteen (15) years extensive experience in highway design, contract administration and evaluation of claims, and not less than ten (10) years as a Resident Engineer or Team Leader level on a road construction contract of comparable magnitude. Knowledge of FIDIC Contract Procedure and Donor Funded Projects requirements is desirable. Previous experience on road projects in East Africa will be an added advantage. *The team leader should have atleast two years of experience with the firm or its associates within the last eight years.*

ii) Deputy Resident Engineers/Highway Engineer (34man months)

He/She must possess BSc. Degrees in Civil Engineering or equivalent and with at least fifteen (15) years professional experience. He/She should preferably be a local national Registered with Engineers Board of Kenya or equivalent such as Member of the Institution of Civil Engineers (U.K.).

He/She must have previous relevant experience of at least ten (10) years as a Resident or Deputy Resident Engineer or Team leader gained on projects of similar complexity and size and must have supervised highway construction contracts with particular experience in measurement of works, tender documentation and contract administration.

He/She must have at least three (3) years in the design of roads using the latest computer aided design software. Experience on road projects in East Africa will be an advantage.

iii) Materials/Pavement Engineer (34 man months)

He/She must possess BSc. Degree in Civil Engineering or equivalent or related field and with at least fifteen (15) years professional experience. He/She must be a Registered Engineer with Engineers Board of Kenya or equivalent such as Member of the Institution of Civil Engineers (U.K.).

He/She must have a minimum of twelve (12) years' experience in road construction materials (geotechnical investigations, testing and pavement design for Dense Bitumen Macadam, Graded crushed stone, and Asphalt concrete in tropical countries) and at least ten (10) years' experience in roadworks laboratory. Experience on road projects in East Africa will be an advantage.

iv) Bridge/Structural and drainage Engineer (30 man months)

He/She must possess BSc. Degree in Civil Engineering or equivalent and with at least fifteen (15) years professional experience and must be a Registered Engineer with Engineers Board of Kenya or equivalent such as Member of the Institution of Civil Engineers (U.K.).

He/She must have at least Ten (10) years' experience in structural analysis, design and construction supervision of bridges and road drainage structures and must be familiar with latest Computer Aided Design applications. Experience on road projects in East Africa will be an advantage.

v) Engineering Surveyor (34 man months)

He/She must possess BSc. Degree in Survey & Photogrammetry or equivalent and with at least fifteen (15) years professional experience. He/She must be registered with Institute of Surveyors of Kenya or equivalent.

He/She must have served in similar capacity in at least three road projects of similar magnitude and complexity and must be familiar with GPS, Total Station and associated computer applications. Experience on road projects in East Africa will be an advantage.

vi) Environmental Safeguards Specialist (15 man months)

He/She must possess a Degree in Environmental Management or related discipline and with a minimum of ten (10) years of practical post qualification experience in environmental studies of infrastructural projects. He/She must be registered as Lead Expert (NEMA) or equivalent.

He/She must have a minimum of Five (5) years working experience on environmental/social management with sound knowledge of environmental and social issues, initiatives and implementation of mitigation measures in construction of highways. Experience on highway project would be an added advantage

vii) Social Safeguards Specialist (15 man months)

He/She must possess a Degree in Sociology or related discipline and with a minimum of ten (10) years of practical post qualification experience in Sociology/Gender issues in infrastructure projects.

He/She must have a minimum of Five (5) years working experience on social management issues with sound knowledge of gender and social issues, initiatives and implementation of mitigation measures in civil engineering construction works. Experience on highway project would be an added advantage.

viii) Road Safety Specialist/ Traffic Engineer (15 man months)

He/She must possess BSc. Degree in Civil Engineering or equivalent and with at least ten (10) years professional experience and must be a Registered Engineer with Engineers Board of Kenya or equivalent such as Member of the Institution of Civil Engineers (U.K.).

He/She must have five (5) years extensive experience in Traffic and Road Safety Engineering on highways of similar size and complexity.

ix) Architect (5 man months)

He/She must possess BSc. Degrees in Architecture or equivalent and with at least ten (10) years professional experience. He/She should preferably be a local national Registered with the Board of Architects and Quantity Surveyors or equivalent.

He/She must have previous relevant experience of at least ten (10) years as an Architect gained on projects of similar complexity and size and must have supervised construction contracts.

He/She must have at least five (5) years in the design of low-rise commercial buildings using the latest computer aided design software. Experience on construction projects in East Africa will be an advantage.

x) Quantity Surveyor (7 man months)

He/She must possess BSc. Degrees in Quantity Surveying or equivalent and with at least ten (10) years professional experience. He/She should preferably be a local national Registered with the Board of Architects and Quantity Surveyors or equivalent.

He/She must have previous relevant experience of at least five (5) years as a Quantity Surveyor gained on projects of similar complexity and size and must have supervised construction contracts.

Experience on construction projects in East Africa will be an advantage.

xi) Senior Roads Inspector (34 man months)

He/She must possess a Higher National Diploma in Civil Engineering from the Kenya Polytechnic or its equivalent.

They should have at least twenty (20) years' experience in supervision of road construction works of equivalent scope particularly earthworks, laying of Graded Crushed Stone, Dense Bitumen Macadam, Asphalt Concrete, Surface dressing, concrete works and placing of reinforcement and structural steel.

xii) Materials Technologist (34 man months)

He/She must possess a Higher National Diploma in Civil Engineering from the Kenya Polytechnic or its equivalent.

He/She should possess at least fifteen (15) years' experience in overseeing site laboratories in particular soils sampling and testing for road construction projects of similar scope. Experience with laboratory testing of Graded Crushed Stone, Dense Bitumen Macadam, Asphalt Concrete, Surface dressing and concrete works is essential.

xiii) CAD Engineer (30 man months)

He/She must possess a degree in Civil Engineering or equivalent and must have at least five (5) years practical post qualification with CAD or any other equivalent.

xiv) Specialized Experts (5 man months)

The Consultant may engage other specialized short term experts when it is found necessary for specialized services upon approval by the Employer. The consultant is expected to quote a price in his financial proposal assuming a comparable education and experience with that of the Deputy Resident Engineer.

A summary of the estimated key personnel man months is as tabulated in Table 2 hereunder:

Table 2 – Consultant’s Key Personnel and Inputs for Project Phases

No.	<u>Position</u>	Person Months	
		Construction (36months)	Defects Notification Period and submission of Final reports* (12 months)
1.	Resident Engineer/Team Leader	34	3
2.	Deputy Resident Engineer /Highway Engineer	34	-
3.	Materials/Geotechnical Engineer	33	1
4.	Bridge/Structural and Drainage Engineer	30	-
5.	Engineering Surveyor	33	1
6.	Environmental Safeguards Specialist	15	-
7.	Social Safeguards Specialist	15	-
8.	Road Safety Specialist/Traffic Engineer	15	-
9.	Architect	5	-
10.	Quantity Surveyor	4	-
11.	Senior Roads Inspector	34	-
12.	Materials Technologist	34	-
13.	CAD Engineer	30	1
14.	Other Specialized Experts	5	
	TOTAL	321	6

Note: The consultant shall consider and include all necessary additional staff (both key and support) which they consider to be necessary to discharge all their obligations and achieve the objectives of the project., Duties and responsibilities of these additional staff need to be indicated in the technical proposal and the corresponding financial implications in the financial proposal.

*The Inputs provided during the defects liability Period shall be computed on prorate basis until all project reports and the Final account has been received and approved by the Employer

SUPPORT STAFF

In addition to the key personnel and technicians designated above, the Consultant shall be required to avail the following support to assist with on-site supervision of the works. The number of support staff, their inputs in person months for the supervision services are tabulated in Table 3 below. The cost of support staff shall be included in the Consultant financial proposal. The support staff are to be locally recruited with Ordinary Level Diploma in Civil Engineering from the Kenya Polytechnic or its equivalent in respective related fields with a minimum of 12 years' experience on highway projects in respective fields of assignment.

The team shall have knowledge and experience of in the administration of ICB contracts for similar types of projects.

The Consultant is not expected to attach the CVs of the technicians with the technical proposal. However, the successful firm will submit the CVs during negotiation and/or prior to mobilizing the staff for the review of the Employer.

Curriculum Vitae (CV) for the other key proposed professional staff shall be filled in the format given in the RFP.

Table 3 – Consultant's Supports Staff and Inputs Requirement

Position	No. of Staff	Estimated Person Months	
		Construction	DLP
Assistant Material Engineer (Graduate Trainee) - Minimum Qualification shall be Degree in Civil Engineering with specialization/interest to pursue Materials Engineering for the rest of the career.	2	60	
Laboratory Technician - (Minimum qualification of Ordinary Level Diploma in Civil Engineering and twelve (12) years post qualification experience in materials quality control in road projects)	3	90	1
Site Inspectors – Road works (Minimum qualification of Ordinary Level Diploma in Civil Engineering and twelve (12) years post qualification experience in road works)	2	60	
Site Inspectors – Asphalt works (Minimum qualification of Ordinary Level Diploma in Civil Engineering and twelve (12) years post qualification experience in Asphalt road works)	1	30	2
Site Inspectors – Structural/Drainage works (Minimum qualification of Ordinary Level Diploma in Civil Engineering and twelve (12) years post qualification experience in Drainage/Structural works)	2	60	1
Assistant Laboratory Technician - (Minimum qualification of Ordinary Level Diploma in Civil Engineering and four (4) years post qualification experience in materials quality control in road projects)	3	90	

Position	No. of Staff	Estimated Person Months	
		Construction	DLP
Assistant Surveyor – Site Quality Control Works (Minimum qualification of Higher National Diploma in Surveying and Photogrammetry and twelve (12) years post qualification experience in Surveying works)	2	72	1
Survey Assistant/Leveler – Site Quality Control Works (Minimum qualification of Ordinary Level Diploma in Surveying and Photogrammetry and four (4) years post qualification experience in Surveying works)	2	72	
Assistant Environmental Safeguards Specialist- He/She must possess a Degree in Environmental Management or related discipline and with a minimum of three (3) years of practical post qualification experience in environmental studies of infrastructural projects. He/She must be registered as Lead Expert (NEMA) or equivalent.	1	36	
Assistant Social Safeguards Specialist- He/She must possess a Degree in Sociology or related discipline and with a minimum of three (3) years of practical post qualification experience in Sociology/Gender issues in infrastructure projects.	1	36	
Office Administrator	1	30	
Secretary	1	36	2
TOTAL		672	7

Note:

- (i) The cost of any additional staff and support which are not indicated in the financial proposal are assumed to be factored in the financial proposal submitted for the service.
- (ii) The Consultant can propose any further additional staff, which, in the opinion of the Consultant, are necessary for the performance of the services and indicate the same in the Technical and Financial Proposals.
- (iii) The works contract shall provide for the attendance to the Resident Engineer only in the categories of labourers, laboratory attendants, chainmen, cleaners, and office assistants/messengers.
- (iv) The entire Consultant's staff that will be required for the services and will be resident on site should be named and clearly indicated.
- (v) Curricula Vitae (CVs) for the proposed key Personnel excluding the specialized experts, technicians and support staff shall be submitted as an Appendix to the Technical Proposal. All CVs should be signed and currently dated by the nominees.
- (vi) CVs of the technicians, support staff will be submitted by the successful Consultant at the time of Contract Negotiations

- (vii) CVs of the Specialized Experts should be submitted for approval when the Client considers it to be necessary to mobilize such experts.

5. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES

The Consultant shall prepare in hard and soft copies and submit to KeNHA and AfDB the following documents in English.

Table 1 –Reports to be submitted by Consultant

Ref.	Report	No. of Hard copies	No. of Soft Copies
1	Inception Report	2	2
2	Monthly Progress Reports	2	2
3	Quality Assurance Manual	2	2
4	Quarterly Progress Report	2	2
5	Quarterly Environmental and Social Management Report	2	2
6	Design Review	2	2
7	RAP implementation/audit report	2	2
8	Claims Analysis Report(s)	2	2
9	Special Report(s) (at least three)	2	2
10	Annual Progress Report	2	2
11	Outcome and Impact Assessment report	2	2
12	Draft Project Completion report	2	2
13	Final Project Completion Report	2	2

Notes:

- All hard Copies of the reports shall be submitted with 2 No. Executive Summary separately bound. The Soft copy CDs of each of the reports must be neatly printed and/labelled electronically.*
- The soft copies of all the reports in PDF, one copy in editable format, should be submitted along with the hard copies.*
- All reports shall be submitted to KeNHA and to the African Development Bank concurrently at the provided address except for the Claims Analysis Reports that shall only be submitted to KeNHA.*

1. Inception Report

The Consultant shall prepare within the first three months, a draft Inception/Mobilization report to cover the Consultant's initial findings and confirm the methodology and detailed work program proposed for adoption in light of the initial findings, while also identifying constraints and proposed solutions, together with any action required by KeNHA to facilitate the successful implementation of the service. This report will also address the

mobilization and preparation status of the Contractor and the Consultant. The final inception report should be submitted within one week of receiving comments from KeNHA.

2. Monthly Progress Reports

The Consultant shall prepare Monthly Progress Reports for the duration of the Contract and illustrated with appropriate progress photographs. These reports should be submitted to KeNHA and AfDB not later than five days after end of the reporting month.

The contents and format of the progress reports shall include, but not be limited to:

- (i) Project description, Information about the implementation of the project to enable financial and technical follow-up of the project;
- (ii) Accomplishment of the different activities in the reporting period compared with the plan;
- (iii) Problem encountered in the reporting period or carried over from the previous months still affecting the project with the actions taken and any additional proposed mitigation measures;
- (iv) Supervision activities of the consultant;
- (v) Description of any changes to the originally envisaged technical solutions;
- (vi) Changes of quantities compared to contractual Bill of Quantities;
- (vii) Suggestions for resolutions of any technical and other problems which occur and those affecting progress of the works;
- (viii) Progress charts including percentage of completion of main work items and overall project;
- (ix) Financial status for Construction and Supervision works;
- (x) Construction and supervision data and climatic information and charts;
- (xi) Environmental and social aspects related to the works (including safety, employment record, etc.);
- (xii) Executive summary clearly assessing the progress in the reporting months in the comparison with the plan and with the causes for under/over achievement with actions taken to mitigate.
- (xiii) Appropriate number of color photographs with captions and date imprint should be included which will illustrate progress and any difficulties encountered on the Site
- (xiv) Pending key correspondences should also be attached with the reasons for delay in the main report.

Notwithstanding the submission of the monthly progress report stated above, the Consultant is required to send to the client, two days before the end of each month, a progress summary of the works in a summary table to be issued by KeNHA.

3 Quarterly Progress Report

The Consultant shall prepare a Quarterly Progress Report for the duration of the Contract. Quarterly reports should be distributed to KeNHA and AfDB not later than the 7th day after the end of the quarter being reported.

The format and contents of this main quarterly report shall be similar to that of the monthly progress report with additional information - bound separately - on each of the issues indicated to be reported quarterly such as the estimated cost and time of completion (Project Financial Appraisal),

In addition to the main quarterly report, the supervision consultant shall submit separately an environmental and Social quarterly report highlighting among others, (i) ESMP implementation (a comprehensive report on all Environmental and Social impact mitigation measures undertaken by the contractor. It will describe the major environmental elements of the project, adequacy of the mitigation measures proposed during design as well as supervision period and the effectiveness of the measures undertaken during construction. (ii) PAPs and (iii) RAP Implementation/Audit Report.

4 Claims Analysis Report

The Consultant shall comprehensively review and analyze the contractor's Claims, if any, strictly within timelines stipulated in the contract upon receipt of detailed particulars from the contractor. In addition, each report shall contain an executive summary containing a brief of the status of any previous claim(s) in addition to that of the claim under review.

5 Design Review and Cost Appraisal Report

The draft of the report, which is to be submitted to KeNHA not later than four (4) months after commencement, shall involve a comprehensive review based on sound technical and economic considerations with recommendations on the adequacy of the design with special emphasis on drainage structures, major junctions, the pavement, accesses to existing service roads serving public facilities and the stated roadside amenities including the detailed cost appraisal as a result of the review of the designs. The final report will be submitted within two weeks of receiving the comments.

6 Annual Progress Report

The Consultant shall prepare an Annual Progress Report for the duration of the Contract. Annual Reports should be submitted not later than two weeks after the end of the year being reported on. This report will summarize the activities performed within the year. The format of this report shall be similar to that of the monthly progress report. The 4th quarter report shall be treated as an annual report. Scanned copies of key correspondences of the year should be attached in the soft copy of the annual report and should also include traffic census update for the Project Road.

7 Projects Completion Report

A Draft Projects Completion Report shall be submitted within two months prior to commencement of the Defects Notification Period. This report should contain sufficient

information on the type, quality and quantity of materials used in the Works and including the “As-Built” drawings, Specifications and Claims as well as Economic Internal Rate of Return (EIRR) and Net Present Value (NPV) at completion

The Draft Projects Completion Report shall also include a summary of the principal difficulties encountered during the construction and the means employed to overcome them, changes made to the original designs, modifications to specifications and Conditions of Contract, utilizations of Provisional Sums, Financial and Physical Contingency Sums, cumulative monthly payments to the Contractor designated by the date and number of payment certificates and breakdown into foreign and local currency payments, including a similar schedule for consulting services, together with recommendations with regard to any unresolved claims, works, Road Safety, ESMP implementation, RAP Audit. The final project completion report should be submitted **within one month** of receiving comments from KeNHA.

8 Special Reports

The Consultant shall produce Special Reports on any such matters of special nature to the project. The consultant shall submit such reports as the case demands or as required by KeNHA. Such special reports may cover aspects that is not particularly covered in the normal reporting or on which the client may require further/detailed analysis.

9. Outcome and impact assessment report

To prepare baseline report at project inception which should be compared with values measured at mid-term and at the end of the project, the data (baseline values/indicators) include: traffic counts, travel time for specific type of vehicle and trip, accident rates, gender differential roles and responsibilities, and HIV/AIDS prevalence.

10. Consultant’s Quality Assurance Manual

This manual shall at a minimum describe the methodology and procedures to be followed in attaining the desired quality of the service at each stage of the construction and design on site. The report should also detail assignment of responsibilities with regard to quality assurance to the respective personnel in the team. The content of the manual shall be suggested by the Consultant for review by KeNHA and will be finalized taking into account KeNHA’s comments.

Submission of Reports

The above reports shall be submitted to:

Director (Development)
Kenya National Highways Authority
1st floor, North wing, Block A, Barabara Plaza
P.O. Box 49712-00100
NAIROBI

Tel: +254 2 8013842 ***Fax:*** +254 2 715483 ***Website:*** www.kenha.co.ke

*The African Development Bank
East Africa Regional Resource Centre (EARC)
Khushee Tower, Longonot Road, Upper Hill
P.O. Box 4861-00200
NAIROBI, KENYA.
Tel: (+254-20) 271 2925/6/8 Fax (+254-20) 271 2938 Website: www.afdb.org*

Table 2 –Summary of report submission timelines

	Types of Reports/Documents	Draft			Final		
		No		Submission Date			Submission Date
		KeNH A	ADB		KeNH A	ADB	
1	Inception Report	1	1	Within three months days of commencement of services	1	1	Within one week of receipt of the Client's comments
2	Monthly Progress Reports	N/A	N/A	N/A	1	1	Not later than five days after end of the reporting month
3	Quality Assurance Manual	1	1	Within three months of commencement of services	1	1	Within two weeks of receipt of the Client's comments
4	Quarterly Progress Report	N/A	N/A	N/A	1	1	Not later than the 7 th day after the end of the quarter being reported.
5	Quarterly Environmental and Social Management Report	N/A	N/A	N/A	1	1	Not later than the 7 th day after the end of the quarter being reported.
6	Design Review	1	1	Not later than four (4) months after commencement	1	1	Within two weeks of receipt of the Client's comments
7	RAP implementation/audit report	1	1	Within three months days of commencement of services	1	1	Within two weeks of receipt of the Client's comments
8	Claims Analysis Report(s)	N/A	N/A	N/A	2	0	Within timelines stipulated in the contract
9	Special Report(s) (at least three)	1	1	Within two weeks on request	1	1	Within one week of receipt of the Client's comments
10	Annual Progress Report	N/A	N/A	N/A	1	1	Not later than two weeks after the end of the year being reported on

11	Outcome and Impact Assessment report	1	1	At inception, mid-term and at the end of the project	1	1	Within two weeks of receipt of the Client's comments
12	Draft Project Completion report	1	1	Within two months prior to commencement of the Defects Notification Period	N/A	N/A	N/A
13	Final Project Completion Report	N/A	N/A	N/A	1	1	Within one month of receipt of Client's comments

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

- (a) A set of all contract documents and design reports.
- (b) Liaison and assistance for any information or documents required from other Government Agencies and which is considered essential for execution of this assignment.
- (c) Under the Terms and Conditions of the Civil Works Contract, the Consultant shall be provided with site offices, laboratory, accommodation, transport, equipment and utilities necessary for the execution of the services. These facilities are detailed in the specifications and bills of quantities. However, during the contractor's mobilization period (first 4 months), the Consultant should make temporary arrangements for the provision of skeletal office equipment as necessary for the execution of the Services; and the cost of such provision shall be separately indicated in their financial proposal. The consultant is advised to peruse and be conversant with the bidding document for works.
- (d) It will be the responsibility of the Consultant to supervise provision of the above stated facilities and equipment by the Contractor in accordance with the contract document. Any equipment purchased by the Contractor and paid for by the Client shall become the property of the Client upon completion of the contract or whenever it is no longer required for carrying out of services, whichever occurs earlier.
- (e) In the event the Consultant wishes to establish and utilize additional non-site office facilities, accommodation, transport, equipment, utilities and consumable, and any other resources deemed necessary off-site for the complete execution of the Services, in Nairobi or elsewhere, then the cost of provision of such facilities and the related additional staffing shall be detailed in the Consultant's proposal.
- (f) Assigning of Project Coordinator: The Client shall appoint and assign a Project Coordinator who shall be the Contact person and shall be responsible for day to day running of the assignment on behalf of the Client

7. TRAINING

The Consultant will provide structured on-site training to Engineers and technicians assigned by KeNHA from time on all relevant aspects of site supervision and management. The trainees will be deployed to site on full time basis. Payment of short term regular trainees/attachees shall be covered by training lumpsum provided on the Financial proposal upon approval of the Client.

In addition to the regular trainees and attachees, there will be 2No. graduate trainees solely for full time training under the Materials/pavement Engineer. The graduate trainees shall be categorized as support staff of the Consultants and billed accordingly on the proposal.

The Consultant shall include a section on training progress in his periodic reports.