

Terms of Reference
Construction Supervision Services
on the
Resilient and Inclusive Economic Corridor Improvement Project:
Northern Section of Sisian-Kajaran Road

A. Background

- “North-South Road Corridor Investment Program” is a major infrastructure program (hereafter NSRCIP program) which aims at connecting the Southern border of the country with its Northern point by means of 556 km-long Meghri-Yerevan-Bavra highway by reducing it to about 85km and reaching up to 470 km. North South Corridor is also a part of the Asian Highway corridor (AH 82) which connects the Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan). As a result, the reconstruction of the current road of 556 km of the 2nd category with the average speed limit of 60 km/h will reach to 470 km road with 80-100km/h as a result of which the crossing time of the mentioned section will decrease from current 9-9.5 hours to 5-6 hours and will increase comfort and safety, ensuring also the goal of becoming a transit route of freight and transport movement from East to West and from West to East. The construction of this highly important strategic road will ensure easier traffic from the Southern border of Armenia to the Georgian border and up to Black Sea ports and will allow passenger and cargo transportation in accordance with European standards. The highway will also provide serious development opportunities for all communities from the North to the South of Armenia. Eventually, NSRCIP program implementation will result in the following outcomes:
 - Improved road corridor in compliance with international standards;
 - Four-lane Category 1 road on Yerevan-Gyumri and Yerevan-Ararat sections;
 - Other road sections meeting international standards with the possibility to be widened up to four-lane road in the future;
 - Efficient and safe road corridor traffic management.
- The Ministry of Territorial Administration and Infrastructure of Republic of Armenia is responsible for the overall management of the Project on the Republic of Armenia side.
- “Road Department” Fund (**hereafter: Client**) acting under the Agency Agreement signed between the Ministry of Territorial Administration and Infrastructure of Republic of Armenia and “Road Department” Fund. A dedicated Project Implementation Units (PIU’s) will be established in RDF, headed by a Program General Manager and supported by other staff responsible to implement the Project. It should be emphasized that within the framework of this Project, the Client has the following primary responsibility for the overall implementation of the Project, including, but not limited:
 - organization of the bidding processes,
 - selection of Consultants and Contractors,
 - control over the preparation of designs by the Consultants and the approval of designs,

- conduct of the design's required expertise,
 - control over the preparation and implementation of Land Acquisition and Resettlement Plan (LARP) and Environmental and Social Impact Assessment (ESIA) by the Consultants,
 - through the Consultants, control of the quality and quantity of construction work,
 - time control,
 - ensuring timely payments for the work performed by the Consultants / Contractors,
 - other functions for the implementation of the Project delegated to the Client.
- In 2019, a detailed design was prepared for the construction of a new section (total length about 60 km) of the Sisian-Kajaran road. Detailed design provides technical solutions and works volumes for construction of a technical category II new road (100 km / h design speed) with a total length of about 60 km, including construction of new bridges with a total length of about 4.7 km and tunnels with a total length of about 12.5 km (the longest is the Bargushat tunnel, the length of which will be about 8.6 km).
- According to the current status of the discussions with potential international financing institutions (IFIs), it is planned to divide the Sisian – Kajaran road into 3 sections. Financing of each section will be led by a different financier:
- Section 1, Northern Section from km 0 to the Bargushat Tunnel North Portal at approx. km 27, section length: about 27 km (expected to be financed by ADB and EIB)
 - Section 2, Bargushat Tunnel from km 27 to km 35.8, section length: about 9 km (financing to be confirmed)
 - Section 3, Southern Section from Bargushat Tunnel South Portal at approx. km 35.8 to km 60, section length: about 24 km (expected to be financed by EBRD and EIB).
- This Terms of Reference is prepared to conclude a contract for Construction supervision of construction of Northern Section (from km 0 to the Bargushat Tunnel North Portal at approx. km 27, section length: 27+104 km) of Sisian - Kajaran Road Project (including construction of 16 new bridges with a total length of about 3.06km and 3 tunnels with a total length of about 1.56km), **hereafter: "Project"** with an International consulting company (**hereafter: Consultant**) with specific experience in the field of technical supervision / Engineer services under FIDIC contracts in the reconstruction/construction of road infrastructures.

B. Scope of Consulting Services

In accordance with this Term of Reference the Consultant shall perform duties of FIDIC Engineer for Northern Section KM0+000 ÷ KM27+104 (about 27km) of Sisian - Kajaran Road Project as described in the FIDIC Conditions of Contract for Construction, MDB Harmonized Edition, June 2010 (Pink Book) for all civil works provided by the detailed design and constructed by an engaged contractor (**hereafter: Contractor**).

Services provided by the Consultant will be paid on the Time-based basis.

A Time-based contract will be signed with the Consultant in the format specified in the RFP.

A detailed description of the tasks is given below:

- A. The Consultant will carry out all construction supervision (FIDIC Engineer) activities for civil works for the Project under FIDIC Conditions of Contract for Construction, MDB Harmonized Edition, June 2010 (Pink Book).
- B. The Consultant will cooperate closely with the Client and other stakeholders.
- C. The Consultant will ensure all contractual arrangements, including all changes required from the parties of the contract, in order to ensure quality and compliance with the rules and procedures of the Client.
- D. The Consultant will ensure compliance with the terms of the works contract, terms of payment, changes, dispute resolution, monitoring and so on.
- E. The Consultant will also support the Client mission during visits to monitor the progress of the Northern Section civil works contract.
- F. The Consultant shall study the detailed design documents within 4 weeks period starting from the effectiveness of the works contract. As an outcome of this activity, the Consultant shall verify, clarify and as might be necessary further detail the design and specifications as part of his supervision services. In conclusion, he shall produce a Design Study Report where his concurrence with the design is stated or further modifications are proposed¹. Subject to the Client's approval, these revisions shall be prepared by the Consultant and transmitted to the Contractor for execution.
- G. The Consultant will additionally be responsible for reviewing any design required to be undertaken by the Contractor. This shall include, but will not be limited to temporary works design obligations, temporary traffic management designs, and any other specific design obligations required by the LARP and ESIA, such as design of noise barrier and/or animal underpasses along the alignment.
- H. The Consultant will monitor the performance of the Project works contract and ensure compliance with all social and environmental requirements of the lenders` and the requirements of design solutions. The Consultant will ensure that all relevant policies and procedures on safeguards are followed throughout the implementation period. The Consultant will maintain communication with local affected communities and the Grievance Redress Mechanism and help identify and resolve emerging issues and complaints.
- I. In order to transfer advanced professional knowledge, the Consultant must hire two interns (final year students or students who are studying for a master's degree in technical higher educational institutions of the Republic of Armenia, specializing in the construction of roads and/or bridges and tunnels) on a paid basis for a period of six months. The Consultant is required to involve interns in daily operations and tasks relating to the Consultant's own terms of references. Consultant must assign key staff as instructors for interns. Assigned instructors must provide on-the-job mentoring and job shadowing opportunities to intentionally facilitate knowledge and skills transfer to the interns. Consultants select appropriate intern candidates with the final selection being subject to approval by the Client. The Consultant should positively consider applications from eligible female candidates. The Consultant in coordination with the partner higher educational institution shall prepare an intern training plan. The Consultant will support interns in maintaining a weekly training journal that broadly

¹ All proposed design and specification modifications must be technically and economically justified by the Consultant. The Consultant shall ensure that the proposed modifications align with the original design concept and contribute to a more technically and economically efficient implementation of the Project. These modifications will only be applied upon approval by the Client. If the Client accepts the proposed modifications, the Consultant shall undertake an expertise assessment for the modifications in accordance with RA legislation.

outlines tasks interns have been engaged in and knowledge transferred. In his monthly reports to the Client, the Consultant is required to report on the work performed by the interns in line with intern's training journal, and broadly evaluate interns' work and learning progress. Financial costs for interns, such as allowances, insurance, and working gear, will need to be calculated by the Consultant and included in Consultant's financial proposal.

J. The Consultant's responsibilities will be:

1. Develop and implement an overall monitoring plan;
2. Develop a consolidated construction program for the Project, showing the critical path of the overall implementation program. Any actions required Government actions that have potential implication in implementation should be attended timely and properly. Update overall Program planning accordingly;
3. Coordinate with, and support, the road safety audit firm tasked with the completion of a road safety audit prior to the commencement of construction and again 3 months prior to the completion of the works. If necessary, as a result of the findings of the road safety audit, instruct the Contractor to amend completed works or undertake additional works to comply with the findings of the audit;
4. Conduct safety inspections of all temporary traffic management operations on roads open to live traffic along the site during the Project ensuring that (i) traffic management operations are in accordance with any approved temporary traffic management designs and (ii) there are no unexpected hazards creating a danger to the public and passing traffic at the relevant locations.
5. Monitor and report to Client compliance of the Project works with the ensuring fair treatment, non-discrimination and equal treatment and opportunity of workers,, protecting and promoting safety and health at work, enforcing gender equality, and preventing risks of spread of communicable deceases; preventing human trafficking (child and forced labor), ensuring that accessible and effective means to raise and address workplace concerns are available to workers and ensure that such requirements are included in the bid and works contract documents;
6. Monitor and report to Client compliance with Project assurances, including compliance with all environmental and social safeguards and in line with the lenders' requirements and national regulations as described in the project E&S documentation (e.g. ESIA, ESMP, SEP etc.);
7. Review the Contractor's submitted embodied carbon measurement data to ensure compliance with the requirements of the construction contract and measurement methodology approved by the Client.
8. Ensure that the environmental and social safeguards documentation and construction methods proposed by the Contractor for carrying out the works are satisfactory, complies with ADB's Safeguards Policy Statement (SPS), 2009, EIB's Environmental and Social Standards(2022), and environmental and social laws of Armenia, and the ESIA, ESAP, ESMP and BAP prepared for the Project;
9. Ensure that a site selection, E&S surveys and assessment, and design works for the spoil disposal areas (SDAs), access roads to them, construction camps, lay-down sites,

power line, water supply and other Project components that are not currently sited, will be in line with the recommendations defined in the project E&S documentation (ESIA, ESMP, SEP etc.) and in compliance with the ADB's Safeguards Policy Statement (SPS), 2009, EIB's Environmental and Social Standards(2022), as well as in line with provisions of LARF of the Project² and LARP of the Project

10. Ensure that the environmental and social management and monitoring plans, biodiversity action plan reflecting full details regarding the estimated mitigation costs are in place through the Site Specific Environmental Management Plans (SSEMPs)..
11. Review, monitor and evaluate implementation of the contractors' SSEMPs corrective action plans and recommend necessary corrective actions to be taken. Advise on corrective measures where necessary.
12. Review the environmental and social management capability of RD and train employees on monitoring and impact mitigation. Determine the training needs of construction contractor staff as well as develop training materials for effective implementation of the SSEMP during the construction stage;
13. Prepare a reporting system on implementation of ESIA, ESMP, CHMP, BAP, LARP, SSEPS_s etc. including quarterly and semi-annual environmental monitoring reports. Review Contractor's reporting on environmental and social performance and ensure the implementation of proper measures based on comments.
14. Document results/findings, including environmental, social and H&S indicators in quarterly progress reports.
15. During the period of this assignment the Consultant ensures the storage of all records, in the framework of the contract for construction works, implements the daily coordination, monitoring and supervision of all actions, including the preparation and submissions to the Client of the relevant reports.
16. Evaluation and reporting: The Consultant will report implementation progress of the Project to the Client through quarterly, monthly and semi-annually progress reports. The quarterly progress reports should include Project implementation status, major issues, and proposed corrective actions, which include the evaluation and reporting on the environmental and social performance of the project.
17. Construction supervision:
 - a) The Consultant shall carry out all construction supervision activities for the Project works contract in compliance with the requirements of international standards and best practices for highway construction;
 - b) The civil works are executed using FIDIC Conditions of Contract for Construction (Multilateral Development Bank Harmonized Edition, 2010);
 - c) The Consultant will take over all the powers and responsibilities entrusted to "Engineer" within the framework of the contract of construction work;
 - d) Planned duration of Civil Works (Defects Notification Period (DNP) excluded): 72

² https://armroad.am/en/news/inner/News_21.07.2023

(seventy-two) months from the date of signing of the works contract. Defects Notification Period (DNP) will be 730 days calculated from the date on which Civil Works is completed as certified by Taking-over Certificate.

- e) The Consultant must adhere to the scope of the civil works contract as defined in the specifications and bills of quantities. All proposed modifications should be discussed and agreed with Client prior to commencing with the modifications.
- f) To the extent not already included in the scope of its responsibilities as the "Engineer" under the civil works contract, the Consultant shall also be responsible for:
 - i. Ensure the Contractor adheres to the agreed schedule at the time of signing the works contract for submitting all documents (performance security, insurance policies, license, E&S management plans etc.) and any other requirements as stipulated in the specifications and the civil works contract;
 - ii. Preparation of an IPC (Internal Payment Certificate);
 - iii. Review Civil Works implementation schedule in consultation with the Contractor;
 - iv. Hold joint regular meetings with Client and Contractor;
 - v. Ensure Daily presence (either full time or part time as required) on site such as but not limited to inspectors of works, surveyors, material Engineers' and senior Engineers' staff. Day-to-day quality control and quantity measurements of the works carried out;
 - vi. Oversee preconstruction surveys of roads and adjacent properties carried out by the Contractor.
 - vii. Planning and execution of construction supervision and contract administration, including effective and regular supervision of the works, maintenance of Project records, correspondence and diaries, as well as quality control testing to ensure that the Works are executed in accordance with the Contract;
 - viii. Checking and approving the Contractor's method statements, working drawings, and programs for both temporary and permanent structures; verifying that those are consistent with the Project implementation schedule and with the design solutions, the requirements of existing normative documents, technological sequence and safety of construction, informing about it in a written form to Client;
 - ix. Carryout and recommend necessary changes/adjustments in the design/drawing, if required, during construction due to the Employer request and/or site requirement/condition. In the event of variations to the works being required, prepare the necessary documents, negotiate these with contractor, determination of rates of works, advise the Employer on alternatives and recommend these to employer for approval;
 - x. Develop quality and quantity assurance control manual and conduct daily monitoring in accordance with the manual, which will be oriented to the day-by-day quantity and quality control and approval of the Contractor's works;
 - xi. Inspect, prepare inspection acts, and test all materials and works to ensure compliance with specifications and giving immediate notice to the Contractor in the

event that such materials and works fail to comply with the specifications. Copies of notices will be included in the quarterly progress reports to Client;

- xii. Inspect regularly the Contractor's construction equipment, installations, housing, medical facilities, etc. and prepare inspection acts, and ensure that they are adequate and in accordance with the terms and conditions specified in the contract for the works;
- xiii. Approve construction material and carry out independent testing in the field and/or the Contractor's laboratory and approve or disapprove and certify the Works that conform with the specifications and maintain permanent records of results of all the tests made;
- xiv. Give notice to Contractor of any defects and deficiencies, and issue instructions for the removal and substitution of the improper works, where provided under the works contract;
- xv. Revise and approve Contractor's design drawings, if any, and working drawings. If necessary, issue further drawings and/or give instructions to the Contractor;
- xvi. Maintain, check, record and approve the daily progress records produced by the Contractors on work progress, labor, equipment, major construction materials at site, work accomplished, weather, accidents as well as any other events affecting Project cost or implementation conditions of the Tranche 4;
- xvii. Ensure that road safety design requirements are implemented in accordance with the requirements of the works contract;
- xviii. Issue notices to the Contractor advising of any noncompliance with environmental and social mitigation measures, as set out in the works contract documents and SSEMPs. Copies of all notices should be provided to Client at the time of issue. Before issuing such notices, the Consultant should, as appropriate, have advised the Contractor of the noncompliance and given an opportunity to the Contractor to make good any adverse impact prior to the notice being issued;
- xix. Establish efficient procedures for verifying Contractor performance and reporting progress and problems in a timely manner, including quality control reports, quantity survey records, requests for variation or change orders, requests for time extension, and Contractor's claims and invoices;
- xx. Ensure that the Contractor does not involve child and forced labor in the execution of civil works contracts in accordance with the provisions of the works contract;
- xxi. Prepare and issue to the Client the following reports, whose format and content should be acceptable to Client: monthly progress reports, detailed quarterly reports, and quarterly and semi-annual environmental and social monitoring reports,;
- xxii. Certify payments for the works against the relevant bill of quantities and issue the Interim Payment Certificates, the Final Payment Certificate and other certificates, including Taking Over Certificate and Performance Certificate, as required under the civil works contract;

- xxiii. Keep Client timely informed of implementation problems that could jeopardize the Project objectives and recommend on how those objectives can be safeguarded;
- xxiv. Advise the Client on need for effective liaison with local authorities, police, landowners, utility owners, complainants, the public and other organizations affected by the Works to minimize or avoid unnecessary delays or disputes;
- xxv. Hold inception meeting with safeguards staff of the Client and Contractor prior the start of construction works to ensure detailed familiarization of all parties about environment and social safeguards requirements set for the Project and agree on required course of action, including arrangement of pre-construction public consultations and other safeguards related preparatory works.
- xxvi. Monitor the Project implementation and identify if there would be any design changes, unanticipated impacts or other circumstances that would require preparation of corrective action plans (CAP) or Addendum LARP. If required, and upon instruction given by the Client as an additional activity under the Contract, prepare CAPs under the main LARP and/or LARP addendum in accordance with Government, ADB's SPS (2009), and EIB's Environmental and Social Standards (2022) safeguards policy requirements following the provisions set out in Project Land Acquisition and Resettlement Framework (LARF) and LARP, including engagement of needed experts. The needed activities would include: (a) planning and implementation of the detailed measurement surveys, (b) updating the census and socio-economic surveys, if required, (c) ensuring completion of valuation or updated replacement cost surveys to ensure that compensation rates are based on full replacement cost at time of compensation, (d) supporting the preparation of detailed relocation and income restoration strategies, in consultation with affected households, civil society and relevant Government agencies, (e) ensuring meaningful consultation and participation of affected households, civil society stakeholders, community-based organizations, and relevant government agencies in the planning and implementation of the resettlement plans, (f) supporting the RD and relevant Government agencies to ensure appropriate disclosure of the LARP Addendums/CAPs or social due diligence reports (SDDR), and (g) preparing and supporting the RDF in the finalization of the LARP Addendums/CAPs/SDDR to the stage where they are endorsed by the Government (as needed) and receive Donors concurrence. Ensure that no construction works are carried out until such LARP Addendums/CAPs are approved and implemented.
- xxvii. Ensure that the Contractor timely appoints grievance focal point (GFP) as per Project established Grievance Redress Mechanism (GRM), maintain communication with all GFPs, including community liaison officer and local affected communities, help the Client and Contractor to identify and resolve emerging issues and complaints. Develop a Grievance Complaint Log/register (database) and the Grievance Recording Form to be placed on cloud storage where all GFPs will enter information on received/processed grievances and ensure management of this GRM database.
- xxviii. Support the Client in overseeing the Contractor's activities in identification and employment of qualified project-affected persons and local residents as part of livelihood restoration activities under the LARP.

- xxix. Develop a consolidated guidance note (GN) based on construction contract provisions and safeguards plans (such as the CAP/SDDR/Addendum and ESMP) regarding management of temporary land take by the Contractor (including mechanisms of identification of such land take needs, negotiation and signing of agreements with landowners, compensation of damages (if any), recultivation and handover of lands etc.) and ensure monitoring of GN's implementation by the Contractor. Conduct workshop for the Contractors' staff on GN requirements prior to the construction and regularly throughout the construction.
- xxx. Evaluate claims, disputes, extensions of time, etc., including issuing variation orders list and quantity of additional works for Client's approval as appropriate and in line with the limits placed on Engineer's authority (as far as Variation Orders are concerned), provide risk assessments, time impact analysis, as well as advising Client on all matters relating to the execution of the works; Issue Engineer's determinations / instructions as appropriate under the civil works contract;
- xxxi. Provide assistance in drafting claims, referrals, statement of defenses and other related documents arising from the FIDIC Contract on Civil Works, in the manner and format requested by the Client, including providing time schedule for such assignments. Support the client in the preparation activities for dispute board proceedings and/or other contractual dispute resolution mechanisms;
- xxxii. Provide timely assistance to the Contractor in all matters related to interpretation of the works contract documents, planning, quality control testing and other matters relating to the works contract;
- xxxiii. Provide Client with complete records, reports and check "as-built" drawings for the works provided by the Contractor;
- xxxiv. Conduct a complete joint review of the works with all stakeholders, as well as a safety audit and post-construction environmental audit, prior to handover of the site to Client;
- xxxv. Following the issue of the Taking Over Certificate, carry out detailed inspection of the Works during Defects Notification Period and prepare detailed inspection and recommendation reports for the Client after each inspection and approve the execution of the outstanding works (if any), as well as the rectification of any defects or damage - advise on any extension to the works contract period that may be required for such works;
- xxxvi. The Consultant will be directly responsible (to the limit of liability stated in the consultancy contract) for the Contractor's low-quality works and/or low-quality materials used by the Contractor if such works or materials have already been accepted and approved by the Consultant.

18. Ensuring Road Safety during Construction:

- g) The Consultant will review and approve, in coordination with Client, traffic control plans prepared by the Contractor (which must be agreed in advance with the Road Police) and ensure compliance with all applicable road safety standards, guidelines and regulations, before commencement of road works. The Consultant will ensure adequacy of measures in Contractor's traffic control plans for the safety

of all road users, including vulnerable road users, under different traffic, weather, and daytime/night time conditions. The Consultant will, among others, verify design of temporary diversions and traffic management arrangements; adequacy of signing, marking and delineation at work zones; adequacy of road safety devices (e.g., temporary and movable barriers, crash cushions, truck mounted attenuators, etc.) and proper maintenance of the devices; and adequacy of personal protective equipment for the workers. The Consultant will regularly inspect road safety audit work zones under traffic, and coordinate and control the timely addressing of all road safety issues. The Consultant will be responsible for reporting to Client, and following up on road safety issues/lapses as appropriate.

- h) The Consultant shall conduct road safety audits at pre-construction, in-construction and post- construction stages; and on the basis of those audits, direct the Contractor to implement such additional works as may be necessary to ensure the completed road meets appropriate internationally accepted road safety standards;
19. Accident Analysis and Mitigation: The Consultant will also conduct analysis of road collisions occurred on Tranche 4 road during implementation, if any, identify road/traffic management related causes, and recommend specific road safety countermeasures for review and endorsement by Client.

For sake of clarity, to the extent that duties of the Consultant described hereof directly conflict with such Consultant's duties as described under the FIDIC Conditions of Contract for Construction, MDB Harmonized Edition, June 2010 (Pink Book), then the Consultant shall be required to comply with the requirements specified in the FIDIC Conditions of Contract for Construction, MDB Harmonized Edition, June 2010 (Pink Book).

C. Reporting Requirements

The Consultant will prepare the following reports in English and Armenian languages (two printed copies in English, two printed copies in Armenian) and submit them to Client. The format and content of each report should be agreed with Client. All reports submitted must have signatures of the author, checker and approver, with seals of the Consultant. For each report submitted an electronic copy will be provided. Electronic copies will be in the format used in their preparation with all links, formulas, and fields active. For all reports an executive summary will be included.

I. Monthly Progress Reports

The Consultant shall submit monthly progress report by the 15th of the month following the reporting month, reflecting the progress of the work during the reporting month - the Executive Summary of this report consisting of (i) the position for the Project together with (ii) project performance report update (quarterly), and (iii) Project status report. This report should normally include, but not limited to:

- a) a work program for the road with a bar chart showing scheduled against actual financial/physical progress by major work item, illustrated by bars and percentage of accomplishment (total and by major work item); the work program and the bar chart (showing the critical path) shall be suitably updated in each progress report;
- b) financial data, updated as appropriate, giving time, cost and financial forecast, a schedule of certified payments, update of quantities and cost estimates for construction and supervision;

- c) summary of implementation progress, the work performed, variations issued, payments certified, the equipment and manpower (skilled/unskilled by foreign/local categories in person-months) utilized by the Contractor during the reporting month, together with an outline of the work to be performed during the next reporting period; the Engineer's personnel arrivals and departures;
- d) statement of causes of possible delays and remedial measures taken or recommended;
- e) Environmental and Social Safeguards Monitoring Reports, environmental and social assessment and due-diligence reports, CAP; LARP Addendums/CAPs/SDDRs prepared during reporting period, if any.

II. Quarterly Progress Reports

The Consultant shall prepare quarterly reports presenting a summary status (schedule, budget, actual and/or potential problems and delays) of the Project, including illustration as necessary by means of photograph, graphs and tables to provide an up-to-date picture of construction progress during the reporting period. The reports shall be submitted within 30 days of the end of the report period and should include, but not limited to the following:

- a) Principal work accomplished during the period covered by the report;
- b) Comparison of actual progress with the original estimated schedule of construction with the schedule agreed upon with the Contractor;
- c) Actual or contemplated major deviations and reasons thereof from original plans or schedules other than changes of a character which would require prior consultation with Client;
- d) Explanations on stoppages or delays, measures necessary to avoid any future delays; an indication of measures required to recover any lost time in the implementation of the Tranche 4; and works contract variations;
- e) The development of cost estimates and expenditures and the availability of funds to meet the cost of the Project;
- f) Conditions which would significantly affect construction schedules or the cost of the Project;
- g) Progress made with the commitments described in the project E&S documentation and problems / issues/ unanticipated associated with environmental matters, any adverse environmental impacts that occur during construction, the corrective action plans taken to remedy these impacts, and the steps taken to avoid their recurrence;
- h) Progress made and problems/issues/unanticipated impacts associated with social safeguards and resettlement that occur during the constructions, the corrective measures taken to remedy the issues, and the steps taken to avoid their recurrence, LARP Addendums/CAPs/SDDRs prepared during the reporting period, if any.
- i) Highlights of all matters requiring action.

III. Quarterly and Semi-annual Environmental Monitoring Reports

The Construction supervision Consultant submits to Client Quarterly and Semi-annual Environmental Monitoring Reports on environmental safeguards implementation.

Environmental monitoring reports include the status of compliance with the Project ESAP, ESMPs,

CHMP, BAP, etc. record of related activities, status of grievance redress mechanism, issues and solutions, and results of environmental baselines and monitoring, unanticipated impacts and design changes which require preparation of environmental assessments, due diligence reports and CAPs, if any. The report shall cover also all related environmental and social sub-management plans, such as ESAP, BMP and Cultural Heritage Management Plans. Submission date: Within 15 days after the end of each 3 and 6-month reporting period.

IV. Semi-annual Social Safeguards Monitoring Reports

The Consultant submits to the Client Semi-annual Social Safeguards Monitoring Reports on the land acquisition and resettlement activities as well as overall social safeguards compliance status (including implementation of ESAP/SEP) presenting the observations, findings, issues, non-compliance, and any variance from the provisions of the LARP, unanticipated impacts of design changes which require preparation of LARP Addendum/CAP/SDDRs, if any, status of grievance redress mechanism, recommended and solutions and actions necessary to ensure compliance with the terms of the approved LARP and Donor's Safeguard Policy., Submission date: Within 15 days after the end of each 6-month reporting period.

V. Program Completion Report (PCR)

- a) The Consultant will draft a PCR prior to overall completion of construction works in a manner satisfactory to Client, including but not limited to the following:
- b) the major Project events, performance of the Contractor, operation of the Project, actual and price inflated (to completion year) Project cost (foreign and local costs separately) by implementation year, and labor employed by skilled/unskilled and foreign/local categories in man-years;
- c) the major Project events, the relative successes (problems) in the implementation of each of the sections, this section of the PCR shall also contain an assessment of the impact of road improvement on the economy and social aspects for the whole Project area;
- d) "as-built" drawings (to be submitted to Client). These "as-built" drawings will be furnished by the Contractor as per Clauses of the works contract;
- e) detailed description of all the works by items of technical and non-technical matters, economic analysis, financial and disbursement data, analyses, difficulties and delays, and remedial actions taken or suggested, the overall progress of the Project as monitored, including recommendations to Client.
- f) Detailed description of ESIA, ESMP, CHMP, BAP, LARP etc , implementation, remedial actions, lessons learnt.
- g) Final Social Safeguards Monitoring Report, including the list of all complaints and status.

D. Experience and Qualifications Required of the Consultant key staff

- a) The MoTAI through the RD will hire a consulting firm based on the Quality- and Cost-Based Selection (QCBS) procedures for the implementation of duties of FIDIC Engineer for the Project. The Consultant shall have extensive and proven experience in Program administration, financial management, and Program performance management, highway design, construction supervision, preparation of technical specifications, quality control, contract management and dispute resolution of similar type and size international contracts.

- b) The Consultant shall also have knowledge and experience in reviewing environmental assessments and resettlement action plans for road/bridge/tunnel construction Programs in accordance with guidelines of international donor organizations (ADB, EBRD, EIB, etc.).
- c) The Consultant team shall comprise of specialists that have obtained, at least, a bachelor's degree from an accredited university, and have experience in similar international Programs.
- d) The Consultant Team Leader/ Senior Resident Engineer shall be Regular Staff of the lead firm or its international associates (clarification: Staff having Regular Employment Status with the lead firm (or independent experts having worked with the Consultant for cumulative 3 years) or its international associates for a minimum of 3 years is considered Regular Staff).
- e) The curriculum vitae of the key experts should contain information of the assignment they have successfully completed, with complete names and addresses of the clients and the name and contact information of the immediate supervisors, and the number(s) of the membership(s) and the name(s) of the issuing organization(s).
- f) National Experts: Nationals of the Client's country who possess the appropriate international experience may be considered for assignments that require international expertise in the national's own country. Individuals of ADB member countries who have appropriate authorization to legally reside and work in the country of the assignment but do not hold the nationality of that country may also be considered as national consultants.
- g) The minimum experience and qualifications required of the consultant **key staff** are following:

Position	International or Local staff	Minimum General Experience (Years)	Minimum Specific experience (Years)	Minimum required education
Team Leader/ Senior Resident Engineer	International	At least 20 years of professional experience in highways design and/or highways construction/supervision projects;	At least 15 years of international relevant /similar to proposed position/ experience in design and/or construction and/or supervision of roads projects, professional experience in project/program management (leading position) OR in a senior engineering management position is required.	At least Bachelor's degree in Highway/ Road Engineering, Proven knowledge of the FIDIC contract conditions, preferably MDB Harmonized version 2010; Familiarity with the international road construction standards, Fluency in written and spoken English is a must; knowledge of Armenian/Russian is an advantage;
Deputy Team Leader / Highways Design Engineer	International	At least 15 years of professional experience in highways design and/or highways construction/supervision projects;	At least 10 years of international relevant /similar to proposed position/ experience in design and/or construction and/or supervision of roads	At least Bachelor's degree in Highway/ Road Engineering, Familiarity with the road construction international standards; Fluency in written and spoken English is a must;

Position	International or Local staff	Minimum General Experience (Years)	Minimum Specific experience (Years)	Minimum required education
			projects	knowledge of Armenian/Russian is an advantage;
Senior pavement and Materials Engineer	International	At least 15 years of professional experience in highways design and/or highways construction/supervision projects;	At least 10 years of international relevant /similar to proposed position/ experience in design and/or construction and/or supervision of roads projects.	At least Bachelor's degree in Highway/ Road Engineering, Pavement design Familiarity with the road construction international standards AASHTO, ASTM, EN; Fluency in written and spoken English is a must; knowledge of Armenian/Russian is an advantage;
Senior Geologist / Geotechnical Engineer	International	At least 15 years of professional experience in highways construction/supervision projects;	At least 10 years of international relevant /similar to proposed position/ experience tunnel construction and/or supervision projects	At least Bachelor's degree in Geological/Geotechnical engineering, Fluency in written and spoken English is a must; knowledge of Armenian/Russian is an advantage;
Senior Bridges and Structures Engineer	International	At least 20 years of professional experience in bridges design and/or bridges construction/supervision projects;	At least 15 years of international relevant /similar to proposed position/ experience in design and/or construction and/or supervision of roads projects.	At least Bachelor's degree in Bridges and/or Tunnels, and/or Structures construction, Familiarity with the road construction international standards; Fluency in written and spoken English is a must; knowledge of Armenian/Russian is an advantage;
Senior Tunnels Engineer	International	At least 15 years of professional experience in tunnels design and/or tunnels construction/supervision projects;	At least 10 years of international relevant /similar to proposed position/ experience in design and/or construction and/or supervision of roads projects.	At least Bachelor's degree in Tunnels, and/or Structures construction, Familiarity with the road construction international standards; Fluency in written and spoken English is a must; knowledge of Armenian/Russian is an advantage;
Tunnel Engineer	International	At least 10 years of professional experience, preferably in tunnels design and/or construction/supervision projects;	At least 7 years of relevant /similar to proposed position/ experience in design and/or construction and/or supervision of tunnels projects.	At least Bachelor's degree in Bridges and/or Tunnels, and/or Structures construction, Familiarity with the tunnel construction international standards; Fluency in written and spoken English is a must;

Position	International or Local staff	Minimum General Experience (Years)	Minimum Specific experience (Years)	Minimum required education
				knowledge of Armenian/Russian is an advantage;
Electrical Engineer	International	At least 15 years of professional experience in electrical equipment design and/or electrical equipment construction/supervision projects;	At least 10 years of international relevant /similar to proposed position/ experience in design and/or construction and/or supervision of roads projects.	At least Bachelor's degree in electrical networks construction, Familiarity with the international road construction standards; Fluency in written and spoken English is a must; knowledge of Armenian/Russian is an advantage;
FIDIC Contracts and Claims expert	International	At least 15 years of experience in the contracts administration and/or claims analysis and evaluation under infrastructure projects under FIDIC Contracts, preferably MDB harmonized version 2010.	At least 10 years of international (outside of his/her country of residence) professional experience on similar position in design and/or construction and/or supervision of roads reconstruction projects	At least Bachelor's degree in Management and Administration and/or Law, Proven knowledge of the FIDIC contract conditions, preferably MOB harmonised version 2010; Fluency in written and spoken English is a must; knowledge of Armenian/Russian is an advantage;
Tunnel / Road safety engineer	International	At least 15 years of professional experience in highways construction/supervision projects;	At least 10 years of international relevant /similar to proposed position/ experience road/tunnel construction and/or supervision projects	At least Bachelor's degree in Highway/ Road Engineering, Pavement design Familiarity with the road construction international standards ; Fluency in written and spoken English is a must; knowledge of Armenian/Russian is an advantage;
Senior Environmental Specialist	International	At least 15 years of general professional experience	Preferably 10 years of professional experience related to environmental studies, E&S impact assessment, ESAP implementation in construction projects under IFI requirements in road/transport infrastructure projects	Bachelor's degree in environmental science, engineering or a related field;
Senior Occupational Health and	International	At least 15 years of professional experience in highways	At least 10 years of international relevant /similar to proposed	Professionally qualified specialist in all health and safety aspects of major civil

Position	International or Local staff	Minimum General Experience (Years)	Minimum Specific experience (Years)	Minimum required education
Safety Specialist		construction/supervision projects;	position/ experience road/tunnel construction and/or supervision projects	works construction, including tunnels, high level bridgeworks, and road works involving the use of explosives Fluency in written and spoken English is a must; knowledge of Armenian/Russian is an advantage;
Highways Engineer	Local	At least 7 years of professional experience, preferably in highways design and/or construction/supervision projects;	At least 5 years of relevant /similar to proposed position/ experience in design and/or construction and/or supervision of roads projects.	At least Bachelor's degree in Highway/ Road Engineering, Familiarity with the road construction international standards; Fluency in written and spoken Armenian/Russian and good command of English are required
Bridge, Structural Engineer	Local	At least 7 years of professional experience, preferably in highways design and/or construction/supervision projects;	At least 5 years of relevant /similar to proposed position/ experience in design and/or construction and/or supervision of roads projects.	At least Bachelor's degree in Bridges and/or Tunnels, and/or Structures construction, Familiarity with the road construction international standards; Fluency in written and spoken Armenian/Russian and good command of English are required
Pavement, and Materials Engineer	Local	At least 7 years of professional experience, preferably in highways design and/or construction/supervision projects;	At least 5 years of relevant /similar to proposed position/ experience in design and/or construction and/or supervision of roads projects.	At least Bachelor's degree in Highway/ Road Engineering, Familiarity with the road construction international standards; Fluency in written and spoken Armenian/Russian and good command of English are required
Geologist / Geotechnical Engineer	Local	At least 7 years of professional experience in highways construction/supervision projects;	At least 5 years of irrelevant /similar to proposed position/ experience tunnel construction and/or supervision projects	At least Bachelor's degree in Geological/Geotechnical engineering, Fluency in written and spoken Armenian/Russian and good command of English are required

E. Consultant Team Composition

(a) INTERNATIONAL EXPERTS (Minimum 465 person-month inputs)

Title	Key or non-key expert	Minimum Inputs (person-months)	Minimum General Experience (Years)	Minimum Specific experience (Years)	Areas of specialization
Team Leader/ Senior Resident Engineer	Key	76 (including 6 months for DNP)	20	15	Roads Design, Quality Control, FIDIC Contract Administration
Deputy Team Leader/Highways Design Engineer	Key	68 (including 2 months for DNP)	20	15	Road Construction and/or Road Design and/or Road Construction Management
Senior Pavement and Materials Engineer	Key	48	20	15	Roads Pavement Design, AASHTO standards, materials and mix design methods, Construction Supervision
Senior Geologist / Geotechnical Engineer	Key	36	15	10	Geology, Geotechnical, Construction Supervision
Senior Bridges and Structures Engineer	Key	48	20	15	Civil Engineering, Bridges, Structures Design/construction, materials and concrete mix design methods, Construction Supervision
Senior Tunnels Engineer	Key	36	20	15	Civil Engineering, Tunnel Design, Tunnels, and/or Structures construction, Construction Supervision
Tunnel Engineer	Key	18	10	7	Civil Engineering, Tunnel Design, Tunnels, and/or Structures construction, Construction Supervision
Electrical Engineer	Key	12	20	15	Civil Engineering, electrical networks construction, Construction Supervision
FIDIC Contracts and Claims expert	Key	24	10	7	Contract Law/ Dispute procedure and FIDIC Contract Administration
Tunnel/Road safety engineer	Key	36	15	10	Road/tunnel safety operations and procedures, and to manage the day-to-day implementation of the project's road/tunnel safety awareness program
Senior Environmental Specialist	Key	36	15	10	Environmental studies, E&S impact assessment, ESAP implementation in construction projects under IFI requirements in road/transport infrastructure projects
Senior Occupational Health and Safety	Key	27	15	10	All health and safety aspects of major civil works construction,

Specialist					including tunnels, high level bridge works, and road works involving the use of explosives
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(b) National Experts (Minimum 1032 Person-Month Inputs)

Title	Key or non-key expert	Minimum Inputs (person-months)	Minimum General Experience (Years)	Minimum Specific experience (Years)	Areas of specialization
Highways Engineer (2 person)	Key	2x72=144	7	5	Road Construction
Bridge, Structural Engineer (2 person)	Key	2 x 36=72	7	5	Artificial Structures Construction and/or Artificial Structures Design
Pavement and Materials Engineer	Key	48	7	5	Pavement Construction and/or Pavement Design, AASHTO standards, materials and mix design methods, Construction Supervision
Geologist / Geotechnical Engineer	Key	36	7	5	Geology, Geotechnical, Construction Supervision
Highways Design/CAD Engineer	Non-key	72	7	5	Roads Design
Road Safety Specialist	Non-key	72	7	5	Road Construction Supervision
Road lighting/Electrical Engineer	Non-key	12	7	5	Road lighting Construction and/or Road lighting Design
Site Inspectors/Quality Control Specialists (3 persons)	Non-key	3 x 72=216	7	5	Road Construction Quality Control
Quantity Surveyors	Non-key	72	7	5	Road Construction Quantity Control
Topographer	Non-key	72	7	5	Road/Bridge/Tunnel Construction Geodesy and Topography
Environmental Specialist	Non-key	48	7	5	Environmental Science, environmental impact assessment, EMP,
Biodiversity specialist	Non-key	24	7	5	Environmental studies, E&S impact assessment, ESAP implementation in construction projects
Health and Safety Specialist	Non-key	72	7	5	Health and safety on site
Social, Resettlement and Gender Specialist	Non-key	48	7	5	Bachelor's degree or above in Social Science or related sphere
Archaeologist	Non-key	24	7	5	Archaeological surveys and/or assessments

F. Assignments Administrative Arrangements

- a) The Consultant should provide translators that might be required to undertake the assignments and ensure consistency and accuracy of English and Armenian versions of the deliverables and reports.
- b) These costs should be included and identified in the Consultant's Financial Proposal.
- c) All information, data and reports to be provided by the Client in the execution of the services of the Consultant shall be properly reviewed and analyzed by the Consultant. The responsibility for the correctness of using such data shall rest with the Consultant. All such information, data and reports shall be treated as confidential.

G. Facilities provided by the Client

- a) The Client will provide, through provision in the civil works contracts, logistical support consisting of equipment, vehicles and office / residential accommodation. This will include:
 - (i) equipped and maintained Site offices;
 - (ii) a fully equipped Engineer's and Contractor's laboratory on site
 - (iii) support staff including cleaners, survey assistants and labor;
 - (iv) vehicles, appropriate to the number of supervision staff, fuel, and maintenance;
 - (v) accommodation at the Site appropriate to the number of supervision staff including maintenance and utilities.
- b) The Employer will also provide all relevant project reports, documents, etc. relating to the project.
- c) Except the items stated above, no other facilities, equipment, logistical support, or other things will be provided during the services. The consultant shall therefore be responsible for all costs associated with accommodation away from the Site and any other costs necessary for the performance of the services, which will include also accommodation and transport costs for meetings with RDF/PIU in Yerevan. The Consultant should provide for these items in his Financial Proposal.
- d) After completion of the services the consultant will hand over to the Contractor all equipment and furniture provided under the civil works contract.