GOVERNMENT OF CHHATTISGARH

REQUEST FOR PROPOSAL

FROM

CONSULTANCY SERVICES

FOR

PREPARATION OF DETAILED PROJECT REPORT

(ADB –III)



Office of Project Director,

Chhattisgarh State Road Sector Project,

Public Works Department, Raipur (C.G.)

CONTENTS

REQUEST FOR PROPOSAL FROM CONSULTANCY SERVICES
FOR
PREPARATION OF DETAILED PROJECT REPORT

S.No.	Particulars	Page No.
1	Notice Inviting Proposal	2-3
2.	Section-1, Letter of Invitation	4
3	Section- 2, Instructions to consultants	5-14
4	Section - 3 : Data Sheet	15
5	Section - 4 : Summary Evaluation Sheet	16-17
6	Personnel Evaluation Sheet	18
7	Annexure-I Narrative Evaluation Criteria (FTP)	19-21
8	Section-5, Terms of Reference (TOR)	22-66
9	Supplement -I- Selection & Evaluation of Projects	67-69
10	Project Ranking Criteria	70-73
11	Supplement -II- Sample check list for Safety Audit	74-77
12	List of Key Personnel and Man months – Enclosure -I	78
13	Schedule for submission of reports and documents - Enclosure - II	79
14	Qualification and experience requirement of key personnel (Enclosure - III)	80-83
15	Technical Proposal Including Sample Forms - Appendix - I	84-93
16	Financial Proposal Form FIN-1	94
17	Financial Proposal Form FIN-2	95
18	List of ADB Member Countries	96
19	Annexure "A"- List of Roads for the consultancy Group	97-98
20	Agreement & GCC	99-119
21	Special Conditions	120
23	Form of Bank Guarantee for Retention Money- Appendix II	121-122
24	Form of Bank Guarantee for Performance Security - Appendix III	123

Name of Group : A / B / C
Issued to : .....
.....
.....

Money Receipt No..... Date :.....Amount : Rs.10,000/-

(Seal & Signature)

Office of Project Director
Chhattisgarh State Road Sector Project, Public Works Department
Sirpur Bhavan, Civil Line, Raipur(CG)
0771-4031102, 2765205 **FAX:** 0771 – 2331427
Email: pdadb.raipur.cg@gov.in

No./ 3 /ADB-III / DPR (3rd Call)/2017 **Dated: 03.10.2017**

NOTICE FOR INVITATION OF REQUEST FOR PROPOSAL FROM CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT

(3rd Call)

Government of Chhattisgarh, Public Works Department, (CSRSP) (hereinafter referred to as 'Employer' or 'Client'), is engaged in rehabilitation and upgrading of State Highways and MDRs across the state under Chhattisgarh State Road Sector Project. The organization is negotiating a loan from Asian Development Bank for development of 1468.70 Km of SH & MDR network. To facilitate this process, GoCG, PWD intends to engage the services of technically expert consultancy firms to prepare Detailed Project Report (DPR) for Rehabilitation & Upgrading of SH & MDRs including Survey, detailed engineering for the project, project design, Feasibility Study, Resettlement and Rehabilitation Plan, Utility Shifting Plan, Land Acquisition Plans, cost estimates, etc. GoCG, PWD invites offers from reputed firms for providing services for the above assignment for following Groups:

S. No.	Name of the Group	Number of roads	Total Length in KM	Bid Security (INR in Lakhs)	Time for Completion
1.	Group -A	10	456.40	8.00	6 Months
2.	Group -B	06	221.40	4.00	6 Months
3.	Group -C	07	233.00	4.00	6 Months

An Agency shall be selected on the basis of Least Cost Method. Details about the minimum qualification criterion, the marking system, detailed scope of work, how to apply etc. are given in the Request for Proposal (RFP) document, which can be obtained between 10.30 hrs to 17.30 hrs on all working days **upto 24-10-2017** from the Office of Project Director, CSRSP, ADB Project, Raipur (C.G.), India on payment of non-refundable fee of **Rs.10,000/-** (Rs. Ten Thousand Only) by way of Demand Draft in favour of **"Project Manager, ADB Project, Division Raipur" payable at Raipur, CG, India**. The RFP document can be viewed and downloaded from our website "**https:\\eproc.cgstate.gov.in"** and Official Website of CGPWD: "**https:\\cg.pwd.nic.in".** In such case, Applicant will be required to pay a non-refundable fee of Rs. 10,000.00 (Rupees Ten thousand only) by way of Demand Draft drawn in favour of **"Project Manager, ADB Project, Division Raipur" payable at Raipur, CG, India**. at the time of submission of RFP. A Pre-bid meeting shall be held on **13-10-2017 at 11.30 hrs.** in the **Office of Project Director, CSRSP, ADB Project, Sirpur Bhavan, Raipur CG, India.** Duly filled in Request for Proposal is to be submitted through registered / Speed post or in person on or before **15.00 hrs on 25-10-2017**. The technical bid shall be opened on the same day at **15:30 hrs** in the Office of Project Director, CSRSP, ADB Project, Sirpur Bhavan, Raipur CG India in presence of bidders or their authorized representatives who choose to be present. The schedule of opening of financial proposal shall be informed to bidders, who have been declared successful on the basis of technical evaluation.

Project Director
CSRSP, ADB Project

PWD, Raipur (C.G.)

Office of the Project Director, Chhattisgarh State Road Sector Project,
Public Works Department
Sirpur Bhavan, Civil Line, Raipur(CG), India
TEL: 0771-4031102, 2765205 **FAX:** 0771 – 2331427,
Email: pdadb.raipur.cg @gov.in

REQUEST FOR PROPOSAL FROM CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT

1. BRIEF SCOPE OF WORK

The GoCG, PWD is planning to upgrade, reconstruct and strengthen various roads as detailed in this Request for Proposal. GoCG, PWD invites proposals for preparation of Detailed Project Report for the road projects mentioned in Annexure- A.

2. MODE OF ACCESS FOR BID DOCUMENTS

'Request for Proposal (RFP) document can be obtained between 10.30 hrs and 17.30 hrs on all working days upto 24-**10-2017** at the address mentioned below on payment of Non- refundable document fee of **Rs. 10,000/- (Rs. Ten Thousand only)** in the form of Demand Draft favoring **"Project Manager, ADB Project, Division Raipur" payable at Raipur,CG, India.** The Proposal can also be downloaded from the e-procurement website "**https:\\eproc.cgstate.gov.in**" and Official Website of CGPWD : "**https:\\cg.pwd.nic.in"**. In such case, applicant will be required to pay a non-refundable fee of Rs. 10,000.00 (Rupees Ten thousand only) by way of Demand Draft drawn in favour of **"Project Manager, ADB Project, Division Raipur" payable at Raipur CG India** at the time of submission of RFP.

3.

A PRE-BID meeting will be held on **13-10-2017** at 11:30 hrs in the Office of the Project Director, CSRSP, ADB Project, Raipur CG India.

4. SUBMISSION OF DOCUMENTS

Sealed proposals should reach at the address for communication as mentioned below not later than 15.00 hrs on **25-10-2017.**

5. OPENING OF BID:

The technical proposal of bids received on or before the submission date shall be opened on 15:30 Hrs on **25-10-2017** in presence of bidders or their authorized representatives who choose to be present. If this happens to be a holiday, the bids can be submitted on the next working day upto 15:00 Hrs. and the technical proposal shall be opened subsequently on the same day. The bidders, who have been declared successful on the basis of technical evaluation, shall be informed regarding the schedule of opening of the financial proposal separately.

6. CONDITIONS ISSUED BY CGPWD

Proposal should be submitted on the document purchased from CGPWD/ downloaded from the website of CGPWD. CGPWD will not be responsible for any delay in receiving the proposal and reserves the right to accept/reject any or all proposals without assigning any reason thereof. The consultancy firms will be selected as per the guidelines indicated in RFP document.

7. ADDRESS FOR COMMUNICATION

Project Director
Chhattisgarh State Road Sector Project,
ADB Project, Public Works Department
Sirpur Bhavan, Civil Line, Raipur (CG), India
0771-4031102, FAX: 0771 – 2331427

Email: pdadb.raipur.cg@gov.in

SECTION -1. LETTER OF INVITATION

For Full Technical Proposal & Financial Proposal using Least Cost Method

No./3/ADB-III / DPR (3rd Call)/2017/……. **Dated: 03-10-2017**

[Contact Person & Designation]
[Name of Firm & Address]

To,

……
……

SUBJECT : CONSULTING SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR REHABILITATION & UPGRADING OF ROADS IN CHHATTISGARH

Government of Chhattisgarh Public Works Department (GoCG, PWD) invites proposals from Consultants fulfilling the requisite criteria for preparation of Detailed Project Report for the roads mentioned in **Annexure-A**.

The consultants will be selected and engaged in accordance with **Least Cost methodology** as specified in this RFP document.

The deadline for receipt of proposals through registered / Speed post or in person shall be **25-10-2017 upto 15:00 hrs.**

The **Background Information and Terms of Reference** for the Consulting services are provided in Section 5 of the Request for Proposal (RFP).

Please note that you are not allowed to transfer this invitation to another consulting firm. Your proposals must be submitted in the same name and capacity in which the tender form has been purchased. If you submit proposals in the name of another firm, the GoCG, PWD may consider the proposals non-responsive. GoCG, PWD reserves the right to accept or reject any proposal, and to annul the selection process and reject all proposals at any time prior to the award of contract, without thereby incurring any liability or any obligation in any form to the affected firms on any grounds.

The RFP includes the following documents:

(i) Section 1 - Letter of Invitation
(ii) Section 2 - Instructions to Consultant
(iii) Section 3 - Data Sheet
(iv) Section 4 - Summary Evaluation Sheet Including Personal Evaluation Sheet
(v) Section 5 - Terms of Reference (TOR)
(vi) Annexure-I - Narrative Evaluation Criteria (FTP)
(vii) Supplement- I -Selection of Evaluation of Projects
(viii) Supplement - II - Sample checklist of Safety Audit
(ix) Enclosure-I - List of Key Personnel
(x) Enclosure-II - Schedule for Submission of Reports and Documents
(xi) Enclosure-III - Qualification and Experience Requirement of Key Personnel
(xii) Appendix-I - Technical Proposal Forms (Form I to X), Financial Proposal Forms (Fin-I & II)
(xiii) Annexure-A - List of Project Roads.
(xiv) General Conditions of Contract
(xv) Special Conditions of Contract
(xvi) Appendix-II - Form of Bank Guarantee
(xvii) Appendix-III - Bid Security
(xviii) Appendix-IV -Performance Security

A Pre-bid meeting has been scheduled for **13-10-2017** at the office of the undersigned at 11:30 hrs., where all issues/clarifications could be discussed and finalized.

Project Director

SECTION 2. INSTRUCTIONS TO CONSULTANT

1. INTRODUCTION

General

1.1 The name of assignment shall be as indicated in the Data Sheet. GoCG, PWD will select a consulting firm/organization (the Consultant) in accordance with the method of selection specified in the Data Sheet.

1.2 Consultants should familiarize themselves with local conditions and take them into account in preparing their Proposals. To obtain first-hand information on the assignment and local conditions, Consultants are encouraged to visit the project site.

1.3 Consultants shall bear all costs associated with the preparation and submission of their Proposals. Costs might include site visit; collection of information; and, if selected, attendance at contract negotiations etc.

1.4 GoCG, PWD is not bound to accept any Proposal and reserves the right to annul the selection process at any time prior to contract award, without thereby incurring any liability to the Consultants.

1.5 In preparing their Proposals, Consultants are expected to examine in details the documents comprising the RFP. Material deficiencies in providing the information requested may result in rejection of Proposal.

Conflict of Interest

1.6 GoCG, PWD requires that Consultants to provide professional, objective, and impartial advice and at all times hold the Client's interests paramount, avoid conflicts with other assignments or their own corporate interests and act without any consideration for future work. Consultants shall not be recruited for any assignment that would be in conflict with their prior or current obligations to other clients, or that may place them in a position of not being able to carry out the assignment in the best interest of the GoCG, PWD. Without limitation on the generality of the foregoing, Consultants, and any of their associates shall be considered to have a conflict of interest and shall not be recruited under any of the circumstances set forth below:

(i) If a Consultant combines the function of consulting with those of contracting and/or supply of equipment; or

(ii) If a Consultant is associated with, or affiliated to a contractor, or manufacturer; or

(iii) If a Consultant is owned by a contractor or a manufacturing firm with departments or design offices offering services as Consultants. The Consultant should include relevant information on such relationships along with a statement in the Technical Proposal cover letter to the effect that the Consultant will limit its role to that of a Consultant and disqualify itself and its associates from work, in any other capacity or any future project within the next five years (subject to adjustment by in special cases), that may emerge from this assignment (including bidding or any part of the future project). The contract with the Consultant selected to undertake this assignment will contain an appropriate provision to such effect.

Fraud and Corruption

1.7 The GoCG PWD requires that consultants observe the highest standard of ethics during the procurement and execution of such contracts. In such pursuance of this policy, the GoCG PWD :

(i) defines, for the purposes of this provision, the terms set forth below as follows:

(a) "corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and

(b) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the borrower, and includes collusive practices among bidders (prior to or after bid submission) designed to establish bid prices at artificial, non-competitive levels and to deprive the borrower of the benefits of free and open competition).

(ii) will reject a Proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract; and

(iii) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded any CGPWD contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, any CGPWD contract.

Proposal:

1.8 A Consultant may only submit one Proposal for each Group. If a Consultant submits more than one proposal in Group, such a Consultant shall be disqualified. The Joint Venture and Association is not allowed for bidding. The Consultant has to submit the Proposal individually as sole Consultant.

Proposal Validity

1.9 The Data Sheet indicates how long the Consultants' Proposals must remain valid after the submission date. During this period, the Consultants shall maintain the availability of experts nominated in the Proposal. The Client will make its best effort to complete negotiations within this period. In case of need, the Client may request Consultants to extend the validity period of their Proposals. Consultants have the right to refuse to extend the validity period of their Proposals.

Participation of Government Employees

1.10 No current government employee shall be deployed by the consultant without the prior written approval by the appropriate authority**.**

1.11 **Bid Security (Earnest Money Deposit)**

a. The bid security shall be in the form of FDR for the amount mentioned in the Invitation for Consultant for Preparation of Detailed Project Report from any nationalized/scheduled bank in favour of **"Project Manager, ADB Project, Division Raipur" payable at Raipur (CG) India**. If a consultant wishes to apply more than one Group, the consultant has to submit separate Bid Security for each Groups applied for.

b. The Client shall reject any bid not accompanied by bid security or defective bid security, as non responsive.

c. The bid security of all the Bidders shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.

d. The bid security may be forfeited:

(a) if a Bidder withdraws its bid during the period of bid validity.
(b) if the successful Bidder fails to:
(i) sign the Contract within required time frame;
(ii) furnish a performance security in accordance with clause 11 of Section-2 Instruction to Consultant.

2. CLARIFICATIONS AND AMENDMENTS TO RFP DOCUMENTS

2.1 Consultants may request a clarification of any of the RFP documents up to ten (10) days prior to the Proposal submission date indicated in the Data Sheet. Any request for clarification must be sent in writing to the address indicated in the Data Sheet. The Client will respond in writing and will send written copies of the response, including an explanation of the query but without identifying the source of inquiry, to all Consultants. Should the Client deem it necessary to amend the RFP as a result of a clarification, it shall do so following the procedure under Sub-Clause 2.2.

2.2 At any time before the submission of Proposals, the Client may, whether at its own initiative, or in response to a clarification requested by a firm, amend the RFP by issuing an addendum. The addendum shall be sent to all Consultants and will be binding on them. To give Consultants reasonable time in which to take an amendment into account in their Proposals, the Client may at its discretion, if the amendment is substantial, extend the deadline for the RFP submission.

3. PREPARATION OF THE PROPOSAL

3.1 Consultant's Proposal (the Proposal) will consist of three (3) components

(i) Bid Security
(ii) the Technical Proposal, and
(iii) the Financial Proposal

3.2 Bid Security: Bid security as mentioned in clause no 1.11 above shall be placed in Envelope I. If the bid security is found proper then only technical and financial proposals will be entertained

3.3 The Proposal, as well as all related correspondence exchanged by the Consultants and the Client, shall be in English. All reports prepared by the **contracted Consultant shall also be in English.**

3.4 The Proposal should include a cover letter signed by person(s) with full authorization to make legally binding contractual (including financial) commitments on behalf of the firm.

3.5 The Technical Proposal should clearly demonstrate the Consultant's understanding of the assignment requirements and capability and approach for carrying out the tasks set forth in the TOR through the nominated experts.

4. THE TECHNICAL PROPOSAL

General

4.1 **The Technical Proposal shall not include any financial information and any Technical Proposals containing financial information shall be declared non-responsive.**

4.2 **Technical Proposal Format**

(i) The consultant shall submit technical proposal as per the data sheet which indicates the format of the Technical Proposal to be used for the assignment. Submission of the wrong type of Technical Proposal will result in the Proposal being deemed non-responsive.

(ii) The following table summarizes the content and maximum number of pages permitted for each type of Proposal. If the maximum number of pages is exceeded, a penalty will be applied during evaluation of the Proposal. A page is considered to be one printed side of A4 size paper.

Type of Proposal ⇨ **Content** ⇩	**Full Technical Proposal (FTP)**
Cover Letter	maximum two (2) pages excluding necessary attachments.
Experience of the firm	(i) maximum two (2) pages introducing the firm and associate firm(s) background and general experience. (ii) maximum of twenty (20) pages completed projects in the format enclosed illustrating firm's relevant experience. No promotional material should be included.
General approach and methodology, work and staffing schedule **Experts' CVs** **Comments on terms of reference**	Maximum Ten (10) pages inclusive of charts and graphs. No limit but preferably should not exceed five (5) pages for each expert's CV. No limit, but to be concise and to the point.
Counterpart staff and facility requirements	Maximum two (2) pages.

Technical Proposal Content

4.3 The Technical Proposal shall contain information indicated in the following paragraphs from (i) to (x) using the Standard Technical Proposal Forms (Form I to Form X). Such information must be provided by the Consultant.

A brief description of the organization and outline of recent experience of the consultant on assignments of a similar nature is required in form iii. For each assignment, the outline should indicate *inter-alia*, the assignment, contract amount and the consultant's involvement. Information should be provided only for those assignments for which the consultant was legally contracted by the client as a corporate entity or as one of the major participating consulting firms within a Joint venture. **In case the assignment was carried out in joint venture then the JV agreement is to be submitted**. Assignments completed by individual experts working privately or through other consulting firms cannot be claimed as the experience of the Consultant, or that of the Consultant's Associate(s), but can be claimed by the individuals themselves in their CVs. The satisfactory completion certificate issued by the Principal Employer should be attached in support of the experience. Design Experience of work done for concessionaire on DBFOT pattern (PPP mode) shall be considered. In this case, it is mandatory to submit the certificate issued by the Concessionaire (Principal Employer).

(i) A concise, complete, and logical description of how the Consultant's team will carry out the services to meet all requirements of the TOR.

(ii) A work plan showing in graphical format (bar chart) the timing of major activities, anticipated coordination meetings, and deliverables such as reports required under the TOR.

(iii) An organization chart indicating relationships amongst the Consultant and any Associate(s), the Client, the ADB, and other parties or stakeholders, if any, involved in the assignment.

(iv) Comments, if any, on the TOR to improve performance in carrying out the assignment. Innovativeness will be appreciated, including workable suggestions that could improve the quality/effectiveness of the assignment. In this regard, unless the Consultant clearly states otherwise, it will be assumed by the Client that work required to implement any such improvements, are included in the inputs shown on the Consultant's Staffing Schedule.

(v) The Technical Proposal shall not include any financial information. Technical Proposals containing financial information shall be declared non responsive.

Personnel

(vi) The name, age, nationality, background employment record, and professional experience of each nominated expert, with particular reference to the type of experience required for the TA should be presented in the CV format shown in Form VII. (Proof of age and qualification should be submitted along with the CVs).

(vii) All nominated experts must be nationals of an ADB member country.

(viii) Only one CV may be submitted for each position. If a consultant applies for two or more Groups, the CVs shall not be repeated for particular or different positions. Similarly, CV of same expert submitted by more than one consultant for a particular or different position will not be accepted.

(ix) Higher rating will be given to nominated experts from the consulting firm who are regular full-time employees. The Client defines a regular full-time employee to be a person who is employing continuously with the Consultant for more than twelve (12) months prior to the date of submission of the Proposal.

(x) The Client requires that each expert confirm that the content of his/her curriculum vitae (CV) is correct and the experts themselves should sign the certification of the CV. Note that the need to provide address and fax/e-mail details of experts in the CVs of the experts is not considered mandatory. In cases where consulting firms/organizations are prevented from providing such information by prevailing laws in their country, or if Consultants have valid reasons not to comply with the completion of this item, there will be no negative impact on the evaluation of the expert.

(xi) **A zero rating will be given to a nominated expert if :**

(a) the expert is not a national (determined from the passport the expert holds or other equivalent legal document in the case of domestic Consultants in certain countries who do not have passports) of a member country of the ADB; or

(b) the expert is proposed for a domestic position but is not a citizen of that country; or

(c) the expert failed to state nationality on the CV; or

(d) the expert has not signed the CV in accordance with Sub-Clause 4.3 (x) requirements.

(e) the expert is a current employee of the executing agency for the loan project

(f) CV of expert is repeated by participating consultant / consultants for same or different positions in a Group or more than one Group.

5. FINANCIAL PROPOSAL

5.1 All information provided in Consultants' Financial Proposal will be treated as confidential.

5.2 The Financial Proposal is to be submitted in the requisite forms enclosed.

5.3 No proposed schedule of payments should be included in Consultants' Financial Proposals.

5.4 Consultants shall quote the rates in Indian National Rupees only.

5.5 Form FIN-2 is an acknowledgement that, in preparation and submission of the Technical and Financial Proposals, Consultants have:

(i) not taken any action which is or constitutes a corrupt or fraudulent practice as defined in ADB's anticorruption policy and as reflected in Section 1.05 of the Guidelines; and

(ii) agreed to allow the Client , at their option, to inspect and audit all accounts, documents, and records relating to the Consultant's Proposal and to the performance of the ensuring Consultant's Contract.

5.6 The rates to be quoted shall be on **per kilometer** (excluding exploratory boring for bridges/fly over/ROBs.) and it shall include all costs / expenses, direct and indirect taxes, duties, cess etc. The rates for exploratory boring shall be quoted on per meter basis and it shall include all costs / expenses, taxes, duties, cess etc.

6. SUBMISSION, RECEIPT AND OPENING OF PROPOSALS

6.1 The original Proposal (Earnest Money Deposit, Technical and Financial Proposals) shall contain no interlineations or overwriting, except as necessary to correct errors made by Consultants themselves. Any such corrections, interlineations or overwriting must be initialed by the person(s) who signed the Proposal.

6.2 Authorized representative of the Consultant shall initial all pages of the original Technical Proposal as well as Financial Proposal.

6.3 The Technical Proposal shall be marked "**ORIGINAL**" or "**COPY**" as appropriate. All required copies of the Technical Proposal as specified in the Data Sheet will be made from the original. If there are discrepancies between the original and the copies of the Technical Proposal, the original governs.

The Financial Proposal shall be submitted in Original only.

6.4 The original and all copies of the Technical Proposal to be sent to the Client shall be placed in a separate sealed envelope clearly marked "**TECHNICAL PROPOSAL.**" Similarly, the original Financial Proposal shall be placed in a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" and with a warning "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL**." The envelopes (Envelope 1 – Earnest Money Deposit, Envelope 2 - Technical and Envelope 3 - Financial Proposals) shall be placed into an outer envelope and sealed. The outer envelope shall bear the submission address, reference number and title of the loan project, and other information indicated in the **Data Sheet**.

If the Financial Proposal is not submitted by the Consultant in a separate sealed envelope and duly marked as indicated above, this will constitute grounds for declaring both Technical and Financial Proposals non-responsive.

6.5 Proposals must be delivered at the indicated Client submission addresses through registered / Speed post or in person only, on or before the time and date stated in the Data Sheet or any new date established by the Client according to provisions of Sub-Clause 2.2.

7. PROPOSAL EVALUATION

General

7.1 From the time the Proposals are opened to the time the contract is awarded, the Consultant should not contact the Client on any matter related to its Technical and/or Financial Proposal. Any effort by a Consultant to influence the Client in examination, evaluation, ranking of Proposals or recommendation for award of contract may result in rejection of the Consultant's Proposal.

7.2 The envelope 1 shall be opened first. If the bid security is not found to be in order then the proposal shall be treated as non responsive and shall not be evaluated further.

Evaluation of Technical Proposals

7.3 The Client's 'Consultants Selection Committee' (CSC) will be responsible for evaluation and ranking of Proposals received.

7.4 The CSC evaluates and ranks the Technical Proposals on the basis of Proposal's responsiveness to the TOR using the evaluation criteria and points system specified in the Data Sheet. Each Technical Proposal will receive a technical score. **A Proposal shall be rejected if** it does not achieve the minimum aggregate technical mark of 600 from the maximum of 1,000 points

7.5 A Technical Proposal may not be considered for evaluation in any of the following cases:

(i) the Consultant that submitted the Proposal belongs to one of the cases described in Sub-Clause 5.5 (i) to (ii) of section-2 and failed to make a proper statement to that effect in the cover letter ; or

(ii) the Consultant that submitted the Proposal was found not to be legally incorporated or established in an ADB member country; or

(iii) the Technical Proposal was submitted in the wrong format;

(iv) the Technical Proposal included details of costs of the services; or

(v) the Technical Proposal reached the Client after the submission closing time and date specified in the Data Sheet.

7.6 After the technical evaluation is completed, the Client shall notify Consultants whose Proposals did not meet the minimum qualifying technical mark or Consultants whose Technical Proposals were considered non-responsive to the RFP requirements, indicating that their Financial Proposals will be returned unopened after completion of the selection process. The Client shall simultaneously notify, in writing Consultants whose Technical Proposals received a mark of 750 or higher,

indicating the date, time, and location for opening of Financial Proposals. (Consultants' attendance at the opening of Financial Proposals is optional).

8. PUBLIC OPENING AND EVALUATION OF FINANCIAL PROPOSALS

Public Opening of Financial Proposals

8.1 At the public opening of Financial Proposals, Consultant representatives who choose to attend, will sign an **Attendance Sheet.**

(i) The mark of each Technical Proposal that met the minimum mark of 750 will be read out aloud.

(ii) Each Financial Proposal will be inspected to confirm that it has remained sealed and unopened.

(iii) The Client's representative will open each Financial Proposal. Such representative will read out aloud the name of the Consultant and the total price shown in the Consultant's Financial Proposal. This information will be recorded in writing by the Client's representative.

Evaluation of Financial Proposals

8.2 The detailed contents of each Financial Proposal will be subsequently reviewed by the Client. During the examination of Financial Proposals, the Client's staff and any others involved in the evaluation process will not be permitted to seek clarification or additional information from any Consultant who has submitted a Financial Proposal.

8.3 The client shall compare all the opened financial proposals to determine the lowest evaluated bid.

9. RANKING OF PROPOSALS

9.1 Following completion of evaluation of Financial Proposals, ranking of the Proposals will be determined. The Consultant who has offered Lowest Total Price shall be ranked First among the technically qualified consultants.

9.2 In the event of two or more proposals have the same rank in the final ranking of proposals, the proposal with the highest technical score will be ranked first, the next highest technical score will be ranked second, and so forth.

10. AWARD OF CONTRACT

10.1 The work shall be awarded to the Ist ranked consultant.

10.2 The selected Consultant is expected to commence the Assignment on the date and at the location specified in the Data Sheet.

10.3 Within 15 days of issue of Letter of Acceptance, the selected consultant shall sign the contract.

11. PERFORMANCE SECURITY

The consultant will furnish within 10 days of the issue of Letter of Acceptance (LOA), an unconditional Bank Guarantee in favour of Project Director, CSRSP, ADB Project, Raipur C.G from a Bank (Generally, by SBI or its subsidiaries or any Indian nationalized bank or Scheduled Bank) for an amount equivalent to 10% of the total contract value to be received by him towards Performance Security valid for a period of one year beyond the date of completion of services. The Bank Guarantee (shall be extendable till the approval of Final DPR) will be released by upon approval of Final DPR by GoCG PWD.
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SECTION – 3 : DATA SHEET

Consulting Services for preparation of Detailed Project Report for ADB-III Roads

Clause Ref.		
1.1	(i) Name of assignment	(i) Consultancy Service for preparation of Detailed Project Report for Rehabilitation and Upgrading of Group- …… (A/B/C) Roads in the State of Chhattisgarh.
	(ii) Method of Selection	(ii) Least Cost Method
1.9	Validity of Technical and Financial Proposals	180 days
2.1	Name and Address of the Employer or Client where correspondence concerning this Request for Proposal is to be sent:	Government of Chhattisgarh Public Works Department (GoCG, PWD) Represented by Project Director, CSRSP, ADB Project, Sirpur Bhavan, Civil Line, Raipur (C.G.), INDIA. Pin Code: 492001
4.2(i)	Type of Technical Proposal	F T P
5.7	Taxation	The rates quoted shall be all inclusive of all statutory taxes duties, cess, levies, etc.
6.3	No. of Copies of Technical Proposals required.	**One Original and One Copy**
6.3	No. of Copies of Financial Proposals required.	**One Original only.**
6.4	Information to be written on outer envelope	**(i) Consultant's name and address with contact no.**
6.5	Submission date and time of Technical and Financial Proposal	**(25-10-2017)** **15.00 hours.**
7.	Evaluation Criteria	As per Annexure 1
8.1	Expected date of public opening of Financial Proposal	Shall be intimated once the technical evaluation is completed.
10.2	Date & Location to commence the assignment	Shall be intimated separately.

SECTION – 4 : SUMMARY EVALUATION SHEET

EVALUATION CRITERIA	Maximum Weight	Firm (A)		Firm (B)		Firm (C)	
		Rating	Score	Rating	Score	Rating	Score
I. QUALIFICATION OF PROPOSER	250						
a. Experience in similar projects	200						
b. Experience in similar geographical areas	50						
II. APPROACH AND METHODOLOGY	50						
1. Understanding of objectives							
a. General Understanding	2						
b. Components Coverage	2						
c. Site Visit	1						
2. Quality of methodology	18						
3. Innovativeness	5						
4. Work Program	10						
5. Personnel Schedule	6						
6. Counterpart facilities	3						
7. Proposal Presentation	3						
III. PERSONNEL (AREA OF EXPERTISE)	700						
Sr. Highway Engineer cum Team Leader	150						
Highway Engineer	75						
Pavement Specialist	50						
Bridge Engineer	75						
Traffic Engineer	25						
Materials cum Geo Technical Engineer	50						
Senior Survey Engineer	25						
Transport Economist	50						
Environment Specialist	50						
Resettlement and Rehabilitation Specialist	50						
Social Development Specialist	50						
Quantity Surveyor / Documentation Expert	50						
TOTAL	1000						
RANKING							

RATING

		Criteria approved on	Evaluation Done on
Excellent	100%		
Very Good	90%		
Good	80%		
Fair	75%		
Average	60%		
Not complying	0%		

SCORE= Maximum Weight X Rating

Note :- The Minimum Technical Score Required to Pass is: 600 Points

Use Personnel Evaluation Sheet (attached) to determine ratings.

CONFIDENTIAL

PERSONNEL EVALUATION SHEET FOR FULL TECHNICAL PROPOSAL

Name of Firm:

	Position	NAME	A		B		C		D		
			General Qualifications		Project-Related Experience		Overseas Experience		Full-Time Permanent Staff		TOTAL SCORE (A+B+C+D)
			20%		60%		15%(10% TL)		5%(10% TL)		
			Rating	Score	Rating	Score	Rating	Score	Rating	Score	
	Sr. Highway Engineer Cum Team Leader										
	Highway Engineer										
	Pavement Specialist										
	Bridge Engineer										
	Traffic Engineer										
	Materials cum Geo Technical Engineer										
	Senior Survey Engineer										
	Transport Economist										
	Environment Specialist										
	Resettlement and Rehabilitation Specialist										
	Social Development Specialist										
	Quantity Surveyor / Documentation Expert										

Rating:Excellent - 100% Very Good - 90% Good - 80% Fair – 75% Average - 60% Non-complying - 0%

Notes: *Applicable to both lead and associate firms.

Annexure - 1

NARRATIVE EVALUATION CRITERIA FOR FULL TECHNICAL PROPOSAL (FTP)

I. QUALIFICATION OF PROPOSER (250 Points)

A. Experience in Preparation of Detailed Project Reports (200 points)

Criteria: Firm should have successfully prepared Detailed Project Report during last 5 years for at least aggregate length of **200 kms of 2 laning or equivalent highway project** (SH/NH/Expressway etc.) for 60% of points. No weightage will be given for experience of preparing feasibility report.

Factors to consider:

(a) One single assignment of minimum 100 km length of 2 laning/intermediate highway project (MDR/ SH/ NH/ Expressway etc.) is mandatory. Experience of Multilane for firm and Key Personnel shall be converted into equivalent length of two lane.

(b) Higher scores will be given to a firm, which has more experiences for projects with relevant nature as mentioned below.

Rating		
Excellent	**100%**	**More than 800 Km**
Very Good	**90%**	**Above 700 Km to 800 kms**
Good	**80%**	**Above 500 Km to 700 kms**
Fair	**75%**	**300 Km to 500 Km**
Average	**60%**	**200 Km to 300 km**
Not Complying	**0%**	**Below 200 Km**

(c) The satisfactory Completion certificate issued by the Principal Employer should be attached in support of the experience.

(d) Design Experience of work done for concessionaire on DBFOT pattern (PPP mode) shall be considered. It is mandatory to submit certificate issued by the concessionaire (Principal employer) in such case.

(e) For considering the projects carried out by the Consultant in Joint Venture, in addition to the Completion certificate issued by the Principal Employer, certified fee receipt issued by the Chartered Account to calculate the weightage of experience shall be mandatory.

(f) The Consultant has to demonstrate the continuity of Consultancy Services for at least last 5 years prior to the submission deadline and Minimum Average Annual Turnover from Consultancy Business of last 3 years for Rs 20.00 Crore (Rupees Twenty Crore) by using Form II of Appendix I.

B. Experience in Similar Geographical Areas (50 points)

Criteria: Extent of experience in India or similar geographical region like, Nepal, Bangladesh, Bhutan, Pakistan, Sri Lanka, Afghanistan, Myanmar, etc. with the criteria mentioned in Para "A" above will only be considered.

II. APPROACH AND METHODOLOGY (50 Points)

A. Understanding of Objectives (5 points)

Criteria: General understanding of the project requirements; coverage of principal components as requested in TOR; and site visit assessment.

Factors to consider: The three following aspects will be considered:

General understanding	45 %
Components coverage	45 %
Site visit	10 %

Maximum points will be given if all the three aspects are positively judged.

B. Quality of Methodology (18 points)

Criteria: The degree to which the presented written methodology/approach addresses the requirements of the TOR.

Factors to consider: Assessment of the inter-relationship of work program and methodology write-up. A consistent relationship is to be given maximum points.

C. Innovativeness/Comments on Terms of Reference (5 points)

Criteria: Suggestions, which could improve the quality of the project.

Factors to consider: Points will be given for workable suggestions proposed. No innovativeness will be given zero points.

D. Work Program (10 points)

Criteria: A work program showing graphical presentation of activities (bar chart); an organization chart showing the relationship of the Bank, the Executing Agency and the Consultants.

Factors to consider: Work program will be assessed on logical sequence of events. The organization chart is to be assessed on the consultant's understanding of relationship between the Bank, the consultant and the executing agency.

E. Personnel Schedule (6 points)

Criteria: Relationship between required person-months and proposed work program.

Factors to consider: The Personnel Schedule will be assessed based on phasing of activities of the work program and allocation and timing of expert's individual inputs. Total requirements close to estimated work requirements will be assessed as well as the appropriateness of time allocated to the task to be performed in terms of individual expertise. The balance between field time and home office time and the proposed number of trips will be checked.

F. Counterpart Personnel and Facilities (3 points)

Criteria: Requirement for counterpart personnel, office space, transportation, equipment and services.

Factors to consider: Reasonableness and completeness of requirements and understanding of local conditions will be assessed.

G. Proposal Presentation (3 points)

Criteria: Clarity and ease of assessment of the entire proposal (including material presentation).

Factors to consider If all items requested in the invitation letter are covered in a clear and easily understandable form and the proposal is assembled in a professional manner, maximum points will be given.

III. PERSONNEL (700 Points)

Expertise

The minimum academic qualification and experience requirement of Key personnel is attached herewith as Enclosure - III.

Criteria: Separate assessment of each expert listed in the Request for Proposal. Each expert is to be evaluated against the tasks assigned in accordance with four main criteria:

(i) General Qualification such as academic qualification (20%)

(ii) Project related experience based on the number of relevant projects implemented and the number of years of related experience: (60%)

(iii) Overseas experience (10% for team leader, 15% for team member) and

(iv) For assessing full time permanent employment the personnel deployed who has worked for the current employer (who has submitted the Proposal) on a regular/permanent full-time basis continuously for the last 12 months, additional:

10% for team leadership (fixed)
5% for experts (fixed)

SECTION – 5 Terms of Reference (TOR)

Preparation of Detailed Project Report for Rehabilitation and Upgrading of SH & MDRs in Chhattisgarh under Chhattisgarh State Road Sector Project (ADB-III)

1. General

1.1 Government of Chhattisgarh is applying to ADB for loan for ADB-III for the improvement of about 1468.70 Kms of SH & MDR network in Chhattisgarh i/c roads mentioned in Annexure-"A".

1.2 Chhattisgarh State Road Sector Project has been entrusted the implementation of ADB-III. The improvement work consists of rehabilitation, strengthening and / or widening of the existing roads and cross drainage structures / bridges.

1.3 The projects under the ADB-III will be selected, prepared, and approved in accordance with selection criteria and approval procedures under the loan. GoCG, PWD has already identified 910.80 Kms of roads as per Annexure "A" as projects for further evaluation in accordance with the selection criteria.

1.4 GoCG PWD (the Employer) invites proposals for preparation of detailed project report including evaluation of projects, in accordance with the projects selection criteria (Supplement I) for rehabilitation and upgrading of 910.80 kms of roads identified by GoCG, PWD , and eventually to achieve effectively the objective of improving connectivity of state road network. For this purpose the total road length of 910.80 kms. has been divided into three Groups.

1.5 The appointed consultants shall be expected to adhere to high level of quality standards and to the stipulated time schedule.

2. Objective

2.1 The main objective of the consultancy service is to establish the technical, economical, and financial viability of the projects with due consideration to environmental and social safeguards and prepare detailed project reports for rehabilitation and upgrading of roads as enumerated in Annexure A.

2.2 The viability of the projects shall be established taking into account the requirements with regard to rehabilitation & resettlement, upgrading and improvement based on highway design, pavement design, provision of service roads wherever necessary, type of intersections, underpasses / flyovers / ROB's, rehabilitation and widening of existing and/or construction of new bridges and structures, road safety features, utility shifting, acquisition of land, if required quantities of various items of works and cost estimates.

2.3 The Detailed Project Report would inter-alia include surveys and investigations, detailed highway design, condition and performance, requirements for capacity augmentation based on traffic projections, design of pavement including overlays, design of bridges and cross drainage structures and grade separated structures, design of service roads, truck lay byes, bus stops, quantities of various items, detailed drawings, detailed cost estimates, economic viability analyses, environmental and social feasibility, social and environmental action plans as appropriate and documents required for tendering the project for international competitive bidding under ADB procedures.

2.4 The DPR consultant should ensure detailed project preparation incorporating aspects of value engineering, quality audit and safety audit requirement in design and implementation.

3. Scope of Services

The broad scope of work is as under, and is followed by detailed terms of reference in the next section.

3.1 List of roads for which the DPR are to be prepared is annexed as Annexure A. The name and length of roads included in the list may change during course of preparation of DPR. Per Km cost shall be paid as per rate quoted by the bidder/final rate after negotiation, as the case may be.

3.2 Road safety audit shall be carried out for each road project to identity areas of major concern, including black spots, and measures to be taken for improving detailed engineering design with respect to road safety at least two times in the tenure of preparation of DPR viz. once during survey and preparation of drawing and secondly during finalization of drawings wherein safety parameter be introduced before finalization of drawing which must include a certificate from Road Safety Expert that the final proposed design incorporated are as per safety related parameters to safe traffic movement.

3.3 The rehabilitation & resettlement and widening proposals shall be within the existing right of way as for as possible. However those sections/ locations would be identified where the available right of way is inadequate or would be inadequate if the short bypasses, service roads, alignment corrections, constructions of bridges and ROB's, improvement of intersections including provision of grade separators etc. were included as per requirements. Detailed land acquisition plans covering all details be prepared for such location and submitted to within 2 months from the date of issue of work order for consultancy team.

3.4 Modification of the terms and conditions of this Contract may only be made by written agreement between the Parties. However, each party shall give due consideration to any proposals for modification made by the other Party.

Modification in Scope of Services : In case of addition of deletion of any sub project road of any Group, the Client reserves the right to instruct the Consultant to cease further activities in respect of preparation of DPR. The payments to the Consultant shall be adjusted accordingly.

3.5 Each project is to be designed, constructed, operated, maintained, and monitored in compliance with the existing environmental laws and regulations of Government of India and Chhattisgarh, and ADB’s Environmental Assessment Guidelines (2003), as may be amended from time to time. Accordingly the consultant will prepare for every project the reports on environmental aspects including Initial Environmental Examination and environmental monitoring and management plans (EMMPs) as per ADB guidelines. The Consultant will also assist in discussions and presentations to Ministry of Environment and Forest, if necessary, for obtaining the necessary clearances.

3.6 An initial poverty and social assessment (IPSA) will be conducted. Social risks and vulnerabilities as a result of the project will be identified during IPSA, especially related to Gender and increased transmission of HIV/AIDS and Human trafficking etc. An IPSA report along with appropriate mitigation plan to address social issues as described above will be prepared.

The screening and impact categorization checklists for involuntary resettlement (IR) and indigenous people (IP) shall be prepared together with other required project selection procedures, for review and approval of project for implementation under ADB-III Based on the screening of IR and IP impacts and categorization and appropriate resettlement framework, resettlement plans for each subproject, Indigenous People's Development Framework (IPDF) indigenous people's development plans (if required) or specific actions to address IP issues will be incorporated in sub-project Resettlement plans prepared in accordance with ADB's Policy on Involuntary Resettlement (October, 2014), Handbook on Resettlement – A Guide to Good Practice, ADB's Policy on Indigenous People (1998) and ADB's Handbook on Poverty and Social Analysis (2012) for approval.

3.7 In case of Railway Over bridges, approval of all designs and drawings including GAD and detail engineering designs and drawings from the Railways will be provided by the consultant. However, if Railways require proof checking of the drawings prepared by the consultants, the same will be got done by GoCGPWD and payment to the proof consultant shall be made by GoCGPWD directly. The consultant shall assist the client in getting such drawings proof checked from Railways.

3.8 The cost estimates shall also incorporate the estimates for shifting of utilities, to the extent identifiable on ground within RoW based on discussion with the concerned local authorities. In this connection, the GoCGPWD shall provide the necessary supporting letters and any official fees.

3.9 The consultant should ensure detailed project preparation incorporates value engineering, quality audit and safety requirements in design and the consultant will submit quality assurance plan before starting preparation/updation of Detailed Project Report.

3.10 The entire scope of services would, inter-alia, include the items mentioned in the Letter of Invitation and the detailed TOR.

3.11 All 'good for construction' drawings shall be prepared. However, final 'good for construction' drawings shall be further approved and released to the Civil Work Contractor (prior to the execution of work) by the Construction Supervision Consultant engaged for the works.

3.12 In order to have uniformity, quality and check in project preparation for various road sections, a coordination committee comprising of Team Leader of each consultant shall be formed, which will nominate one of its members as Chair. The committee will meet periodically and ensure that uniform design standards, criteria and presentation styles are adopted by all the consultants. The Project Director / concerned Project Manager, CSRSP ADB Projects may join these coordination meetings.

4. Detailed Terms of Reference

4.1 Primary Tasks

General Scope of Services shall cover but not be limited to the following major tasks:

(i) Review of all available reports and published information about the project road and the project influence area;
(ii) Environmental, poverty and social impacts, including those related to cultural properties, indigenous people natural habitants, involuntary resettlement etc.;
(iii) Public consultation, including consultation with Communities located along the road, NGOs working in the area, other stake-holders and relevant Govt. deptts at all the different stages of assignment (such as inception report stage, interim report stage, detailed project report (Part-I) stage and detailed project report (Part-II) stage;
(iv) Detailed reconnaissance;
(v) Identification of possible improvements in the existing alignment and bypassing congested locations with alternatives, (please note that the project design does not envisage any land acquisition, hence such elements shall not be included for further evaluation, design, costing and analyses); however LA plan for such location from safety consideration be prepared and submitted to within two month from date of work order so that land acquisition, if any, required to be completed as soon as possible.
(vi) Traffic studies including traffic surveys and axle load survey and demand forecasting for next 25 Years
(vii) Inventory and condition surveys for road;
(viii) Inventory and condition surveys for bridges, cross-drainage structures and drainage provisions;
(ix) Detailed topographic surveys using Total Stations and GPS;
(x) Pavement investigations;
(xi) Sub-grade characteristics and strength: investigation of required sub-grade and sub-soil characteristics and strength for road and embankment design and sub soil investigation;
(xii) Identification of sources of construction materials;
(xiii) Road safety audit to identity areas of major concern, including black spots, and measures to be taken for improving detailed engineering design with respect to road safety
(xiv) Preliminary proposal for rehabilitation / widening including shoulder composition and cross-section details
(xv) Detailed design for rehabilitation / widening of road, its x-sections, horizontal and vertical alignment and design of embankment of height more than 6m and also in poor soil conditions and where density consideration require, even lesser height embankment; detailed design for rehabilitation /widening/ reconstruction of bridges, cross-drainage structures, preparation of GAD and detailed drawings for bridges cross-drainage structures and underpasses etc. In case of reconstruction geotechnical investigations including bore holes, hydraulic surveys etc shall be carried out by the consultant. Identification of the type and the design of intersections;
(xvi) Design of complete drainage system and disposal point for storm water;
(xvii) Value analysis / value engineering and project costing;
(xviii) Economic analyses;
(xix) Selection of projects for ADB funding in accordance with selection criteria and approval procedures (Supplement I);
(xx) Strip plan indicating the scheme for carriageway widening, location of all existing utility services (both over- and underground) and the scheme for their relocation, trees to be felled and planted;

(xxi) Preparation of detailed project report, cost estimate, good for construction drawings, rate analysis, detailed bill of quantities;
(xxii) Bid documents appropriate for single stage- two envelope bidding based on ADB standard bidding documents for execution of civil works
(xxiii) Tie-in of on-going/sanctioned works of MORT&H/ GoCG/ other agencies;
(xxiv) Preparation of initial Poverty and Social Assessment Reports (IPSA), resettlement framework, preparation of resettlement plans for each sub-project as per ADB guidelines and Govt. of India R & R Policy.
(xxv) Preparation of Initial Poverty and Social Assessment Reports (IPSA), IR checklist resettlement framework, preparation of resettlement plans for each sub-project (if all the subprojects/roads are not connected to each other but are not connected to each other but are scattered all over the state) as per ADB guidelines, Govt. of India National Policy on Resettlement and Rehabilitation for project (NPRR 2004); and Land Acquisition Act (2013).
(xxvi) Preparation of IP checklist, IPDF, IPDP (if required) or inclusion of specific actions to address IP issues in resettlement plans; preparation of mitigation plans to address other social risks and vulnerabilities related to HIV/AIDS transmission, Human trafficking, gender etc.
(xxvii) Preparation of PPMS base parameter and submitting their values during preparation of DPR along with documentary evidence of their values.

4.2 While carrying out the field studies, investigations and design, the development plans being implemented or proposed for future implementation by the local bodies, should be taken into account. Such aspect should be clearly brought out in the reports and drawings.

4.3 The consultant shall plan the arboriculture along the highway and propose in implementation with time schedule to help in aforestation of the road/area.

4.4 Standards and Codes of Practices

4.4.1 All activities related to field studies, design and documentation shall be done as per the latest guidelines/ circulars of MORTH and relevant publications of the Indian Roads Congress (IRC) and Bureau of Indian Standards (BIS) applicable as on date of finalization of DPR. For aspects not covered by IRC and BIS, international standard practices, such as, British and American Standards may be adopted. The Consultants, upon award of the Contract, may finalise this in consultation with and reflect the same in the inception report.

4.4.2 All notations, abbreviations and symbols used in the reports, documents and drawings shall be as per IRC:71

4.5 Quality Assurance Plan (QAP)

The Consultants should have detailed Quality Assurance Plan (QAP) for all field studies including topographic surveys, traffic surveys, engineering surveys and investigations, design, analysis and documentation activities. The draft detailed QAP Document must be discussed and finalized with the concerned officers (Project Director / Project Managers, CSRSP, ADB Project) immediately upon the award of the Contract and submitted as part of the inception report. Each document shall be got approved/signed by concerned Project Manager, CSRSP, ADB Project before submission.

4.6 Review of Data and Documents

The Consultants shall collect the available data and information relevant for the Study. The consultant will also summarize the analysis of the collected data available. The data and documents of major interest shall include, but not be limited to, the following:

(i) Climate;
(ii) Road inventory;
(iii) Road condition, year of original construction, year and type of major maintenance/rehabilitation works;
(iv) Condition of bridges and cross-drainage structures;
(v) Sub-surface and geo-technical data for existing bridges;
(vi) Hydraulic data, drawings and details of existing bridges;
(vii) Detailed of sanctioned / on-going works on the stretch sanctioned by MORT&H/ other agencies for Tie-in purposes;
(viii) Survey and evaluation of locally available construction materials;
(ix) Historical data on classified traffic volume (preferably for 5 years or more);
(x) Origin-destination and commodity movement characteristics; if available;
(xi) Speed and delay characteristics; if available;
(xii) Commodity-wise traffic volume; if available;
(xiii) Accident statistics; and,
(xiv) Vehicle loading behaviour (axle load spectrum), if available;
(xv) Type and location of existing utility services (e.g. Fibre Optical Cable, O/H and U/G Electric, Telephone line, Water mains, Sewer, Trees etc.)
(xvi) Environmental setting and social baseline of the project.
(xvii) Preparation of PPMS base parameter and submitting their values during preparation of DPR along with documentary evidence of their values.

4.7 Traffic Survey

4.7.1 Number and Location of Survey Stations

4.7.1.1 The type of traffic surveys and the minimum number of survey stations shall normally be as under, unless otherwise specifically mentioned.

Sl.NR.	Description	Number of Survey Stations per 100 km (or minimum numbers for shorter lengths)
1.	Classified Traffic Volume Count	3 (2)
2.	Origin-Destination and Commodity Movement Characteristics	Minimum of 2 per 200 km. (2)
3.	Axle Loading Characteristics	2(1)
4.	Intersection Volume Count	All Major Intersection
5.	Speed-Delay Characteristics	Project Road Section

4.7.1.2 The number of survey locations indicated in the table above are indicative only. The Consultants shall, immediately upon award of the work, submit to proposals regarding the total number as well

as the locations of the traffic survey stations as part of inception report. Each document shall be duly approved/signed by concerned Project Manager, CSRSP, ADB Project before submission. Suitable maps and charts should accompany the proposals clearly indicating the rationale for selecting the location of survey stations.

4.7.1.3 The methodology of collection and analysis of data, number and location of traffic survey stations shall be finalised in consultation with Coordination Committee /GoCG PWD . Each document shall be duly approved/signed by concerned Project Manager, CSRSP, ADB Project before submission.

4.7.2 Classified Traffic Volume Count Survey

4.7.2.1 The classified traffic volume count surveys shall be carried out for 7 days (continuous, direction-wise) at the selected survey stations. The vehicle classification system as given in relevant IRC code may be followed. However, the following generalized classification system is suggested in view of the requirements of traffic demand estimates and economic analysis:

<table>
<tr><th colspan="3">Motorized Traffic</th><th>Non-Motorised Traffic</th></tr>
<tr><td colspan="3">2-Wheeler</td><td>Bi-Cycle</td></tr>
<tr><td colspan="3">3-Wheeler</td><td>Cycle-Rickshaw</td></tr>
<tr><td colspan="3">Passenger Car</td><td>Animal Drawn Vehicle (ADV)</td></tr>
<tr><td colspan="3">Utility Vehicle (Jeep, Van etc.)</td><td>Hand Cart</td></tr>
<tr><td colspan="3"></td><td>Other Non-Motorised Vehicle</td></tr>
<tr><td>Bus</td><td colspan="2">Mini Bus
Standard Bus</td><td rowspan="6"></td></tr>
<tr><td>LCV</td><td colspan="2">LCV-Passenger
LCV-Freight</td></tr>
<tr><td>Truck</td><td colspan="2">MCV : 2-Axle Rigid Chassis</td></tr>
<tr><td></td><td colspan="2">HCV : 3-Axle Rigid Chassis</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">MAV</td><td>Semi Articulated</td></tr>
<tr><td>Articulated</td></tr>
</table>

4.7.2.2 All results shall be presented in tabular and graphical form. The survey data shall be analyzed to bring out the hourly and daily variations. The traffic volume count per day shall be averaged to show a weekly Average Daily Traffic (ADT) by vehicle type. The Annual Average Daily Traffic (AADT) shall be worked out by applying seasonal factors.

4.7.2.3 The consultants shall compile the relevant traffic volume data from secondary sources also. The salient features of traffic volume characteristics shall be brought out and variations if any, from the traffic census carried out by the State shall be suitably explained.

4.7.3 Origin-Destination and Commodity Movements Surveys

4.7.3.1 The Consultants shall carry out 1-day (24 hour, both directions) O-D and Commodity Movement Surveys at locations finalized in consultation with concerned Project Manager, CSRSP, ADB Project. These will be essentially required around congested towns to delineate through traffic. The road side interviews shall be on random sample basis and cover all four-wheeled vehicles. The locations of the O-D survey and Commodity Movement surveys shall normally be same as for the classified traffic count stations.

4.7.3.2 The location of origin and destination zones shall be determined in relation to each individual station and the possibility of traffic diversion to the Project Road from/to other road routes including bypasses.

4.7.3.3 The trip matrices shall be worked out for each vehicle type information on weight for trucks should be summed up by commodity type and the results tabulated, giving total weight and average weight per truck for the various commodity types. The sample size for each vehicle type shall be indicated on the table and also in the graphical representations e.g. traffic band figures.

4.7.3.4 The data derived from surveys shall also be analysed to bring out the lead and load characteristics and desire line diagrams. The data analysis should also bring out the requirement for the widening of existing roads / construction of bypasses.

4.7.3.5 The distribution of lead and load obtained from the surveys should be compared with those derived from the axle load studies.

4.7.3.6 The commodity movement data should be duly taken into consideration while making the traffic demand estimates.

4.7.4 Turning Movement Surveys

4.7.4.1 The turning movement surveys for estimation of peak hour traffic for the design of major intersections shall be carried out for the Study. The details regarding composition and directional movement of traffic shall be furnished by the Consultant.

4.7.4.2 The methodology for the surveys shall be as per IRC: SP: 41. The details including location and duration of surveys shall be finalized in consultation with officials. The proposal in response to this TOR shall clearly indicate the number of locations that the Consultants wish to conduct turning movement surveys and the rationale for the same.

4.7.4.3 The data derived from the survey should be analyzed to identify requirements of suitable remedial measures, such as construction of underpasses, fly-overs, interchanges, grade-separated intersections along the project road alignment. Intersections with high traffic volume requiring special treatments either presently or in future shall be identified.

4.7.5 **Axle Load Surveys**

4.7.5.1 Axle load surveys in both directions shall be carried out at suitable location(s) in the project road stretch on a random sample basis normally for trucks only (both empty and loaded trucks) for 2 normal days - (24 hours) at special count stations to be finalised in consultation with . However, a few buses may be weighed in order to get an idea about their loading behaviour. While selecting the location(s) of axle load survey station(s), the locations of existing bridges with load restrictions, if any, should be taken into account and such sites should be avoided.

4.7.5.2 The axle load surveys shall normally be done using axle load pads or other sophisticated instruments. The location(s) of count station(s) and the survey methodology including the data formats and the instrument type to be used shall be finalized before taking up the axle load surveys.

4.7.5.3 The axle load data should be collected axle configuration-wise. The number of equivalent standard axles per truck shall be calculated on the basis of results obtained. The results of the survey should bring out the VDF for each truck type (axle configuration, if the calculated VDF is found to be below the national average, then national average shall be used. Furthermore, the data from axle load surveys should be analyzed to bring out the Gross Vehicle Weight (GVW) and Single Axle Load (SAL) Distributions by truck type (axle configuration).

4.7.5.4 The Consultant shall ascertain from local enquiries about the exceptional live loads that have used the highway in the past in order to assess the suitability of existing bridges to carry such loads.

4.7.6 **Speed-Delay Surveys**

The Consultants shall carry out appropriate field studies such as moving car survey to determine running speed and journey speed. The data should be analysed to identify sections with typical traffic flow problems and congestion. The objective of the survey would be to suggest for future action suitable measures for segregation of local traffic, smooth flow of through traffic and traffic safety. These measures would include the provision of bypasses, under-passes, overpasses, grade-separated intersections and service roads

4.7.7 **Pedestrian / Animal Cross Traffic Surveys**

These may be conducted to determine if provision of subways etc. for pedestrians/animals is necessary to improve the traffic safety.

4.7.8 **Truck Terminal Surveys**

The data derived from the O-D, speed-delay, other surveys and also supplementary surveys should be analysed to assess requirements for present and future development of truck terminals at suitable locations enroute.

4.8 **Traffic Demand Estimates**

4.8.1 The consultants shall make traffic demand estimates and establish possible traffic growth rates in respect of all categories of vehicles, taking into account the past trends, annual population and real per capita growth rate, elasticity of transport demand in relation to income and estimated annual production increase. The other aspects including socio-economic development plans and the land use patterns of the region having impact on the traffic growth, the projections of vehicle manufacturing industry in the country, development plans for the other modes of transport, O-D and commodity movement behaviour should also be taken into account while working out the traffic demand estimates.

4.8.2 The values of elasticity of transport demand shall be based on the prevailing practices in the country. The Consultants shall give complete background including references for selecting the value of transport demand elasticity.

4.8.3 The traffic demand estimates shall be done for the period, 2017-2047. The demand estimates shall be done assuming three scenarios, namely, optimistic, pessimistic and most likely traffic growth. The growth factors shall be worked out for five-yearly intervals.

4.8.4 Traffic projections should be based on sound and proven forecasting techniques. In case traffic demand estimated is to be made on the basis of a model, the application of the model in the similar situation with the validation of the results should be established. The traffic projections should also bring out the possible impact of implementation of any competing facility in the near future. The demand estimates should also take into account the freight and passenger traffic along the major corridors that may interconnect with the project. Impact of toll charges on the traffic estimates should be estimated.

4.8.5 The methodology for traffic demand estimates described in the preceding paragraphs is for normal traffic only. In addition to the estimates for normal traffic, the Consultants shall also work out the estimates for generated, induced and diverted traffic with sound and explicit assumptions, based on studies in similar geographical areas in the past.

4.8.6 The traffic forecasts shall also be made for both diverted and generated traffic. The traffic forecast shall also be made, taking into account the effect of toll, in case the toll collection is considered (Para 3.4)

4.8.7 Overall traffic forecast thus made shall form the basis for the design of each pavement type and other facilities/ancillary works.

4.9 Engineering Surveys and Investigations

4.9.1 Reconnaissance and Alignment

4.9.1.1 The Consultants should make an in-depth study of the available land width (ROW), topographic maps, and other available relevant information collected by them concerning the existing alignment. Consultant has to arrange the required maps and the information needed by him from the potential sources. GoCGPWD shall provide introductory/support letters, if required.

4.9.1.2 The detailed ground reconnaissance may be taken up immediately after the study of maps and other data. The primary tasks to be accomplished during the reconnaissance surveys include:

(i) Topographical features of the area;
(ii) Typical physical features along the existing alignment within and outside ROW i.e. land use pattern;
(iii) Possible alignment alternatives, vis-à-vis, scheme for the widening of the existing road. In general, rehabilitation / upgrading of road shall be done within available ROW. The alignment shall be fixed accordingly in best possible geometry. But if significant improvement in geometrics is required or, land acquisition is unavoidable then it should be clearly notified.
(iv) Realignment requirements including the provision of bypasses, ROBs / underpasses/ overpasses and subways for pedestrian crossings with possible alignment alternatives;
(v) Preliminary identification of improvement requirements including treatments and measures needed for the cross-roads;
(vi) Traffic pattern and preliminary identification of traffic homogenous links;
(vii) Sections through congested areas;
(viii) Inventory of major aspects including land width, terrain, pavement type, carriageway type, bridges and structures (type, size and location), intersections (type, cross-road category, location) urban areas (location, extent), geologically sensitive areas, environmental features;
(ix) Critical areas requiring detailed investigations; and,
(x) Requirements for carrying out supplementary investigations;
(xi) Soil (textural classifications) and drainage conditions;
(xii) Type and extent of existing utility services along the alignment (within ROW).

4.9.1.3 The data derived from the reconnaissance surveys are normally utilized for planning and programming the detailed surveys and investigations. All field studies including the traffic surveys should be taken up on the basis of information derived from the reconnaissance surveys. . The projects are to be designed for rehabilitation and upgrading within the ROW. The detailed surveys

and investigation should normally extend a minimum of 30 m beyond either side of the centre line of the proposed divided carriageway or land boundary whichever is more.

4.9.1.4 The data and information obtained from the reconnaissance surveys should be documented. The data analysis and the recommendations concerning alignment and the field studies should be included in the Inception Report. The data obtained from the reconnaissance surveys should form the core of the database which would be supplemented and augmented using the data obtained from detailed field studies and investigations.

4.9.1.5 The data obtained from the reconnaissance surveys should be compiled in the tabular as well as graphical (chart) form indicating the major physical features and the proposed widening scheme for GoCGPWD comments. The data and the charts should also accompany the rationale for the selection of traffic survey stations.

4.9.2 **Topographic Surveys**

4.9.2.1 The basic objective of the topographic survey would be to capture the essential ground features along the alignment in order to consider improvements and for working out improvements, rehabilitation and upgrading costs. The detailed topographic surveys should normally be taken up after the completion of reconnaissance surveys.

4.9.2.2 The carrying out of topographic surveys will be one of the most important and crucial field tasks under the project. The detailed field surveys shall be carried out using high precision instruments i.e. Total stations. The data from the topographic surveys shall be available in (x, y, z) format for use in a sophisticated digital terrain model (DTM). The Consultants would be fully responsible for any inaccuracy in surveys.

4.9.2.3 The detailed field surveys would essentially include the following activities:

(i) Topographic Surveys along the Existing Right of Way (ROW): Running a continuous open Traverse along the existing road and realignments, wherever required, and fixation of all cardinal points such as horizontal intersection points (HIP's), centre points and transit points etc. and properly referencing the same with a pair of reference pillars fixed on either side of the centre-line at safe places within the ROW.

(ii) Collection of details for all features such as structures (bridges, culverts etc.) utilities, existing roads, electric and telephone installations (both O/H as well as underground), huts, buildings, fencing and trees (with girth greater than 0.3 metre) oil and gas lines etc. falling within the extent of survey.

4.9.2.4 The width of survey corridor will generally be as given under:

(i) The width of the survey corridor should taken into account the layout of the existing alignment including the extent of embankment and cut slopes and the general ground profile. While carrying out the field surveys, the widening scheme (i.e. right, left or symmetrical to the centre line of the existing carriageway) should be taken into consideration so that the topographic surveys cover sufficient width beyond the centre line of the proposed carriageway. Normally the surveys should extend a minimum of 30 m beyond either side of the centre line of the proposed divided carriageway or land boundary whichever is more.

(ii) Where existing roads cross the alignments, the survey will extend a minimum of 100 m either side of the road centre line and will be of sufficient width to allow improvements, including at grade intersection to be designed.

4.9.2.5 The surveyed alignment shall be transferred on to the ground as under:

(i) Reference Pillar and Bench Mark / Reference pillar of size 15 cm X 15 cm X 45 cm shall be cast in RCC of grade M 15 with a nail fixed in the centre of the top surface. The reference pillar shall be embedded in concrete upto a depth of 30 cm with CC M10 (5 cm wide all around). The balance 15 cm above ground shall be painted yellow. The spacing shall be 250m apart, incase Bench Mark Pillar coincides with Reference Pillar, only one of the two need be provided.

(ii) Establishing Bench marks at site connected to GTS Bench marks at a interval of 250 metres on Bench mark pillar made of RCC as mentioned above with RL and BM No. marked on it with red paint

4.9.2.6 **Longitudinal and Cross-Sections**

The topographic surveys for longitudinal and cross-sections shall cover the following:

(i) Longitudinal section levels along final centre line at every 25 m interval, at the locations of curve points, small streams, intersections and at the locations of change in elevation.

(ii) Cross sections at every 50 m interval in full extent of survey covering sufficient number of spot levels on existing carriageway and adjacent ground for profile correction

course and earth work calculations. Cross sections shall be taken at closer interval at curves.

(iii) Longitudinal section for cross roads for length adequate for design and quantity estimation purposes.

(iv) Longitudinal and cross sections for major and minor streams as per recommendations contained in IRC Special Publication No. 13 (Guidelines for the Design of Small Bridges and Culverts) and IRC:5-1998 ("Standard Specifications & Code of Practice for Road Bridges, Section 1 - General Features of Design" for proposal for new bridges / reconstruction of existing bridges.

4.9.2.7 Details of utility Services and Other Physical Features

4.9.2.7.1 The Consultants shall collect details of all important physical features along the alignment. These features affect the project proposals and should normally include buildings and structures, monuments, burial grounds, cremation grounds, places of worship, railway lines, stream / river / canal, water mains, severs, gas/ oil pipes, crossings, trees, plantations, utility services such as electric, and telephone lines (O/H & U/G) and poles, optical fibre cables (OFC) etc. The survey would cover the entire right-of-way of the road on the adequate allowance for possible shifting of the central lines at some of the intersections locations.

4.9.2.7.2 The information collected during reconnaissance and field surveys shall be shown on a strip plan so that the proposed improvements can be appreciated and, utility removals of each type and tree cutting etc. assessed and suitable actions can be initiated. Separate strip plan for each of the services involved shall be prepared for submission to the concerned agency.

4.9.3 Road and Pavement Investigations

The Consultants shall carry out detailed field studies in respect of road and pavement features. The data collected through road inventory and pavement investigations should be sufficient to meet the input requirements of HDM-IV.

4.9.3.1 Road Inventory Surveys

4.9.3.1.1 Detailed road inventory surveys shall be carried out to collect details of all existing road and pavement features along the existing road sections. The inventory data shall include but not limited to the following:

(i) Terrain (flat, rolling, mountainous);

(ii) Land-use (agricultural, commercial, forest, residential etc) @ every kilometer;

(iii) Carriageway width, surfacing type @ every 500m and every change of feature whichever is earlier;
(iv) Shoulder surfacing type and width @ every 500m and every change of feature whichever is earlier;
(v) Sub-grade / local soil type (textural classification) @ every 500m and every change of feature whichever is earlier;
(vi) Horizontal curve; vertical curve
(vii) Road intersection type and details, at every occurrence;
(viii) Retaining structures and details, at every occurrence;
(ix) Location of water bodies (lakes and reservoirs), at every occurrence; and,
(x) Height of embankment or depth of cut @ every 200m and every change of feature whichever is earlier.
(xi) Land width i.e. ROW;
(xii) Culverts, bridges and other structures (type, size, span arrangement and location);
(xiii) Roadside arboriculture;
(xiv) Existing utility services on either side within ROW;
(xv) General drainage conditions
(xvi) Inventory of all road side facilities for the public including educational, health, communication facilities and road user based facilities such as tea shops, dhaba, vehicle service shops etc

4.9.3.1.2 The data should be collected in sufficient detail. The data should be compiled and presented in tabular as well as graphical form. The inventory data would be stored in computer files using simple utility packages, such as EXCEL.

4.9.3.2 Pavement Investigation

4.9.3.2.1 Pavement Composition

1. The data concerning the pavement composition may be already available with the CGPWD. However, the consultants shall make trial pits to ascertain the pavement composition. The test pit interval will be as per Para 4.9.3.2.4 (iv) below.

2. For each test pit, the following information shall be recorded:

(i) test pit reference (Identification number, location):
(ii) pavement composition (material type and thickness); and
(iii) subgrade type (textural classification) and condition (dry, wet)

4.9.3.2.2 Road and Pavement Condition Surveys

1. Detailed field studies shall be carried out to collect road and pavement surface conditions. The data should generally cover:
   (i) pavement condition (surface distress type and extent);
   (ii) shoulder condition;
   (iii) embankment condition; and
   (iv) drainage condition

a. Pavement
   - cracking (narrow and wide cracking), % of pavement area affected;
   - ravelling, % of pavement area affected;
   - potholing, % of pavement area affected;
   - edge break, length (m); and,
   - rut depth, mm

b. Shoulder
   - Paved: Same as for pavement
   - Upaved: material loss, rut depth and corrugation,
   - Edge drop, mm.

c. Embankment
   - general condition; and
   - extent of slope erosion

d. Drainage
   - General condition
   - Connectivity of drainage turnouts into the natural topography
   - Condition in cut sections
   - Condition at high embankments

2. The objective of the road and pavement condition surveys shall be to identify defects and sections with similar characteristics. All defects shall be systematically referenced, recorded and quantified for the purpose of determining the mode of rehabilitation.

3. The pavement condition surveys shall be carried out using visual means. Supplemented by actual measurements and in accordance with the widely accepted methodology (AASHTO, IRC, OECD, TRL and World Bank Publications) adapted to meet the study requirements. The measurement of rut depth would be made using standard straight edges.

4. The shoulder and embankment conditions shall be evaluated by visual means and the existence of distress modes (cuts, erosion marks, failure, drops) and extent (none, moderate, frequent and very frequent) of such distress manifestations would be recorded.

5. For sections with severe distresses, additional investigations as appropriate shall be carried out to determine the cause of such distresses.

6. Middle 200m could be considered as representative sample for each one km. of road and incase all other things are considered similar.

The data obtained from the condition surveys should be analyzed and the road segments of more or less equal performance may be identified using the criteria given in IRC: 81 as well as AASTHO & HDM IV. The Comparative results of all the three should be analyzed and given.

4.9.3.2.3 **Pavement Roughness**

(i) The roughness surveys shall be carried out using Bump Integrator or similar instrument. The methodology for the surveys shall be as per the widely used standard practices. The calibration of the instrument shall be done as per the procedure given in the World Bank's Technical Publications and duly got authenticated by established laboratory/institution acceptable to the client.

(ii) The surveys shall be carried out along the outer wheel paths. The surveys shall cover a minimum of two runs along the wheel paths for each direction, as applicable for the configuration of individual projects.

(iii) The results of the survey shall be expressed in terms of BI and IRI and shall be presented in tabular and graphical forms. The processed data shall be analyzed using the cumulative difference approach to identify road segments homogenous with respect to surface roughness.

4.9.3.2.4 **Pavement Structural Strength**

(i) The Consultants shall carry out structural strength surveys for existing pavements using Benkelman Beam Deflection technique in accordance with the CGRA procedure given in IRC:81 ("Guidelines for Strengthening of Flexible Road Pavements Using Benkelman Beam Deflection Technique").

(ii) It is suggested that the deflection surveys may be carried out as per the scheme given below:
1. mainline testing; and,
2. control section testing.

(iii) The deflection tests for the mainline shall be carried out at every 500 m along the road sections covered under the study. The control section testing shall involve carrying out deflection testing for each 100 m long homogenous road segment along the road sections. The selection of homogenous segment shall be based on the data derived from pavement condition surveys. The total length of such homogenous segments shall not be less than 100 m per kilometre. The deflection measurements for the control section testing should be at an interval of not more than 10 m.

(iv) Test pits shall be dug at every 500 m and also along each homogeneous road segment to obtain pavement composition details (pavement course, material type and thickness) so as to be able to study if a correlation exists between deflection and composition. If so, the relationship may be used while working out the overlay thickness for the existing pavement.

(v) Benkelman Beam Deflection surveys may not be carried out for severely distressed sections of the road warranting reconstruction. The Consultants, immediately upon the award of the contract, shall submit to the scheme describing the testing schedule including the interval. The testing scheme shall be supported by data from detailed reconnaissance surveys.

(vi) In case, the Consultants wish to use any acceptable method(s) other than Benkelman Beam deflection technique for the evaluation of pavement strength, details of such methods or innovative features for deflection testing using Benkelman Beam technique along with the methodology for data analysis, interpretation and the use of such data for pavement overlay design purposes using IRC or any other widely used practices, such as AASHTO guidelines, should be got approved by GoCGPWD. The sources of such methods should be properly referenced.

4.9.3.3 **Subgrade Characteristics and Strength**

4.9.3.3.1 Based on the data derived from condition (surface condition, roughness) and structural strength surveys, the project road section should be divided into segments homogenous with respect to pavement condition and strength. The delineation of segments homogenous with respect to roughness and strength should be done using the cumulative difference approach (AASHTO).

4.9.3.3.2 The data on soil classification and mechanical characteristics for soils along the existing alignments may already be available with the PWD. The testing scheme for the widening of existing road within the ROW is, therefore, proposed that the Consultants shall test at least three sub-grade soil samples for each homogenous road segment or three samples for each soil type encountered, whichever is more.

4.9.3.3.3 The testing for subgrade soil shall include:

(i) in-situ density and moisture content at each test pit
(ii) field CBR using DCP at each test pit
(iii) characterisation (grain size and Atterberg limits) at each test pit and,
(iv) laboratory moisture-density characteristics (modified AASHTO compaction);
(v) laboratory CBR (unsoak and 4-day soak compacted at three energy levels) and swell.

4.9.3.3.4 For problematic soils, the testing shall be more rigorous. The characteristics with regard to permeability and consolidation shall also be determined for these soils. The frequency of sampling and testing of these soils shall be finalised in consultation with the officers after the problematic soil types are identified along the road sections.

4.9.4 **Investigations for Bridges and Structure**

4.9.4.1 **Inventory of Bridges, Culverts and Structures**

The Consultants shall make an inventory of all the structures (bridges, ROBs, culverts, etc.) along the road under the project. The inventory for the bridges, and ROBs shall include the parameters required as per the guidelines of IRC-SP:35. The inventory of culverts shall be presented in a tabular form covering relevant physical and hydraulic parameters

4.9.4.2 **Hydraulic and Hydrological Investigations**

4.9.4.2.1 The Consultants shall collect information on high flood level (HFL), low water levels (LWL), discharge velocity etc. from available past records, local inquiries and visible signs, if any, on the structural components and embankments. Local inquiries shall also be made with regard to the road sections getting overtopped during heavy rains.

4.9.4.2.2 The Consultants shall make a desk study of available data on topography (topographic maps, stereoscopic aerial photography), storm duration, rainfall statistics, top soil characteristics, vegetation cover etc. so as to assess the catchment areas and hydraulic parameters for all existing and proposed drainage provisions. The findings of the desk study would be further supplemented and augmented by a reconnaissance along the area. All important hydrological features shall be noted during this field reconnaissance.

4.9.4.2.3 For bridges and cross drainage structures having inadequate waterway, history of overtopping and are proposed for reconstruction, the detailed hydrological and hydraulic studies shall be carried out in accordance with IRC Special Publication No. 13 ("Guidelines for the Design of Small Bridges and Culverts") and IRC:5 ("Standard Specifications & Code of Practice for Road Bridges, Section I General Feature of Design").

4.9.4.3 **Condition Surveys for Bridges, Culverts and Structures**

4.9.4.3.1 The Consultants shall thoroughly inspect the existing structures and shall prepare a report about their condition including all the parameters given in the Inspection pro-forma of IRC-SP; 35. The condition and structural assessment survey of the bridges / culverts / structures shall be carried out by senior experts of the Consultants.

4.9.4.3.2 For the bridges identified to be in a distressed condition based upon the visual condition survey, supplementary testing shall be carried out as per IRC-SP:35 and IRC-SP:40. Selection of tests may be made based on the specific requirement of the structure.

4.9.4.4 **Geo-technical Investigations and Sub-Soil Exploration**

4.9.4.4.1 The Consultants shall carry out geo-technical investigations and sub-surface explorations for the proposed new bridges / bridges proposed for reconstruction / Road over bridges/underpasses/ overpasses etc., along high embankments and any other location as necessary for proper design of the works and conduct all relevant laboratory and field tests on soil and rock samples. The minimum scope of geo-technical investigations for bridge and structures shall be as under:

S.N.	Description	Location of Boring
1.	Over all length = 6 – 30 m	Each abutment location
2.	Over all length = 30 – 60 m	Each abutment location and at least one intermediate location between abutments for structures having more than one span.
3.	Over all length >60 m	Each abutment and each pier locations.

4.9.4.4.2 The deviation(s), if any, by the Consultants from the scheme presented above should be got approved by H.Q. being submitted through Project Managers, CSRSP, ADB Project of GoCG PWD.

4.9.4.4.3 However, where a study of geo-technical reports and information available from adjacent crossings over the same waterway (existing highway and railway bridges) indicates that subsurface variability is such that boring at the suggested spacing will be insufficient to adequately define the conditions for design purposes, the Consultants shall review and finalise the bore hole locations in consultation with the GoCG PWD officers.

4.9.4.4.4 Sub-soil investigations will be done as per IRC: 78.

4.9.4.4.5 The scheme for the borings locations and the depth of boring shall be prepared by the Consultants and submitted to GoCGPWD for approval. These may be finalised in consultation with GoCGPWD. Each document shall be duly approved/signed by concerned Project Managers, CSRSP, ADB Project of GoCGPWD before submission.

4.9.4.4.6 The sub-soil exploration and testing should be carried out through the Geo-technical Consultants empanelled by the MORT&H. The soil testing reports shall be in the format prescribed in relevant IRC Codes. The cores obtained from boring shall be submitted to the Offices of respective Project Managers, CSRSP, ADB Project of GoCG PWD in a wooden box as recommended in IRC: 78.

4.9.4.4.7 The payment for the sub-soil investigations is inclusive of per Km rate quoted for preparation of DPR. Upon award of the Service, the Consultants shall assess and submit the schedule, the scheme for sub-soil exploration work including testing for bridges, structures and embankments. The Consultants shall adhere to the schedule, the scheme as approved by concerned Project Manager, CSRSP, ADB Project of GoCG PWD .

4.9.4.5 **Material Investigations**

4.9.4.5.1 The Consultants shall identify sources (including use of fly-ash/ slag), quarry sites and borrow areas, undertake field and laboratory testing of the materials to determine their suitability for various components of the work and establish quality and quantity of various construction materials and recommend their use on the basis of techno-economic principles. The Consultants shall prepare mass haul diagram for haulage purposes giving quarry charts indicating the location of selected borrow areas, quarries and the respective estimated quantities.

4.9.4.5.2 It is to be ensured that no material shall be used from the right-of-way except by way of leveling the ground as required from the construction point of view, or for landscaping and planting of trees etc. or from the cutting of existing ground for obtaining the required formation levels.

4.9.4.5.3 Environmental restrictions, if any, and feasibility of availability of these sites to prospective civil works contractors, should be duly taken into account while selecting new quarry locations.

4.9.4.5.4 The Consultants shall make suitable recommendations regarding making good the borrow and quarry areas after the exploitation of materials for construction of works.

4.9.4.5.5 The Material Investigation aspect shall include preparation and testing of bituminous mixes for various layers and concrete mixes of different design mix grades using suitable materials (binders, aggregates, sand filler etc.) as identified during Material Investigation to conform to latest MORT&H specification.

4.9.5 **Road Safety Audit**

4.9.5.1 Road safety audit shall be carried out for each road project to identity areas of major concern, including black spots, and measures to be taken for improving detailed engineering design with respect to road safety. The audit should be in line with the ADB's Road Safety Audit for Road Projects – An Operational Toolkit. Sample checklists for road safety audit are at Supplement II.

4.9.5.2 The data on accident statistics should be compiled and reported showing accident type and frequency so that black spots are identified along the project road section. The possible causes (such as poor geometric features, pavement condition etc.) of accidents should be investigated into and suitable cost-effective remedial measures suggested for implementation.

4.9.6 **Detailed Design of Road and Pavements, Bridges, and Structures**

4.9.6.1 **General**

4.9.6.1.1 The Consultants are to carryout detailed designs and prepare detailed drawings including the following:

(i) Geometric design of highway with appropriate level of service;
(ii) Design of pavement for the widening and rehabilitation for the existing road, paved shoulders, medians, verge (if applicable)s;
(iii) Bridges, underpass / overpass / cattle pass /subways and structures including ROBs etc.;
(iv) At-grade intersections;
(v) ROB for railway crossings as per the requirement and the standards of the Indian Railways; and,
(vi) Alignment plans, longitudinal sections and cross-sections @ 50m intervals;
(vii) Designs for road furniture and road safety/traffic control features;
(viii) Designs and drawings for service road/ (provided no land acquisition is involved) tree planting/fencing at locations where necessary / required;
(ix) Drainage design showing location of turnouts, out falling structures, separate drawings sheet for each 5 km. stretch**;**
(x) Rehabilitation and repair plan with for bridges and structures design and drawings;
(xi) Traffic amenities (Parking Areas, Weighing Station and Rest Areas, etc.);
(xii) Other safety features.

4.9.6.1.2 Wherever feasible within the constraints of the available land, symmetrical widening of the existing carriageway shall be avoided and the required widening shall be achieved by widening along one side of the existing road.

4.9.6.2 **Design Standards**

4.9.6.2.1 The Consultants shall evolve Design Standards and material specifications for the Study primarily based on IRC publications, MORTH Circulars and relevant recommendations of the international standards (American, Australian, British, Canadian, Japanese).

4.9.6.2.2 The Design Standards evolved for the project shall cover all aspects of detailed design including the design of geometric elements, pavement design, bridges and structures, traffic safety and materials

4.9.6.3 **Geometric Design**

4.9.6.3.1 Based on the data collected from reconnaissance and topographic surveys, the sections with geometric deficiencies, if any, should be identified and suitable measures for improvement should be suggested for implementation within the right of way. However as safety concern proposal for L.A., if any be submitted within two months from date of issue of work order.

4.9.6.3.2 The detailed design for geometric elements shall cover, but not be limited to the following major aspects:

(i) horizontal alignment;
(ii) longitudinal profile;
(iii) cross-sectional elements;
(iv) junctions; and
(v) service roads.

4.9.6.3.3 The alignment design shall be verified for available sight distances as per the standard norms. The provision of appropriate markings and signs shall be made wherever the existing site conditions do not permit the adherence to the sight distance requirements as per the standard norms.

4.9.6.3.4 The consultants shall make detailed analysis of traffic flow and level of service for the existing road and workout the traffic flow capacity for the improved project road. The analysis should clearly establish the widening requirements with respect to the different horizon periods taking into account special problems such as road segments with isolated steep gradients.

4.9.6.3.5 In the case of closely spaced cross roads the Consultant shall examine different options to reduce conflicts and furnish appropriate proposals for this purpose keeping in view the cost of improvement, impact on traffic movement and accessibility to cross roads. The detailed drawings and cost estimate should include the provisions for realignments of the existing cross roads to allow such arrangements.

4.9.6.3.6 The Consultant shall also prepare design of underpasses / subways for large cross traffic of pedestrians and / or animals.

4.9.6.3.7 The Consultant shall also prepare details for intersections taking into account the site conditions, turning movement characteristics, level of service, overall economy and operational safety.

4.9.6.4 **Pavement Design**

4.9.6.4.1 The detailed design of pavement shall involve:

(i) strengthening of existing road pavement and design of the new pavement for the widening / additional lane(s), if the findings of the traffic studies and life-cycle costing analysis confirm the requirement for widening or reconstruction of the road;;

(ii) design of shoulders

4.9.6.4.2 The design of pavement shall primarily be based on IRC publications. However, the Consultants shall use the recommendations given in widely used international practices including AASHTO, NAASRA, RTAC and TRL wherever.

4.9.6.4.3 The design of pavement shall be rigorous and shall make use of the latest Indian and International practices. The design alternatives and the most appropriate design, option shall be established on life-cycle costing and techno-economic consideration.

4.9.6.4.4 For the design of pavement, each set of design input shall be decided on the basis of rigorous testing and evaluation of its suitability and relevance in respect of in-service performance of the pavement. The design methodology shall accompany the design proposals and shall clearly bring out the basic assumptions, values of the various design inputs, rationale behind the selection of the design inputs and the criteria for checking and control during the implementation of works. In other words, the design of pavement structure should take due account of the type, characteristics of materials used in the respective courses, variability of their properties and also the reliability of traffic predictions. Furthermore, the methodology adopted for the design of pavement shall be complete with flow charts indicating the various steps in the design process, their interaction with one another and the input parameter required at each step.

4.9.6.4.5 For the design of overlays for the existing pavement, the strengthening requirement shall duly take into account the strength of the existing pavement vis-à-vis the remaining life. The overlay thickness requirements shall be worked out for each road segment homogenous with respect to condition, strength and sub-grade characteristics. The rehabilitation provisions should also include the provision of regulating layer. For existing pavement with acceptable levels of cracking, provision of a crack inhibiting layer should also be include.

4.9.6.4.6 Latest techniques of pavement design and rehabilitation like provision of geo-synthetics and cold/hot pavement recycling, use of modified bitumen etc. should be duly considered.

4.9.6.5 **Design of Embankments**

4.9.6.5.1 The embankments design should provide for maximum utilization of locally available materials consistent with economy. Use of fly ash wherever available within economical leads and technically feasible must be considered. In accordance with Government guidelines, use of flyash within 50kms from Thermal
Power Stations is mandatory.

4.9.6.5.2 The Consultants shall carry out detailed analysis and design for all embankments of height greater that 6 m based on relevant IRC publications.

4.9.6.5.3 The design of embankments should include the requirements for protection works and traffic safety features.

4.9.6.6 **Design of Bridges and Structures**

4.9.6.6.1 The Consultant shall prepare General Arrangement Drawing (GAD) and Alignment Plan showing the salient features of all the bridges and structures proposed to be constructed / reconstructed/ widened along the road sections covered under the Study. These salient features such as alignment, overall length, span arrangement, cross section, deck level, founding level, type of bridge components (superstructure, substructure, foundations, bearings, expansion joint, return walls etc.) shall be finalized based upon hydraulic and geo-technical studies, cost effectiveness and ease of construction. The GAD shall be supplemented by Preliminary designs. In respect of span arrangement and type of bridge a few alternatives with cost-benefit implications should be submitted to enable to approve the best alternative.

4.9.6.6.2 The location of all at-grade level crossings shall be identified falling across the existing level crossings for providing ROB at these locations. The Consultants shall prepare preliminary GAD for necessary construction, reconstruction or widening separately to the Client. The Consultant shall assist in pursuing the Indian Railways Authorities or/and any statutory authority of State/Central Government for approval of the GAD from concerned Authorities.

4.9.6.6.3 Subsequent to the approval of the GAD and Alignment Plan by and Railways, the Consultant shall prepare detailed design as per IRC and Railways guidelines and detailed drawings for all components of the bridges and structures. The Consultant shall furnish the design and detailed drawings for suitable protection works and/or river training works wherever required.

4.9.6.6.4 The existing structures having inadequate carriageway width shall be widened/ reconstructed in part or fully as per the latest MORT&H guidelines. The Consultant shall furnish the detailed design and working drawings for carrying out the above improvements.

4.9.6.6.5 Suitable repair / rehabilitation measures shall be suggested in respect of the existing structures as per IRC-SP:40 along with their specifications, drawings and cost estimate in the form of a report. The rehabilitation or reconstruction of the structures shall be suggested based on broad guidelines for rehabilitation and strengthening of existing bridges contained in IRC-SP:35 and IRC-SP:40.

4.9.6.6.6 Subsequent to the approval of the GAD and the alignment plan by GoCG PWD, detailed design shall also be carried out for the proposed underpasses, overpasses and subways.

4.9.6.6.7 The Consultants shall also carry out the design and make suitable recommendations for protection works for bridges and drainage structures, wherever required/found inadequate.

4.9.6.6.8 In case land available is not adequate for embankment slope, suitable design for RCC retaining wall shall be furnished. However, RE wall may also be considered depending upon techno-economic suitability to be approved by GoCG PWD.

4.9.6.7 **Drainage System**

4.9.6.7.1 The requirement of roadside drainage system and the integration of the same with proposed cross-drainage system shall be worked out for the entire length of the project road section.

4.9.6.7.2 In addition to the roadside drainage system, the Consultants shall design the special drainage provisions for sections with super-elevated carriageways, high embankments and for road segments passing through cuts. The drainage provisions shall also be worked out for road segments passing through urban areas.

4.9.6.7.3 The designed drainage system should show locations of turnouts/ outfall points with details of outfall structures fitting into natural contours. A separate drawing sheet covering every 5 km. stretch of road shall be prepared.

4.9.6.8 **Traffic Safety Features, Road Furniture and Road Markings**

The Consultants shall design suitable traffic safety features and road furniture including traffic signals, signs, markings, overhead sign boards, crash barriers, delineators etc. The locations of these features shall be given in the reports and also shown in the drawings.

4.9.6.9 **Arboriculture and Landscaping**

The Consultants shall work out appropriate plan for planting of trees (specifying type of plantation), horticulture, floriculture on the surplus land of the right-of-way with a view to beautify the highway and making the environment along the highway pleasing. The existing trees / plants shall be retained to the extent possible.

4.9.6.10 **Bus Parking, Truck Lay byes, Weighing Station, Parking Areas and Rest Areas**

The consultant shall suggest suitable sites for Bus Parking, Truck Lay byes weighing stations, parking areas and rest areas and prepare suitable separate designs in this regard. The common facilities like petrol pump, first-aid medical facilities, police office, restaurant, vehicle parking etc. should be included in the general layout for planning.

4.9.6.11 **Miscellaneous Works**

The Consultants shall prepare detailed plan for the traffic management and safety during the construction period.

4.10 **Environment and Social Impact Study**

The consultant shall under take the detailed environmental, social and poverty impact studies in accordance with the standard set by the Government of India and ADB including Environmental Assessment Guidelines (2003) of including ADB, as may be amended from time to time.

4.10.1 **Environmental Impact**

4.10.1.1 The consultant should carry out the preliminary environmental screening to assess the direct and induced impacts due to the project and to classify the project from environmental aspects (The project should be categorized as an A or B project in accordance to the ADB's Environmental Assessment Guideline (2003) as well as classification based on the Govt. requirement for environmental assessment study.

4.10.1.2 The consultant will carried out environmental assessment study based on the requirement emerged from classifying the project. If it is "B" project, the initial environment examination (IEE) should be carried out in accordance with ADB's Environmental Assessment Guidelines (2003) as amended from time to time / Government of India Guidelines, as applicable and if the IEE warrants that EIA need to be prepared, the consultant has to prepare the EIA study. If the project is classified as an "A" project, the EIA will be prepared in accordance with ADB's Environmental Assessment Guidelines (2003) as amended from time to time / Government of India Guidelines.

4.10.1.3 The consultant shall assess and document baseline conditions relevant to the project with the objective to establish the benchmarks.

4.10.1.4 If any project pass through forest land and pass through nearby forest land (less than 1 km), the consultant has to clearly identify the legal status of the forest, whether the forest is part of National parks or Wildlife Sanctuaries or other special status of the forest. If the forest is national Park or Sanctuary, the consultant has to undertake vegetation analysis, and raid wildlife movement study along the roads that pass through/ nearby national parks or sanctuaries.

4.10.1.5 The consultant shall assess the potential positive and negative significant impacts due to the project and identify the cost effective mitigative measures to address these impacts adequately in the Environmental Monitoring and Management Plant (EMMP)

4.10.1.6 The consultant shall do the analysis of alternatives incorporating environmental concerns and the associated costs in the economic analysis. This should include with and without scenario and modification incorporated in the proposed project due to environment considerations.

4.10.1.7 The consultant shall give special attention to the environmental enhancement measures in the project for the following:

(i) Cultural property enhancement along the highways;
(ii) Bus bays and bus shelters including a review of their location;
(iii) Highway side landscape and enhancement of the road junctions;
(iv) Enhancement of highway side water bodies, and
(v) Redevelopment of the borrow areas located on public land.

4.10.1.8 The IEE report including an EMMP will be prepared with adequate public consultation and the recommendations arising thereon. If the EIA needs to be prepared, 2 step consultations with affected people needs to be done. First consultation should aims together environmental concerns of the affected people, and second consultation is to share the result of the study especially of EMP to mitigate the environmental impacts..

4.10.1.9 All mitigation measures are identified in the IEE and EMMP should be incorporated in the project design so that they are carried out during construction, operation and maintenance in consultation with the stakeholders.

4.10.1.10 The consultant shall prepare the bill-of-quantities (BOQ) and technical specifications for all items of work on account of environmental enhancement measures in such a way that these may be readily integrated to the construction contracts.

4.10.1.11 The consultant shall establish a suitable monitoring network with regard to air, water and noise pollution. The consultant will also provide additional inputs in the areas of performance indicators and monitoring mechanisms for environmental components during construction and operational phase of the project..

4.10.1.12 The consultant shall provide the cost of mitigation measures and ensure that environmental related staffing, training and institutional requirements are budgeted in project cost.

4.10.1.13 The consultant shall prepare the application forms and obtain forestry and environmental clearances from the respective authorities including the SPCBs and the MOEF on behalf of . The consultants will make presentation, if required, in defending the project to the MOEF Infrastructure Committee.

4.10.1.14 The consultant shall identify and plan for plantation of the suitable trees along the existing highway in accordance with IRC guidelines.

4.10.1.15 The consultant shall assist in providing appropriate input in preparation of relevant environment and social sections.

4.10.2 Social and Poverty Impacts

4.10.2.1 The social and poverty analysis impact studies shall be carried out in accordance with Government of India policy and ADB Guidelines. The social analysis study will, among other things, provide a socio-economic profile of the project area and address in particular, indigenous people, communicable disease particularly HIV/AIDS, Human trafficking, poverty alleviation, gender, local population, industry, agriculture, levels of poverty and unemployment, health, education, child labour, land acquisition and resettlement.

(i) The study will include all parameters required to be reviewed and evaluated in accordance with the selection criteria, evaluation and ranking procedures at Supplement I.

(ii) The consultant will carry out (a) the initial poverty and social assessment; (b) assessment on social issues such as indigenous people; gender; HIV/AIDS; human trafficking; and labours including child labour with respect to the projects in accordance with Handbook on Poverty and Social Analysis.

(iii) The consultant will prepare a report on (a) initial poverty and social assessment; and (b) mitigation plan to address social issues.

(iv) The consultant will minimize the involuntary resettlement and roads having insignificant resettlement impact (significance categories B & C) or no negative impact will be selected. (Refer To OM/F2 for definition of category B and C)

(v) The consultant will prepare checklist for (a) involuntary resettlement; (b) indigenous peoples screening and impact categorization for each sub-project.

(vi) Based on the findings of IR and IP screening and impact categorization; (a) resettlement framework, (b) appropriate resettlement plans for each sub-project, (c) IPDF, (d) indigenous peoples development plan or specific action to address IP issues (to be incorporated in RPs) will be have to be prepared. All these will be prepared. These will be prepared in accordance with ADB's Policy on involuntary Resettlement (2014), Handbook on Resettlement – A Guideline to Good Practice, ADB's Policy on Indigenous People (1998); India's National Resettlement

Policy on Resettlement and Rehabilitation for Project Affected Families (NPRR 2003); and Land Acquisition Act (2013).

(vii) In order to prepare the resettlement plan, the consultant would conduct:

a. 25% base line socio-economic survey of affected persons and 100% census survey to assess the impacts on the people, properties, common property resources and loss of livelihood. The socio-economic survey will establish the benchmark for monitoring of R&R activities. Consultation with affected persons and other stakeholders to identify mechanisms to improve project designs, minimize resettlement impacts to meet the needs of different stakeholders. A summary of stakeholders discussions, issue raised and how the project design was developed to meet stakeholders needs will be prepared.
b. All non-titled occupants should be recorded at the initial stages so that identify cards can be issued to ensure there is no further influx of people into the project area. The recorded date at the initial stage will serve as an eligibility cut-off date for non-titled occupants. All consultations with affected persons (to include list of participants) should be fully documented and records made available to.
c. Assessment on the impact of the project on the poor and vulnerable groups and indigenous people (if any) along the project road corridor.
d. Based o the identified impacts, developing entitlement matrix for the project affected people. Assessment of feasibility and effectiveness of income restoration strategies and suitability and availability to relocation sites.
e. Assessment on social issues such as indigenous people, gender, HIV/AIDS, labours including child labour.
f. Implementation budgets, sources and timing of funding and schedule of tasks.
g. Responsibility of tasks, institutional arrangements and personnel for delivering entitlement and plans to build institutional capacity.
h. Internal and external Monitoring plans, key monitoring indicators grievance redress mechanism.
i. Incorporating any other suggestions of the ADB and , till the acceptance of the reports by the ADB/, as applicable.

(viii) The report on resettlement impacts would include the following:

a. Executive Summary
b. Description of project
c. Objectives of the Project.
d. The need for Resettlement in the Project and evaluation of measures to minimize resettlement.
e. Description and results of public consultation and plans for continued participation of PAPs.
f. Definition of PAPS and the eligibility criteria.
g. Socio-economic of PAPs; census and survey results-number affected, how are they affected and what impacts will the experience.

h. Legal and entitlement policy framework-support principles for different categories of impact.
i. Organizational responsibilities for IR implementation
j. Mechanisms for resolving of conflicts and appeals procedures.
k. Proposed income restoration program for PAPs
l. Arrangements for monitoring and evaluation (internal and external)
m. Implementation schedule for resettlement which is linked to the civil works contract.
n. A matrix of scheduled activities to indicate clearly what steps and actions will be taken at different stages and the time frame.
o. The payment of compensation and resettlement during the acquisition process.
p. An itemized budget (replacement value for all assets) and unit costs for different assets.

4.10.2.2 A social assessment would be conducted for the entire project to identify mechanisms to improve project designs to meet the needs of different stakeholders. A summary of stakeholders discussions, issue raised and how the project design was developed to meet stakeholders need would be prepared.

4.10.2.3 The Resettlement and Rehabilitation Plan would assess feasibility and effectiveness of income restoration strategies and suitability and availability to relocation sites. The resettlement plan which accounts for resettlement impacts would be based on a 25% socio-economic survey and 100 % census survey of project affected people which provides the complete assessment of the number of affected households and persons, including common property resources. All untitled occupants should be recorded at the initial stages so that identify cards can be issued to ensure there is no further influx of people into the project area. All consultants with affected persons (to include list of participants) should be fully documented and records made available to .

(i) Assessment on the impact of the project on the poor and vulnerable groups along the project road corridor.
(ii) Based on the identified impacts, developing entitlement matrix for the project affected people.
(iii) Assessment on social issues such as indigenous people, gender, HIV/AIDS, labours including child labour.
(iv) Implementation budgets, sources and timing of funding and schedule of tasks.
(v) Responsibility of tasks, institutional arrangements and personnel for delivering entitlement and plans to build institutional capacity.
(vi) Internal and external Monitoring plans, key monitoring indicators and grievance redress mechanism.
(vii) Incorporating any other suggestions of the ADB and GoCG PWD, till the acceptance of the reports by the ADB/ GoCG PWD, as applicable.

4.10.2.4 The relevant resettlement plans should be updated and modified to incorporate changes, if any, that may be necessitated by the detailed engineering designs prepared for the Projects in accordance with the requirements specified in Supplement I.

4.10.2.5 The consultant shall incorporate in the bid document the following requirements for compliance during implementation of the project:

(i) Civil works contractors employed under the Project undertakes appropriate health and safety programs to, amongst others, disseminate information to the construction workers on human immunodeficiency virus/acquired immunodeficiency syndrome and preventive measures;
(ii) Civil works contractors complies with all applicable labor laws of India and the State Government, and does not employ child labour for construction and maintenance activities;
(iii) Employment targets, as acceptable, are set for women in road construction activities;
(iv) Civil works contractors does not differentiate between wages of men and women workers for work of equal value; and
(v) Appropriate child-care facilities are provided at or around the construction campsites.
(vi) The consultant shall assess and document base line conditions relevant to the project with the objective to establish the batch marks.

4.10.3 Reporting Requirements of Environment Impact

4.10.3.1 The consultant would prepare the stand-alone reports including the IEE and EMMP as per the requirement of the ADB/ GoCGPWD, as applicable, with contents as per the following:

(i) Executive Summary
(ii) Description of the Project
(iii) Environmental setting of the project
(iv) Identification and categorization of the potential impacts (during pre construction, construction and operation periods)
(v) Analysis of alternatives (this would include correlation amongst the finally selected alternative alignment/routing and designs with the avoidance and environmental management solutions)
(vi) The public consultation process
(vii) Typical plan or specific designs for all additional environmental items as described in the scope of work
(viii) Incorporating any other as per the suggestions of the ADB/ GoCGPWD, till the acceptance of the reports by the ADB/ GoCGPWD, as applicable

4.10.3.2 EMMP (Environment Monitoring and Management Plan) Reports for Each Contract Package based on uniform methodology and processes. The consultant will also ensure that the EMMP has all the elements for it to be a legal document. The EMMP reports would include the following:

(i) Brief description of the project, purpose of the EMMP, commitments on incorporating environmental considerations in the design, construction and operations phases of the project and institutional arrangements for implementing the EMP.
(ii) A detailed EMMP for construction and operational phases with recourse to the mitigation measures for all adverse impacts.
(iii) DGPS survey of forest area, wherever required with marking of road alignment passing through forest area as per requirements of forest authorities. The details shall be provided in hard as well as in soft copies.

(iv) Detailed plans for highway-side tree plantation (as part of the compensatory aforestation component).
(v) Environmental enhancement measures would be incorporated. Enhancement measures would include items described in the scope of work and shall be complete with plans, designs, BOQ and technical specifications.
(vi) Environmental monitoring plans during and after construction including scaling and measurement techniques for the performance indicators selected for monitoring.
(vii) The EMP should be amendable to be included in the contract documents for the works.
(viii) Incorporating any other as per the suggestions of the ADB and the GoCGPWD, till the acceptance of the reports by the ADB/ GoCGPWD, as applicable.

4.10.4 Reporting requirements for social and poverty impacts

The reports to be prepared by the consultant would cover the following:

(i) Initial Poverty and Social Assessment Report along with mitigation plan for social risks and vulnerabilities especially related to gender, HIV/AIDS transmission and Human trafficking, etc.
(ii) Checklists for initial poverty and social assessment, involuntary resettlement and indigenous peoples development.
(iii) Resettlement Framework
(iv) Resettlement plan/s for each sub-project
(v) IPDF
(vi) IPDP(if required)
(vii) Initial Base line Data with aim to prepare PPMS to be prepared by consultant and got approved by Project Director, ADB Project.

4.11 Estimation of Quantities and Project Costs

4.11.1 The Consultants shall prepare detailed estimates for quantities (considering designs and mass haul diagram) and project cost for the entire project (civil packages wise), including the cost of environmental and social safeguards proposed based on MORTH's Standard Data Book and market rate for the inputs or the local schedule of rates. The estimation of quantities shall be based on detailed design of various components of the projects. The estimation of quantities and costs would have to be worked out separately for each civil work Package as defined in this TOR.

4.11.2 The Consultants shall make detailed analysis for computing the unit rates for the different items of works. The unit rate analysis shall duly take into account the various inputs and their basic rates, suggested location of plants and respective lead distances for mechanized construction. The unit rate for each item of works shall be worked out in terms of manpower, machinery and materials. Cost estimates include foreign exchange and local components, separately identifying taxes and customs duties.

4.11.3 The project cost estimates so prepared are to be checked against rates for similar on-going works in India.

4.12 **Economic Analysis**

4.12.1 The road project should be divided into the traffic homogenous links based on the findings of the traffic studies. The homogenous links of the road project should be further subdivided into sections based on physical features of road and pavement, sub-grade and drainage characteristics etc. The economic analysis shall be carried out separately for each traffic homogenous link as well as for the project.

4.12.2 The values of input parameters and the rationale for their selection for the economic analyses shall be clearly brought out.

4.12.3 For models to be used for the economic analyses, the calibration methodology and the basic parameters adapted to the local conditions shall be clearly brought out.

4.12.4 The economic should bring out the priority of the different homogenous links in terms of project implementation.

4.12.5 The Consultants shall carry out economic analysis for the road project in accordance with the ADB guidelines for Economic Analysis of Projects. The analysis should be for each of the sections covered under this TOR. The benefit and cost streams should be worked out for the project using HDM-IV or other internationally recognized life-cycle costing model.

4.12.6 The economic analysis shall cover but be not limited to be following aspects:

(i) assess the capacity of existing roads and the effects of capacity constraints on vehicle operating costs (VOC);
(ii) calculate VOCs for the existing road situation and those for the project;
(iii) quantify all economic benefits, including those from reduced congestion, travel distance, road maintenance cost savings and reduced incidence of road accidents; and,
(iv) estimate the economic internal rate of return (EIRR) for the project over a 200-year period after construction/rehabilitation. In calculating the EIRRs, identify the tradable and non-tradable components of projects costs and the border price value of the tradable components;
(v) Saving in time value.

4.12.7 Economic Internal Rate of Return (EIRR) and Net Present Value (NPV) should be worked out based on these cost-benefit stream. Furthermore, sensitivity of EIRR and NPV worked out for the different scenarios as given under:

Scenario - I	Base Costs and Base Benefits
Scenario - II	Base Costs plus 20% and Base Benefits
Scenario – III	Base Costs and Base Benefits minus 20%
Scenario - IV	Drop in traffic growth rates by 50%
Scenario - V	No generated traffic benefits
Scenario - VI	Two-year project implementation delay
Scenario - VII	Less than optimal road maintenance such as delay or omission of periodic maintenance
Scenario - VIII	Base Costs plus 20% and Base Benefits minus 20%

4.12.8 The sensitivity scenarios given above are only indicative. The Consultants shall select the sensitivity scenarios taking into account possible construction delays, construction costs overrun, traffic volume, revenue shortfalls, operating costs, exchange rate variations, convertibility of foreign exchange, interest rate volatility, non-compliance or default by contractors, political risks and force majeure.

4.12.9 The economic analysis shall take into account all on-going and future road and transport infrastructure projects and future development plans in the project area.

4.12.10 The consultant shall suggest ways of enhancing/making the projects in terms of project economics attractive.

5. Selection and Prioritization of projects

For the purpose of selection as project for ADB financing, a road project must meet the selection criteria and evaluation requirements including attaining a minimum 12% estimated economic internal rate of return. The sub-projects shall further be prioritized using the ranking criteria. The project selection criteria including evaluation and ranking criteria are at Supplement I. The consultant shall prepare and submit a report on Selection and Prioritization of projects as early as possible, e.g. preliminary list at STAGE 2 – Interim Report for GoCGPWD and ADB consideration. The preparation of bid documents and final detailed design report should be carried out only after the respective projects are determined for possible ADB financing.

6. Time period for the service

6.1 Time period envisaged for the study of each of the projects is six months**.** The final reports, drawings and documentation shall be completed within this time schedule.

6.2 GoCG PWD shall arrange to give observations and comments on all sketches, drawings, reports and recommendations and other matters and proposals submitted for decision by the Consultant through Project Director / Project Manager, CSRSP, ADB Project of GoCG PWD in such reasonable time so as not to delay or disrupt the performance of the Consultant's services.

7. Project Team and Project Office of the Consultant

7.1 The Consultants shall be required to form a multi-disciplinary team for this assignment. The consultants Team shall be manned by adequate number of experts with relevant experience in the execution of similar detailed design assignments.

7.2 List of key personnel to be fielded under the technical team is given in Enclosure I as per clients assessment. The key personnel fielded by the consultant shall not be shifted during the entire period of the services.

7.3 All the key personnel mentioned will be evaluated at the time of evaluation of technical proposal. Consultants are advised in their own interest to frame the technical proposal in an objective manner as far as possible so that these could be properly assessed. The bio-data of the key personnel should be signed on every sheet by the personnel concerned and the last sheet of each bio-data should also be signed by the authorised signatory of the Consultants.

7.4 The consultant shall establish TL Office at Raipur / Rajnandgaon / Bilaspur for Group-A/B/C respectively during the Contract period. The consultant shall attend Office of Project Director / concerned Project Manager, CSRSP, ADB Project as and when required for discussions / meetings.

7.5 The Consultants shall also establish an office at the Project Site manned by senior key personnel during the course of the surveys and investigations. All the project related office work shall be carried out by the consultant in their site office unless there are special reasons for carrying out part of the office work elsewhere for which prior approval of GoCGPWD shall be obtained. The address of site office including the personnel manning it including their Telephone and FAX numbers will be intimated by the Consultant to before commencement of the services.

7.6 All necessary technical support staff and office support staff shall be provided by the consultant. They should however bring out the details of these personnel and their duration of deployment in the technical proposal.

7.7 The consultant shall mobilize all necessary survey equipment, computers, software, other equipment and all other equipment required to fulfill the job

7.8 The consultant shall include all necessary vehicles motorcycles etc in his proposal which may be required to carry out the job.

7.9 The rates to be quoted shall be on per kilometer basis (excluding exploratory boring for bridges/fly over/ROBs.) and it shall include all costs / expenses, taxes, duties, cess, etc but exclude service tax as applicable.

7.10 The rates for exploratory boring shall be quoted on per meter basis and it shall include all costs / expenses, taxes, duties, cess, etc, but exclude service tax as applicable.

8. Reports to be submitted by the Consultant to

8.1 All reports, documents and drawings are to be submitted separately for each of the traffic homogenous link of the Project Road. The analysis of data and the design proposals shall be based on the data derived from the primary surveys and investigations carried out during the period of assignment. The sources of data and model relationships used in the reports shall be indicated with complete details for easy reference.

8.2 Project preparation activities will be split into four stages as brought out below.

Stage 1: Quality Assurance Plan; Inception Report
Stage 2: Feasibility study and Project Selection and Prioritization Report (PSPR)
Stage 3: Draft Detailed Project Report .
Stage 4: Detailed Project Report (Part II)

8.3 Time schedule in respect of all such stages has been indicated in the next para. Consultant shall be required to complete, to the satisfaction of the client, all the different stages of study within the time frame indicated in the schedule of submission in para 10 pertaining to Reports and Documents for becoming eligible for payment for any part of the next stage.

8.4 The Consultant shall submit to the client the reports and documents in bound volumes (and not spiral binding form) after completion of each stage of work as per the schedule and in the number of copies as given in Enclosure II. Further, the reports shall also be submitted in floppy diskettes / CD's in addition to the hard copies as mentioned in Enclosure-II. Consultant shall submit all other reports mentioned specifically in the preceding paras of the TOR.

8.5 The time schedule for various submissions prescribed at Sl.No.1 above shall be strictly adhered to. No time-over-run in respect of these submissions will normally be permitted. Consultant is advised to go through the entire terms of reference carefully and plan his work method in such a manner that various activities followed by respective submissions as brought out at Sl.No.1 above are completed as stipulated. Consultant is, therefore, advised to deploy sufficient number of supporting personnel, both technical and administrative, to undertake the project preparation activities in each construction package (Section) simultaneously. As far as possible, the proposal should include complete information such as number of such persons, name, position, period of engagement, remuneration rate etc. The Consultant is also advised to start necessary survey works from the beginning so as to gain time in respect of various other activities in that stage

STAGE -1

8.1.1 Quality Assurance Plan (QAP) Document

Immediately upon the award, the Consultants shall submit four copies of the QAP document covering all aspects of field studies, investigations design and economic analysis. The quality assurance plans/procedures for different field studies, engineering surveys and investigation, design and documentation activities should be presented as separate sections like engineering surveys and investigations, traffic surveys, material geo-technical and sub-soil investigations, road and pavement investigations, investigation and design of bridges & structures, environment and R&R assessment, economic & financial analysis, drawings and documentation; preparation, checking, approval and filing of calculations, identification and traceability of project documents etc. Further, additional information as per format shall be furnished regarding the details of personal who shall be responsible for carrying out/preparing and checking/verifying various activities forming part of project preparation, since inception to the completion of work.

8.1.2 Inception Report (IR)

The report shall cover the following major aspects:

(i) Project appreciation;

(ii) Detailed methodology to meet the requirements of the TOR finalised in consultation with the officers; including scheduling of various sub-activities to be carried out for completion of various stages of the work; stating out clearly their approach & methodology for project preparation after due inspection of the entire project stretch and collection/ collation of necessary information;

(iii) Task Assignment and Manning Schedule;
(iv) Work programme;
(v) Proforma for data collection;
(vi) Key plan and Linear Plan;
(vii) Development plans being implemented and / or proposed for implementation in the near future by the local bodies and the possible impact of such development plans on the overall scheme for field work and design for the study;
(viii) Draft design standards; and

STAGE -2

8.2.1 Feasibility study

8.2.1.1 The Consultant shall commence the project preparation for the road projects in accordance with the accepted IR and the report shall contain the following:

(i) Executive summary
(ii) Project description including possible alternative alignments/bypasses and technical/engineering alternatives
(iii) Methodology adopted for the study
(iv) Socioeconomic profile of the project areas
(v) Road safety audit including black spot identification and analysis
(vi) Indicative design standards, methodologies and specifications
(vii) Traffic surveys and analysis
(viii) Outline proposals for rehabilitation / widening of existing roads including shoulder composition and cross sections; rehabilitation / widening of existing structures; new bridges, cross structures, underpasses/overpasses, subways; reconstruction of existing structures; service roads, truck lay byes, bus stops, etc in order to finalize those before taking up the detailed design
(ix) Environmental screening and initial environmental examination
(x) Checklists for involuntary resettlement, indigenous people's development, and initial poverty and social assessments; Initial social impacts including impacts on poverty and on indigenous people
(xi) Preliminary land acquisition/resettlement impact, and resettlement requirements
(xii) Preliminary Cost estimates
(xiii) Economic analysis

8.2.1.2 The basic data obtained from the field studies and investigations shall be submitted in a separate volume as an Appendix to the Report.

8.2.1.3 Any comments, revisions and modifications in the Report suggested by shall be incorporated and submitted within 15 days of receipt of comments from

8.2.2 Project Selection and Prioritization Report (PSPR)

The report on Project Selection and Prioritization shall be prepared to present the details of qualification or otherwise of road project through the selection criteria and evaluation

requirements (Supplement I) including attainment of a minimum 12% estimated economic internal rate of return. The sub-projects shall further be prioritized using the ranking criteria (Supplement I). The report shall include recommendations/ proposals for contract packages for procurement of civil works and proposed implementation schedule.

STAGE: 3

8.3.1 Draft Detailed Project Report (DDPR)

8.3.1.1 The DDPR Submission shall consist of construction package-wise Main Report, Design Report, Materials Report, Engineering Report, Drainage Design Report, Economic and Financial Analysis Report, Environmental Assessment Report including Resettlement Action Plan (RAP), Package-wise bid Documents and Drawings.

8.3.1.2 The Report volumes shall be submitted as tabulated in para 10 above.

8.3.1.3 The Documents and Drawings shall be submitted for each section (Package) and shall be in the following format:

Volume-I, Main Report

8.3.1.4 This report will present the project background, social analysis of the project, details of surveys and investigations carried out, analysis and interpretation of survey and investigation data, traffic studies and demand forecasts, designs, cost estimation, environmental aspects, economic and commercial analyses and conclusions. The report shall include Executive Summary giving brief accounts of the findings of the study and recommendations.

8.3.1.5 The Report shall also include maps, charts and diagrams showing locations and details of existing features and the essential features of improvement and upgrading.

8.3.1.6 The Environmental Impact study report including Initial Environmental Examination (IEE) and EMMP (Environmental Monitoring And Management Plan) for each project shall be submitted separately as a part of the main report.

8.3.1.7 The basic data obtained from the field studies and investigations and input data used for the preliminary design shall be submitted in a separate volume as an Appendix to Main Report.

Volume - II, Design Report

8.3.1.8 This volume shall contain design calculations, supported by computer printout of calculations wherever applicable. The Report shall clearly bring out the various features of design standards adopted for the study. The design report will be in two parts. Part-I shall primarily deal wit the design of road features and pavement composition while Part-II shall deal with the design of bridges and cross-drainage structures. The design report shall include detailed analysis for recommendations with regard to the proposals for rehabilitation, widening including shoulder composition and cross-sections, new bridges, cross drainage structures, underpasses, overpasses, subways, reconstruction of existing bridges,

service roads, road amenities in line with the description given above. The sub-soil exploration report including the complete details of boring done, analyses and interpretation of data and the selection of design parameters shall be included as an Appendix to the Design Report.

All designs shall be provided in hard and soft copies. All design calculation of highways and individual CD structure shall be submitted in hard and soft copies (pdf and STAAD files).

The detailed design for all features should be carried out as per the requirements of the Design Standards for the project. However, there may be situations wherein it has not been possible to strictly adhere to the design standards due to the existing site conditions, restrictions and other considerations. The report should clearly bring out the details of these aspect and the standards adopted.

Volume - III, Materials Report

8.3.1.9 The Materials Report shall contain details concerning the proposed borrow areas and quarries for construction materials and possible sources of water for construction purposes. The report shall include details on locations of borrow areas and quarries shown on maps and charts and also the estimated quantities with mass haul diagram including possible end use with leads involved, the details of sampling and testing carried out and results in the form of important index values with possible end use thereof.

8.3.1.10 The materials Report shall also include details of sampling, testing and test results obtained in respect physical properties of subgrade soils. The information shall be presented in tabular as well as in graphical representations and schematic diagrams. The Report shall present soil profiles along the alignment.

8.3.1.11 The material Report should also clearly indicate the locations of areas with problematic soils. Recommendations concerning the improvement of such soils for use in the proposed construction works, such as stabilisation (cement, lime, mechancial) should be included in the Report.

Volume - IV, Cost Estimates

8.3.1.12 This volume will present the contract package wise cost of each item of work as well as a summary of total cost.

Volume - V, Rate Analysis

8.3.1.13 This volume will present the analysis of rates for all items of works. The details of unit rate of materials at source, carriage charges, any other applicable charges, labour rates, machine charges as considered in arriving at unit rates will be included in this volume.

Volume - VI, Drawings

8.3.1.14 All drawings forming part of this volume shall be 'good for construction' drawings. However, prior to execution of work, final 'good for construction' drawings shall be submitted by the civil work contractor for obtaining approval from the Construction Supervision Consultant engaged for the work. All plan and profile drawings will be prepared in scale 1:250V and 1:2500H scale to cover one km in one sheet. In addition this volume will contain 'good for construction' drawings for the following:

(i) Horizontal Alignment and Longitudinal Profile.
(ii) Cross-section @ 50m interval along the alignment within ROW
(iii) Typical Cross-Sections with details of pavement structure.
(iv) Detailed Drawings for individual Culverts and Cross-Drainage Structures.
(v) Detailed Drawings for individual Bridges, tunnels and Structures.
(vi) Detailed Drawings for Improvement of At-Grade and Grade-Separated Intersections and Interchanges.

8.3.1.15 Drawings for Road Sign, Markings, Toll Plazas (if required).

8.3.1.16 Schematic Diagrams (linear chart) indicating but be not limited to be following:

(i) Widening scheme;
(ii) Locations of median openings, intersections, interchanges, underpasses, overpasses, bypasses;
(iii) Locations of service roads;
(iv) location of traffic signals, traffic signs, road markings, safety features; and,
(v) locations of parking. areas, weighing stations, bus bays, rest areas, if any.

8.3.1.17 Preliminary Drawings for Bus Bays, Parking areas, Rest areas, weighing stations etc.

8.3.1.18 All drawings will be prepared in A2 size sheets. The format for plan, cross-section and profile drawings shall be finalized in consultation with the GoCGPWD. The drawings shall also include details of all BM and reference pillars, HIP and VIP. The co-ordinates of all points should be referenced to a common datum, preferably, GTS referencing system. The drawings shall also include the locations of all traffic safety features including traffic signals, signs, markings, crash barriers delineators and rest areas, bus bays, parking areas etc.

8.3.1.19 The typical cross-section drawings should indicate the scheme for future widening of the carriageway. The proposed cross-sections of road segment passing through urban areas should indicate the provisions for pedestrian movements and suitable measures for surface and sub-surface drainage and lighting, as required.

8.3.1.20 The drawing shall include separate sheet of center line coordinates of existing and proposed alignment along with soft copies of the same in pdf and dwg formats.

8.3.1.21 All drawings shall be submitted in hard copies in A-2 size sheets along with soft copies in pdf and dwg formats.

Volume - VII, Poverty and Social Assessment Report including Resettlement Plan

8.3.1.22 The Report shall be prepared conforming to the Guidelines of the Government of India, State Government and ADB as appropriate for each project.

Volume - VIII, Earthwork Calculations

8.3.1.23 This volume of earthwork calculation shall be submitted in hard and soft copies (pdf and approved format). The software used for earthwork calculation shall be got approved by the consultant from the client.

STAGE: 4

8.4.1.1 Detailed Project Report (DPR) – Part-II

The comments of the GoCGPWD, if any, on the reports submitted at Stage-3 shall be incorporated and such volumes shall be resubmitted along with the following:

(i) Bid documents for the projects in four volumes,
(ii) Volume-I shall contain Instructions to Applicants, Appendix to Bid, General and Particular Conditions of Contract based on FIDIC, various Forms etc.
(iii) Volume-II shall contain Technical Specifications based on MORT&H's Technical Specifications for Road and Bridge works;
(iv) Volume-III shall contain Bill of Quantities
(v) Volume-IV shall contain drawings
(vi) Volume - V : Strip Plan

- Details of the centre line of the proposed widened SH / MDR along with the existing and proposed right-of-way limits to appreciate the requirements of land acquisition;
- The information concerning the area including ownership of land to be acquired for the implementation of the project shall be collected from the revenue and other concerned authorities and presented along with the strip plans;
- Strip plans showing the position of existing utilities and services indicating clearly the position of their relocation;
- Details for various clearances such as environment and forest clearances;
- Separate strip plan showing shifting / relocation of each utility services in consultation with the concerned local authorities;
- The utility relocation plans should clearly show existing right-of-way and pertinent topographic details including buildings, major trees, fences and other installations such as water-mains, telephone, telegraph and electricity poles, and suggest relocation of the services along with their

crossings the highway at designated locations as required and prepare necessary details for submission to the Service Departments;

- The strip plans shall be prepared on the basis of data from reconnaissance and detailed topographic surveys.
- The strip plans shall clearly indicate the scheme for widening. The views and suggestions of the should be duly taken into account while working out the widening scheme (left, right or symmetrical). The widening scheme shall be finalized in consultation with GoCGPWD.

8.4.1.2 Detailed Project Reports, Documents and Drawings (6 Sets)

The Detailed Project Reports, Documents and Drawings, incorporating all revisions deemed relevant following receipt of the comments from shall be submitted as per the schedule given in Enclosure II.

9. Interaction with GoCGPWD

9.1 During entire period of services, the Consultant shall interact continuously with and provide any clarification as regards methods being followed and carry out modification as suggested by GoCG PWD. A programme of various activities shall be provided to GoCG PWD and prior intimation shall be given to GoCG PWD regarding start of key activities such as boring, survey etc. so that inspections of officials could be arranged in time.

9.2 The officers of GoCG PWD may visit the site at any time, individually or collectively to acquaint themselves with the field investigation and survey works.

9.3 The consultant shall be required to send 3 copies of concise monthly Progress Report by the 5^{th} day of the following month to the designated officer at his Head Quarter so that progress could be monitored by the GoCG PWD. These reports will indicate the dates of induction and de-induction of various key personnel and the activities performed by them. Frequent meetings with the consultant at Raipur or consultant's site office foreseen during the currency of project preparation shall be conducted as and when required by the client.

9.4 All equipment, software and books etc. required for satisfactory services for this project shall be obtained by the Consultant at their own cost and shall be their property.

10. Payment Schedule

10.1 The Consultant will be paid consultancy fee as a percentage of the contract value except boring charges as per the schedule given below:

S.No.	Description	Payment
1	On submission of Stage-I Report	10%
2	On Submission of Stage-2 reports	20%
3	On Submission of Stage-3 report	30%
4	On finalisation of Stage-3 reports based on comments of the Employer, and submission of Stage-4 Report and other documents	20%
5	On acceptance of Stage-4 documents or finalization of Addenda for the bidders, whichever is earlier	15%
6	On Project clearances/ NOC from concerned state/central departments/ agencies.	5%
	Total	100%

Note : For exploratory boring for bridges/fly over/ROBs the payment shall be regulated as per the actual quantum of work done on quoted rate.

11. Data and Software

11.1 The HDD / CD containing all basic as well as the processed data from all field studies and investigations, report, appendices, annexure, documents and drawings shall be submitted to at the time of the submission of the Final Report. The data can be classified as follows:

(i) **Engineering Investigations and Traffic Studies**: Road Inventory, Condition, Roughness, Test Pit (Pavement composition), Benkelman Beam Deflection, Material Investigation including test results for subgrade soils, Traffic Studies (traffic surveys), axle load surveys, Sub-soil Exploration, Drainage Inventory, Inventory data for bridge and culverts indicating rehabilitation, new construction requirement etc. in MS EXCEL or any other format which could be imported to widely used utility packages.

(ii) **Topographic Surveys and Drawings**: All topographic data would be supplied in (x, y, z) format along with complete reference so that the data could be imported into any standard highway design software. The drawing files would be submitted in dxf or dwg format.

(iii) **Rate Analysis:** The Consultant shall submit the rate analysis for various works items including the data developed on computer in this relation so that it could be used by the Authority later for the purpose of updating the cost of the project.

(iv) **Economic and Financial Analysis**.

11.2 Software

11.2.1 The Consultant shall also hand-over HDD / CDs containing any general software including the models which may have been specifically developed for the project.

11.2.2 The floppy HDD / CDs should be properly indexed and a catalogue giving contents of all HDD / CDs and print-outs of the contents (data from field studies topographic data and drawings) should be handed over to at the time of submission of the Final Report.

11.2.3 All highway and structural drawings shall be submitted in pdf as well as editable / format, such as dwg.

11.2.4 Earthwork calculation shall be done by the software approved by the client. Soft copy of the calculation shall also be submitted with final DPR.

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SUPPLEMENT - I

SELECTION AND EVALUATION OF PROJECTS

A. Selection Criteria for Projects

1. The Projects shall be meet the criteria set forth hereinafter.

   (a) The Projects shall comprise road sections that comply with any of the following:
      (i) The selected priority road sections to be upgraded and expanded shall be linked to the State highway network or important industrial / tourism centers;
      (ii) The selected state road sections to be improved shall have higher traffic volume than 500 vehicles a day and more dynamic economic and commercial activities;
      (iii) The selected state road sections to be rehabilitated shall be located in such districts in which economic performance may potentially be enhanced with improved road infrastructure and conditions; and
      (iv) The selected state road sections shall improve connectivity with the rural roads included under the PMGSY and the Rural Roads Project, linking major populous settlements to main and secondary road networks that will facilitate access of the rural poor to better economic opportunities and social services:

   (b) The economic analysis for each Project shall have been prepared in accordance with the ADB's Guidelines for the Economic Analysis of Projects and the estimated economic internal rate of return of each Project shall be equal to or greater than twelve percent (12%).

   (c) The Projects shall have met the- technical specifications and design criteria, including the design codes, set by the Indian Roads Congress' standard publication for state highways and major district roads.

   (d) The Projects shall have undertaken road safety audits to identify areas of major concern, including black spots, and measures to be taken to improve detailed engineering designs with respect to road safety.

B. Evaluation and Ranking of Projects

2. Prior to submission for 's approval, each Project shall have been evaluated and ranked in accordance with a scoring system (project ranking criteria), which takes into account the following concerns:

   (i) traffic level and composition, and connectivity with major arterial and trunk routes;
   (ii) riding quality of the road segment, flood proneness, presence of expansive soils in the foundation and weak structures;
   (iii) environmental sensitivity;
   (iv) social and economic considerations, such as predominant land use pattern and illiteracy levels along the road corridor, proximity to primary health centers

and educational institutions, social category of the population along the segment;
(v) levels of poverty and unemployment;
(vi) involuntary resettlement impacts; and
(vii) any other concerns that may arise from the findings and recommendations of the initial poverty and social assessments, resettlement plans and indigenous peoples development plans to be prepared for the Projects.

C. **Approval of Projects**

3 (a) The consultant shall review, evaluate and rank the projects in accordance with the requirements of paragraph 2 here above, and verify the information provided with respect to the Projects and compliance with the selection criteria.

(b) The following documentation and information, prepared in accordance with sound financial, engineering, and environmental and road maintenance practices shall be furnished for GoCG PWD's approval:

(i) scope of the Project indicating the road link or location, length, present condition and improvements proposed;
(ii) feasibility studies including lEEs and EMMPs which shall have been prepared with adequate public consultation, and the recommendations arising therefrom;
(iii) checklists for initial poverty and social assessment, involuntary resettlement and indigenous peoples development;
(iv) details of compliance of the Project with the selection criteria described in paragraph 1 above;
(v) cost estimates;
(vi) details of proposed contract packages for procurement of civil works; and
(vii) proposed implementation schedule.

(c) The initial poverty and social assessments with respect to the projects should be prepared and carried out in accordance with the ADB Handbook on Incorporating Social Dimensions and Handbook on Poverty and Social Analysis. If required, the resettlement plans, indigenous peoples development plans with respect to the projects shall be prepared and carried out in accordance with the Resettlement Framework And Indigenous Peoples Development Framework prepared for this Project and agreed between the State and ADB, the relevant policies and guidelines of ADB, in particular,

Handbook on Resettlement -A Guide to Good Practice, Handbook on Incorporating Social Dimensions and Handbook on Poverty and Social Analysis.

D. **Land Acquisition and Involuntary Resettlement**

4. It shall be ensured that:
(i) technical design for the road rehabilitation works under the Project, does not require widening of the existing rights of way and each civil works contract package is closely screened to exclude those road segments which may require widening of the existing right of way.
(ii) involuntary resettlement is minimized and only those road segments with insignificant resettlement impact or no negative impact are selected;

(iii) the relevant resettlement plans are updated and modified to incorporate changes, if any, that may be necessitated by the detailed engineering designs prepared for the Projects in accordance with the requirements specified in paragraph 3 here above.

E. **Environmental Concerns**

5. It shall be ensured that:

(i) The Project is carried out, and all Project facilities are designed and monitored in compliance with the existing environmental laws and regulations of India and the State Government, and the Environmental Assessment Guidelines (2003) of ADB, as may be amended from time to time;
(ii) All environmental mitigation measures identified in the lEEs and the EMMPs prepared for the Projects are incorporated in such Projects' design for carrying out during construction, operation and maintenance of the Projects;
(iii) Local communities and other stakeholders are duly consulted during the implementation of the Projects on such mitigation measures;
(iv) The Projects do not. include road segments passing through national parks or sanctuaries, and the clearances required by the Forest Act (1991) and Environment Protection Act (1986) with respect to segments passing through reserve forests are obtained in a timely manner prior to commencement of construction at such segment.

PROJECT RANKING CRITERIA

Traffic

1. Each project will be ranked based on composition of traffic, connectivity with major arterial and trunk routes, and traffic levels (existing traffic volume and projected traffic volume).

Environment and Engineering

2. The projects will be ranked based on riding quality, presence of expansive soils in the foundation, weak structures, and the percentage of sections overtopped due to flooding. Environmental sensitivity of the projects will be a primary factor to determine the selection, if any major impact has been identified.

Social and Economic Requirements

3. The projects will be ranked based on predominant land use pattern, proximity to the basic amenities such as primary health centers and educational institutions, and distribution of population in terms of social category. Each project will be screened to minimize involuntary resettlement effects and ensure that resettlement plan and resettlement framework approved by the GoCG and accepted by ADB will be strictly implemented and meet the requirements of the ADB's safeguard policy for involuntary resettlement. Prior review and approval is required for awards of civil works contracts for such projects.

Poverty, Indigenous Peoples and Resettlement

4. The projects will be ranked on the basis of level of poverty, population served, percentage of unemployment, and recommendations of the poverty impact assessment and the benefit distribution analysis completed by the Asian Development Bank for the Project. Also, projects will be selected in accordance with the findings and recommendations from the IPSA, the initial poverty and social assessments and indigenous people plans and resettlement plans prepared by the GoCG and approved by the to ensure that all adverse social impacts are mitigated. To minimize unnecessary resettlement impacts, only those projects with significance category B or C will be selected. All projects evaluation reports should be submitted to the for review and approval prior to finalization of selection process.

Table SAF.1 shows the criteria and their weights.

TABLE SAF1: PROJECT RANKING CRITERIA

Criterion / Consideration	Priority Score	Indicators of Significance
A. Traffic Consideration		
1. Traffic Composition (50%)		Economic
• Agricultural	3	
• Commercial	2	
• Non Motorized	1	
2. Traffic level		Engineering & Economics
• >1500 vpd	5	
• 1000-1500 vpd	4	
• 500-1000 vpd	3	
• 500 -250 vpd	2	
• <250 vpd	1	
3. Connectivity With Major Road Network		Strategic
• NH	5	
• SH under Bond Roads	4	
• Bond Roads	3	
• BOT Roads	2	
• None	1	
B. Engineering Consideration – Road Condition		
1. Roughness levels (IRI)		Engineering & Economics
• > 10 to15	4	
• 8-10	3	
• 4-8	2	
• <4	1	
2. Flood prone Sections (% Length)		Engineering & Economics
• <5	4	
• 5-10	3	
• 10-15	2	
• >15	1	
3. No of Weak Structures on the project road		Engineering & Economics
• <10	5	
• 10-25	4	
• 25-50	3	
• 50-25	2	
• >50	1	

Criterion / Consideration	Priority Score	Indicators of Significance
4. Expansive Soils along the corridor (length)		Engineering & Economics
• <10	4	
• 10-25	3	
• 25-50	2	
• 50	1	
C. Socio economic Consideration		
1. Predominant Land use along the Project Road		Economics
• Agricultural	4	
• Industrial	3	
• Commercial	2	
• Barren	1	
2. Percent (%) literacy level along the Project Corridor		Social & Economics
• >50	4	
• 25-50	3	
• 10-25	2	
• <10	1	
3. Proximity to the Primary health center & Educational institutions		Social & Economics
• more than 50 km	4	
• 25 - 50 km	3	
• 10-25 km	2	
• <10km	1	
4. Social Category of the population along the road		Social & Poverty
• Indigenous people	5	
• Scheduled Tribe	4	
• Schedule Caste	3	
• Backward Class	2	
• Others	1	
D. Poverty		
1. Level of poverty in terms of % Population		Poverty
• >50	4	
• 25-50	3	
• 10-25	2	
• <10	1	

Criterion / Consideration	Priority Score	Indicators of Significance
3. Level of unemployment % Population • >75 • 50-75 • 25-50 • 25	Poverty 4 3 2 1	
E. Environmental Sensitivity		Projects will not include any road sections going through a national park or sanctuary. Projects will not involve any expansion of RoWs.
F. Involuntary Resettlement		Sections with involuntary resettlement will be subject to strict implementation of the RPs approved by GoCG and acceptable to ADB. Prior review and approval of ADB is required before awards of civil works contracts for such Project roads.

SUPPLEMENT-II
SAMPLE CHECKLISTS FOR SAFETY AUDIT

Checklists

The use of checklists is highly recommended as they provide a useful "aide memoire" for the audit team to check that no important safety aspects are being overlooked. They also give to the project manager and the design engineer a sense of understanding of the place of safety audit in the design process. The following lists have been drawn up based on the experience of undertaking systematic safety audit procedures overseas. This experience indicates that extensive lists of technical details has encouraged their use as "tick" sheets without sufficient thought being given to the processes behind the actions. Accordingly, the checklists provide guidelines on the principal issues that need to be examined during the course of the safety audits.

Stage 1-During Feasibility Study

1. The audit team should review the proposed design from a road safety perspective and check the following aspects

CONTENTS	ITEMS
Aspects to be checked	A. Safety and operational implications of proposed alignment and junction strategy with particular references to expected road users and vehicle types likely to use the road. B. Width options considered for various sections. C. Departures from standards and action taken. D. Provision of pedestrians, cyclists and intermediate transport E. Safety implications of the scheme beyond its physical limits i.e. how the scheme fits into its environs and road hierarchy
A1 : General	➢ Departures from standards ➢ Cross-sectional variation ➢ Drainage ➢ Climatic conditions ➢ Landscaping ➢ Services apparatus ➢ Lay-byes ➢ Footpaths ➢ Pedestrian crossings ➢ Access (minimize number of private accesses) ➢ Emergency vehicles ➢ Public Transport ➢ Future widening ➢ Staging of contracts ➢ Adjacent development

A2 : Local Alignment	➢ Visibility ➢ New/Existing road interface ➢ Safety Aids on steep hills.
A3 : Junctions	➢ Minimise potential conflicts ➢ Layout ➢ Visibility
A4 : Non-Motorised road users Provision	➢ Adjacent land ➢ Pedestrians ➢ Cyclists ➢ Non-motorised vehicles
A5 : Signs and Lighting	➢ Lighting ➢ Signs/Markings
A6 : Construction and Operation	➢ Buildability ➢ Operational ➢ Network Management

Stage 2 – Completion of Preliminary Design

1. The audit team should review the proposed design from a road safety perspective and check the following aspects	
CONTENTS	**ITEMS**
Aspects to be checked	A. Safety and operational implications of proposed alignment and junction strategy with particular references to expected road users and vehicle types likely to use the road. B. Width options considered for various sections. C. Departures from standards and action taken. D. Provision of pedestrians, cyclists and intermediate transport E. Safety implications of the scheme beyond its physical limits i.e. how the scheme fits into its environs and road hierarchy
B1 : General	➢ Departures from standards ➢ Cross-sectional variation ➢ Drainage ➢ Climatic conditions ➢ Landscaping ➢ Services apparatus ➢ Lay-byes ➢ Footpaths ➢ Pedestrian crossings ➢ Access (minimize number of private accesses) ➢ Emergency vehicles ➢ Public Transport

	➢ Future widening ➢ Staging of contracts ➢ Adjacent development
B2 : Local Alignment	➢ Visibility ➢ New/Existing road interface ➢ Safety Aids on steep hills.
B3 : Junctions	➢ Minimise potential conflicts ➢ Layout ➢ Visibility
B4 : Non-Motorised road users Provision	➢ Adjacent land ➢ Pedestrians ➢ Cyclists ➢ Non-motorised vehicles
B5 : Signs and Lighting	➢ Lighting ➢ Signs/Markings
B6: Construction and Operation	➢ Buildability ➢ Operational ➢ Network Management

Stage 3 – Completion of Detailed Design

1. The audit team should satisfy itself that all issues raised at Stage 1 have been resolved. Items may require further consideration where significant design changes have occurred.

2. If a scheme has not been subject to a stage 1 audit, the items listed in Checklists B1 to B6 should be considered together with the items listed below.

CONTENTS	ITEMS
Aspects to be checked	A. Any design changes since Stage 1. B. The detailed design from a road safety viewpoint, including the road safety implications of future maintenance (speed limits; road signs and markings; visibility; maintenance of street lighting and central reserves).
C1 : General	➢ Departures from standards ➢ Drainage ➢ Climatic conditions ➢ Landscaping ➢ Services apparatus ➢ Lay-byes ➢ Access ➢ Skid-resistance ➢ Agriculture ➢ Safety Fences ➢ Adjacent development
C2 : Local Alignment	➢ Visibility ➢ New/Existing road interface

C3 : Junctions	➢ Layout ➢ Visibility ➢ Signing ➢ Lighting ➢ Road Markings ➢ T,X,Y-junctions ➢ All roundabouts ➢ Traffic signals
C4 : Non-Motorised road users Provision	➢ Adjacent land ➢ Pedestrians ➢ Cyclists ➢ Non-motorised vehicles
C5 : Signs and Lighting	➢ Advanced direction signs ➢ Local traffic signs ➢ Variable message signs ➢ Other traffic signs ➢ Lighting
C6 : Construction and Operation	➢ Buildability ➢ Operational ➢ Network Management

Enclosure -I

LIST OF KEY PERSONNEL TO BE FIELED FOR PREPARATION OF DETAILED PROJECT REPORT

S.No.	Name of the position	Number of persons	Period (Months)
1	Sr. Highway Engineer-cum-Team Leader	1	6
2	Highway Engineer	1	6
3	Pavement Specialist	1	3
4	Bridge Engineer	1	4
5	Traffic Engineer	1	3
6	Material-cum-Geo-technical Engineer	1	3
7	Senior Survey Engineer	1	4
8	Transport Economist	1	2
9	Environmental Specialist	1	2
10	Resettlement & Rehabilitation Specialist	1	2
11	Social Development Specialist	1	2
12	Quantity Surveyor/ Documentation Expert	1	4

Note: The above input of Key personnel is minimum requirement, however, all necessary inputs of manpower such as field technical staff , office staff other than the above as deemed necessary shall be provided by consultants within the quoted price to ensure that the entire work is completed in accordance with the TOR within stipulated time frame. In case of extended period, minimum deployment of Key Personnel shall be proportionately enhanced.

Enclosure -II

Schedule for Submission of Reports and Documents
Group - A / B / C

Submission Time w.e.f Date of Commencement of Consultancy Services (in months)			
S.No.	**Activity**	**No. of copies**	**Time Period for total assignment**
			6 Months
1	**Monthly Reports / Quality Assurance Plan**	**3**	Every month
2	**Inception Report** (i) Inception Report	3	21 days
3	**F.S. REPORT & PSPR**		
	i) Land Acquisition Plan for identified locations as per sub-clause 3.3 of Section 5	6	2 months
	ii) Draft Feasibility Report	4	2 months
	iii) Final Feasibility Report **(within 15 days of receiving comments of on draft feasibility report)**	6	3 Months
	iv) Project Selection and Prioritization Report (PSPR)	6	3 Months
	v) Strip Plan with L. A. Reports & Plans	6	3 Months
4	**Draft Detailed Project Report (DDPR).** **Final DDPR including details and drawings for** repair/rehabilitation of existing bridges **(Final DDPR within 15 days of receiving comments of)**	**6**	**4 Months**
5	**Detailed Project Report (DPR)** i) Final DPR (including drawings and draft bidding (ICB) documents)	6	5 Months
6	**Project clearances /NOC** from concerned State agencies like Forest, Irrigation etc. (Original letters from the concerned agencies and 5 photocopies of each.)		5.5 Months
7	**Project Clearances/NOC/ approvals from Central Govt. Deptt. Like MOEF, Railway, etc.**		6 months

Note :

1. Reports are to be submitted in two sets in CDs and one USB (per drive) along with required Nos. of hard copies mentioned above.
2. Consultant has to submit land plan of all the roads assigned under this agreement within four months of issue of work order positively, otherwise his IPC for stage fourth may not be paid. The LA plan shall also be countersigned by officials of Revenue department not below the rank of Tehsildar.

Enclosure-III

Qualification and Experience Requirement of Key Personnel

1. Senior Highway Engineer-cum- Team Leader

i)	**Educational Qualification**	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 20 **years**
	b) Experience in Highway projects c) Experience in similar capacity	Min. 15 years in Planning, project preparation and design of **Highway projects** and minimum of 5 years as a Team Leader. Two laning of highway projects (NH/SH/Expressways) / externally aided projects such as WB / ADB/ USAID etc. of aggregate length of minimum 350 KM. The Multilane Highway projects shall be converted into equivalent length of two lane.

2. Highway Engineer

i)	**Educational Qualification**	
	Minimum	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min 15 years
	b) Experience in Highway Projects	Min. 12 years in Planning, project preparation and design of Highway projects.
	c) Experience in Similar Capacity	Two laning of major highway projects (NH/SH / Expressways)/ externally aided projects such as WB / ADB/ USAID etc. of aggregate length of minimum 350 KM. The Multilane Highway projects shall be converted into equivalent length of two lane.

3. Pavement Specialist

i)	**Educational Qualification**	
	Minimum	Graduate in Civil Engineering
ii)	**Experience**	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Highway projects	Minimum 12 years experience in pavement design and construction.
	c) Experience in Similar capacity	Pavement design for highway projects (NH/SH/ Expressways) /externally aided projects such as WB / ADB/ USAID etc. of **aggregate length of** minimum 350 KM. The Multilane Highway projects shall be converted into equivalent length of two lane.

4. Bridge Engineer

i)	**Educational Qualification**	
	Minimum	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Bridge projects	Min. 10 years in project preparation and design of bridge projects.
	c) Experience in Similar Capacity	Bridge Engineer in highway design consultancy projects (NH/SH/ Expressways)/ externally aided projects such as WB / ADB/ USAID etc. involving design of minimum two **major bridges** (each of length more than 200m)

5. Traffic Engineer

i)	**Educational Qualification**	
	Minimum	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Highway projects	Min. 10 years on similar projects and an experience of minimum 2 projects as a road safety auditor.
	c) Experience in Similar Capacity	Traffic Engineer in highway Projects (NH/SH/Expressways) externally aided projects such as WB / ADB/ USAID etc. involving 2 laning of aggregate **length** minimum 350 KM. The Multilane Highway projects shall be converted into equivalent length of two lane.

6. Material Engineer – cum – Geo-technical Engineer

i)	**Educational Qualification**	
	Minimum	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Similar type of work in infrastructure projects	Min. 8 years on similar projects in design and/or construction
	c) Experience in Similar Capacity	Material cum Geo-technical Engineer on highway projects (NH/SH/Expressways) /externally aided projects such as WB / ADB/ USAID etc. of aggregate length minimum 350 KM or more including at least one major bridge. The Multilane Highway projects shall be converted into equivalent length of two lane.

7. Senior Survey Engineer

i)	**Educational Qualification**	
	Minimum	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Highway projects	Min. 12 years on similar projects in project preparation an construction & thorough understanding of modern computer based methods of surveying
	c) Experience in Similar Capacity	Survey Engineer for projects preparation of highway project (NH/SH/Expressways) /externally aided projects such as WB / ADB/ USAID etc. involving 2 laning of **aggregate length** minimum 350 KM. The Multilane Highway projects shall be converted into equivalent length of two lane.

8. Transport Economist

i)	**Educational Qualification**	
	Minimum	Graduate in Civil Engineering or / Graduate in Traffic & Transportation Engineering or Post Graduate in Economics
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Highway projects	Min. 10 years on highway projects
	c) Experience in Similar Capacity	Transport Economist in Highway project (NH/SH/Expressways) /externally aided projects such as WB / ADB/ USAID etc. involving 2 laning of **aggregate length** minimum 350 KM. The Multilane Highway projects shall be converted into equivalent length of two lane.

9. Environment Specialist

i)	**Educational Qualification**	
	Minimum	Graduate Engineer with specialization in Environmental Engineering / MSc in Environmental Science
ii)	**Essential Experience**	
	a) Total Professional Experience	Minimum 15 years in relevant field.
	b) Experience in Highway projects	Minimum 8 years in environment impact assessment of infrastructure projects/ externally aided projects such as WB / ADB/ USAID etc.
	c) Experience in Similar Capacity	Environmental specialist in at least two highway projects.

10. Resettlement and Rehabilitation Specialist

i)	**Educational Qualification**	
	Minimum	Graduate in Social Science
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 10 years
	b) Experience in Highway projects	Min. 5 years on highway infrastructure projects
	c) Experience in Similar Capacity	R&R Expert for at least one highway project

11. Social Development Specialist

	Educational Qualification	
	Minimum	Graduate in Social Science
ii)	**Essential Experience**	
	Total Professional Experience	Minimum 10 years in relevant field.
	Experience in Highway Projects	Minimum 5 years on highway infrastructure projects.
	Experience in similar capacity	Social Development Specialist for atleast one highway project

12. Quantity Surveyor/Documentation Expert

i)	**Educational Qualification**	
	Minimum	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Highway Projects	Min. 12 years in Preparation of Bill of Quantities, Contract documents and documentation for major highway projects involving 2 laning
	c) Experience in Similar Capacity	Quantity Surveyor / Documentation Expert in highway projects (NH/SH/Expressways) involving 2 laning of **aggregate length** minimum 350 KM.

Appendix-1

(Form-I)

TECHNICAL PROPOSAL FOR GROUP A / B / C

FROM:

_____
_____
_____
_____

TO:

Project Director,
CSRSP, ADB Project Raipur (C.G.)
India.

Sir:

Subject: Hiring of Consultancy Service for _____

Regarding Technical Proposal

I/We _____ Consultant/ Consultancy firm herewith enclose Technical Proposal for selection of my/our firm/organization as Consultant for _____.

Yours faithfully,

Signature _____
Full Name _____
Designation _____
Address _____

(Authorized Representative)

(Form-II)

FIRM'S INFORMATION SHEET

S.No.	Particulars	**Information (to be filled by the Consultant)**			
1	Name & Address of the firm				
2	Telephone No., Mobile No. and Fax No.				
3	Name & Address of the Authorised Signatory (Attach Power of Attorney with Identity proof)				
4	PAN Number (Attach the copy of PAN)				
5	Goods & Service Tax Registration Number (Attach copy of the Registration)				
6	Annual Average Turnover of Consultancy Business of last 3 years (Attach Audited Balance sheet of last 3 years)	**Year 1**	**Year 2**	**Year 3**	**Average**
7	No. of Years in Consultancy Business (Minimum experience of 5 years) prior to submission deadline supported with Documentary evidence. ????				

I, _____ (name and position of authorized signatory) duly authorized by _____ (name of Consulting firm) ("Consultant") hereby certify on behalf of the Consultant and myself that information provided above are true, correct and accurate to the best of my knowledge and belief.

Authorized Signatory
For and on behalf of the Consultant

Date: _____

(Form-III)

FIRM'S REFERENCES

Relevant Services Carried out in the Last Five Years Which Best Illustrate Qualifications

The following information should be provided in the format below for each reference assignment for which your firm, either individually as a corporate entity or as one of the major companies within a consortium, was legally contracted by the Employer stated below:

<table>
<tr><td colspan="2">Assignment Name:</td><td>Country:</td></tr>
<tr><td colspan="2">Location within Country :</td><td>Professional Staff Provided
by your firm:</td></tr>
<tr><td colspan="2">Name of Employer :</td><td>No. of Staff :</td></tr>
<tr><td colspan="2">Address :</td><td>No. of Staff Months :</td></tr>
<tr><td>Start Date (Month / Year)</td><td>Completion Date
(Month / Year)</td><td>Approx. Value of
Services : (In INR)</td></tr>
<tr><td colspan="2">Name of Association Firm(s) if any :</td><td>No. of Months of Professional
Staff provided by Associated Firm(s)</td></tr>
<tr><td colspan="3">Name of Senior Staff (Project Director / Coordinator, Team Leader) involved and functions performed:</td></tr>
<tr><td colspan="3">Narrative Description of Project :</td></tr>
<tr><td colspan="3">Description of Actual Services Provided by your Staff :</td></tr>
</table>

Signature of Authorized Representative

Note : Certificate from Principal Employer regarding experience should be furnished.

(Form-IV)

CONSULTANT NAME:

APPROACH PAPER ON METHODOLOGY
PROPOSED FOR PERFORMING THE ASSIGNMENT

As per the detail mentioned in the NARRATIVE EVALUATION CRITERIA FOR FULL TECHNICAL PROPOSAL (FTP).

Note: Marks will be deducted for writing lengthy and out of context approach and methodology for the assignment.

(Form-V)

COMMENTS/ SUGGESTIONS OF CONSULTANT

On the Terms of Reference:

1.
2.
3.
4.
5.
..
..

On the Data, services and facilities to be provided by the Employer indicated in the Terms of Reference.

1.
2.
3.
4.
5.

(Form-VI)

Composition of the Team Personnel and the task
Which would be assigned to each Team Member

Technical/Managerial Staff

S.No.	Name	Position	Task Assignment
1			
2			
3			
4			
..			
..			
..			

Support Staff

S.No.	Name	Position	Task Assignment
1			
2			
3			
4			

(Form-VII)

Format of Curriculum Vitae (CV) For Proposed Key Staff

Paste Pass Port Size Photo

1. Proposed Position: _____
2. Name of Staff: _____
3. Date of Birth : _____**(Please furnish proof of age)**
4. Nationality: _____
5. Educational Qualification:

   (Summarize college/university and other specialized education of staff member, giving names of schools, dates attended and degrees obtained). **(Please furnish proof of qualification)**
6. Membership of Professional Societies: _____
7. Publication:

   (List of details of major technical reports/papers published in recognized national and international journals)
8. **Employment Record:**

   (Starting with present position, list in reversed order, every employment held. List all positions held by staff member since graduation, giving dates, names of employing organization, title of positions held and location of assignments. For experience ***period of specific assignment must be clearly mentioned,*** also give Employer references, where appropriate).
9. Summary of the CV

   (Furnish a summary of the above CV. The information in the summary shall be precise and accurate. The information in the summary will have bearing on the evaluation of the CV).

A) Education:
   - i) Field of Graduation and year
   - ii) Field of post graduation and year
   - iii) Any other specific qualification

B) Experience

i)Total experience in highways: _____ Yrs
ii)Responsibilities held : i) _____ Yrs
ii) _____ Yrs.
iii) _____ Yrs.
iv) Relevant Experience: _____ Yrs.

C) Permanent Employment with the Firm (Yes/No):
If yes, how many years :
If no, what is the employment :
Arrangement with the firm ?

Certification :

I am willing to work on the project and I will be available for entire duration of the project assignment and I will not engage himself in any other assignment during the currency of his assignment on the project

I, the undersigned, certify that to the best of my knowledge and belief, this bio-data correctly describes myself my qualification and my experience.

Signature of the Candidate _____
Place _____
Date _____

Signature of the Authorized Representative of the firm_____
Place _____
Date _____

Note: Each page of the CV shall be signed in ink by both the staff member and the Authorized Representative of the firm. Photocopies will not be considered for evaluation.

(Form-VIII)

WORK PROGRAM AND TIME SCHEDULE FOR KEY PERSONNEL

MONTHS (in the Form of Bar Chart)

Sl. No.	Name	Position	Report Due/ Activities	Months								Number of Months
1												Sub Total (1)
2												Sub Total (2)
3												Sub Total (3)
4												Sub Total (4)
…												
….												

Field Full : Part Time :

Reports Due:

Activities :

Duration :

(Form-IX)

A. FIELD INVESTIGATION

(1st, 2nd etc. are months from the date of assignment)

S. N	**Item of Work / Activities**	Months							
1									
2									
3									
..									
..									

B. COMPLETION AND SUBMISSION OF REPORTS

S.No.	Reports	Programme
	(As per TOR)	
1		
2		
3		
4		
..		
..		

(Form – X)

Format for furnishing additional information as per clause 10.1 (1) of TOR

S.No.	Details of activity	*To be Carried out / prepared by* (Name/Designation)	To be Checked/ Verified by (Name/Designation)
1	2	3	4
1	Fixation of all TBM's		
2	Physical surveys (given separate details for various studies)		
3	Traffic studies (given separate details for various studies)		
4	----------		
5	----------		
6	----------		

Note : in column 2 all relevant activities since inception to the completion of feasibility study and project preparation work should be covered.

FORM FIN-1

FINANCIAL PROPOSALS For

Group - A / B / C

FROM:

_____

_____

_____

_____

TO:

Project Director,

CSRSP, ADB Project

GoCGPWD, Raipur (C.G.)

India.

Subject: Hiring of Consultants' Services for feasibility study and preparation of detailed project report for **Group – A / B / C**

Regarding: Price Proposal

I/We_____ Consultant/consultancy firm herewith enclose Price Proposal for selection of my/our firm/organization as Consultant for feasibility study and preparation of detailed project for **Group – A / B / C.**

We have read and understood all the terms and conditions mentioned in this request for proposal and agree to abide by them. In confirmation to the terms and conditions mentioned in the RFP we quote rates including costs / expenses, taxes, duties, cess etc. as applicable as follows:

	Approx Qty. for Group-A/B/C	Unit	Rate(Rs) per Unit	Amount (Rs) for Group-A/B/C
Preparation of DPR	456.40 / 221.40 / 233.00	Km		
Boring in all type of soils (other than rocks)	3000 / 1400 / 1400	R.M.		
Boring in rocks	900 / 450 / 450	R.M.		
Total				

Total Amount (in words) Rs.....
.....

Yours faithfully,
Signature_____

Full Name_____

Designation_____

Address_____

(Authorized Representative)

FORM FIN-2

DECLARATION

Acknowledgement of Compliance with ADB's *Guidelines on the Use of Consultants by Asian Development Bank and Its Borrowers (Guidelines)*

I, _____ (name and position of authorized signatory) duly authorized by _____ (name of Consulting firm) ("Consultant") hereby certify on behalf of the Consultant and myself that information provided in the Technical and Financial Proposals (collectively "Proposals") submitted by the Consultant for Loan No.-Country: Title ("Project") is true, correct and accurate to the best of my knowledge and belief. I further certify that on behalf of the Consultant that (i) the Proposals have been prepared and submitted in compliance with the terms and conditions set forth in the ADB's Guidelines on the Use of Consultants by Asian Development Bank and its Borrowers (Guidelines), (ii) that the Consultant has not taken any action which is or constitutes a corrupt and fraudulent practice as defined in ADB's anticorruption policy and as reflected in Section 1.05 of the Guidelines; and (iii) that the Consultant agrees to allow the Client or the ADB, at its option, to inspect and audit all accounts, related documents, and records relating to the Proposals and, if the Consultant is engaged, to the performance of the ensuing contract.

I further certify on behalf of the Consultant that, if selected to undertake consulting services in connection with the Project, we shall carry out such services in continuing compliance with the terms and conditions of the *Guidelines*.

Authorized Signatory
For and on behalf of the Consultant

Date: _____

LIST OF ADB MEMBER COUNTRIES

1.	AFG	Afghanistan	35.	FSM	Micronesia, Federal States of
2	ARM	Armenia	36.	MON	Mongolia
3.	AUS	Australia	37.	MYA	Myanmar
4.	AUT	Austria	38.	NAU	Nauru, Republic of
5.	AZE	Azerbaijan	39.	NEP	Nepal
6.	BAN	Bangladesh	40.	NET	The Netherlands
7.	BEL	Belgium	41.	NZL	New Zealand
8.	BHU	Bhutan	42.	NOR	Norway
9.	BRU	Brunei Darussalam	43.	PAK	Pakistan
10.	CAM	Cambodia	44.	PAL	Palau
11.	CAN	Canada	45.	PNG	Papua New Guinea
12.	PRC	China, People's Republic of	46.	PHI	Philippines
13.	COO	Cook Islands	47.	POR	Portugal
14.	DEN	Denmark	48.	SAM	Samoa
15.	FIJ	Fiji Islands	49.	SIN	Singapore
16.	FIN	Finland	50.	SOL	Solomon Islands
17.	FRA	France	51.	SPA	Spain
18.	GEO	Georgia	52.	SRI	Sri Lanka
19.	GER	Germany	53.	SWE	Sweden
20.	HKG	Hong Kong, China	54.	SWI	Switzerland
21.	IND	India	55.	TAJ	Tajikistan
22.	INO	Indonesia	56.	TAP	Taipei,China
23.	IRE	Ireland	57.	THA	Thailand
24.	ITA	Italy	58.	TIM	Timor-Leste, Democratic Republic of
25.	JPN	Japan	59.	TON	Tonga
26.	KAZ	Kazakhstan	60.	TUR	Turkey
27.	KIR	Kiribati	61.	TKM	Turkmenistan
28.	KOR	Korea, Republic of	62.	TUV	Tuvalu
29.	KGZ	Kyrgyz Republic	63.	UKG	United Kingdom
30.	LAO	Lao People's Democratic Republic	64.	USA	United States
31.	LUX	Luxembourg	65.	UZB	Uzbekistan
32.	MAL	Malaysia	66.	VAN	Vanuatu
33.	MLD	Maldives	67.	VIE	Viet Nam
34.	RMI	Marshall Islands			

Annexure – "A"

DETAILS OF PROJECT ROADS

Sl. No.	Group	Name of District	Name of Road	Class of Road	Approx Length (Km.)	Remarks
1	**2**	**3**	**4**	**5**	**6**	**7**
1	A	Raipur / Dhamtari	Tikarapara Sejbahar Semara Bhakhara Dhamtari Road (Old Dhamtari Road)	MDR	61.40	
2	A	Raipur / Durg	Bendri (Raipur) - Sejbahar - Kathadih - Khudmudaghat - Amleshwar - Kumhari Road	Bypass	49.00	
3	A	Dhamtari	Kurud Megha Magrlod Amlidih Dhourabhatha Khisora Road (NH-30 to Rajim Gariyaband Road)	MDR	42.00	
4	A	Dhamtari	Budeni Nayapara Parsavani Magarlod Mohandi Borsi Bhoyena Road (Dhamtari SH-23)	SH-20	72.00	
5	A	Dhamtari	Kalle Anvari Semara Gadadih Hanchalpur Kurra Bagtarai Aamdi Road	MDR	30.00	
6	A	Gariyaband	Rajim, Chhura Road Vhaya Tarrighat Road	MDR	45.00	
7	A	Gariyaband	Panduka Jatmay Ghatarani Gaydbari Mudeli Mudagaon Road (Chhura Fingeshwar Road)	MDR	40.00	
8	A	Gariyaband	Chhura Churkidadar Charoda Road	MDR	30.00	
9	A	Mahasamund	Dewari Saldih Gadfuljhar Toshgaon Toresingha Road	MDR	47.00	
10	A	Balodabazar / Mahasamund	Ghotiya Palari Vatgan Ghirpuri Chikhali Samoda Achhola Tumgaon Road	MDR	40.00	
			Sub Total Group-A (Total 10 Nos. of Roads):-		**456.40**	
11	B	Rajnandgaon / Durg	Thelkadih Durg Road	MDR	31.00	
12	B	Rajnandgaon	Bihrikala Dangad Somatola Gotatola Khadgaon	MDR	39.00	
13	B	Kabirdham	Sahaspur Lohara Sarodha Bhoramdev Palak Road	MDR	39.40	
14	B	Kabirdham	Lohara Rengakhar Road	MDR	33.40	
15	B	Balod	Anda Runchirai Jamgaon Road	MDR	33.60	
16	B	Balod	Dondi Avari Muagondi Amadula Singhola Beloda Mullegoda Road	MDR	45.00	
			Sub Total Group-B (Total 06 Nos. of Roads) :-		**221.40**	
Sl. No.	**Group**	**Name of District**	**Name of Road**	**Class of Road**	**Approx Length (Km.)**	**Remarks**

1	2	3	4	5	6	7
17	C	Bilaspur	Mangala Bhaisarjhar Road	MDR	26.00	
18	C	Raigarh	NH-200 Karubhatha Raksapali Kachhar Usrouth Tarapur Putkapuri Suta to NH-216 Road	MDR	50.00	
19	C	Raigarh	Dharamjaygarh Kapu Road	MDR	32.20	
20	C	Raigarh	Sambalpuri Tilga Bhagora Jamgaon 15.00 Km. Raigarh Tapariya (Hamirpur) Road 23.20 Km. Road	MDR	38.20	
21	C	Mungeli	Lormi to Bhasana, Bhasana Paijaniya to Jarhagaon Road	MDR	25.00	
22	C	Mungeli	Takhatpur Kukusada Barchha Road	MDR	30.60	
23	C	Janjagir Champa	Sakti Tundri Road	SH-29	31.00	
			Sub Total Group-C (Total 07 Nos. of Roads) :-		**233.00**	
Grand Total :-			**Total 23 Roads**		**910.80**	

Agreement & General Conditions of Contract

CONTENTS

Sl. No. Description

I. CONTRACT FOR CONSULTANT'S SERVICES

II. GENERAL CONDITIONS OF CONTRACT

1. General Provisions

1.1 Definitions
1.2 Relation between the Parties
1.3 Law Governing the Contract
1.4 Language
1.5 Headings
1.6 Notices
1.7 Location
1.8 Authority of Member in Charge
1.9 Authorized Representatives
1.10 Taxes and Duties

2. Commencement, Completion, Modification and Termination of Contract

2.1 Effectiveness of Contract
2.2 Termination of Contract for Failure to Become Effective
2.3 Commencement of Services
2.4 Expiration of Contract
2.5 Entire Agreement
2.6 Modification
2.7 Force Majeure

2.7.1 Definition
2.7.2 No Breach of Contract
2.7.3 Measures to be Taken
2.7.4 Extension of Time
2.7.5 Payments
2.7.6 Consultation

2.8 Suspension
2.9 Termination

2.9.1 By the Employer
2.9.2 By the Consultants
2.9.3 Cessation of Rights and Obligations
2.9.4 Cessation of Services
2.9.5 Payment upon Termination
2.9.6 Disputes about Events of Termination

3. Obligations of the Consultants

3.1 General

3.1.1 Standard of Performance
3.1.2 Law Governing Services

3.2 Conflict of Interests

3.2.1 Consultants not to Benefit from Commissions, discounts etc.
3.2.2 Consultants and Affiliates not to be otherwise interested in Project
3.2.3 Prohibition of Conflicting Activities

3.3 Confidentiality
3.4 Liability of the Consultants
3.5 Insurance to be taken out by the Consultants
3.6 Accounting, Inspection and Auditing
3.7 Consultants' Actions requiring Employer's prior Approval
3.8 Reporting Obligations
3.9 Documents prepared by the Consultants to be the Property of the Employer
3.10 Equipment and Materials furnished by the Employer

4. Consultants' Personnel

4.1 General
4.2 Description of Personnel
4.3 Approval of Personnel
4.4 Working Hours, Overtime, Leave etc.
4.5 Removal and/or Replacement of Personnel
4.6 Resident Project Manager

5. Obligations of the Employer

5.1 Assistance and Exemptions
5.2 Access to Land
5.3 Change in the Applicable Law
5.4 Services, Facilities and Property of the Employer
5.5 Payment

6. Payment to the Consultants

6.1 Cost Estimates; Ceiling Amount
6.2 Currency of Payment
6.3 Mode of Billing and Payment

7. Responsibility for accuracy of the project document

7.1 General
7.2 Retention money
7.3 Penalty
7.4 Action for deficiency in services

8. Fairness and Good Faith

8.1 Good Faith
8.2 Operation of the Contract

9. SETTLEMENT OF DISPUTES

9.1 Amicable Settlement
9.2 Dispute Settlement

III. SPECIAL CONDITIONS OF CONTRACT

IV. APPENDICES

Appendix A: Terms of reference containing, inter-alia, the Description of the Services and Reporting Requirements

Appendix B: Consultants' Sub consultants, Key Personnel and Sub Professional Personnel, Task assignment, work programme, manning schedule, qualification requirements of key personnel, schedule for submission of various report.

Appendix C: Hours of work for Consultants' Personnel

Appendix D: Duties of the Employer

Appendix E: Cost Estimate

Appendix F: Minutes of Financial/ Contract Negotiations with the Consultant

Appendix G: Copy of letter of invitation

Appendix H: Copy of letter of acceptance

Appendix I: Format for Bank Guarantee for Performance Security

Appendix J : Minutes of the Pre-bid meeting

CONTRACT FOR CONSULTANTS' SERVICES

Consultancy Services for preparation of Detailed Project Report for

Rehabilitation and Upgrading of existing roads under *[insert name of **Group (A/B/C).***

This CONTRACT (hereinafter called the "Contract") is made on the ---------- day of the month of ----------20----, between, on the one hand, **Project Director, CSRSP, ADB Project, Government of Chhattisgarh, Public Works Department** (hereinafter called the "Employer/ Client") and, on the other hand,---------- (hereinafter called the "Consultant").

WHEREAS

(A) the Employer has requested the Consultants to provide certain consulting services as defined in the General Conditions attached to this Contract (hereinafter called the "Services");

(B) the Consultants, having represented to the Employer that they have the required professional skills, personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract (hereinafter called "GCC");

   (b) The following Appendices:

   Appendix A: Instruction to Consultants and Data Sheet.

   Appendix B: Terms of reference containing, inter-alia, the Description of the Services and Reporting Requirements

   Appendix C: Consultants' Key Personnel and Sub Professional Personnel, Task assignment, work programme, manning schedule, qualification requirements of key personnel, schedule for submission of various report.

   Appendix D: Minutes of Financial/ Contract Negotiations with the Consultant, If any.

   Appendix E: Copy of letter of invitation

   Appendix F: Copy of letter of acceptance

   Appendix G: Copy of Bank Guarantee for Performance Security

   Appendix-H: Minutes of the pre-bid meeting

   Appendix I: Financial Proposal.

2. The mutual rights and obligations of the Employer and the Consultants shall be as set forth in the Contract; in particular:

   (a) The Consultants shall carry out the Services in accordance with the provisions of the Contract; and

   (b) Employer shall make payments to the Consultants in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

FOR AND ON BEHALF OF
Government of Chhattisgarh
(Employer)

Project Director
CSRSP, ADB Project
PWD, Raipur (C.G.)

Witness

Signature

Name

Address

FOR AND ON BEHALF OF
(Consultant)

(Authorised Representative)

Witness

Signature

Name

Address

GENERAL CONDITIONS OF CONTRACT

1. GENERAL PROVISIONS

1.1 Definitions

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Law" means the laws and any other instruments having the force of law.

(b) "Contract" means the Contract signed by the Parties, to which these General Conditions of Contract are attached, together with all the documents listed in Clause 1 of such signed Contract;

(c) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GCC 2.1.

(d) "GCC" means these General Conditions of Contract;

(e) "GoCG PWD" means the Government of Chhattisgarh, Public Works Department;

(f) "currency" means the Indian National Rupee;

(g) "Member", in case the Consultants consist of a joint venture of more than one entity, means any of these entities, and "Members" means all of these entities;

(h) "Personnel" means persons hired by the Consultants as approved by EMPLOYER as employees and assigned to the performance of the Services or any part thereof; "foreign Personnel" means such persons who at the time of being so hired had their domicile outside India; and "local Personnel" means such persons who at the time of being so hired had their domicile inside India;

(i) "Party" means the Employer or the Consultants, as the case may be, and Parties means both of them;

(j) "Services" means the work to be performed by the Consultants pursuant to this Contract for the purposes of the Project;

(k) "Third Party" means any person or entity other than the Government, the Employer and the Consultants.

(l) **"SCC"** means the Special Conditions of Contract by which these General Conditions of Contract may be amended or supplemented;

1.2 **Relation between the Parties**

Nothing contained herein shall be construed as establishing a relation of master and servant or of agent and principal as between the Employer and the Consultants. The Consultants, subject to this Contract, have complete charge of Personnel performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

1.3 **Law Governing the Contract**

This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law as prevalent in India.

1.4 **Language**

This Contract has been executed in English, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

1.5 **Heading**

The headings shall not limit, alter or affect the meaning of this Contract.

1.6 **Notices**

1.6.1 Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram or facsimile to such Party at the address as specified in the SCC.

1.6.2 Notice will be deemed to be effective as specified in the SCC.

1.6.3 A party may change its address for notice hereunder by giving the other Party notice of such change at the address mentioned as under

Employer :	**Consultant:**
Project Director, CSRSP, ADB Project, PWD Sirpur Bhawan, Civil Lines, Raipur (C.G.) India.	

1.7 **Location**

The Services shall be performed at such locations as are specified in TOR.

1.8 **Authorized Representatives**

Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Employer or the Consultants may be taken or executed by the authorized representative.

1.9 Taxes and Duties

The Consultants and their personnel shall (i) pay all taxes (including service tax), custom duties, fees, levies, cess and other impositions levied under the laws.

1.10 Insurance

The Consultants (i) shall take out and maintain, at their own cost but on terms and condition approved by the Employer, insurance against the risks, and for the coverage's, as necessary and (ii) at the Employer's request, shall provide evidence to the Employer showing that such insurances have been taken out and maintained and that the current premiums therefore have been fully paid.

2. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

2.1 Effectiveness of Contract

This Contract shall come into force and effect on the date of the Employer's notice to the Consultants instructing the Consultants to begin carrying out the Services.

2.2 Termination of Contract for Failure to Become Effective

If this Contract has not become effective within such time period after the date of the Contract signed by the Parties as shall be specified in the SCC, either Party may, by not less than two (2) months written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

2.3 Commencement of Services

The Consultants shall begin carrying out the Services at the end of such time period after the Effective Date.

2.4 Expiration of Contract

Unless terminated earlier pursuant to Clause GCC 2.9 hereof, this Contract shall expire when services have been completed and all payments have been made at the end of such time period after the Effective Date.

2.5 Entire Agreement

This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

2.6 Modification

(a) Modification of the terms and conditions of this Contract may only be made by written agreement between the Parties. However, each party shall give due consideration to any proposals for modification made by the other Party.

(b) Modification in Scope of Services : In case of addition of deletion of any sub project road of any Group, the Client reserves the right to instruct the Consultant to cease further activities in respect of preparation of DPR. The payments to the Consultant shall be adjusted accordingly.

2.7 Force Majeure

2.7.1 Definition

(a) For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, and which makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by government agencies.

(b) Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Sub consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both (A) take into account at the time of the conclusion of this Contract and (B) avoid or overcome in the carrying out of its obligations hereunder.

(c) Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

2.7.2 No Breach of Contract

The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

2.7.3 Measures to be Taken

(a) A party affected by an event of Force Majeure shall take all reasonable measures to remove such Party's inability to fulfill its obligations hereunder with a minimum of delay.

(b) A party affected by an event of Force Maguire shall notify the other Party of such event as soon as possible, and in any event not later than fourteen (14) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give notice of the restoration of normal conditions as soon as possible.

(c) The Parties shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

2.7.4 **Extension of Time**

Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

2.7.5 **Payments related to force majeure**

Both the parties will have to bear their own cost during the force majeure.

2.7.6 **Consultation**

Not later than thirty (30) days after the Consultants, as the result of an event of Force Majeure, have become unable to perform a material portion of the Services, the Parties shall consult with each other with a view to agreeing on appropriate measures to be taken in the circumstances.

2.8 **Suspension**

The Employer may, by written notice of suspension to the Consultants, suspend all payments to the Consultants hereunder if the Consultants fail to perform any of their obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultants to remedy such failure within a period not exceeding thirty (30) days after receipt by the Consultants of such notice of suspension.

2.9 **Termination**

2.9.1 **By the Employer**

The Employer may, by not less than thirty (30) days' written notice of termination to the Consultants (except in the event listed in paragraph (f) below, for which there shall be a written notice of not less than sixty (60) days), such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause 2.9.1, terminate this Contract:

(a) if the Consultants fail to remedy a failure in the performance of their obligations hereunder, as specified in a notice of suspension pursuant to Clause 2.8 hereinabove, within thirty (30) days of receipt of such notice of suspension or within such further period as the Employer may have subsequently approved in writing;

(b) if the Consultants become (or, if the Consultants consist of more than one entity, if any of their Members) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) if the Consultants fail to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause 8 hereof;

(d) if the Consultants submit to the Employer a statement which has a material effect on the rights, obligations or interests of the Employer and which the Consultants know to be false;

(e) if, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or

(f) if the Employer, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

2.9.2 **By the Consultants**

The Consultants may, by not less than thirty (30) day's written notice to the Employer, such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause 2.9.2, terminate this Contract:

(a) if the Employer fails to pay any money due to the Consultants pursuant to this Contract and not subject to dispute pursuant to Clause 8 hereof within forty-five (45) days after receiving written notice from the Consultants that such payment is overdue;

(b) if the Employer is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultants may have subsequently approved in writing) following the receipt by the Employer of the Consultants' notice specifying such breach;

(c) if, as the result of Force Majeure, the Consultant are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or

(d) if the Employer fails to comply with any final decision reached as a result of arbitration pursuant to Clause 8 hereof.

2.9.3 **Cessation of Rights and Obligations**

Upon termination of this Contract pursuant to Clauses 2.2 or 2.9 hereof, or upon expiration of this Contract pursuant to Clause 2.4 hereof, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause 3.3 hereof, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause 3.6 (ii) hereof, and (iv) any right which a Party may have under the Applicable Law.

2.9.4 **Cessation of Services**

Upon termination of this Contract by notice of either Party to the other pursuant to Clauses 2.9.1 or 2.9.2 hereof, the Consultants shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultants and equipment and materials furnished by the Employer, the Consultants shall proceed as provided, respectively, by Clauses 3.9 or 3.10 hereof.

2.9.5 **Payment upon Termination**

Upon termination of this Contract pursuant to Clauses 2.9.1 or 2.9.2 hereof, the Employer shall make the following payments to the Consultants (after offsetting against these payments any amount that may be due from the Consultant to the Employer):

(a) Remuneration pursuant to Clause 6 hereof for Services satisfactorily performed prior to the effective date of termination.

(b) Reimbursable expenditures pursuant to Clause 6 hereof for expenditures actually incurred prior to the effective date of termination; and

2.9.6 **Disputes about Events of Termination**

If either Party disputes whether an event specified in paragraphs (a) through (e) of Clause 2.9.1 or in Clause 2.9.2 hereof has occurred, such Party may, within forty-five (45) days after receipt of notice of termination from the other Party, refer the matter to arbitration pursuant to Clause 8 hereof, and this Contract shall not be terminated on account of such event except in accordance with the terms of any resulting arbitral award.

3. OBLIGATIONS OF THE CONSULTANTS

3.1 General

3.1.1 **Standard of Performance**

The Consultants shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe and effective equipment, machinery, materials and methods. The Consultants shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Employer, and shall at all times support and safeguard the Employer's legitimate interests in any dealings with Subconsultants or Third Parties.

3.1.2 **Law Governing Services**

The Consultants shall perform the Services in accordance with the Applicable Law and shall take all practicable steps to ensure that any Subconsultants, as well as the Personnel and agents of the Consultants and any Subconsultants, comply with the Applicable Law. The Employer shall advise the Consultants in writing of relevant local customs and the Consultants shall, after such notifications, respect such customs.

3.2 **Conflict of Interests**

3.2.1 **Consultants not to Benefit from Commissions, Discounts, etc.**

The remuneration of the Consultants pursuant to Clause 6 hereof shall constitute the Consultants' sole remuneration in connection with this Contract or the Services and the Consultants shall not accept for their own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or to the Services or in the Discharge of their obligations hereunder, and the Consultants shall use their best efforts to ensure that any Sub-consultants, as well as the Personnel and agents of either of them, similarly shall not receive any such additional remuneration.

3.2.2 **Consultants and Affiliates not to be otherwise interested in Project**

The Consultants agree that, during the term of this Contract and after its termination, the Consultants and any entity affiliated with the Consultants, as well as any Sub-consultant and any entity affiliated with such Sub-consultant, shall be disqualified from providing goods, works or services (other than the Services and any continuation thereof) for any project resulting from or closely related to the Services.

3.2.3 **Prohibition of Conflicting Activities**

Neither the Consultants nor their Sub consultants nor the Personnel of either of them shall engage, either directly or indirectly, in any of the following activities:

(a) during the term of this Contract, any business or professional activities which would conflict with the activities assigned to them under this Contract; or

(b) after the termination of this Contract, such other activities as may be specified by Employer.

3.3 **Confidentiality**

The Consultants, their Sub-consultants and the Personnel of either of them shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relating to the Project, the Services, this Contract or the Employer's business or operations without the prior written consent of the Employer.

3.4 **Liability of the Consultants**

The Consultants' liability under this Contract shall be as provided by the Applicable Law.

3.5 **Accounting, Inspection and Auditing**

The Consultants (i) shall keep accurate and systematic accounts and records in respect of the Services hereunder, in accordance with internationally accepted accounting principles and in such form and detail as will clearly identify all relevant time charges and cost, and the bases thereof (including the bases of the Consultants' costs and charges), and (ii) shall permit the Employer or its designated representative periodically, and up to one year from the expiration or termination of this Contact, to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the Employer.

3.6 **Consultants' Actions requiring Employer's prior Approval**

The Consultants shall obtain the Employer's prior approval in writing before appointing such members of the Personnel as are listed in Enclosure-I ;

3.7 **Reporting Obligations**

The Consultants shall submit to the Employer the reports and documents specified in **Enclosure-II** hereto, in the form, in the numbers and within the time periods set forth in the said Appendix.

3.8 **Documents prepared by the Consultants to be the Property of the Employer**

All plans, drawings, specifications, designs, reports and other documents prepared by the Consultants in performing the Services shall become and remain the property of the Employer, and the Consultants shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Employer, together with a detailed inventory thereof. The Consultants may retain a copy of such documents.

3.9 **Equipment and Materials furnished by the Employer**

Equipment and materials made available to the Consultants by the Employer, or purchased by the Consultants with funds provided by the Employer, shall be the property of the Employer and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultants shall make available to the Employer an inventory of such equipment and materials and shall dispose of such equipment and materials in accordance with the Employer's instructions. While in possession of such equipment and materials, the Consultants, unless otherwise instructed by the Employer in writing, shall insure them in an amount equal to their full replacement value.

4. CONSULTANTS' PERSONNEL

4.1 General

The Consultants shall employ and provide such qualified and experienced Personnel as are required to carry out the Services.

4.2 Description of Personnel

(a) The titles, agreed job descriptions, minimum qualification and estimated periods of minimum engagement of the key professionals is to be adhered.

(b) If required to comply with the provisions of Clause 3.1.1 of this Contract, adjustments with respect to the estimated periods of engagement of Key personnels is to be increased. The consultant will have to take into account the requirement of personals and other relevant infrastructure required for timely completion of the project. Based on assessment of required professional, equipments and other infrastructure the consultant should quote the rates per kilometer (excluding exploratory boring for bridges/fly over/ROBs.) and it shall include all costs / expenses, taxes, duties, cess, etc but exclude service tax as applicable.

(c) The rates for exploratory boring shall be quoted on per meter basis and it shall include all costs / expenses, taxes, duties, cess etc.

(d) If additional work is required beyond the scope of the Services specified in TOR, the remuneration shall be fixed on mutually agreed terms.

4.3 Approval of Personnel

In respect of Key Personnel, which the Consultants propose to use in the carrying out of the Services, the Consultants shall submit to the Employer for review and approval a copy of their biographical data. If the Empl**o**yer does not object in writing (stating the reasons for the objection) within twenty-one (21) calendar days from the date of receipt of such biographical data, such Key Personnel shall be deemed to have been approved by the Employer.

4.4 Working Hours, Overtime, Leave, etc.

Working hours and holidays for Key Professional shall be as per labour laws.

4.5 Removal and/or Replacement of Personnel

(a) Once approved by the Employer no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Consultants, it becomes necessary to replace any of the key Personnel, the Consultants shall forthwith provide as a replacement a person of equivalent or better qualifications.

(b) If the Employer (i) finds that any of the key Personnel has committed serious misconduct or has been charged with having committed a criminal action, or (ii) has reasonable cause to be dissatisfied with the performance of any of the key Personnel, then the Consultants shall, at the Employer's written request specifying the grounds therefore, forthwith provide as a replacement of the person with qualifications and experience acceptable to the Employer. Any such replacement shall be at risk & cost of the consultant.

4.6 **Resident Project Manager**

The Consultants shall ensure that at all times during the Consultants' performance of the Services a resident project manager, acceptable to the Employer, shall be in charge of the performance of such Services.

5. **OBLIGATION OF THE EMPLOYER**

5.1 Assistance and Exemptions

The Employer shall use its best efforts to ensure that the EMPLOYER shall:

(a) assist the Consultants, Sub consultants and Personnel in arranging work permits and such other documents as shall be necessary to enable the Consultants, Sub consultants or Personnel to perform the Services;

(b) assist for the Personnel and, if appropriate, their eligible dependents to be provided promptly with all supporting papers for necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in India;

(c) facilitate clearance through customs of any property required for the Services;

(d) issue to officials, agents and representatives of the agency all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services;

5.2 **Access to Land**

The Employer warrants that the Consultants shall have, free of charge, unimpeded access to all land in respect of which access is required for the performance of the Services. The Employer will be responsible for any damage to such land or any property thereon resulting from such access and will indemnify the Consultants and each of the Personnel in respect of liability for any such damage, unless such damage is caused by the default or negligence of the Consultants or any Sub consultants or the Personnel of either of them.

5.3 **Change in the Applicable Law**

The consultant shall bear all financial implication, if, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties.

5.4 **Services, Facilities and Property of the Employer**

The Employer shall make available to the Consultants and the Personnel, for the purposes of the Services and free of any charge, the services and facilities as mentioned in clause 5.1 and 5.2.

5.5 **Payment**

In consideration of the Services performed by the Consultants under this Contract, the Employer shall make to the Consultants such payments and in such manner as is provided by Clause 6 of this Contract.

6. **PAYMENT TO THE CONSULTANTS**

6.1 The payment shall be made as per clause 10.1 mentioned in TOR.

6.2 The payment shall be made through A/c payee cheque, payable at Raipur, in Indian Rupees.

6.3 **Mode of Billing and Payment**

Billing and payments in respect of the Services shall be made as follows:-

(a) Payment Schedule

The Consultant will be paid stage-wise as a percentage of the contract value excluding boring charges as per the schedule given below

S.No.	Description	Payment
1	On submission of Stage-I Report	10%
2	On Submission of Stage-2 reports	20%
3	On Submission of Stage-3 report	30%
4	On finalisation of Stage-3 reports based on comments of the Employer, and submission of Stage-4 Report and other documents	20%
5	On acceptance of Stage-4 documents or finalization of Addenda for the bidders, whichever is earlier	15%
6	On Project clearances/ NOC from concerned state/central departments/ agencies.	5%
	Total	100%

Note : For exploratory boring for bridges/fly over/ROBs the payment shall be regulated as per the actual quantum of work done on quoted rate.

(b) No payment shall become eligible for the next stage till the consultant completes to the satisfaction of the Employer the work pertaining to the preceding stage.

(c) The Employer shall cause the payment of the Consultants in Para 6.3 (a) above as given in schedule of payment within thirty (30) days after the receipt by the Employer of bills.

(d) The final payment under this Clause shall be made only after the final report and a final statement, identified as such, shall have been submitted by the Consultants and approved as satisfactory by the Employer. The Services shall be deemed completed and finally accepted by the Employer and the final report and final statement shall be deemed approved by the Employer as satisfactory ninety (90) calendar days after receipt of the final report and final statement by the Employer unless the Employer, within such ninety (90) day period, gives written notice to the Consultants specifying in detail deficiencies in the Services, the final report or final statement. The Consultants shall thereupon promptly make any necessary corrections, and upon completion of such corrections, the foregoing process shall be repeated. Any amount which the Employer has paid or caused to be paid in accordance with this Clause in excess of the amounts actually payable in accordance with the provisions of this Contract shall be reimbursed by the Consultants to the Employer within thirty (30) days after receipt by the Consultants of notice thereof. Any such claim by the Employer for reimbursement must be made within twelve (12) calendar months after receipt by the Employer of a final report and a final statement approved by the Employer in accordance with the above.

7. Responsibility for Accuracy of Project Documents

7.1 General

7.1.1 The Consultant shall be responsible for accuracy of the data collected, by him directly or procured from other agencies/authorities, the designs, drawings, estimates and all other details prepared by him as part of these services. He shall indemnify the Authority against any inaccuracy in the work which might surface during implementation of the project. The Consultant will also be responsible for correcting, at his own cost and risk, the drawings including any re-survey / investigations and correcting layout etc. if required during the execution of the Services.

7.1.2 The Consultant shall be fully responsible for the accuracy of design and drawings of the bridges and structures. All the designs and drawings for bridges and structures including all their components shall be fully checked by a Senior Engineer after completion of the designs. All drawings for bridges and structures shall be duly signed by the (a) Designer, (b) Senior Checking Engineer, and (c) Senior Bridge / Structure Expert. The designs and drawings not signed by the three persons mentioned above shall not be accepted. The Consultant shall indemnify the Employer against any inaccuracy / deficiency in the designs and drawings of the bridges and structures noticed during the construction and even thereafter and the Employer shall bear no responsibility for the accuracy of the designs and drawings submitted by the Consultants.

7.1.3 The survey control points established by the Consultant shall be protected by the Consultants till the completion of the Consultancy Services.

7.2 Retention Money

An amount equivalent to 10% of the contract value shall be retained from each IPCs for accuracy of design and quantities submitted and the same will be released after the completion of civil contract works. The Retention Money so deducted from the IPCs of the Consultant may be converted into an unconditional irrevocable Bank Guarantee, after 3 years from approval of DPR, in the format attached as Annexure-II for the equal amount for the time prescribed above.

7.3 Penalty

7.3.1 Penalty for delay

In case of delay in completion of services, a penalty equal to 0.05% of the contract price every day for which the work remains incomplete subject to a maximum 5% of the contract value will be imposed and shall be recovered from payments due/performance security. However in case of delay due to reasons beyond the control of the consultant, suitable extension of time will be granted as provided in clause 2.7.4 of GCC. The decision of the Employer / Client in this matter shall be final, conclusive and binding on both the parties and shall not be open for a revision.

7.3.2 Penalty for Error/Variation

If variation in any of the main quantities of work like earth work including sub grade, GSB, WMM, Bituminous works (BM/DBM/AC/BC) and total quantity of concrete in bridge works or overall project cost, found during execution is more than +/- 15% individual for each Sub Project, the penalty upto 5% of the calculated contract value for that Sub Project, shall be imposed. The decision of the Employer / Client in this matter shall be final, conclusive and binding on both the parties and shall not be open for a revision. For this purpose retention money equivalent to 5% of the contract value will be forfeited. This shall exclude any additional/deletion of items/works ordered during the execution.

7.4 ACTION FOR DEFICIENCY IN SERVICES

7.4.1 Consultants liability towards the Employer

Consultant shall be liable to indemnify the Employer for any direct loss or damage accrued or likely to accrue due to deficiency in service rendered by him.

7.4.2 Warning / Debarring

In addition to the penalty as mentioned in para 7.3, warning may be issued to the erring consultants for minor deficiencies. In the case of major deficiencies in the Detailed Project Report involving time and cost overrun and adverse effect on reputation of EMPLOYER, other penal action including debarring for certain period may also be initiated as per policy of EMPLOYER.

8. FAIRNESS AND GOOD FAITH

8.1 Good Faith

The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

8.2 Operation of the Contract

The Parties recognize that it is impractical in this Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with Clause 9 hereof.

9. SETTLEMENT OF DISPUTES

9.1 Amicable Settlement

The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or the interpretation thereof.

9.2 Dispute Settlement

Any dispute between the Parties arising out of or in connection with the contract which cannot be settled amicably within thirty (30) days after receipt by one Party of the other Party's request for such amicable settlement, shall be finally settled by Chhattisgarh Arbitration Tribunal, Raipur under Chhattisgarh Madhyastham Adhikaran Adhiniyam 1983.

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SPECIAL CONDITIONS OF CONTRACT

i) Consultant has to open office at concerned Project Manager, Head Quarter i.e. Raipur / Rajnandgaon / Bilaspur during preparation of DPR with guidance of concerned Project Manager, to coordinate work with GoCG PWD. Consultant shall ensure that all key personnel as per TOR are made available before Project Manager during weekly/fortnightly review meetings of progress and technical discussions for preparation of DPR.

ii) Any change in mode i.e. BOT, Toll+Annuity, Annuity scheme of any of the road, if required, shall be done by consultant. No additional payment shall be made to the consultant on this account.

iii) It is mandatory in initial stage to the consultant to verify if any road/stretch of road already taken by CGPWD / PMGSY or any other scheme of Government of Chhattisgarh. Such road/stretch of road is to be identified prior to start of preparation of DPR, so that these roads/stretches of roads may be deleted from scope of work. No payment of such roads/stretches shall be made to the consultant, if found approved in any scheme but where DPR is prepared by the DPR Consultant.

iv) It is necessary to submit detailed survey drawings, hydraulic calculations and structural design of all structures including minor bridges and major bridges and their detailed working drawings along with draft DPR. Working drawing of all components of minor bridges and major bridges to be submitted by the consultant after the approval of GAD of each structure.

v) The Consultant has to prepare complete mobility plan for the State of Chhattisgarh incorporating all the roads proposed for preparation of DPR in coordination with other consultants deployed by so that the roads may be prioritized as per requirement of mobility plan considering their importance.

vi) The suggestions, if any, made by the Consultant appointed by the ADB should be incorporated by the DPR Consultant at any stage of preparation/after submission of DPR.

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APPENDIX- II

FORM OF BANK GUARANTEE

(FOR RETENTION MONEY)

Ref: _____ Bank Guarantee: _____

Date: _____

To,

The Project Director,
CSRSP, ADB Project,
GoCGPWD, Sirpur Bhawan, Civil Line
Raipur (C.G.) 492001.

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Dear Sir,

In consideration of **"Government of Chhattisgarh, Public Works Department"** (hereinafter referred as the "Employer", which expression shall, unless repugnant to the context or meaning thereof include it successors, administrators and assigns) having awarded to M/s. _____ (hereinafter referred to as the "Consultant" which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a contract by issue of Employer's Contract Agreement No. _____ dated _____ and the same having been unequivocally accepted by the Consultant, resulting in a Contract valued at

_____ for **(name of the project) _____ (**hereinafter called the "Contract")

and the Consultant having agreed to furnish a Bank Guarantee to the Employer against the release of retention money as stipulated by the Employer in the said contract for accuracy of the services performed amounting to Rs.

_____ (in words and figures).

We _____ (Name of the Bank) having its Head Office at _____ (hereinafter referred to as the Bank), which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators executors and assigns) do hereby guarantee and undertake to pay the Employer immediately on demand any or, all amount payable by the Consultant to the extent of _____ as aforesaid at any time upto _____ @ _____ without any demur, reservation, contest, recourse or protest and/or without any reference to the consultant. Any such demand made by the Employer on the Bank shall be conclusive and binding notwithstanding any difference between the Employer and the Consultant or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We agree that the Guarantee herein contained shall be irrevocable and shall continue to be enforceable till the Employer discharges this guarantee.

The Employer shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee, from time to time to vary it or to extend the time for performance of the contract by the Consultant. The Employer shall have the fullest liberty without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Employer and to exercise the same at any time in any manner, and either to enforce or to forebear to enforce any covenants, contained or implied, in the Contract between the Employer and the Consultant any other course or remedy or security available to the Employer. The bank shall not be relieved of its obligations under these presents by any exercise by the Employer of

its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would but for this provision have the effect of relieving the Bank.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Consultant and notwithstanding any security or other guarantee that the Employer may have in relation to the Consultant's liabilities.

Notwithstanding anything contained herein above our liability under this guarantee is limited to _____ and it shall remain in force upto and including _____ @ _____ and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s. _____ on whose behalf this guarantee has been given.

Dated this _____ day of _____ 20_____at _____

WITNESS

_____ _____

(signature) (signature)

_____ _____

(Name) (Name)

_____

_____ _____

(Official Address) Designation (with Bank stamp)
Attorney as per Power of

Attorney No. _____

Dated _____

Strike out whichever is not applicable.

@ The date will be twenty four months after the date of commencement of services. However its validity should be extendable if requested by .

Note 1: The stamp papers of appropriate value shall be purchased in the name of bank that issues the "Bank Guarantee".

Note 2: The Bank Guarantee will be accepted which is issued by State Bank of India or its subsidiaries or any Indian Nationalised Bank/ Scheduled Bank.

Appendix -III

Performance Security

..... *Bank's Name, and Address of Issuing Branch or Office* .....

Beneficiary: ..... *Name and Address of Employer* .....

Date: .....

Performance Guarantee No.: .....

We have been informed that a Letter of Acceptance has been issued to . . . . . *name of the Consultant*. . . . . (hereinafter called "the Consultant") vide No. . . . . *reference number of the LoA*. . . .
. dated . . . . . ., for Preparation of Detailed Project Report for …….. (Group…….) (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Consultant, we . . . . . *name of the Bank*. . . . . hereby irrevocably and unconditionally undertake to pay you any sum or sums not exceeding in total an amount of . . . . .
name of the currency and amount in figures[1]. . . . . (. . . . . *amount in words*. . . . .) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultant is in breach of its obligation(s) under the Contract, without your needing to prove or to
show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the . . . . . Day of . . . . . , ... [2], and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458, except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.

. . . . . .
Seal of Bank and Signature(s)

All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.

1. *The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract and denominated either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Employer.*

2 *Insert the date twenty-eight days after the expected completion date. "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed six months, in response to the Employer's written request for such extension, such request to be presented to us, the Guarantor, before the expiry of this Guarantee."*