OFFICE OF THE PROJECT DIRECTOR,
(ADB PROJECT)
C.G. STATE ROAD SECTOR PROJECT,
PUBLIC WORKS DEPARTMENT,
SIRPUR BHAWAN, RAIPUR (C.G.)
E-mail:- pdadb.raipur.cg@gov.in, Tel. /FAX 0771- 2331427

EOINo.:-/ADB/L-3/2018/03 **Raipur Date: - 16 / 04/2018**

Notice Inviting Expression of Interest for Supervision Consultants

Title of the Proposed Project: CONSTRUCTION SUPERVISION OF GROUP-C ROADS IN CHHATTISGARH (CHHATTISGARH ROAD CONNECTIVITY PROJECT)

The Government of India has applied for a loan from the Asian Development Bank (ADB) and intends to utilize part of this loan towards the cost of the contract for consulting services related to construction supervision of civil works to be taken up in Group-C, under the aforesaid Project. The Public Works Department, Chhattisgarh is the implementing agency for rehabilitation and upgrading of the road sections shown in Table below. The work under Group-C are proposed to be taken up under eight (08) civil work contract packages.

Contract Packages under Group C :

Package No.	Road and Package Name	Estimated Length (Km)	Category of Road
18	Mangala Bhaisarjhar Road	26.12	MDR
19	Karubhatha Raksapali Kachhar Usrouth Tarapur Putkapuri Supa to NH-216 Road	48.34	MDR
20	Dharamjaygarh Kapu Road	32.87	MDR
21	Lormi to Paijania, Masna to Masni Jarhagaon Road	25.14	MDR
22	Sakti Tundri Road	31.70	SH-29
23	Pali to Silli Road	21.58	MDR
24	Bakaruma Lailunga Road	23.00	MDR
25	Jaijepur Malkharoda Chhoteseepat Paraswani Gobarabhata Road	18.06	MDR
	Total	**226.81**	MDR

The supervision consultancy services shall include, apart from construction supervision of the aforementioned civil works, monitoring and evaluation of the Project with focus on social impact monitoring and environmental management in accordance with ADB's Safeguard Policies.

The consulting services will be implemented over 24 months of construction period followed by 12 months of defects notification period. The Consultant's input requirement consists of about 26

international person-months and 2160 national person-months for Group-C. The estimated cost of the services for the aforesaid period is about USD 4.35 millions inclusive of Goods & Service Tax (GST). The commencement of consulting services is expected in August / September 2018.

The Public Works Department Chhattisgarh invites Expression of Interest (EOI) from eligible consultant for the said assignment. Consultants from the member countries of ADB are eligible for submitting EOIs.

On the basis of the submissions, the consultant shall be shortlisted and invited to submit their proposals in accordance with ADB's **Guidelines on the Use of Consultants** (the ADB Guidelines). The **request for proposal** to the short-listed consultants is expected to be issued in May / June 2018. Selection of the consultant shall be done under QCBS (Quality-and Cost-Based Selection) with a quality-cost ratio of 80:20 in accordance with the ADB Guidelines.

This Notice Inviting Expression of Interest, project details, EOI submission template and the draft terms of reference can also be downloaded from departmental website https://cgpwd.nic.in or https://eproc.cgstate.gov.in.

Interested consultants are strongly requested to submit their Expressions of interests (EOIs) online through ADB's website (www.adb.org) and the hardcopy of the EOIs to the address indicated below. In case of any discrepancies between them, the EOI submitted in hardcopy will be evaluated for shortlisting purposes.

For online submission: (1) register with ADB's CMS (Consultant Management System) at http://www.adb.org/Consulting/cms.asp, (2) go to http://csrn.adb.org, (3) click on "INDIA", (4) find the captioned project name and click on "View CSRN", (5) click on "submit EOI" or "Express Interest", and (6) follow the instructions. All requested information must be filled in completely.

Hard Copy of EOIs (in 2 copies) must be delivered on or before **15.05.2018 at 5:30 PM** through registered / speed post or in person at the following address :-

Office of the Project Director
CSRSP, ADB Project,
Sirpur Bhawan, Civil Line
Raipur (Chhattisgarh).
Pin :- 492001
E-mail :- pdadb.raipur.cg@gov.in
Tel. :- 0771 - 4031102
Fax. :- 0771-2331427

(D.K. Agrawal)
Project Director

ADB Asian Development Bank

Expression of Interest (EOI) Consulting Firms

Project Number	
Project Name	
Project Country	

I. Consulting Firm Information

CMS No.[1] / date:	Country of Incorporation:[2]
Consultant Name:	Acronym:
EOI Submission Authorized by:	Position

Associations (Joint Venture or Sub-consultancy)

CMS No.[1]	Consultant	Acronym	Country of Incorporation[2]	Joint Venture (JV) or Sub-consultant	EOI Submission Authorized By	Position

Present the rationale for and benefits of working in association (JV or Sub-consultant) with others rather than undertaking the assignment independently (as appropriate). Describe the proposed management and coordination approach of the association and the role of each firm.

I confirm that:

☐ Documentation regarding our corporate structure including beneficial ownership has been attached.

☐ Documentation regarding our Board of Directors has been attached.

☐ A written agreement to associate for the purpose of this Expression of Interest has been signed between the consortium partners and has been attached.

[1] If already registered on ADB's Consultant Management System (CMS). CMS registration is not mandated under EA-administered selection.

[2] The lead consultant must submit a copy of the Certificate of Incorporation of itself and of each JV member and sub-consultant through VII. EOI Attachments.

Once your team is shortlisted and invited for submission of the Proposal, it is not permissible to transfer the invitation to any other firm, such as Consultant's parent companies, subsidiaries and affiliates. The Client will reject a Proposal if the Consultant drops a JV member without the Client's prior consent, which is given only in exceptional circumstances, such as debarment of the JV partner or occurrence of Force Majeure.[3]

II. Assignment Specific Qualifications and Experience

For online submission: Your EOI shall demonstrate technical competence and geographical experience based on project references entered in full registration under your CMS profile. We encourage you to update Project Information under your CMS prior to filling EOI.
For offline submission: Please provide relevant project information in Section E below.

A. Technical Competence

Cross-referencing from your profile projects in Section E. Project References, highlight the technical qualifications of your entity/consortium in undertaking similar assignments. Provide details of past experiences working with similar project authorities.

B. Geographical Experience

Cross-referencing from your profile projects in Section E. Project References, present experiences in similar geographic areas.

C. Management Competence (Please answer each question in one paragraph of 3-5 sentences)

1. Describe standard policies, procedures, and practices that your entity has to assure quality interaction with clients and outputs. Please state if your company is ISO certified.

[3] Paras. 3 and 7, Section 1 of the Standard Request for Proposal (SRFP), ADB website.

2. How will your firm/consortium handle complaints concerning the performance of experts or quality of the reports submitted for this assignment? What internal controls are in place to address and resolve complaints?

3. How will you ensure the quality of your firm's/consortium's performance over the life of this assignment?

4. Describe standard policies, procedures and practices that your firm has put in place to avoid changes/replacements of personnel and to ensure the continuity of professional services once contracted.

5. Describe what social protection practices you have in place to safeguard the well-being of your proposed experts? Specifically describe arrangements you have in place for medical, accident, and life insurance coverage during the assignment.

D. Other Information (maximum of 500 words)

E. Project References

Please select most relevant projects to demonstrate the firm's technical qualifications and geographical experience (maximum 10 projects).

SN	Project	Period	Client	Country	Firm
1					
2					
3					
4					
5					

6					
7					
8					
9					
10					

Project Summary

SN 1	
Project Title	
Country / Region	
Start Date	
Completion Date	
Continuous / Intermittent	
Client	
Funding Source	
Description	(indicate your role and input inperson-months)

SN 2	
Project Title	
Country / Region	
Start Date	
Completion Date	
Continuous / Intermittent	
Client	
Funding Source	
Description	(indicate your role and input in person-months)

(Please insert more tables as necessary)

III. Comments on Terms of Reference

IV. Comments on Budget Adequacy

V. Key Considerations in approaching this assignment (no more than 9,000 characters summarizing approach and methodology)

VI. Key Experts

List of experts is only required for Consultants' Qualifications Selection (CQS). Attach CV of each expert.

SN	Name	Email	Position/Title	Nationality
1				
2				
3				
4				
5				

(Please insert more rows as necessary)

VII. EOI Attachments

SN	Description
1	Certificate of Incorporation of the lead member
2	Certificate of Incorporation of the JV member (for each member)
3	Certificate of Incorporation of the Sub-Consultant (for each sub-consultant)
4	Letter of Association
5	

(Please insert more rows as necessary)

VIII. Eligibility Declaration[4]

We, the undersigned, certify to the best of our knowledge and belief:

☐ We have read the advertisement, including the terms of reference (TOR), for this assignment.

☐ Neither the consulting firm nor its JV member or sub-consultant or any of its experts prepared the TOR for this activity.

☐ We confirm that the project references submitted as part of this EOI accurately reflect the experience of the specified firm/consortium.

[4] Eligibility refers to ADB's Guidelines on the Use of Consultants by Asian Development Bank and its Borrowers, Clause 1.13 together with Clauses 1.10-1.11 and 1.23-1.25 on integrity and anti-corruption policies.

☐ We further confirm that, if any of our experts is engaged to prepare the TOR for any ensuing assignment resulting from our work product under this assignment, our firm, JV member or sub-consultant, and the expert(s) will be disqualified from short-listing and participation in the assignment.

☐ All consulting entities and experts proposed in this EOI are eligible to participate in ADB-funded, -supported and –administered activities.

☐ The lead entity and JV member or sub-consultant are NOT currently sanctioned by ADB or other MDBs. Neither the consulting firm nor the JV member or sub-consultant has ever been convicted of an integrity-related offense or crime related to theft, corruption, fraud, collusion or coercion.

☐ We understand that it is our obligation to notify ADB should any member of the consortium become ineligible to work with ADB or other MDBs or be convicted of an integrity-related offense or crime as described above.

☐ JV member or sub-consultant, including all proposed experts named in this EOI, confirmed their interest in this activity in writing.

☐ JV member or sub-consultant, including all proposed experts named in this EOI, authorized us in writing to represent them in expressing interest in this activity.

☐ None of the proposed consortiums are subsidiaries of and/or dependent on the Executing Agency or the Implementing Agency or individuals related to them.

☐ We understand that any misrepresentations that knowingly or recklessly mislead, or attempt to mislead may lead to the automatic rejection of the proposal or cancellation of the contract, if awarded, and may result in further remedial action, in accordance with ADB's Anticorruption Policy.

Terms of Reference (TOR)

1. BACKGROUND

The Government of India has applied for financial assistance from the Asian Development Bank (ADB) towards the cost of the proposed Chhattisgarh Road Connectivity Project (the project). The project aims to improve road connectivity in the state of Chhattisgarh by rehabilitating and upgrading 26 state highways and major district roads (MDRs), totaling 870.24 km. The project will also support the executing agency, the Chhattisgarh's Public Works Departments (PWD), in road maintenance, road safety and innovations.

2. OBJECTIVE

The objective of the proposed consultancy services is to assist the PWD to implement the project through:

(i) proper management of civil works contracts as "the Engineer" in terms of civil works contract;

(ii) comprehensive supervision of project implementation activities carried out by the contractors to ensure compliance with the drawings, technical specifications and various stipulations contained in the contract documents, with high standards of quality assurance in supervision and in the execution of work;

(iii) provision of supports to complete the work within the stipulated time for completion; and

(iv) transfer of knowledge to the PWD and its Project Implementation Unit (PIU) staff in contract administration.

Three construction supervision consultants (CSCs) will be recruited to assist PWD in implementing the project. Each CSC will cover a group of project roads, which was specified based on their geographical locations and other practical consideration. This terms of reference (TOR) is for the CSC of Group C, which covers the roads as shown in Table 1 below.

Table 1: List of Group C Roads

Package No	Road Name	Estimated Length (Km)	Category of Road
18	Mangala Bhaisarjhar Road	26.12	MDR
19	Karubhatha Raksapali Kachhar Usrouth Tarapur Putkapuri Supa to NH-216 Road	48.34	MDR
20	Dharamjaygarh Kapu Road	32.87	MDR
21	Lormi to Paijania, Masna to Masni Jarhagaon Road	25.14	MDR
22	Sakti Tundri Road	31.70	SH-29
23	Pali to Silli Road	21.58	MDR
24	Bakaruma Lailunga Road	23.00	MDR
25	Jaijepur Malkharoda Chhoteseepat Paraswani Gobarabhata Road	18.06	MDR
	Total :-	**226.81**	

3. CONTRACT MANAGEMENT FRAMEWORK

The civil construction contract will be based on the FIDIC MDB Harmonized Version construction contract (June 2010 version) (hereafter referred to as FIDIC) with appropriate amendments to incorporate local requirements.

The Government of Chhattisgarh, Public Works Department, will administer the project as "the Employer".

The PIU will be headed by Project Director, who will act as “Employer’s Representative.”The PIU will create separate sub-units under the PIU to be exclusively in charge for the group of contract packages. The sub-unit will be headed by a Project Manager/Nodal Officer assisted by appropriate support staff.

All CSCs will report to the Project Director of the PIU, which is based in the state capital, Raipur.

The CSC will act as "the Engineer" under FIDIC for the contract. The CSC will make the necessary measurements and ensure the quality of work. The CSC shall make all engineering decisions required during the implementation of the contract. However, the CSC shall seek prior approval of the Employer with regard to the following, where this TOR or FIDIC conditions require:

- Issuing the order to commence the works;
- Variation order exceeding 0.5% of the individual items or aggregate variation exceeding 5% of the contract value with financial implications;
- Sanction of additional items, sums or costs and variations of rates and price including fixation of new rates;
- Approval of subletting of any part of works;
- Approval of any extension of contractual time limits; and
- Stopping and/or termination of the contract of works.

The CSC will be a firm of consultants. The firm’s full time Director will be "the Engineer." The CSC will designate its Team Leader as the “Engineer’s Representative,” who shall act on all matters pertaining to the Engineer’s Representative under FIDIC. However, the Consultant’s firm shall be responsible for all actions taken by its Team Leader, and the team.

4. SCOPE OF CONSULTING SERVICES

The scope of consulting services will include, but not necessarily be limited to the following:

1. Act as the ‘Engineer’ in terms of civil works contract to the extent of the delegation given;
2. Assist the Employer in contract administration and management of the project and the civil works contract;
3. Interpretation of the Technical Specifications and Contract Documents;
4. Review designs, drawings, BOQ provisions and specification with respect to actual site conditions and suggest modifications, if required or deemed

appropriate. Any realignment, redesign/modification, any additional design of bridge desired for completion of the project will be done by CSC and related approvals from concerned authorities will be obtained by the CSC without any extra cost including remuneration of personnel, equipment, software and office supplies;

5. Ensure that provisions for ensuring road safety during construction, including at pre-opening stage, are in place by the contractors;

6. Review and ensure conformity of contractor's securities in approved formats and ensure validity of these securities;
7. Ensure requisite insurances have been received and they comply with the requirements of the contract;
8. Review compliance with the documentation and advance actions requirements, including securing of all statutory clearances and permits or handing over of site, and advise on issuing the notice to set the Commencement Date;
9. Ensure the contractor effects and implements a system for the quality assurance of the works. The system of control of quality of materials and completed works shall also include sampling methods and criteria and acceptance criteria. The sampling methods and the acceptance criteria shall be based on statistical methods and the recommendations of the relevant IRC and MORTH/BIS publications (as applicable) and international practices;
10. Scrutinize the contractor's detailed work programme, suggest modifications, if any, to the programme after a careful study and ensure the contractor complies with the programme;
11. Scrutinize and/or review contractor's superintendence, personnel and suggest modifications, if any;
12. Scrutinize the contractor's mobilization of the contractor's equipment to ensure the nominated plant and equipment is delivered to the site in accordance with the contractor's programme and that permits where necessary are obtained in a timely manner;
13. Scrutinize the construction methods proposed by the contractor for carrying out the works to ensure that these are satisfactory with particular reference to the technical requirements, project implementation schedule and environmental aspects as well as safety of works, personnel and the general public;
14. Review the horizontal and vertical alignment for the roads based on review of tender drawings and the topographic survey carried out by the contractor. This work will include if required, amending the DPR alignment plan and profile drawings based on the updated topographic surveys;
15. Issue of finalized or revised 'Good for Construction' drawings and prepare and provide additional detailed drawings, if and as necessary, including drainage (inclusive of drainage scheme through the built-up areas), junctions, road signs and markings, safety measures, km stones, protection works etc. based on the contractor's survey and setting out;
16. Ensure all bridge details are complete and modify the design and drawings wherever required due to founding level as a result of the change in the founding strata or any other reason at the time of execution;

17. Scrutinize and approve the contractor's working drawings based on survey setting out details, and drawings for temporary works, as required under the contract;
18. Carry out detailed checking and verification of the setting-out data for the work including lines, levels and layout to ensure conformity with the working drawings;
19. Carry out supervision of all works as per approved method statements of various items of work and ensure proper supervision as per requirement;
20. Examine contractor's preparation and the completed portion of work as per 'requests for inspection' and promptly advise the contractor;
21. Monitor closely and regularly the progress of work and advise the contractor about corrective measures;
22. Carry out regular inspection of the contractor's equipment, plant, machinery, installations, housing and medical facilities etc. and ensure they are adequate and are in accordance with the terms and conditions of the contract;
23. Direct the contractor to carry out all such works or to do all such things as may be necessary to avoid or to reduce the risk in case of any emergency affecting the safety of life or of the works or of the adjoining property and advise the Employer thereof as soon thereafter as is reasonably practicable;
24. Supervise the contractor in all matters concerning safety and care of the work including environmental aspects and labour welfare;
25. Witness sampling and testing being carried out by staff of the contractor and undertake additional audit tests as necessary to ensure the quality of works and promptly inform the contractor of the results;
26. Review the test results/certificates of all construction materials and/or sources of materials and undertake additional tests as necessary to assess the quality of works;
27. Review all mix designs proposed by the contractor and approve/suggest modifications in the mix design, laying methods, sampling and testing procedure, and quality control measures, to ensure required standard and consistency in quality at the commencement of items;
28. Maintain a permanent record of all tests carried out for monitoring the quality of works;
29. Prepare updated and additional drawings as required during the contract period and supply to the contractor in time;
30. Measurement of quantities and certification, recording of measurements; verify, certify and issue interim and final payment certificate of the contractor based on the conditions of the contract/approval of employer;
31. Examine the requests for advances and monthly statements of contractors;
32. Support the PWD in matters relating to land acquisition and resettlement including updating the Resettlement Plan, monitoring the implementation of the resettlement plan and providing expert advice in all matters relating to acquisition and resettlement which include, but not necessarily limited to, the following activities;
    a. Review results of internal monitoring and verify claims through random checking at the field level to assess whether resettlement

objectives have been generally met. Involve the affected people and the community groups in assessing the impact of land acquisition for monitoring and evaluation purposes.

b. Identify the strengths and weaknesses of the resettlement objectives and approaches, implementation strategies and suggest corrective action plans.
c. Review and verify the progress in land acquisition/ resettlement implementation and prepare monthly and semi-annual monitoring reports for the EA and ADB respectively.
d. Evaluate and assess the adequacy of compensation given to the affected persons and the livelihood opportunities and incomes as well as the quality of life of the affected persons after the project induced changes.
e. Evaluate and assess the adequacy and effectiveness of the consultative process with the affected persons, particularly those who are vulnerable, especially women, including the adequacy and effectiveness of the grievance redressal mechanism and procedures available to the affected persons and dissemination of information about these.
f. Advise the EA on safeguard compliance issues and if necessary a corrective action plan will be prepared to address such issues.

33. Review the IEE report and update the Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMOP) in accordance with the details given in the Appendix;
34. Ensure the contractor implements the EMP;
35. Conduct coordination and training workshops on roles and responsibilities on EMP and EMOP implementation;
36. Prepare Environmental Monitoring reports based on the EMP monitoring and EMOP implementation activities as given in the Appendix to be submitted to ADB (Once a year at least);
37. Monitor the status of the contractor's compliance with the HIV/AIDS provisions in the civil works contracts; and
38. Assist PWD in arranging the relocation of services including providing plans of the location of all services if not shown in sufficient detail on the existing plans, preparing correspondence for the PWDs, arranging meetings and generally ensuring that the PWDs are meeting the deadlines necessary to avoid delay claims from the contractor;
39. Maintain a permanent record of all measurements for the work quantities to be paid for and of all payments made;
40. Prepare monthly reports fully describing the progress of works including implementation of environment, social and resettlement safeguard requirements and the services rendered by the Consultant during the month under review, indicating also the problem areas and action required to overcome them;
41. Prepare financial statements;
42. Maintain a day-to-day diary recording all events relevant to the works;
43. Review and approve 'as-built' drawings prepared by the contractors and maintain records of all test data and results and also certify "as constructed" drawings for each component of the works furnished by the contractors;

44. Inspect the works on completion of the milestone before accepting the work and indicate to Project Manager/Nodal Officer any outstanding work to be carried out by the contractors before issuing a milestone certificate;
45. Inspect the works on completion of the milestone for the whole of the Permanent Works before accepting the work and indicate to Project Manager/Nodal Officer any outstanding work to be carried out by the contractor before issuing the milestone certificate or during the Defects Notification Period for the Permanent Works;
46. Inspect the works at appropriate intervals during the Defect Notification Period for the Permanent Works (to the extent of the duration of the services) and advise the PIU on remedial works, if any;
47. Assist the PWD staff to carry out all of the duties as defined above as they apply to the Maintenance Works Contracts until the completion of the services while simultaneously training the PIU staff to undertake all of these duties.

5. OTHER RELEVANT INFORMATION

5.1 The detailed engineering for the work has been presented in the Detailed Project Reports (DPRs) for each contract package, prepared generally in accordance with the Indian Roads Congress standards.

5.2 The DPRs contain drawings which are deemed 'Good for Construction' except where modification is required to adapt to on site conditions and any recommended actions from the road safety audit.

5.3 The specifications are based on the latest edition of the Ministry of Road Transport and Highways (MORTH) Specifications for Roads and Bridge Works.

5.4 The Employer will provide the above information for reference and inspection to facilitate preparation of the Proposals". These documents can be seen in office hours (1030 Hrs IST to 1730 Hrs IST) in the office of Project Director, PIU (ADB Project), Raipur, Chhattisgarh, India.

6. MEASUREMENT OF QUANTITIES AND CERTIFICATION TO CONTRACTOR

The CSC must ensure that all the levels and detailed measurements required to arrive quantities of items are recorded in Measurement Book.

If the CSC wants to use any software for working out the quantities of area or volume, such software/computer programme shall be approved by the Employer prior to its use. Nevertheless, recording of detailed measurements in the Measurement Book is necessary even when software is used by the CSC. In any circumstances standard mode of measurement as given under MORTH specifications shall not be deviated.

The CSC will process interim and final payments certificates for the contractor's work in accordance with contract of the civil works contractor. Interim monthly payments shall be based on interim payment certificates processed by the CSC on the basis of statements filed by the Contractor. The CSC should ensure that all the deductions are made as per the contract provisions before recommending the interim payment certificate. In processing contractual certificates, the Team Leader of the CSC will certify that he has checked at least 15% of the measurements and quality control tests. The Resident Engineer checks and certifies 50% of the measurements and quality control tests, while the Assistant Resident Engineer checks and certifies 100%

of the measurements and quality control tests. The Team Leader shall intimate the details of these check tests to the Project Manager/Nodal Officer before undertaking them, so that the Project Manager/Nodal Officer could associate, if they wish to do so. The Consultant or any of his concerned experts shall do the repeat tests or measurements, if directed by the Project Manager/Nodal Officer of the construction package, in the presence of the same or any of his delegated representatives. In case of any conflict, the Consultant may do the test check in the presence of the Project Manager/Nodal Officer limited to 5% of total measurement/quality control tests.

7. EXPECTED INPUTS

The suggested composition and associated time inputs for the CSC team is given in Table **2**. The minimum time input for the international expert is 26 person-month, while the minimum input for the national experts is 2160 person-month.

Table 2: CSC staffing requirements

Sl. No	Position	Person-month
I	**Key International Expert**	
1	Team Leader/Senior Contract Administration Specialist– 1	26*
	Total person-months(Key International Expert)	**26***
II	**Key National Experts**	
2	Senior Highway Engineer – 1	22
3	Senior Pavement/Material Engineer – 1	6
4	Senior Quantity Surveyor cum Contract Specialist – 1	24
5	Senior Bridge Engineer – 1	22
6	R&R cum Social Development Specialist – 1	6
7	Environmentalist Specialist – 1	6
	Total person-month (Key National Experts)	**86**
	Total person-month (Key International + National Experts)	**112**
III	**Non-Key National Experts**	
8	Resident Engineer – 4	104*
9	Assistant Resident Engineer (Roads) – 8	192
10	Assistant Resident Engineer (Bridge) – 4	96
11	Safeguard Officer (R&R and Social Development) – 1	18
12	Safeguard Officer (Environment) – 1	12
13	Quantity Surveyor – 8	192
14	Material Engineer/Quality Control Engineer – 4	96
15	Field Engineer – Roads – 16	384
16	Field Engineer – Bridge – 4	96
17	Field Engineer – Survey – 8	192
18	CAD Expert – 2	48
19	Lab Technician – 16	384
	Total person-months (Non-Key National Experts)	**1814**
	Total person-month (Key + Non Key National Experts)	**1926**
IV	**Administrative & Support Staff**	
20	Office Manager – 1	26*
21	Accountant – 1	26*
22	Computer Operator – 8	208*
	Total person-months(Administrative & Support Staff)	**260**

* Includes two months (intermittently) during Defect Liability Period

For the purpose of consultant selection, only the CVs of key experts (positions 1-7) will be evaluated. All national experts and staff (positions 2-20) shall be made available in the field.

Position-based tasks/responsibility assignments are given in **Table 3**.

Table 3: Position based tasks/responsibility assignments

Sl. No.	Position	Tasks/Responsibilities
I	**Key International Expert**	
1	Team Leader (TL)/Senior Contract Administration Specialist	• Provide overall day-to-day coordination between the consultant team members in delivering the tasks under this consultancy service assignment; • Provide overall quality control on the deliverables and outputs by each consultant team member; • Assist the Employer in the administration of all civil works contracts; • In coordination with relevant consultant team members, interpret the Technical Specifications and Contract Documents; • Obtain related approvals from concerned authorities for any redesign of road realignment, modifications and redesign of bridges; • Review the contractor's securities being in approved format; • Ensure receipt of requisite insurances as per contract requirement; • Review documentations and advance actions for handing over of site and advise on issuing notice to set the commencement date; • Ensure contractor effects and implements Quality Assurance System; • Issue approval to the contractor's detailed work programme, suggest modifications if any, and ensure contractor compliance with the work programme; • Issue approval to the contractor's Superintendence Personnel with modifications if any; • Scrutinize contractor's mobilization of equipment in accordance with the contractor's program; • Scrutinize and approve contractor's construction methods statement; • Issue finalized or revised "Good for Construction drawings" and additional detailed drawings required for the execution of the work; • Issue to contractor amended alignment plan and profile drawings based on review of tender drawings and updated topographic surveys; • Issue bridge details and modified drawings wherever required due to change in founding level, as a result of change in founding strata or any other reason at the time of execution; • Approve contractors working drawings based on setting out details; • Approve setting out data for the works finalized

Sl. No.	Position	Tasks/Responsibilities
		as a result of ground verification and survey; • In coordination with relevant team members, monitor supervision of all works and ensure proper supervision as per contract requirement; • Monitor closely and regularly the progress of work and advise the contractor about corrective measures; • Monitor status of contractor's equipment, plant, machinery installations, housing and medical facilities; • Direct and/or advise contractor to avoid and/or reduce the risk in case of any emergency; • Advise contractor in all matters covering safety and care of work, environmental aspects and labor welfare; • Review the test results / certificate of all construction material and/or sources of materials to ensure quality; • Review mix designs proposed by the contractors; • Verify and recommend, if in order, contractors requests for advance and interim payment certificate; • Assist the Employer in arranging relocation of services; • In coordination with relevant team members, maintain a permanent record of all payments made to the contractor; • Prepare consolidated monthly reports; • Approve as-built drawings; • Inspect the works on completion of each milestone before accepting the work and report to the PIU; • Inspect works at appropriate intervals during Defect Notification Period and advise the PIU; • In coordination with the environmental specialist, ensure the contractor implements and maintains the environmental monitoring in compliant with the Environmental Management Plans (EMPs); • Assist PWD staff to carry out all the duties as apply to Maintenance Works Contract; • Assist PIU in dispute resolution activities, if necessary, during the pendency of the contract; and • Perform regular coordination with the Project Management Consultant (PMC) team with regard to the preparation and application of the Project Performance Management System (PPMS).

Sl. No.	Position	Tasks/Responsibilities
II	**Key National Experts**	
2	Senior Highway Engineer	• Review designs, drawings for the roadwork; • Suggest modifications, if required as per actual site conditions; • Carry out design of any realignment, redesign/modifications of the roadwork components, if necessary, as per site conditions; • Review horizontal and vertical alignment for the road based on review of tender drawings and topographic survey carried out by the contractor including amending the alignment plan and profile based on updated topographic surveys; • Review road safety provisions in the tender drawing and suggest modifications for construction if necessary; • Ensure provision of road safety during construction and pre-opening stage by the contractor; • Provide inputs and assistance to the TL in the review and approval of as-built drawings; and • Perform regular coordination with the PMC team with regard to the implementation, monitoring and reporting of any project specific innovations.
3	Senior Pavement / Material Engineer	• Assist TL to finalize sampling methods and criteria and acceptance criteria for quality control and assurance; • Examine the contractor's preparation and completed portion of work as per "Request for Inspection" and advise the contractor promptly; • Monitor closely and regularly the progress on materials procurement and quality and report to the TL; • Carry out inspection of the contractor's lab equipment and report to the TL; • Ensure and witness sampling and testing being carried out the contractor and undertake additional tasks as necessary to ensure quality of works; • Scrutinize test results/certification of all construction materials and/or sources of materials and undertake additional tests if necessary and report to the Assistant Resident Engineers and the TL; • Scrutinize mix design proposed by the contractor; • Maintain a permanent record of all tests carried out for monitoring the quality of works; and • In coordination with the environmental specialist, issue approval of borrow areas and quarries

Sl. No.	Position	Tasks/Responsibilities
4	Senior Quantity Survey cum Contract Specialist	• Measure quantities of work, record measurements and verify BOQ items/work quantities executed in the contractor's monthly statement; • Verify and examine interim payment certificates received from contractor; • Maintain a permanent record of all measurement for the work quantities; • In coordination with the TL, assist the Employer and the Engineer in the administration of civil works contracts; • In coordination with the TL, interpret the Technical Specifications and Contract Documents; • In coordination with the TL, review and ensure conformity of contractor's securities in approved formats; • In coordination with the TL, ensure requisite insurances furnished by the contractor being contract compliant; and • In coordination with the TL, assist PIU in dispute resolution activities, if necessary, during the pendency of the contract;
5	Senior Bridge Engineer	• Review designs, drawings for bridges, culverts or any other structures; • Suggest modifications and design, if required as per actual site conditions; • Carry out any design, if required for bridges or culverts or any other structures; • Check and modify design and drawings, if required due to change in founding level, or any other reason as a result of scrutiny of geotechnical data; • Scrutinize contractors working drawings for temporary works for structure; • Carry out supervision of all bridge works and CD works as per approved methods statements; • Examine contractor's preparation and completed position of work as per "Request for Inspection" and advise the contractor promptly; • Monitor closely and regularly the progress of work on bridges or CD works and report to the TL; • Supervise the contractor in all matters concerning safety and care of the works; and • Witness sampling and testing being carried out by contractor particularly of bridge and CD works components;

Sl. No.	Position	Tasks/Responsibilities
6	R&R cum Social Development Specialist	• Support the PWD in matters relating to land acquisition and resettlement; • Update resettlement plan (RP); • Monitor the implementation of RP; • Provide expert advice in all matters relating to acquisition and resettlement; • Monitor implementation of the RP; • Monitor the status of the contractor compliance with HIV/AIDs provisions in the contract; • Identify current economic and social development issues that may arise during construction; • Mobilize community participation in the Project and encourage women participation in all related activities; • Organize and facilitate multi-stakeholder participatory processes and encourage women participation in all related activities; • Organize regional and buffer zone development programme; • Develop communication channels with the Stakeholders and reporting; • Ensure, monitor and record women participation in the all project activities; • All the related assignments mentioned under section 8 Part B, Annexure A and A1 of the bid document; and • Perform regular coordination with the PMC team for any matters related to implementation, monitoring and reporting of ADB safeguard policy, including gender aspect.
7	Environmentalist Specialist	• Scrutinize contractor's construction method statement for its being compliant to environmental aspects; • Supervise the contractor in all matters concerning environmental aspects; • Monitor compliance with the EMP by the contractor; • Assist PIU in undertaking and monitoring of environmental safeguards; • Identify and report any environmental issues that may arise during construction to the TL and the Employers; and • Perform regular coordination with the PMC team for any matters related to implementation, monitoring and reporting of ADB safeguard policy.

Sl. No.	Position	Tasks/Responsibilities
8	Resident Engineer	In performing the following tasks, the Resident Engineer must be in coordination and consultation with the TL and other relevant consultant team members: • Interpret the Technical Specifications and Contract Documents; • Obtain related approvals from concerned authorities for any redesign of road realignment, modifications and redesign of bridges; • Review the contractor's securities being in approved format; • Ensure receipt of requisite insurances as per contract requirement; • Review documentations and advance actions for handing over of site and advise on issuing notice to set the commencement date; • Ensure contractor effects and implements Quality Assurance System; • Issue approval to the contractors detailed work programme, suggest modifications if any and ensure the contractor compliance with the programme; • Issue approval to the contractor's Superintendence Personnel with modifications, if any; • Scrutinize the contractor's mobilization of equipment in accordance with the contractor's programme; • Scrutinize and approve the contractor's construction methods statement; • Issue finalized or revised "Good for Construction drawings" and additional detailed drawings required for the execution of the work; • Issue to contractor amended alignment plan and profile drawings based on review of tender drawings and updated topographic surveys; • Issue bridge details and modified drawings wherever required due to change in founding level, as a result of change in founding strata or any other reason at the time of execution; • Approve the contractor's working drawings based on setting out details; • Approve setting out data for the Works finalized as a result of ground verification and survey; • Monitor supervision of all works and ensure proper supervision as per contract requirement; • Monitor closely and regularly the progress of work and advise the contractor about corrective measures; • Monitor status of the contractor's equipment, plant, machinery installations, housing and medical facilities;

Sl. No.	Position	Tasks/Responsibilities
		• Direct and/or advise the contractor to avoid and/or reduce the risk in case of any emergency; • Advise the contractor in all matters covering safety and care of work, environmental aspects and labor welfare; • Review the test results / certificate of all construction material and/or sources of materials to ensure quality; • Review mix designs proposed by the contractor; • Verify and recommend, if in order, contractors requests for advance and interim payment certificate; • Assist the Employer in arranging relocation of services; • Maintain a permanent record of all payments made to the contractor; • Prepare monthly reports; • Prepare financial statement; • Approve “as-built” drawings; • Inspect the works on completion of each milestone before accepting the work and reportto the PIU; • Inspect works at appropriate intervals during Defect Notification Period and advise the PIU; • Ensure the contractor implements and maintains the environmental monitoring in compliant with the EMP; • Assist PWD Staff to carry out all the duties as apply to Maintenance Works Contract; and • Monitor Assistant Resident Engineer (Roads) and Assistant Resident Engineer (Bridge).
9	Assistant Resident Engineer (Roads)	In performing the following tasks, the Assistant Resident Engineer(Roads) must be in coordination and consultation with the Resident Engineer and other relevant consultant team members: • Assist in project management and contract administration; • Assist in interpretation of the Technical Specifications and Contract Documents; • Review designs, drawings, BOQ Provisions and Specifications; • Ensure road safety provision during construction and pre-opening stages by the contractor; • Assist review compliance of documentation and advance actions for handing over site and advise on setting the commencement date; • Assist the TL to ensure contractors Quality Control Assurance System; • Scrutiny the contractor’s detailed work programme;

Sl. No.	Position	Tasks/Responsibilities
		• Scrutinize and/or review the contractor's Superintendence Personnel and report to the TL on modifications, if any; • Scrutinize the contractor's mobilization of equipment, in accordance with the contractor programme; • Scrutinize the contractor's construction methods statement and report to the TL for its being compliant to technical requirement, project implementation schedule, environmental aspects, safety of works, personnel and general public; • Review horizontal and vertical alignments and follow up action based on report of Senior Highway Engineer; • Finalize/review "Good for Construction Drawings", prepare additional detailed drawings, if required, based on the contractor's survey and setting out; • Scrutinize the contractor's working drawings based on survey setting out details; • Scrutiny, checking and verification of setting out data; • Carry out supervision of all works as per the approved methods statement; • Examine the contractor's preparation and the completed position of work as per "request for inspection" and promptly advise the contractor; • Monitor closely and regularly the progress of work and report to the TL; • Carry out regular inspection of the contractor's equipment, plant, machinery, installations, housing and medical facilities; • Direct contractor to carry out works, as may be necessary to avoid or to reduce the risk in case of any emergency; • Supervise the contractor in all matters concerning safety of works, labor, workmen and environmental aspects and labor welfare; • Witness sampling and testing being carried out by staff of the contractor and undertake additional audit tests to ensure quality; • Monitor and review the test results / certificates for all construction material and/or resources of materials and report to the TL; • Monitor and review the mix designs proposed by the contractor; • Examine the requests for advances and monthly statements of contractors and examine interim payment certificates; • Assist PWD in arranging relocation of services including all correspondence, meetings and preparation of details;

Sl. No.	Position	Tasks/Responsibilities
		• Maintain a permanent record of all measurements for the works or quantities to be paid for and of all payment date; • Prepare monthly reports; • Review "as-built" drawings prepared by the contractor and maintain record of tests of all data and records; and • Maintain a day-to-day diary recording all events relevant to the works;
10	Assistant Resident Engineer (Bridge)	In performing the following tasks, the Assistant Resident Engineer(Bridge) must be in coordination and consultation with the Resident Engineer and other relevant consultant team members: • Assist in project management and contract administration; • Assist in interpretation of the Technical Specifications and Contract Documents; • Review designs, drawings for bridges, culverts or any other structures; • Suggest modifications and design, if required as per actual site conditions; • Carry out any design, if required for bridges, culverts or any other structures; • Check and modify design and drawings, if required due to change in founding level, or any other reason as a result of scrutiny of geotechnical data; • Review BOQ Provisions and Specifications; • Assist review compliance of documentation and advance actions for handing over site and advise on setting the commencement date; • Assist the TL to ensure contractors Quality Control Assurance System; • Scrutiny the contractor's detailed work program; • Scrutinize and/or review the contractor's Superintendence Personnel and report to the TL on modifications, if any; • Scrutinize the contractor's mobilization of equipment, in accordance with the contractor programme; • Scrutinize the contractor's construction methods statement and report to the TL for its being compliant to technical requirement, project implementation schedule, environmental aspects, safety of works, personnel and general public; • Finalize / review "Good for Construction Drawings", prepare additional detailed drawings, if required, based on the contractor's survey and setting out;

Sl. No.	Position	Tasks/Responsibilities
		• Scrutinize the contractor's working drawings based on survey setting out details; • Scrutiny, checking and verification of setting out data; • Carry out supervision of all works as per approved methods statement; • Examine the contractor's preparation and the completed position of work as per "request for inspection" and promptly advise the contractor; • Monitor closely and regularly the progress of works and report to the TL; • Carry out regular inspection of the contractor's equipment, plant, machinery, installations, housing and medical facilities; • Direct the contractor to carry out works, as may be necessary to avoid or to reduce the risk in case of any emergency; • Supervise the contractor in all matters concerning safety of works, labor, workmen and environmental aspects and labor welfare; • Witness sampling and testing being carried out by the contractor and undertake additional audit tests to ensure quality; • Monitor and review the test results/certificates for all construction material and/or resources of materials and report to the TL; • Monitor and review the mix designs proposed by the contractor; • Examine the requests for advances and monthly statements of contractors and examine interim payment certificates; • Assist PWD in arranging relocation of services including all correspondence, meetings and preparation of details; • Maintain a permanent record of all measurements for the works/quantities to be paid for and of all payment date; • Prepare monthly reports; • Review "as-built" drawings prepared by the contractor and maintain record of tests of all data and records; and • Maintain a day-to-day diary recording all events relevant to the works.
11	Safeguard Officer (R&R and Social Development)	In performing the following tasks, the Safeguard Officer must be in coordination and consultation with the R&R cum Social Development Specialist: • Provide day-to-day general support in matters relating to implementation and monitoring of land acquisition and resettlement; • Provide day-to-day general support in matters relating to community consultation and

Sl. No.	Position	Tasks/Responsibilities
		participation; and • Provide day-to-day support to all related assignments mentioned under section 8 Part B, Annexure A and A1 of the bid document.
12	Safeguard Officer (Environment)	In performing the following tasks, the Safeguard Officer must be in coordination and consultation with the Environmental Specialist: • Provide day-to-day general support in matters relating to implementation and monitoring of EMP compliance by the contractor; and • Provide day-to-day support to identify and report any environmental issues that may arise during construction.
10	Quantity Surveyor	• Measure quantities of work, record measurements and verify BOQ items / work quantities executed in the contractor's monthly statement; • Verify and examine interim payment certificates received from the contractors; and • Maintain a permanent record of all measurement for the work quantities.
11	Material Engineer/ Quality Control Engineer	• Assist the TL and to finalize sampling methods and criteria and acceptance criteria for quality control and assurance; • Examine the contractor's preparation and completed portion of work as per "Request for Inspection" and advise the contractor promptly; • Monitor closely and regularly the progress on materials procurement and quality and report to the TL; • Carry out inspection of the contractor's laboratory equipment and report to the TL; • Ensure and witness sampling and testing being carried out by the contractor and undertake additional tasks as necessary to ensure quality of works; • Scrutinize test results/certification of all construction materials and/or sources of materials and undertake additional tests if necessary and report to the Assistant Resident Engineer and the TL; • In coordination with the Senior Pavement / Material Engineer, scrutinize mix design proposed by the contractor; • Maintain a permanent record of all tests carried out for monitoring the quality of works; • In coordination and consultation with the Senior Pavement / Material Engineer and the Environmental Specialist, issue and approve borrow areas and quarries; and • Monitor and maintain quality of Construction Material in all aspects.

Sl. No.	Position	Tasks/Responsibilities
12	Field Engineer – Roads	• Assist the TL and Assistant Resident Engineer on all matters at project site relating to road works.
13	Field Engineer – Bridge	• Assist TL and Assistant Resident Engineer on all matters at project site relating to bridge works.
14	Field Engineer – Survey	• Scrutinize topographic survey data, if any, in the contract drawings and associate and scrutinize the contractor's updated topographic survey data; • Monitor survey and setting out operations and verify data and details; • Carry out detailed checking and verification of setting out data;

8. ADDITIONAL SERVICES

The Consultant shall, if so required by the Employer, provide any additional service at rates or on person-month rates as per the contract, or as mutually agreed upon, as a variation order.

9. REPORTS

The Consultant will prepare and submit the reports as listed in **Table 4** to the Employer on the format prepared by the consultant and as approved by the Employer(except for inception report).

(i) Inception Report

The Inception Report shall contain the details of all meetings held with the Employer and any initial meetings held with the contractor and decisions taken therein, the resources mobilized by the Consultant as well as the contractor and the Consultant's perception in the management and supervision of the project. The report shall also include the Master Work Programme and Resources Mobilization for the project.

(ii) Monthly Progress Reports

The Monthly Progress Report shall contain details of all meetings, decisions taken therein, mobilization of resources (the Consultant and the contractors), physical and financial progress and the projected progress for the forthcoming periods and implementation of environment, social and resettlement safeguard requirements. The report shall clearly bring out the delays, if any, reasons for such delay(s) and the recommendations for corrective measures. The report shall also contain the performance data for contractor's plant and equipment.

(iii) Design Review Report

The supervision consultant shall undertake a detailed engineering review of the design as included in the civil works contract drawings for the purpose of identifying any defects/omissions, which compromise the completeness or consistency of the design. This review shall be carried out immediately after the services commence and a detailed 'Design Review Report' shall be submitted to the Employer within 2 months. This report will set out all findings and recommendations for making good any defects/omissions identified in civil

works designs. Notwithstanding the above, the supervision consultant shall also inform the Employer of any defect/omission which may have a substantial impact on the project at the time the defect/omission is uncovered. Where defects in design are noted or designs are inadequate, the Consultant shall prepare revised detail designs suitable for construction in adequate time so as not to delay the contractor.

(iv) Final Report

The Consultant will prepare a comprehensive final completion report of the construction contract packages after completion of the Permanent Works in that package. The reports shall incorporate summaries of the methods of construction, the construction supervision performed, reference to as-built drawings of the construction, problems encountered, and solutions undertaken thereon and recommendations for future projects of similar nature to be undertaken by the PWD. The Consultant shall submit the self-appraisal report within the prescribed time summarizing the following details:

1. Details of Consultant's personnel including substitution made during the assignment.
2. Details of variation orders issued.
3. Details of extension of time granted to the contractor.
4. Details of Quality Assurance System
5. Quality observed at site by the Consultant.
6. Details of claims.
7. Special preventive measures for maintenance suggested by the Consultant.
8. Overview on environment, social and resettlement safeguard requirements implemented.

The report will also summarize the maintenance works carried out to the time of the report on any of the construction contracts where maintenance has commenced.

(v) Construction Supervision Manual

The primary objective of the Construction Supervision Manual will be to evolve guidelines for administration, supervision and management of the project and the construction contracts to be implemented. Such a manual is not intended to be a contractual document nor is it to take precedence over the contract specifications. The manual will merely act as a guide and reference to the various staff in the management and supervision of the project in discharging their duties in a smooth and systematic manner.

(vi) Quality Assurance Document

The Quality Assurance (QA) Documents shall be evolved on the basis of the relevant manual for quality system for bridges and highways published by the Indian Road Congress (IRC).

Table 4: Reports to be submitted by the Consultant

Sl. No.	Report	Frequency	Due Date	No. of Copies	No. of CDs
1.	Inception Report	One Time	Within 30 days after commencement of services.	5	1
2.	Monthly Progress Report	Every month	10th of month following the reporting month	5	1
3.	Design Review Report	One Time	Two months before start of construction of a section	5	1
4.	Final Report	One Time	Within 90 days of completion of services	10	5
5.	Construction Supervision Manual	One Time	30 days after commencement of services	5	1
6.	Quality Assurance (QA) Document	One Time	30 days after commencement of service	5	1

10. STAFFING SCHEDULE

10.1 The total implementation period for the CSC will consist of (i) individual construction periods of 24 months civil works contract and (ii) a defects notification period during which the Consultant will only require part time input over the first 12 months, as per the arrangement proposed.

10.2 The Consultant's site team would be mobilized progressively on the date of actual commencement of works by the contractors, or as decided by the Employer. During the first 12 months of defects notification period, the Consultant's Team Leader along with other staff as in **Table 2** will be required to continue on a periodic basis, as and when required, which will be dealt with separately at the appropriate stage towards the completion of the construction works.

10.3 After award of the contract for the consulting service, the Employer expects all the proposed key personnel to be available during implementation of the contract as per the agreed staffing schedule. The Employer will not consider substitutions during contract implementation except under exceptional circumstances. In case of such replacements, the Consultant will ensure that there is a reasonable overlap between the staff to be replaced and the replacement wherever feasible/possible.

10.4 Substitutions of key professional staff and curriculum vitae's (CV) of Junior staff of the consultant shall be approved by the Project Director, PIU.

11. QUALIFICATION AND EXPERIENCE REQUIREMENTS

Qualification and experience requirements for key personnel of the Consultant are as suggested below:

The detailed requirements and importance (in terms of weighting) of each requirement are shown in the Evaluation Sheets included in Appendix to the Data Sheet.

Team Leader/Senior Contract Administration Specialist (Key International Expert Position)

a) Qualifications	Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related disciplines. Membership of relevant professional institutions.
b) Total Professional Experience	20 years
c) Project-related Experience	• Preferably10 years as Team Leader/Resident Engineer in supervision or contract administration of large highway or road and bridge construction contracts (2 contracts each having duration of at least 18 months administered under FIDIC or similar contract conditions).
d) Overseas/Country Experience	Preferably with substantial experience in road or highway projects in India or any South Asian countries with similar geographical setting.

Senior Highway Engineer (Key National Expert Position)

a) Qualifications	Bachelor's degree in civil engineering. Preferable: Post graduate degree in highway or transportation engineering. Membership of relevant professional institutions.
b) Total Professional Experience	15years
c) Project-related Experience	• Six years as Highway Engineer in designing highways for highway construction projects; and • Familiarity with international and Indian standards for design of highways including related software (MX-Road).
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Senior Pavement / Material Engineer(Key National Expert Position)

a) Qualifications	Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related fields. Membership of relevant professional institutions.
b) Total Professional Experience	15years
c) Project-related Experience	• Six years as Materials Engineer/Assistant Material Engineer and with experience of various testing procedures, designs of various mixes like GSB, WMM, Bituminous mixes, Concrete Mixes, etc.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Senior Quantity Surveyor-cum- Contract Specialist (Key National Expert Position)

a) Qualifications	Bachelor's degree in civil engineering Preferable: Graduate degree in civil engineering or its related fields. Membership of relevant professional institutions.
b) Total Professional Experience	10 years
c) Project-related Experience	• Preferably6 years as quantity surveyor/assistant quantity surveyor; • Familiarity with international and Indian design standards; • Hands-on experience in using various quantity-estimation software; and • Contract administration of road construction contracts.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Senior Bridge Engineer (Key National Expert Position)

a) Qualification	Bachelor's degree in civil engineering Preferable: Post graduate degree in Structural Engineering. Membership of relevant professional institutions.
b) Total Professional Experience	15 years
c) Project-related Experience	• Preferably 6 years as bridge engineer and with experience in design or supervision.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

R&R cum Social Development Specialist(Key National Expert Position)

a) Qualification	Bachelor's degree in civil engineering, sociology, or other relevant fields. Preferable: Post graduate degree in social science.
b) Total Professional Experience	7 years
c) Project-related Experience	• Preferably4 years as resettlement specialist/resettlement and rehabilitation (R&R) specialist/social development specialist dealing with land acquisition and/or R&R in large highway or road construction projects (2 projects, preferably funded by international funding agencies such as ADB, World Bank, etc.) • Conversant with the requirements of the international funding agencies for social safeguards, and familiar with preparation and implementation of R&R plans as per the requirements of ADB. • Design or implementation of quantitative and qualitative project performance monitoring systems for large infrastructure projects of similar nature, preferably funded by international funding agencies such as ADB, World Bank, etc. • Conversant with the requirements of the international funding agencies regarding project performance monitoring and evaluation.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Environmentalist Specialist (Key National Expert Position)

a) Qualification	Bachelor's degree in environmental engineering, civil engineering or other related fields. Preferable: Post graduate degree in environmental engineering. Preferable: Membership of professional institutions Bachelor's degree in civil engineering.
b) Total Professional Experience	7 years
c) Project-related Experience	• Preferably4years as environment specialist/environmental engineer in large highway or road construction projects (2 projects, preferably funded by international funding agencies such as ADB, World Bank, etc.) • Required to be conversant with the requirements of the international funding agencies for environmental safeguards and familiar with preparation and execution of environmental management plans as per the requirements of ADB.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Resident Engineer(Non-Key National Expert Position)

a) Qualification	Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related disciplines. Membership of professional institutions.
b) Total Professional Experience	15 years
c) Project-related Experience	Five years as resident engineer/project manager in supervision or contract administration of large highway or road and bridge construction contracts
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Assistant Resident Engineer (Roads)(Non-Key National Expert Position)

a) Qualification	Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related disciplines. Membership of professional institutions.
b) Total Professional Experience	12 years
c) Project-related Experience	Five years as assistant engineer/deputy project manager in supervision or contract administration of large highway or road construction.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Assistant Resident Engineer (Bridge)(Non-Key National Expert Position)

a) Qualification	Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related disciplines. Membership of professional institutions.
b) Total Professional Experience	12 years
c) Project-related Experience	Five years as assistant engineer/deputy project manager in supervision or contract administration of bridge works. Exclusive experience in bridge works for 2 years is preferable.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Safeguard Officer - R&R and Social Development(Non-Key National Expert Position)

a) Qualification	Bachelor's degree in civil engineering or other relevant fields.
b) Total Professional Experience	5 years
c) Project-related Experience	Two years as officer in any infrastructure project, preferably in road projects which involved resettlement and land acquisition.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Safeguard Officer - Environment(Non-Key National Expert Position)

a) Qualification	Bachelor's degree in civil engineering, environmental engineering or any other related fields.
b) Total Professional Experience	5 years
c) Project-related Experience	Two years as officer in any infrastructure project, preferably in road projects through environmentally sensitive areas.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Quantity Surveyor(Non-Key National Expert Position)

a) Qualification	Bachelor's degree in civil engineering Preferable: Post graduate degree in civil engineering or its related fields. Membership of professional institutions.
b) Total Professional Experience	10 years
c) Project-related Experience	• Five years as quantity surveyor/assistant quantity surveyor • Familiarity with international and Indian design standards. • Hands-on experience in using various quantity-estimation software.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Material Engineer / Quality Control Engineer (Non-Key National Expert Position)

a) Qualification	Bachelor's degree in civil engineering Preferable: Post graduate degree in civil engineering or its related fields. Membership of professional institutions
b) Total Professional Experience	12 years
c) Project-related Experience	• Six years as materials engineer/assistant materials engineer with experience of various testing procedures, designs of various mixes like GSB, WMM, bituminous mixes, concrete mixes, etc. • Hands-on experience in quantity control is preferable along with above.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

Field Engineer – Roads/ Bridges/ Survey (Non-Key National Expert Position)

a) Qualification	Diploma in civil engineering Preferable: Bachelor's degree in civil engineering or its related fields.
b) Total Professional Experience	5 years for degree holder, or 8 years for diploma holder.
c) Project-related Experience	Three years in relevant area (roads/bridges/survey) of operation in any construction supervision of road projects.
d) Overseas/Country Experience	Preferably with experience in working with international consulting firm or international organizations/agencies.

12. CONSULTANT'S PROPOSAL SUBMISSION

This TOR is prepared to address the construction supervision consultancy package in a general way. The shortlisted consultants are advised to inspect the project sites and acquaint themselves with the ground realities. The shortlisted consultants are also advised to go through the bidding documents of the associated construction packages (as listed in Table 1) which have been put to tender or are about to be put to tender by the Employer before submission of the proposal and include the provisions required thereof meeting the contract requirements.

13. EMPLOYER'S INPUT AND COUNTERPART PERSONNEL

The Employer will make available the Detailed Project Reports (DPRs) for each contract package, prepared generally in accordance with the Indian Roads Congress standards.

The Employer's PIU, through the Project Director will provide guidance and oversight to the Consultant.