OFFICE OF THE ENGINEER-IN-CHIEF
PUBLIC WORKS DEPARTMENT
RAIPUR (C.G.)

N.I.T 49/3/TC/15-16 Raipur Dated: 22/07/2015

AMMENDMENT No.3

For the sake of convenience of bidders, it is brought to their knowledge that only pages 5, 6, 8, 9,10,16,22 ,23 ,24,26,35, 39,60,63, 64, 65, 66, 69, 70, 80,83, 84,86,93, 94, 96, 115, 121, 134, 135, 136, 137, 138, 139, 140, 141, 142, 145, 146, 147, 165, 166,169, 170, have been amended. Rest of the contents are same .Thus the complete document (amended)is as follows:-

PUBLIC WORKS DEPARTMENT

REQUEST FOR PROPOSAL (RFP) OF CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT & PROJECT MANAGEMENT OF TWO OR MORE LANE ROAD PROJECTS IN THE STATE OF CHHATTISGARH

Engineer in Chief
Public Works Department Chhattisgarh
Sirpur Bhawan Civil Lines, Behind All India Radio Raipur

DISCLAIMER

The information contained in this Request for Proposals document ("**RFP**") or subsequently provided to Applicants, whether verbally or in documentary or any other form by or on behalf of the Authority or any of its employees or advisers, is provided to Applicants on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an agreement and is neither an offer nor invitation by the Authority to the prospective Applicants or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in the formulation of their Proposals pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by the Authority in relation to the Consultancy. Such assumptions, assessments and statements do not purport to contain all the information that each Applicant may require. This RFP may not be appropriate for all persons, and it is not possible for the Authority, its employees or advisers to consider the objectives, technical expertise and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in this RFP, may not be complete, accurate, adequate or correct. Each Applicant should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Applicants is on a wide range of matters, some of which depends upon interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Authority accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on the law expressed herein.

The Authority, its employees and advisers make no representation or warranty and shall have no liability to any person including any Applicant under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way in this Selection Process.

The Authority also accepts no liability of any nature whether resulting from negligence or otherwise, howsoever caused, arising from reliance of any Applicant upon the statements contained in this RFP.

The Authority may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumption contained in this RFP.

The issue of this RFP does not imply that the Authority is bound to select an Applicant or to appoint the Selected Applicant, as the case may be, for the Consultancy and the Authority reserves the right to reject all or any of the Proposals without assigning any reasons whatsoever.

The Applicant shall bear all its costs associated with or relating to the preparation and submission of its Proposal including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Authority or any other costs incurred in connection with or relating to its Proposal. All such costs and expenses will remain with the Applicant and the Authority shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by an Applicant in preparation or submission of the Proposal, regardless of the conduct or outcome of the Selection Process.

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Government of Chhattisgarh, Public Works Department

Sirpur Bhawan Campus,Behind Akashwani,Civil Lines, Raipur (C.G.) 492001
Website : https://pwd.cgeprocurement.gov.in, email ID : einc.pwd.cg@nic.in , 0771 – 2425035

REQUEST FOR PROPOSAL (RFP)

N.I.T 49/TC/15-16 Raipur Dated: 27/05/2015

Public Works Department is responsible for the work of up gradation and construction of roads in the state of Chhattisgarh of approximate length kms, distributed in 11 packages, having approximate lengths 319 kms.

Accordingly the **PWD CG** invites proposals from the interested Firms/Companies/organizations for providing consultancy for Preparation of DPR, including Project Management Consultancy for two or more laning of above stretches of roads. Interested Bidders should provide information, demonstrating that they have the required qualification and relevant experience to perform the services. Detailed information docket may be downloaded from official Departmental website **https://pwd.cgeprocurement .gov.in** or may be obtained from the office of the undersigned during office hours. RFP along with the RFP Cost of Rs.10000.00/- (Rs. Ten thousand only) in form of Non-refundable Demand Draft in favor of **Executive Engineer PWD Raipur Division no 3 Raipur** of any Nationalized/Scheduled bank, payable at Raipur, Chhattisgarh, must be delivered through Speed/ Registered(A.D.) post on the address below to reach on or before 04/08/2015 by 1500 Hrs. IST.

The following Schedule is to be followed for the assignment:

1	RFP document sale starts/ available on departmental Portal	27.05.15
2	Deadline for Purchasing RFP Document from office or downloading from the website	11.08.2015
	Last date of Submission of Queries	30.06.2015
	Pre Proposal meeting in PWD CG, HQ	27.07.2015
	PWD CG's response to the Queries	28.07.2015
	Deadline for submission of Proposals	18.08.2015 15:00hours
	Opening of Technical proposals	18.08.2015 16:00hours
	Pre-Qualification of Applicants	25.08.2015.

Modifications/Amendments/Corrigendum, if any shall not be advertised in the news papers but, shall be published in the aforesaid web site only. The undersigned reserves the right to change the terms and conditions, select/reject any application without assigning any reason thereof.

Engineer in Chief
Public Works Department
Chhattisgarh Raipur

REQUEST FOR PROPOSAL (RFP)

SECTION 1: INFORMATION TO CONSULTANTS

GENERAL:-

1. The **Public Works Department** invites proposals for engaging Consultancy Services for Project Management including preparation of Detailed Project Reports for two lane or more than two lane road projects in the state of Chhattisgarh. The abstract of Packages is detailed below:

Table – 1

Abstract of Packages

Package No.	No of Roads	Length in km
1	**2**	**3**
1	06	143.00
2	13	103.00
3	11	67.60
total	**30**	**313.60**

Note:- Package wise details of roads and their lengths are annexed as Annexure 'A'

2. Selection of Technical Consultant for preparation of Detailed Project Reports of two lane or more than two lane roads and Project Management Consultant for the supervision of construction of the projects in the state of Chhattisgarh shall be as per the procedures set forth in this RFP.

3. The proposal shall be submitted in English Language and all correspondences would be in the same language.

4. The ~~**Annuity**~~ projects basically constitute up-gradation involving construction of 2-lane or more than two lane road projects, including Bridges; widening and rehabilitation of bridges and culverts; construction of high embankment/elevated structures/ROBs wayside amenities etc. along the existing highways including provision of realignment and bypasses. The proposed construction works will involve use of modern equipment and construction practices/techniques.

5. **PWD CG** intends to appoint a Technical Consultant to prepare Detailed Project Report (DPR) and to work as Project Management Consultant (PMC) for implementation of road projects on Annuity basis.

   The DPR Consultant is broadly required to: (i) Surveys and investigations (ii) Detail pavement and overlay designs after conducting traffic census and axle load surveys (iii) design of bridges and cross drainage structures (iv) quantities of various items and cost estimates preparation of roads and structures (vi) Bid preparation for international and local competitive bidding.

   The Project Management Consultant is broadly required to: (i) review activities associated with design, design review during construction, required quality assurance and quality control of the project on behalf of **PWD CG** so as to ensure compliance of the requirements of the provisions of Concession Agreement (ii) report to **PWD CG** on the Financial, Technical and physical progress of implementation aspects of the project, (iii) assist **PWD CG** in arriving at an amicable settlement of disputes, if any.

6. The interested consultancy firms may obtain the RFP from **the office of EinC PWD CG** from address given below w.e.f. 27.05.2015 on all working days within 1100 hrs and 1700 hrs. IST, by payment of non-refundable Demand Draft of any Nationalized/Scheduled bank amounting to Rs. 10,000/-(Rupees Ten Thousand only) drawn in favor of **"Executive Engineer PWD division no 3 Raipur"** payable at Raipur. The RFP document is also available on **department website (https://pwd.cgeprocurement.gov.in).**The Consultant who downloads the RFP document from the website will be required to submit the non-refundable fee of Rs. 10,000/-(Rupees Ten Thousand only) in the form of Demand Draft of any Nationalized/Scheduled bank drawn in favor of "**Executive Engineer PWD division no 3 Raipur** " payable at Raipur, along with the Bid proposal.

7. The proposal should be submitted by consultancy firms in two parts in two separate envelopes, package wise duly marked and put together in one single outer envelope. The two parts of the proposal are Part 1: Technical Proposal for prequalification of the applicants and Part 2: Financial Proposal. For a given Package, Stage -1 of the Evaluation shall consider the evaluation of the Technical Proposal (i.e.Part-1) for the purpose of pre-qualification. The firms scoring the qualifying mark (minimum 75%) as mentioned in RFP shall be considered pre-qualified for further evaluation. Under stage 2, the financial

proposal of such qualified firms as selected above shall be opened and evaluated. The final selection of the firms shall be done on the basis of "**Least cost to PWD CG."**

8. The Applicant shall furnish as part of its proposal a Bid Security of Rs 5.00 Lacs (Rupees Five Lacs only) irrespective of number of packages applied for, in the form of Demand draft issued by any Nationalized/Scheduled bank in India in favor of the **Executive Engineer PWD division no 3 Raipur**, payable at Raipur, C.G. It will be valid for a period of 120 days from the last date of the submission of proposal. The bid Security is returnable not later than 60 days from the opening of the financial proposals, except in case of two highest ranked applicants. Bid Security of the selected applicants and the second ranked applicant shall be returned, upon the selected applicant signing the agreement. The applicant can bid for more than one package. Those applicants who are applying for more than one package shall be required to submit Bid security of I.N.R. 5.00 (Five) lacs only along with application of one of the packages applied for, in rest of the packages the photocopies of the same shall be furnished.

9. The total time period for the assignment will be:

1. For Preparation DPR and Bid Documents: **4** months
2. For Supervision as PMC: 24 months

The date of commencement of services for supervision may be extended, depending upon appointment of the Concessionaire, without any liability on the part of **PWD CG**.

10. **Performance Security-**

The successful consulting firm shall have to submit a Bank Guarantee (BG) for an amount of 5.00% (Five Percent) of the Contract Value, within 15 days of issue of LOA. The BG shall be valid for a period of 34 months. If the period of services/contract agreement is increased, than the validity period of BG shall accordingly be extended. The BG shall be in the format specified in Appendix 'J' of draft contract agreement and furnished from a Nationalized/Scheduled Bank approved by RBI, having a net worth of not less than 500 crore as per latest Annual Report of the Bank.

11. **Eligibility criteria for sole applicant firm**

Consulting firms meeting the following criteria are only eligible for applying for this assignment. Firms not meeting these criteria need not apply.

(i) The minimum experience of the firm for preparation of DPR and Project Supervision as Project Management Consultant/Independent Engineer/Authority's Engineer shall be 5 years.

(ii) Technical/Financial Experience:

Experience of the firm in last 5 years		
For Preparation of DPR of Road Projects	For Project Supervision for Road Projects	Annual Turnover

The firm should have experience of preparation of detailed Project Report of 2 or more lane road projects of minimum aggregate length 100 kms.	The firm should have experience of Project Supervision as Project Management Consultant (PMC)/Independent Engineer (IE)/Authority's Engineer (AE) for 2 or more lane road projects of minimum aggregate length 100 kms..	Annual turnover (updated average of last 5 years) of the firm from consultancy business should be minimum Rs.05.00 (five) Crores.

Note :
1. The experience of Private contractors/concessionaire shall not be considered.
2. For weightage of experience in any past Consultancy assignment experience, certificate from the client shall be accepted. Annual turnover duly certified by Chartered Accountant shall be accepted. In case of non-availability of such documents no weightage of turnover/experience will be accepted.
3. Those projects which are substantially completed (90% of the contract value) shall also be considered for evaluation. No experience shall be considered without proof of experience by the client.
4. The weightage given for experience of a firm would depend on the role of the firm in the respective assignments. The firms experience would get full credit if it was the sole firm in the respective assignment. Experience weightage for firms joining lead partner/JV partner shall be considered in the same proportion as payment has been received by the firm towards consultancy work in the project .
5. **JV or Consortium of firms is not allowed**.

12. Following enhancement factor will be used for the cost of services provided and for the turnover from consultancy business to a common base value for works completed in India:

Year of completion of services / turnover	Enhancement factor
Financial year in which RFP invited	1.00
One year prior to RFP	1.10
Two year prior to RFP	1.21
Three year prior to RFP	1.33
Four year prior to RFP	1.46
Five year prior to RFP	1.61

Applicant should indicate actual figures of costs and amount for the works executed by them without accounting for the above mentioned factors.

In case the financial figures and values of services provided are in foreign currency, the above enhancement factors will not be applied. Instead, current market exchange

rate (State Bank of India BC Selling rate as on last date of submission of the bid) will be applied for the purpose of conversion of amount in foreign currency into Indian Rupees.

13. Consultants who have been debarred by **PWD CG/**Govt. of CG/Other States Govt./ central Govt. agency or its subsidiaries and the debarment is in force as on date of application, need not apply as their RFP proposal will not be entertained.

14. **The PWD CG** will not be responsible for any delay, loss or non-receipt of RFP document sent by Speed/Registered post. Further, **It** shall not be responsible for any delay in receiving the Proposal and reserves the right to accept/reject any or all applications without assigning any reason thereof.

15. The two parts of the Proposal (Technical proposal and Financial proposal) must be submitted in a hard bound form with all pages numbered serially, along with an index of submission. (Hard bound implies binding between two covers through stitching or otherwise whereby it may not be possible to replace any paper without disturbing the documents). Spiral bound form, loose form, etc. will not be accepted. All figures quoted in the financial proposal should be covered with a transparent adhesive tape. In the event, any of the instructions mentioned herein have not been adhered to, **PWD CG** may reject the Proposal.

16. RFP submission must be received not later than 1500 hrs on 18/08/2015, in the manner specified in the RFP document at the address given below:

Engineer in Chief
Public Works Department
Sirpur Bhawan Civil Lines,
Behind All India Radio
Raipur (C.G.) 492001
Website : https://pwd.cgeprocurement.gov.in
email ID : einc.pwd.cg@nic.in
Ph : 0771 – 2425035,
Fax : 0771-2425913

Annexure - A

Package Wise Details of Roads

S. No	Package No	Name of District under Packages	Name of Road	Length in Km.
(I) Bypass Roads & Four Lane / Six Lane Road				
1	Package No. 01	Kondagaon	Kondagaon bypass road	8.00
		Bastar	Jagdalpur bypass road no 2	24.00
		Balod	Balod bypass road	11.00
		DURG	Durg Gunderdehi Road 4Lane	12.00
1		Durg-Raipur	Construction of Abhanpur Patan Utai Maroda Nehru Nagar Bhilai Road (Construction of Road and Fly over)	56.00
		Rajnandgaon	Upgradation of Motipur SukuldaihanMusra Belgaon Accholi Dongargarh Road in Rajnandgaon District	32.00
			Total Length of Package	**143.0**
2	Package No.02	Bilaspur	Kota Bypass Road	5.00
		Kawardha	Pandariya Bypass Road	5.00
		Mungeli	Lormi bypass road	11.00
		Janjgir Champa	Baloda (Sipat Baloda)bypass Road	6.60
		Bilaspur	Masturi Sipat bypass Road	10
		Bilaspur	Pendra Bypass Road	14.00
		Bilaspur	Sarbhara bypass road	3.50
		Janjgir Champa	Shivrinarayan Bypass Road	8.00
		Janjgir Champa	Akaltara Bypass Road	2.50
		Bilaspur	Bilaspur Ratanpur Road 4 lane	10.00
		Sarguja	Raising of Ambikapur Ring Road (Existing 4Lane)	10.80
		Balrampur	Balrampur Bypass Road	10.00
		Balrampur	Wardrafnagar bypass road	7.00
			Total Total Length of Package	**103.0 0**

3	Package No.3	- Raipur	Shadani Darbar Raipur to Naya Raipur Junction Road 6Lane	6.00
		Raipur	Gudyari Gondwara Road 4 lane	3.00
		Raipur	Ramnagar Kota Road 4 lane	3.20
		Raipur	Tatibandh Hirapur Road 4 Lane	2.00
		Raipur	V.I.P Road 6 Lane	6.40
		Raipur	Upgradation of City Kotwali to Pachpedi Naka Road in Raipur District	03.00
		Durg	Nandini town bypass road	10.00
		Raipur	Tilda - Neora bypass road	8.00
		Baloda Bazar - Bhatapara	Bhatapara bypass road	10.00
		Durg	Ahiwara bypass road	6.00
		Bemetara	Berla bypass road	10.00
			Total Length of Package	**67.60**

2. **Pre Proposal meeting** will be there on 27-07-2015 at 11.30 Hrs. in the office of E-in-C P.W.D Sirpur Bhawan Raipur (C.G.).

SECTION 2 - LETTER OF INVITATION TO CONSULTANTS

1 INTRODUCTION

1.1 Bids are invited from consulting firms willing to act as technical Consultants for preparation of DPR and PMC for supervision of road projects to submit a proposal for providing consulting services required for the assignment named in the attached Letter of Invitation. **The** proposal could form the basis for future negotiations and ultimately a contract between **the** firm and the **PWD CG.**

1.2 A brief description of the assignment and its objectives are given in the Terms of Reference (TOR) Part 1 and 2.

1.3 The assignment shall be implemented in various stages such as Preparation of, DPR, and Bid documents, Concession agreement with schedules design and Construction supervision etc.

1.4 This RFP is neither an agreement nor an offer by the **PWD CG** to the prospective Applicants or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in the formulation of their Proposals pursuant to this RFP. This RFP includes statements and assumptions, which reflect various assessments, arrived at by the **PWD CG** in relation to the Consultancy. Such assessments and statements do not purport to contain all the information that each Applicant may require. The information contained in this RFP, may not be complete, accurate, adequate or correct. Each Applicant should, therefore, conduct its own investigations about the assignment and the local conditions before submitting the proposal by paying a visit to the **office of EinC PWD CG** and the project site, sending written queries to the client, before the date and time specified in the Data Sheet.

1.5 Please note that (i) the costs of preparing the proposal and negotiating for the contract, including a visit to site, are not reimbursable as a direct cost of assignment and (ii) **PWD CG** is not bound to accept any of the proposals received by it and reserves the right to annul the selection process at any time prior to contract award, without thereby incurring any liability to the Consultants.

1.6 Consultants have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of **PWD CG**, or they may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract and/or any other action as deemed fit by the **PWD CG** at any stage.

1.7 The Consultant shall ensure proper coordination with **PWD CG** officials on the matters related to revenue and forest.

1.8 The land plans shall be submitted by Consultant as per Clause 4.12.27 of terms of reference, Part-I.

1.9 The consultant shall interact with **PWD CG/**proof checking consultants engaged by **PWD CG** for the review and concurrence of the drawings submitted by the concessionaire.

1.10 The consultant shall deploy modern project management tools.

1.11 The consultant shall ensure that within 30 days they shall provide screening report for all the reports earmarking the 40% road length having least social and environmental issues for the submission of the DPR within 5 months from the commencement of services.

1.12 It is the **PWD CG's** policy that the consultants observe the highest standard of ethics during the selection and execution of such contracts. In pursuance of this policy, the **PWD CG:**

(a) Defines, for the purpose of this paragraph, the terms set forth below as follows:

(i) "Corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the selection process or in contract execution;

(ii) "Fraudulent practice" means a misrepresentation or omission of facts in order to influence a selection process or the execution of a contract;

(iii) "Collusive practices" means a scheme or arrangement between two or more consultants with or without the knowledge of the PWD CG desiged to establish prices at artificial, non-competitive levels.

(iv) "Coercive practices" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a procurement process, or affect the execution of a contract.

(b) will reject a proposal for award if it determines that the Consultant recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the contract in question;

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

(d) will have the right to require that a provision be included requiring consultants to permit the **PWD CG** to inspect their accounts and records relating to the performance of the contract and to have them audited by representatives of **PWD CG or Accountant General**.

1.13 Consultants, their Sub-Consultants shall be under a Declaration of ineligibility for corrupt and fraudulent practices. Furthermore, the Consultants shall be aware of the provisions on fraud and corruption as stated in the Clause 8 of Section 1. They shall also furnish pre contract integrity pact in the prescribed form as mentioned in the Clause 9.

1.14 Consultants shall furnish information on commissions and gratuities, if any, paid to be paid to agents relating to this proposal and during execution of the assignment if the Consultant is awarded the Contract, in the Financial Proposal.

1.15 Proposals must remain valid for 120 days after the last date of submission .During this period, Consultants shall maintain the availability of Professional staff. The **PWD CG** will make its best effort to complete negotiations within this period. Should the need arise; however, the **PWD CG** may request Consultants to extend the validity period of their proposals.

Consultants who agree to such extension shall confirm that they maintain the availability of the Professional staff nominated in the Proposal, or in Confirmation of extension of validity of the Proposal, Consultants could submit new staff in replacement, which would be considered in the final evaluation for contract Award. Consultants who do not agree have the right to refuse to extend the validity of their Proposals.

1.16 The Applicant shall enclose with its Proposal, certificate(s) from its Statutory Auditors stating its total revenues from professional fees during each of the 5(five) financial years preceding the PDD and the fee received in respect of each of the Eligible Assignments specified in the Proposal. In the event that the Applicant does not have a statutory auditor, it shall provide the requisite certificate(s) from the firm of Chartered Accountants that ordinarily audits the annual accounts of the Applicant.

1.17 The Applicant should submit a Power of Attorney as per the format at Appendix-K of draft contract Agreement; provided, however, that such Power of Attorney would not be required if the Application is signed by a partner of the Applicant, in case the Applicant is a partnership firm or limited liability partnership.

1.18 Any entity which has been barred by the Central Government, any State Government, a statutory authority or a public sector undertaking, as the case may be, from participating in any project, and the bar subsists as on the date of Proposal, would not be eligible to submit a Proposal either by itself or through its Associate.

1.19 An Applicant or its Associate should have, during the last five years, neither failed to perform on any agreement, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Applicant or its Associate, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or its Associate.

1.20 While submitting a Proposal, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

1.21 Conflict of Interest

1.21.1 An Applicant shall not have a conflict of interest that may affect the Selection Process or the Consultancy (the "Conflict of Interest"). Any Applicant found to have a Conflict of Interest shall be disqualified. In the event of disqualification, the **PWD CG** shall forfeit and appropriate the Bid Security as mutually agreed genuine pre-estimated compensation and damages payable to the **PWD CG** for, inter alia, the time, cost and effort of the **PWD CG** including consideration of such Applicant's Proposal, without prejudice to any other right or remedy that may be available to the **PWD CG** hereunder or otherwise.

1.21.2 The **PWD CG** requires that the Consultant provides professional, objective, and impartial advice and at all times hold the **PWD CG's** interests paramount, avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Consultant shall not accept or engage in any assignment that would be in conflict with its prior or current obligations to other clients, or that may place it in a position of not being able to carry out the assignment in the best interests of the **PWD CG**.

1.21.3 Without limiting the generality of the above, an Applicant shall be deemed to have a Conflict of Interest affecting the Selection Process, if:

(a) Deleted

(b) a constituent of such Applicant is also a constituent of another Applicant; or

(c) such Applicant has received any direct or indirect subsidy or grant from any other Applicant or its Associate; or

(d) such Applicant has the same legal representative for purposes of this Application as any other Applicant; or

(e) such Applicant has a relationship with another Applicant, directly or through common third parties, that puts them in a position to have access to each other's information about, or to influence the Application of either or each of the other Applicant; or

(f) there is a conflict among this and other consulting assignments of the Applicant (including its personnel and Sub-consultant) and any subsidiaries or entities controlled by such Applicant or having common controlling shareholders. The duties of the Consultant will depend on the circumstances of each case. While providing consultancy services to the **PWD CG** for this particular assignment, the Consultant shall not take up any assignment that by its nature will result in conflict with the present assignment; or

(g) a firm which has been engaged by the **PWD CG** to provide goods or works or services for a project, will be disqualified from providing consulting services for the same project; conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and its Members or Associates, will be disqualified from subsequently providing goods or works or services related to the same project;

1.21.4 An Applicant eventually appointed to provide Consultancy for this Project, shall be disqualified from subsequently providing goods or works or services related to the construction and operation of the same Project and any breach of this obligation shall be construed as Conflict of Interest; provided that the restriction herein shall not apply after a period of 5 (five) years from the completion of this assignment or to consulting assignments granted by banks/ lenders at any time; provided further that this restriction shall not apply to consultancy/ advisory services performed for the **PWD CG** in continuation of this Consultancy or to any subsequent consultancy/ advisory services performed for the **PWD CG** in accordance with the rules of the **PWD CG**.

1.22 Number of Proposals

A consultant with a particular team can apply for any number of packages.

1.23 Cost of Proposal

The Applicants shall be responsible for all of the costs associated with the preparation of their Proposals and their participation in the Selection Process including subsequent negotiation, visits to the **office of the EinC PWD CG**, Project site etc. The **PWD CG** will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Selection Process.

1.24 Site visit and verification of information

Applicants are encouraged to submit their respective Proposals after visiting the Project site and ascertaining for themselves the site conditions, traffic, location, surroundings, climate, access to the site, availability of drawings and other data, applicable Laws and regulations or any other matter considered relevant by them.

1.25 Acknowledgement by Applicant

1.25.1 It shall be deemed that by submitting the Proposal, the Applicant has:

(a) made a complete and careful examination of the RFP;

(b) received all relevant information requested from the **PWD CG**;

(c) Acknowledged and accepted the risk of inadequacy, error or mistake in the information provided in the RFP or furnished by or on behalf of the **PWD CG** or relating to any of the matters referred to this RFP;

(d) satisfied itself about all matters, things and information, including matters referred to herein above, necessary and required for submitting an informed Application and performance of all of its obligations there under;

(e) acknowledged that it does not have a Conflict of Interest; and

(f) agreed to be bound by the undertaking provided by it under and in terms hereof.

1.25.2 The **PWD CG** shall not be liable for any omission, mistake or error on the part of the Applicant in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to RFP or the Selection Process, including any error or mistake therein or in any information or data given by the **PWD CG**.

1.26 Right to reject any or all Proposals

1.26.1 Notwithstanding anything contained in this RFP, the **PWD CG** reserves the right to accept or reject any Proposal and to annul the Selection Process and reject all Proposals, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons thereof.

1.26.2 Without prejudice to the generality of this RFP the **PWD CG** reserves the right to reject any Proposal if:

(a) at any time, a material misrepresentation is made or discovered, or

(b) the Applicant does not provide, within the time specified by the **PWD CG**, the supplemental information sought by the **PWD CG** for evaluation of the Proposal.

Misrepresentation/ improper response by the Applicant may lead to the disqualification of the Applicant. If such disqualification / rejection occurs after the Proposals have been opened and the highest ranking Applicant gets disqualified / rejected, then the **PWD CG** reserves the right to consider the next best Applicant, or take any other measure as may be deemed fit in the sole discretion of the **PWD CG,** including annulment of the Selection Process.

2. CLARIFICATIONS AND AMENDMENT OF RFP DOCUMENTS

2.1 The Consultants may request a clarification of any of the RFP documents up to the Number of days indicated in the Data Sheet before the Proposal submission date. Any request for clarification must be sent in writing by paper mail, facsimile, or electronic mail to the **PWD CG** address indicated in the Data Sheet. The **PWD CG** will respond by cable, facsimile, or electronic mail to such requests and will send copies of the response (including an explanation of the query but without identifying the source of inquiry) to all consultants who have purchased the RFP document. Clarification/amendment will also be hosted on **PWD CG** web-site.

2.2 At any time before the submission of Proposals, the **PWD CG** may for any reason, whether at its own initiative or in response to a clarification requested by a Consulting firm, modify the RFP documents by amendment. Any amendment shall be issued in writing through addendum. Addendum may be sent by mail, cable, telex, facsimile or electronic mail to consultants or/and will be hosted on **PWD CG** website which will be binding on them. The **PWD CG** may at its discretion extend the deadline for the submission of Proposals.

3. PREPARATION OF PROPOSAL

3.1 Applicants are requested to submit proposals in Two Parts strictly using the formats enclosed herewith (refer section 4 & 5 of Data Sheet) in 2 separate envelopes/ packages and put together in one single outer envelope/package. The two parts shall be:

Part 1: Technical Proposal and

Part 2: Financial Proposal.

The proposal shall be written in the English language as specified in the Data Sheet. All pages of the Proposal shall be signed by an authorized representative. The representative's authorization shall be confirmed by written Power of Attorney duly notarized to be submitted with the proposal.

Part 1: Technical Proposal

3.2 Applicants are expected to examine all terms and conditions included in the documents. Failure to act or to provide all requested information will be at his own risk and may result in rejection of the proposal.

3.3 During preparation of the Technical proposal the applicant may give particular attention to the following:

i. The man- months for the assignment shall be that stated in the Terms of Reference. The same shall be considered for the purpose of evaluation as well as award. In case the man months of TOR are amended in view of **PWD CG** own initiative or in response to clarification sought by any Consulting firm, the man months so amended and published shall be considered for the purpose of evaluation as well as award.

ii. The Consultants should prefer to field as many of their permanent staff as possible and higher marks shall be given in this regard. The permanent staff would be considered those already employed with the firm prior to one year from the month during which this Tender Notice is issued. Please enclose evidence (e.g. Pay roll, Auditor's Certificate) in this regard. More weightage will be given to those key personnel who are employed with more years with the firm.

iii. No alternative to key professional staff may be proposed and only one Curriculum Vitae (CV) may be submitted for each position.

iv. A good working knowledge of the language specified in the data sheet is essential for key professional staff on this assignment. Reports must be in the language (s) specified in the data sheet.

v. For Key Personnel the Consultants should prefer candidates having worked on PPP Projects. Such personnel shall be rated higher than the candidates having no such experience at all.

3.4 Applicant's Technical Proposal must provide the following information, using but not limited to the formats attached in the Section 3 & 4.

i. A brief description of the firm's organization and an outline of recent experience of the Consultants on assignments of a similar nature. The information which applicant shall provide on each assignment should indicate, inter-alia, the profiles of the staff provided, duration, and contract amount and firms involvement. The details of assignments on hand shall also be furnished.

ii. Any comments or suggestions on the TOR and a description of the methodology (work plan) which the firm proposes to execute the services, illustrated with bar charts of activities.

iii. The composition of the proposed staff team, the tasks which shall be assigned to each and their timing.

iv. Requirement for submission of CVs.

a. CVs strictly in the prescribed format and recently signed in blue ink on each page by both the proposed professional staff and the Managing Director/Head or the authorized representative of the firm.

b. Key information should include years with the firm and degree of Responsibility held in various assignments. In C V format, at summary, the individual shall declare his qualification & total experience (in years) against the requirements specified in TOR for the position (Ref. Enclosures in TOR Part I & II). If any information is found incorrect, at any stage, action including termination and debarment from future projects up to 2 years **or more** may be taken by **the PWD CG** on the personnel and the Firm.

c. If same CV is submitted by two or more firms, zero marks shall be given for such CV.

d. All the CVs which are to be evaluated should be complete in all respects including signing and certification by the individual and the firm. In order to overcome the difficulties in furnishing the duly signed CVs due to time prescribed for submission for RFP, maximum 3 CVs with scanned signatures of the candidates on all pages shall be permitted. However, the authorized representative of the firm shall sign on each page. If the firm is selected, then the firm shall submit duly signed CVs at the time of negotiations.

e. If a CV score less than 75% marks, whatever marks it score will be carried forward for maximum 2 no's key personnel's for determining

the total score of the firm. However, if the Key Personnel does not fulfill the minimum academic qualification (as mentioned at Enclosure-2 of TOR Part 1and Enclosure B of TOR part 2 of RFP), the overall score of his CV will be evaluated as zero. If the Key Personnel does not fulfill the minimum qualification related to experience as mentioned at Enclosure-2 of TOR Part 1and Enclosure B of TOR part 2 of RFP), then zero marks will only be assigned for that sub criteria, but the marks obtained by the CV of the Key Personnel will be carried forward for maximum 2 nos key personnel for determining the total score of the firm. In case, a firm is L-1, then maximum 2 (two) such Key Personnel (whose CV scores less than 75% or who does not fulfil the minimum qualification) will have to be replaced by the firm at the time of contract negotiations. The reduction in remuneration of such replacements will be made as per Clause 4.5 of the contract for consultancy services.

v. Deployment Schedule for each key personnel should be formulated and incorporated in the Technical Proposal which will be reviewed on quarterly basis.

vi. In case of PMC ,Estimates of the total time effort (person x months) to be provided for the services, supported by bar chart diagrams showing the time proposed (person x months) for each professional staff and sub professional staff should be submitted.

vii. A certification to the effect should be furnished by the Consultant that they have checked the qualifications and experiences details submitted by the key personnel in their CVs and found to be correct. This certification should be made in CVs of all key personnel after the certification by the candidate. The format of CV includes certification to this effect.

viii. Each key personnel of the preferred Consultant shall be called for interview at the time of negotiation at the cost of Consultant.

ix. Deleted

x. Having selected Consultants, among other things, on the basis of an evaluation of proposed key professional staff, the Employer expects to negotiate, within the proposal validity period, a contract on the basis of the staff named in the proposal and, prior to contract negotiations, will require assurances that the staff will be actually available. The Employer will not consider substitutions during contract negotiations except in cases of incapacity of key personnel for reasons of health. Similarly, after award of contract the Employer expects all of the proposed key personnel to be available during implementation of the contract. The Employer will not consider substitutions during contract implementation except under exceptional circumstances as mentioned in clause 4.5.2(a) and 4.5.2(b) of the draft contract agreement.

In case during interaction with the key personnel at the time of negotiation it is found that the key personnel proposed is un-suitable for the assignment position, his replacement by equivalent or better shall be provided by the consultant. The key personnel with such un-suitable CV shall not be considered in any future bids for that position for two years.

In the eventuality that a firm becomes non-responsive, for the third time, due to the action of replacements of more than 2 key personnel during negotiation, the firm shall be debarred up to two years for **PWD CG** consultancy projects.

xi. Any additional information.

3.5 The technical proposal must not include any financial information.

Part 2: Financial Proposal

3.6 The Financial Proposal must be strictly using the formats attached in Section 5. No additional items/quantities other than that specified in the formats should be proposed by the Consultants since the same shall not be considered for the evaluation/award.

3.7 The Financial Proposal should clearly identify as a separate amount, the local taxes (including social security), duties, fees, levies and other charges imposed under the applicable law, on the consultants, the sub-consultants, and their personnel (other than nationals or permanent residents of the government's country); unless the Data Sheet specifies otherwise. This cost, however, will not be considered in evaluation.

3.8 Consultants should express the price of their services in Indian **National** Rupees **only.**

3.9 Service tax as applicable shall be reimbursed to the Consultants.

4. SUBMISSION, RECEIPT AND OPENING OF PROPOSALS

4.1 The "ORIGINAL" proposal shall be prepared in indelible ink. It shall contain no inter-lineation or overwriting, except as necessary to correct errors made by the firm itself. Any such corrections must be initiated by the person or persons who sign(s) the Proposals.

4.2 All pages of the "ORIGINAL" Proposal shall be signed by the eligible authority as Specified in Para 3.1 of LOI given above.

4.3 You must submit one „ORIGINAL" proposal only. The proposal for each intended project shall be sealed separately and duly marked on the envelope containing it showing the name of the project, package no. etc. The envelope must be clearly marked.

"DO NOT OPEN, EXCEPT IN PRESEN CE OF THE EVALUATION COMMITTEE"

4.4 This outer envelope shall include two separate envelopes, each clearly marked as "Part 1: Technical Proposal" or "Part 2: Financial Proposal".

4.5 The proposal must be submitted in a hard bound form with all pages numbered serially, along with an index of submissions. (Hard bound implies binding between two covers through stitching or otherwise whereby it may not be possible to replace any paper without disturbing the document). Spiral bound form, loose form, etc. will be not accepted. All figures quoted in the financial Proposal should be covered with a transparent adhesive tape.

4.6 The completed proposal must be delivered on or before the time and date stated in the Data Sheet.

5 PROPOSAL EVALUATION

5.1 A two -stage procedure shall be adopted for evaluating the proposals.

Technical Proposal

5.2 The Evaluation Committee appointed by the **EinC PWD CG** shall carry out its evaluation applying the evaluation criteria and point system specified in the data sheet. Each responsive proposal shall be attributed a technical score. The technical proposals should score at least 75 points to be considered responsive.

Financial Proposal

5.4 After the evaluation of Technical Proposals is completed and the shortlist of qualified firms is finalized, **PWD CG** may notify those consultants whose proposals were not considered as per conditions of RFP indicating that their Financial Proposal will be returned unopened after completing the selection process. The **PWD CG** shall simultaneously notify the finally shortlisted firms indicating the date and time set for opening of the Financial Proposals.

5.5 The Financial Proposals shall be opened publicly in the presence of the consultant's representatives who choose to attend. The name of the consultant, the technical scores, and the proposed prices shall be read aloud and recorded when the Financial Proposals are opened. The **PWD CG** shall prepare minutes of the public opening.

5.6 The Evaluation Committee will determine whether the submitted Financial Proposals are complete i.e. whether applicants have included cost of all items of the corresponding proposals; if not, then the cost towards such missing items will be considered as NIL, but the Consultant shall, however, be required to carry out such obligations without any additional compensation. In case under such circumstances, if **PWD CG** feels that the work cannot be carried out within the overall cost as per the submitted financial proposal, such proposals shall be considered non responsive.

5.7 The Evaluation Committee shall determine if the financial proposal is complete and without computational errors. The rank of the Proposal shall be determined on the basis of "**Least cost to PWD CG."**

5.7 (a) <u>Procedure of Awarding Work based on Assessment of Least Cost to PWD CG</u>

1 A Consultant with a particular Team can apply for any number of packages. ~~However,~~ **~~Award of work to a Consultant with shall be limited to one package only~~. ~~At first,~~ Consultants who become 'L-1' in any package ~~each~~ shall be assigned the respective package.**

~~2. In case, more than one Bidder turns out to be 'L1' for any particular package the bidder having higher technical score as per Clause 5.2 of Section 2, "Letter of invitations to consultants" would be considered.~~

~~3. In case, a Consultant turns out to be 'L1' in more than one package, the package which is to be awarded to this team of a consultant shall be determined on the basis of least cost to **PWD CG** considering the Financial Quote of 'L-1' bidder and 'L-2' Bidder (i.e. L2-L1) limited to those packages which shall be worked out as per procedure illustrated with an example as mentioned below.~~

~~Suppose there are 4 packages namely Package 1, Package 2, Package 3, Package 4, respectively. It is also assumed that 5 consultants namely A, B, C, D, and E have applied for these packages~~

(Project cost mentioned in Rs lacs)

Package No	L1	L2	L3	L4	L5	(L2-L1)	Remarks
1	A	B	D	C	E	B-A	Bidder A is 'L1' in Package 1&2
Project cost	200	220	230	240	260	20	
2	A	C	B	E	D	C-A	
Project cost	400	430	440	460	490	30	
3	B	A	D	E	C	A-B	Bidder B is 'L1' in Package 3&4
Project cost	600	610	620	650	670	10	
4	B	E	D	A	C	E-B	
Project cost	500	540	550	560	590	40	

The different Packages shall be awarded to consultants as mentioned below:

Step-1 :

In this case the Consultant A is 'L1' for Package no 1 and 2 and consultant B is 'L1'for package no 3and 4 respectively.

- In case of consultant A for Packages 1and 2 the (L2-L1) cost is maximum for the Package no 2, hence the Package is allotted to A.
- In case of consultant B for Packages 3 and 4 the L2-L1 cost is maximum for the Package No 4 hence, the Package is allotted to B.

Step-2:

Since the Package no. 2 has been allotted to consultant A and similarly package no. 4 has been allotted to consultant B as per above criteria, the new situation of the financial quotes is as under:

Package No	L1	L2	L3	L4	L5	(L2-L1)	REMARKS
1	D	C	E	–	-	C-D	Bidder D is L1 in Package 1
Project cost	230	240	260	–	-	10	
2	Already Allotted to A as per Step-1						
3	D	E	C	-	-	E-D	Bidder D is L1 in Package 3.
Project cost	600	650	670	-	-	50	
4	Already Allotted to B as per STEP-1						

In this case the Consultant D is 'L1' for Package no. 1 and 3 respectively.

- In case of consultant D for Packages 1and 2 the (L2-L1) cost is maximum for the Package no. 3 hence, the Package is allotted to D.

Step-3:

~~Since the Package no. 3 has been allotted to consultant D as per above criteria, the new situation of the financial quotes is as under:~~

~~Package No~~	~~L1~~	~~L2~~	~~L3~~	~~L4~~	~~L5~~	~~(L2-L1)~~	~~Remarks~~
~~1~~	~~C~~	~~E~~	-	–	-	-	~~C is 'L1' in Package 1~~
~~Project cost~~	~~240~~	~~260~~	-	–	-	-	
~~2~~	~~Allotted to A as per Step 1~~						
~~3~~	~~Allotted to D as per Step 2~~						
~~4~~	~~Allotted to B as per Step 1~~						

- ~~In case of Package 1 the Consultant C is L1 for the Package no.1, hence the Package is allotted to C.~~

~~Final Allotment chart of Packages as per the Selection criteria~~

~~Package No.~~	~~Name of Consultants awarded Packages~~
~~Package 1~~	~~Consultant C~~
~~Package 2~~	~~Consultant A~~
~~Package 3~~	~~Consultant D~~
~~Package 4~~	~~Consultant B~~

6 NEGOTIATIONS

6.1 Prior to the expiration period of validity of proposal, the **PWD CG** shall notify the successful firm who submitted the least cost proposal in writing by Speed Post/Registered letter or facsimile/email and may either issue LOA if negotiations are not required or may invite it to negotiate the contract

6.2 Negotiations normally take one to two days. The aim is to reach agreement on all points, and initial a draft contract by the conclusion of negotiations

6.3 Negotiations shall commence with a discussion of applicant's technical proposal, the proposed methodology (work plan), staffing. Agreement must then be reached on the staffing and bar charts, which shall indicate activities, staff, periods in the field and in the home office, staff months, logistics and reporting. Special attention shall be paid to optimize the required outputs from the firm within the available budget and to define clearly the inputs required from the **PWD CG** to ensure satisfactory implementation of the assignment.

6.4 It is the responsibility of the Consultant, before starting financial negotiations, to contact the local tax authorities to determine the local tax amount to be paid by the Consultant under the Contract. The financial negotiations will include a clarification (if any) of the firm's tax liability in India/CG, and the manner in which it will be reflected in the Contract; and will reflect the agreed technical modifications in the cost of the services.

6.5 Having selected a firm, among other things, on the basis of an evaluation of proposed key professional staff, the **PWD CG** expects to negotiate, a contract on the basis of the staff named in the proposal and, prior to contract negotiations, will require assurance that this staff shall be actually available.

6.6 Replacement of key personnel shall be considered only in unavoidable circumstances. In no case more than two replacements of key personnel shall be permitted during negotiation and in such cases Consultant and such key personnel shall have to submit affidavit to the effect that during the period of assignment specified in para 8 of Section:1, the replaced key personnel shall not be professionally employed anywhere in PWD CG/Govt. of C.G. works. **PWD CG** shall not further consider CV of such key personnel directly or indirectly for any of its projects for this period. The provisions of the clause 4.5.2(a) and 4.5.2(b) of general conditions of contract of the draft contract agreement shall be applicable in case of reduction in remuneration of the substituted key personnel during negotiation.

In case during interaction with the key personnel at the time of negotiation it is found that the key personnel proposed is un-suitable for the assignment position, his replacement by equivalent or better shall be provided by the consultant. The key personnel with such un- suitable CV shall not be considered in any future bids for that position for two years.

6.7 Each key personnel of the preferred consultant shall be called for interview at the time of negotiation at the cost of the Consultant. At the time of interview, the key personnel shall produce the originals of the certificates (Proof of age, Qualifications and experience from their respective employers) in support of their CVs for verification and return. The negotiations shall be concluded with a review of the draft form of Contract. The **PWD CG** and the firm will finalize the contract to conclude negotiations.

7 AWARD OF CONTRACT

7.1 After completion of negotiations with the consultants, the **PWD CG** shall award the Contract to the selected Consultant. However, after signing of the Contract, **PWD CG** may return the unopened Financial Proposals to the unsuccessful Consultants.

7.2 The successful firm with whom the contract is signed is expected to commence the assignment on the date and at the location specified in the data sheet.

7.3 SHORT-LISTING OF APPLICANTS

The Applicants shall be pre-qualified and short-listed as aforesaid for financial evaluation in the second stage. However, if the number of such pre-qualified Applicants is less than two, the Authority may, in its sole discretion, pre-qualify the Applicant(s) whose technical score is up to 60 (sixty) points even if such Applicant(s) does) not; provided that in such an event, the total number of pre-qualified and short-listed Applicants shall not exceed two.

7.4 Evaluation of Financial Proposal

7.4.1 The financial proposal of the shortlisted and pre qualified applicants shall be evaluated on the basis of **"Least Cost to PWD CG."**

7.4.2 The Selected Applicant shall be the Applicant, who quotes least cost to **PWD CG** in his financial proposal.

8. FRAUD AND CORRUPT PRACTICES

8.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this RFP, the **PWD CG** shall reject a Proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "Prohibited Practices") in the Selection Process. In such an event, the **PWD CG** shall, without prejudice to its any other rights or remedies, forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to the **PWD CG** for, inter alia, time, cost and effort of the **PWD CG**, in regard to the RFP, including consideration and evaluation of such Applicant's Proposal.

8.2 Without prejudice to the rights of the **PWD CG** under Clause 8.1 hereinabove and the rights and remedies which the **PWD CG** may have under the LOA or the Agreement, if an Applicant or Consultant, as the case may be, is found by the **PWD CG** to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Selection Process, or after the issue of the LOA or the execution of the Agreement, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by the **PWD CG** during a period of 2 (two) years from the date such Applicant or Consultant, as the case may be, is found by the **PWD CG** to have directly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.

8. 3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

(a) "corrupt practice" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Selection Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the **PWD CG** who is or has been associated in any manner, directly or indirectly with the Selection Process or the LOA or has dealt with matters concerning the Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the **PWD CG**, shall be deemed to constitute influencing the actions of a person connected with the Selection Process); or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Selection Process or after the issue of the LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Agreement, who at any time has been or is a legal, financial or technical consultant/ adviser of the **PWD CG** in relation to any matter concerning the Project;

(b) "fraudulent practice" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process;

(c) "coercive practice" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Selection Process;

(d) "undesirable practice" means (i) establishing contact with any person connected with or employed or engaged by the **PWD CG** with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or (ii) having a Conflict of Interest; and

(e) "restrictive practice" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Selection Process.

9. PRE CONTRACT INTEGRITY PACT

GENERAL

This Pre-Bid Pre-Contract Agreement (hereinafter called the Integrity Pact) is made on _____ day of the month of _____ 2015, between on one hand, the **Public works department CG (PWD CG)** acting through **CE PWD ..... Zone .....** (here in after called the " AUTHORITY", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and "…….. Entered by "……..." (Hereinafter called the "CONSULTANT", which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the second part.

WHEREAS the AUTHORITY proposes to procure Consultancy Services for Project Management including Preparation of DPR of two or more lane Road Projects in the state of Chhattisgarh under Package No. …….. and the CONSULTANT is willing to offer/has offered the services and

WHEREAS the CONSULTANT is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the AUTHORITY is Chhattisgarh Road Development Corporation Ltd.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-

Enabling the AUTHORITY to obtain the desired services at a competitive price in conformity with the defined specification by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling CONSULTANTs to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the AUTHORITY will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

COMMITMENTS OF THE AUTHORITY

1.1 The AUTHORITY undertakes that no official of the AUTHORITY, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favor or any material or immaterial benefit or any other advantage from the CONSULTANT, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

1.2 The AUTHORITY will, during the pre-contract stage, treat all the CONSULTANTs alike, and will provide to all CONSULTANTs the same information and will not provide any such information to any particular CONSULTANT which could afford an advantage to that particular CONSULTANT in comparison to other CONSULTANTs.

1.3 All the officials of the AUTHORITY will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2. In case any such preceding misconduct on the part of such official(s) is reported by the CONSULTANT to the AUTHORITY with full and verifiable facts and the same is prima facie found to be correct by the AUTHORITY, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the AUTHORITY and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the AUTHORITY the proceedings under the contract would not be stalled.

COMMITMENTS OF THE CONSULTANTS

3. The CONSULTANT commits itself to take all the measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-

3.1 The CONSULTANT will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favor or any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the AUTHORITY, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

3.2 The CONSULTANT further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the AUTHORITY or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favor or disfavor to any person in relation to the contract or any other contract with the Government.

3.3 The CONSULTANT shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.

3.4 The CONSULTANT further confirms and declares to the AUTHORITY that the CONSULTANT has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the AUTHORITY or any of its functionaries, whether officially or unofficially to the award of the contract to the CONSULTANT, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

3.5 The CONSULTANT, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the AUTHORITY or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

3.6 The CONSULTANT will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

3.7 The CONSULTANT will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

3.8 The CONSULTANT shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the AUTHORITY as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The CONSULTANT also undertakes to exercise due and adequate care lest any such information is divulged.

3.9 The CONSULTANT commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.10 The CONSULTANT shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.11 If the CONSULTANT or any employee of the CONSULTANT or any person acting on behalf of the CONSULTANT, either directly or indirectly, is a relative of any of the officers of the AUTHORITY, or alternatively, if any relative of an officer of AUTHORITY has financial interest/stake in the CONSULTANT's firm, the same shall be disclosed by the CONSULTANT at the time of filing of tender.

3.12 The CONSULTANT shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the AUTHORITY.

4. PREVIOUS TRANSGRESSION

4.1 The CONSULTANT declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify CONSULTANT's exclusion from the tender process.

4.2 The CONSULTANT agrees that if it makes incorrect statement on this subject, CONSULTANT can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. BID SECURITY

5.1 While submitting commercial bid, the CONSULTANT shall deposit an amount of Rs. 5,00,000 /-(Rupees Five Lacs Only) as Bid Security with the AUTHORITY.

5.2 The Bid Security shall remain valid till the submission of performance guarantee by the successful CONSULTANT.

5.3 In case of the successful CONSULTANT, a clause would also be incorporated in the Performance Bank Guarantee that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the PWD CG to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.4 Within 15 days of the receipt of notification of award from the Employer, the successful CONSULTANT shall furnish the Performance Security equal to 5% of the value of contract from a Commercial bank in accordance with the General Conditions of Contract, in the Performa prescribed at Appendix- I of draft Contract Agreement.

5.5 Performance Security should remain valid for a period of sixty days beyond the date of completion of all contractual obligations.

5.6 No interest shall be payable by the AUTHORITY to the CONSULTANT on Bid Security/ Performance Guarantee for the period of its currency.

6. SANCTIONS FOR VIOLATIONS

6.1 Any breach of the aforesaid provisions by the CONSULTANT or any one employed by it or acting on its behalf (whether with or without the knowledge of the CONSULTANT) shall entitle the AUTHORITY to take all or any one of the following actions, wherever required:-

(i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the CONSULTANT. However, the proceedings with the other CONSULTANT(s) would continue.

(ii) The Earnest Money Deposit (in pre-contract stage) and/or Performance Security (after the contract is signed) shall stand forfeited either fully or partially, as decided by the AUTHORITY and the AUTHORITY shall not be require to assign any reason therefore.

(iii) To immediately cancel the contract, if already signed, without giving any compensation to the CONSULTANT.

(iv) To recover all sums already paid by the AUTHORITY, and in case of an Indian CONSULTANT with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a CONSULTANT from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the CONSULTANT from the AUTHORITY in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

(v) To en-cash the advance bank guarantee and performance bond/warranty bond, if furnished by the CONSULTANT, in order to recover the payments, already made by the AUTHORITY, along with interest.

(vi) To cancel all or any other Contracts with the CONSULTANT. The CONSULTANT shall be liable to pay compensation for any loss or damage to the AUTHORITY resulting from such cancellation/rescission and the AUTHORITY shall be entitled to deduct the amount so payable from the money(s) due to the CONSULTANT.

(vii) To debar the CONSULTANT from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the AUTHORITY.

(viii) To recover all sums paid in violation of this Pact by CONSULTANT(s) to any middleman or agent or broker with a view to securing the contract.

(ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the AUTHORITY with the CONSULTANT, the same shall not be opened.

(x) Forfeiture of Performance Bond in case of a decision by the AUTHORITY to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The AUTHORITY will be entitled to take all or any of the actions mentioned at para 6.1 (i) to (x) of this Pact also on the Commission by the CONSULTANT or any one employed by it or acting on its behalf (whether with or without the knowledge of the CONSULTANT), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the AUTHORITY to the effect that a breach of the provisions of this Pact has been committed by the CONSULTANT shall be final and conclusive on the CONSULTANT. However, the CONSULTANT can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. FALL CLAUSE

7.1 The CONSULTANT undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or subsystems was supplied by the CONSULTANT to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the CONSULTANT to the AUTHORITY, if the contract has already been concluded.

8. INDEPENDENT MONITORS

8.1 The AUTHORITY will appoint Independent Monitors (hereinafter referred to as Monitors) for this Pact.

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the AUTHORITY.

8.6 The CONSULTANT accepts that the Monitor has the right to access without restriction to all Project documentation of the AUTHORITY including that provided by the CONSULTANT. The CONSULTANT will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the CONSULTANT/Subcontractor(s) with confidentiality.

8.7 The AUTHORITY will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the AUTHORITY within 8 to 10 weeks from the date of reference or intimation to him by the AUTHORITY/CONSULTANT and, should the occasion arise, submit proposals for correcting problematic situations.

9. FACILITATION OF INVESTIGATION

In case of any allegation of violation of any provisions of this Pact or payment of commission, the AUTHORITY or its agencies shall be entitled to examine all the documents including the Books of Accounts of the CONSULTANT and the CONSULTANT shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10. LAW AND PLACE OF JURISDICTION

This Pact is subject to Indian Law. The place of performance and jurisdiction is only Raipur (Chhattisgarh).

11. OTHER LEGAL ACTIONS

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. VALIDITY

12.1 The validity of this Integrity Pact shall be from date of its signing and extend the complete execution of the contract to the satisfaction of both the AUTHORITY and the CONSULTANT/Seller, including warranty period, whichever is later, in case CONSULTANT is unsuccessful, this integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

For and on behalf of the CONSULTANT

(Name & Signature of the Authorized Signatory)

Date:

10. PRE-PROPOSAL MEETING

10.1 Pre-Proposal Meeting of the Applicants shall be convened at the Conference Hall of office of **PWD CG**, Sirpur Bhawan , Civil lines, Raipur CG on **27.07.2015 at 11:30.hrs**. Only Applicant/or one of their representatives shall be allowed to participate on production of an authority letter from the Applicant.

10.2 During the course of Pre-Proposal Meeting, the Applicants will be free to seek clarifications and make suggestions for consideration of the **PWD CG**. The **PWD CG** shall endeavor to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Selection Process.

11. MISCELLANEOUS

11.1 The Selection Process shall be governed by, and construed in accordance with, the laws of India and the competent jurisdiction of Court in Raipur (CG). in which the **PWD CG** has its headquarters shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Selection Process.

11.2 The **PWD CG**, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:

(a) suspend and/or cancel the Selection Process and/or amend and/or supplement the Selection Process or modify the dates or other terms and conditions relating thereto;

(b) consult with any Applicant in order to receive clarification or further information;

(c) retain any information and/or evidence submitted to the **PWD CG** by, on behalf of and/or in relation to any Applicant; and/or

(d) independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.

11.3 It shall be deemed that by submitting the Proposal, the Applicant agrees and releases the **PWD CG**, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.

11.4 All documents and other information supplied by the **PWD CG** or submitted by an Applicant shall remain or become, as the case may be, the property of the **PWD CG**. The **PWD CG** will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.

11.5 The **PWD CG** reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

DATA SHEET

(As Mentioned in Letter of Invitation to Consultants)

Sub clause No. in Letter of Invitation to Consultants

1.15 The proposal shall be valid for 120 days after the last date of sub mission.

2.1 Clarification may be requested 7 days prior to Pre Proposal Meeting. The address for requesting clarification is:

Engineer in Chief
Public Works Department
Sirpur Bhawan, Civil Lines,
Behind All India Radio
Raipur (C.G.) 492001
Website : https://pwd.cgeprocurement.gov.in
email ID : einc.pwd.cg@nic.in
Ph : 0771 – 2425035,
Fax : 0771 - 2425913

3.1 The Language of documents and correspondence will be English.

3.3 (iv) All the personnel shall have working knowledge of English and all the reports etc shall be written in English.

3.7 & 3.9 **The PWD CG** shall reimburse only service tax. Consultant has to assess all other taxes and should inbuilt them in their financial proposal. These taxes (other than service tax) should not be provided separately. Consultants are requested to consult Tax Consultants for details.

4.6 The last date of submission of proposals: up to 15:00 hrs on 04.08.2015

5.2 **The points assigned to Technical Evaluation criteria are:**

S. No.	Description	Marks
A1	Relevant experience for the assignment	25
A2	The quality of methodology and work plan proposed	05
A3	Qualifications and competence of the key staff for the assignment	70
	Total	**100**

1. **SUB CRITERIA 'A1' FOR RELEVANT EXPERIENCE OF THE FIRM FOR THE ASSIGNMENT**

S. No.	Description	Marks
A1.1	Average Annual Turnover (last 5years) from consultancy business	3
A1.2	Experience in DPR preparation in number of road projects of 2 or more lane roads in last 5 years	12
A1.3	Experience as PMC/Independent Engineer/Authority's Engineer in number of road projects of 2 or more lane roads in last 5years	10

Notes:

I. Employer's certificate should be submitted substantiating the experience claimed by the firm.
II. Experience of private contractors or concessionaire would not be accepted
III. Consultants should give details of the experience of the firm considering the completed and the on- going highway assignments, separately for PPP and non-PPP Projects along with experience certificates from clients.

Distribution of marks sub criteria 'A1' for relevant experience of the firm for the assignment

A1.1 Total marks assigned for Average Annual Turnover (last 5years) from consultancy business: 03

Description	Turn Over (in crores)	Marks
Average Annual Turnover (last 5years) from consultancy business	25	60% of Total marks assigned
Average Annual Turnover (last 5years) from consultancy business	50	100% of Total marks assigned

A1.2 Total marks assigned for Experience in DPR preparation in number of road projects of 2 or more lane roads in last 5 years: 12

Description	Aggregate length (in km)	Marks	Remarks
Experience in DPR preparation in number of road projects of 2 or more lane roads in last 5 years	400	60% of Total marks assigned	Equal to minimum aggregate length as per eligibility criteria
Experience in DPR preparation in number of road projects of 2 or more lane roads in last 5 years	1200	100% of Total marks assigned	3 times of the minimum aggregate length as per eligibility criteria

A1.3 Total marks assigned for Experience as PMC/Independent Engineer/Authority's Engineer in number of road projects of 2 or more lane roads in last 5years: 10

Description	Aggregate length (in km)	Marks	Remarks
Experience as PMC/Independent Engineer/Authority's Engineer in number of road projects of 2 or more lane roads in last 5years	400	60% of Total marks assigned	Equal to minimum aggregate length as per eligibility criteria
Experience as PMC/Independent Engineer/Authority's Engineer in number of road projects of 2 or more lane roads in last 5years	1200	100% of Total marks assigned	3 times of the minimum aggregate length as per eligibility

				criteria

Note: The assignment of marks for the proposals under sub criteria A1,A2 and A3 for annual turnover , experience of DPR Preparation and PMC respectively ,between maximum marks and the 60% marks would be prorated.

2. SUB CRITERIA 'A2' FOR ADEQUACY OF THE PROPOSED WORK PLAN AND METHODOLOGY IN RESPONSE TO THE TOR.

Comments & Suggestions on TOR	1
Quality of Approach and Methodology	3
Work Programme & Manning Schedule	1

3. SUB CRITERIA 'A3' QUALIFICATIONS AND COMPETENCE OF THE KEY STAFF FOR THE ASSIGNMENT

S.No	**Key personnel and Points for Technical Consultancy for DPR preparation**	**Points assigned**	**Key personnel and Points for PMC Works**	**Points assigned**
1.	Team Leader Cum Senior Highway Engineer	12	Team Leader Cum Senior highway Engineer	12
2	Pavement Engineer	8	Pavement engineer	8
3.	Senior Survey Engineer	8	Senior Quality cum Material Engineer	8
4	Bridge Engineer	8	Bridge Engineer	8
5	Traffic – cum - Safety Expert	9	Resident Engineer	8
6	Material Cum Geotechnical Expert	8	Field Engineer	12
7	CAD Expert	2	Quality control Engineer	6
8	Social Relief & Rehabilitation expert	3	Senior Quantity Surveyor	4
9	Quantity Surveyor/Documentation	2	-	-
10	Field Surveyor	10		
Total		**70**		**66**

Note:- Total 140 marks for staff positions of Technical Consultancy for DPR preparation and PMC

Works shall be weighted to 70 marks, during technical evaluation.

The number of points assigned during the evaluation of qualification and competence of key staff are as given below:

S. No.	Description	Break up of Points (in %)	Max Points (in %)
1	General Qualification		**25**
	(i) Essential Educational Qualification	20	
	(ii) Desirable Educational; Qualification	5	
2	Relevant Experience and Adequacy for the Project		**60**
	(i) Total Professional experience	15 (max)	
	(ii) Experience in Highway Projects (Bridge Projects for Bridge Engineer)	20 (max)	
	(iii) Experience in Similar Capacity	25 (max)	
3	Employment with the Firm		**5**
	Less than 1 year	0	
	1 year to 2 years	3	
	> 2 years	5	
3	Power Presentation by the Team before the Authority		**10**
	Total		**100**

Remarks :

1 The technical proposal and every key personnel should score at least 70 points to be considered responsive for financial evaluation.

2. Based on experience and the Consulting Industry's Capacity, Project specific requirement etc., **PWD CG** may modify the above criteria for Selection of Technical consultant and PMC.

7.2 Commencement of Assignment: The firm shall begin carrying out the services within one month of signing of the Consultancy Agreement.

10.1 Pre-Proposal Meeting shall be held at: office of the EinC PWD CG on ---------- at ..... hrs.

SECTION 3. FORMATS FOR SUBMISSION OF FIRMS CREDENTIALS

The proposal should contain the following information in enclosed format attached at Appendix A.

- Year of Establishment of Firm
- Average annual turnover (last five years)

Note: The Firm shall submit Certificate of Incorporation and audited balance sheet for the last five years (FY 2010-11, FY 2011-12, FY 2012-13 ,FY 2013-14 and FY 2014-15). For claiming experience of road projects completion certificate from employer should be enclosed. The proposal should also contain the details of the key personnel viz. their name, qualification, expertise area, experience and years of association with the firm.

Appendix A

The following information related to the firm should be provided in the proposal.

i. Name of the package applied for:-
ii. Year of establishment of firm *

Consultant	Year of Establishment	Country	Type of Organization			
			Individual	Partnership	Corporation	Other

*Copy of Certificate of incorporation shall be sub mitted.

iii. Office/Business Address/ Telephone nos./Cable Address.
iv. Narrative description of firm (Not more than 2 sheets)
v. Name of two (2) principals who may be contacted with title and telephone number/fax number/E- mail.
vi. Financial Statement of the last five years. **

S.No	Particulars	2014-15	2013-14	2012-13	2011-12	2010-11
1	Annual Turnover from Consultancy Business					
2	Total Assets					
3	Current Assets					

c) Balance Sheet/ Auditor Certificate of last 5 years (FY 2010-11,2011- 12,2012-13,2013-14&2014-15) shall be submitted as evidence of Annual Turnover.

1) The amount shall be stated in INR. (Consider 1 US Dollar **$=Rs. 60.00)

2) Wherever details for Audited Balance Sheet, Financial Statement, Balance Sheet / Audited Certificate of the last 5 years are sought, the last 5years shall be preceding the year in which bid submission is to be made.

In case the annual accounts for the latest financial year are not audited and therefore the Applicant cannot make it available, the Applicant Accountant or Independent Auditor who are competent to do so as recognized by the State Concerned. In such a case, the Applicant shall provide the Audited Annual Reports for 5 (five) years preceding the year for which the Audited Annual Report is not being provided.

vii. Experience as Project Management Consultant/Independent Engineer/Authority's Engineer of two or more laning road projects, separately for PPP and non-PPP Projects during the last 5 years

S N o	Projects Name/Year (Road / Highway projects with or without bridges)	Type of Services Rendered	Length of Project (kms)	Client (with complete address, contact person, telephone Nos. and Fax Nos.)	Total Fee for the Consultancy Assignment (INR)	Fee in INR (Applicant's share in	% age of Total fee received by the firm	Period
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**

viii. Experience in DPR preparation of two or more laning road Projects separately for the PPP and non-PPP projects during the last 5 years.

S No	Projects Name / Year	Type Services Rendered	Description of Road Project/ Length (kms)	Client (with complete address, contact person, telephone Nos and Fax Nos.)	Total Fee for the Consultancy Assignment (I N R)	% age of total fee received by the firm	Approx . cost of Road Project	Period
1	**2**	**3**	**4**	**5**	**6**	7	**8**	**9**
		A. Completed Projects : 1. 2. 3. **B. Projects in progresss:** 1. 2. 3.						

a) Only those projects, to be included in the table which are road Projects and for which clients certificates from the concerned Government agencies are enclosed with the proposal.

b) The details of bridges having length more than 200 m. (500 m. in case the project consist of bridges of length more than 500 m.) in the listed projects is to be specifically mentioned.

c) The weightage given for experience of a firm would depend on the role of the firm in the respective assignments. The firm's experience would get full credit if it was the sole fir m in the respective assignment. Experience weightage for fir ms as Lead partner/JV partner /Associate shall be considered in the same proportion as payment has been received by the fir m towards consultancy work in the project.

d) For weightage of experience in any past Consultancy assignment experience certificate from the client shall be accepted. In the absence of experience certificate from the client, proportion of payment received towards Consultancy work duly certified by statutory body like Chartered Accountant or Independent Auditors who are competent to do so as recognized by the State concerned shall be accepted. Annual turnover duly certified by Chartered Accountant shall be accepted. In case of non-availability of such documents no weightage of turnover/experience will be considered. The Chartered Accountant or Independent Auditors shall submit the **abstract** of past Consultancy assignment experience certificate, duly signed and supported by the client's certificate.

(ix) Assignments on hand including those for which the Letter of Acceptance from the clients received as on 7 days prior to due date for submission of proposals: The details shall be given in the following format.

S. No	Name of Assignment	Client	Role of the firm	Date of letter of Acceptance	Date of Agreement if signed	Present status of Assignment	Team Members provided by the firm		
			Sole, Lead/ Other in JV or sub-consultant				Name	DOB	Position
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

(x) Number of Key Personnel employed with the firm for more than one year from bid submission date.

S.No	Key Personnel	Number of key Personnel employed
1.	Senior Highway Engineer - cum - Team Leader	
2	Pavement Engineer	
3.	Senior Survey Engineer	
4	Bridge Engineer	
5	Traffic – cum - Safety Expert	
6	Material Cum Geotechnical Expert	
7	Financial Analyst	
8	Environmental Expert	
9	Quantity Surveyor/Documentation	
10	Contract Specialist	

11	Senior Quality Cum material Engineer	
12	CAD Expert	
13	Senior Quantity Surveyor	

SECTION 4. FORMAT FOR SUBMISSION OF TECHNICAL PROPOSAL

Appendix B-1	Technical proposal submission form.
Appendix B-2	Firm's comments and suggestions on the Terms of Reference and on data, services, and facilities to be provided by the **PWD CG.**
Appendix B-3	Approach paper on methodology and work plan for performing the assignment.
Appendix B-4	Composition of the Team and Task(s) of each Team member
Appendix B-5	Curriculum vitae of proposed Professional staff.
Appendix B-6	Time Schedule for Professional personnel
Appendix B-7	Activity (Works) Schedule

APPENDIX B-1

Technical proposal submission form.

FROM (Name of Firm) To: (Name and Address of Client)

_____ _____

_____ _____

_____ _____

Ladies/Gentlemen:

Subject: Submission of Technical and Financial Proposal for engagement as Technical Consultant for preparation of feasibility report and DPRs along with supervision of works as PMC .

We, the undersigned, offer to provide the consulting services for the above in accordance with your Request for Proposal dated (Date), and our Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal sealed under a separate envelope for the above mentioned work.

If negotiations are held during the period of validity of the Proposal i.e. before (Date) we undertake to negotiate on the basis of the proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from contract negotiations.

We understand you are not bound to accept any Proposal you receive
We remain,

Yours sincerely, Managing Director/Head of the

firm/ Authorized Representative of the firm

Name of the firm

Address

APPENDIX B-2: COMMENT AND SUGGESTIONS OF CONSULTANTS ON THE TERMS OF REFERENCE (PART I & II) AND ON SERVICES AND FACILITIES TO BE PROVIDED BY THE PWD CG

On the Terms of Reference (not more than one page):

1
.

2
.

3
.

4
.

…
.

On the services and facilities to be provided by the **PWD CG** (not more than one page)

1.

2.

3.

4.

….

APPENDIX B-3: APPROACH PAPER ON METHODOLOGY AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

(not more than six pages)

APPENDIX B-4: COMPOSITION OF THE TEAM PERSONNEL, AND TASK(S) OF EACH TEAM MEMBER

1. Technical/Managerial Staff

Sl. No.	Name	Position	Task
1			
2			
3			
4			
..			
..			

2. Support Staff

Sl. No.	Name	Position	Task
1			
2			
3			
4			
..			
..			

APPENDIX B-5: FORMAT OF CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONAL STAFF

Proposed Position: ……
Name of Firm:.....
Name of Staff:.....
Profession:.....
Date of Birth:
Years with Firm/Entity : Nationality :
Membership of Professional Societies:.....
Detailed Task Assigned: .....

S.No	Name of Employer	Post Held	Project Name	Period		Assignment in the Project	Client of the Project	Remark
				From	To			

Education:
Summarize college/university and other specialized education of staff member, giving their names, dates attended, and degrees obtained. Use about one quarter of a page.

Key Qualifications:
Give an outline of staff members experience and training most pertinent to tasks on assignment. Describe degree of responsibility held by staff member on relevant previous assignments and give dates and locations. Use about half a page.

Employment Record:
Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, name of employing organizations, titles of positions held, and locations of assignments. For experience in last ten years, also give types of activities performed and client references, where appropriate. Use about three- quarters of a page.

Languages :
For English language indicate proficiency: excellent, good, fair, or poor; in speaking, reading, and writing

Summary of Qualification & Experience vis -à-vis the requirements as per TOR

	Academic Qualification		Professional Qualification		
Position of the Key personnel	**as per the TOR-1, Enc-2 and TOR-2 Enc-B**	**Possessed by Staff member**	**as per the TOR-1, Enc-2 and TOR-2 Enc-B**	**Possessed by Staff member**	
				Brief Description of Project	**Man-months provided**

Certification by the Candidate

I, the undersigned, (Name and Address) undertake that this CV correctly describes myself, my qualifications and my experience and **PWD CG** would be at liberty to debar me if any information given in the CV, in particular the Summary of Qualification & Experience vis -à- vis the requirements as per TO R is found incorrect. I further undertake that I have not been debarred by NHAI/MORTH/Other States Govt./Central Govt. or any subsidiary nor left any assignment with the consultants engaged by **the above** / contracting firm (firm to be supervised now) for any continuing work of **PWD CG** without completing my assignment. I will be available for the entire duration of the current project (named…..). If I leave this assignment in the middle of the work, **PWD CG** would be at liberty to debar me from taking any assignment in any of the **PWD CG** works for an appropriate period of time to be decided by **PWD CG.** I have no objection if my services are extended/ contracted by **PWD CG** for this work in future.

I further undertake that if due to my inability to work on this project due to unavoidable circumstances, due to which consultants firm is forced to seek replacement. In such unavoidable circumstances, I shall not undertake any employment in **PWD CG**/Govt. of C.G. projects during the period of assignment of this project and **the PWD CG** shall consider my CV invalid till such time.

For Key Personnel having intermittent inputs, add the following:

I further certify that I am associated with the following assignments as on date (as on 7 days prior to due date for submission of proposal) including those for which LOA has been received by the firm and the inputs in these assignments shall not affect the work of the current assignment.

Name of Assignment	Client	Date of LOA	Likely start (Month / Year)	Likely end (Month / Year)	Total input of the person (man-months)

Note : CVs of Key Personnel having intermittent inputs will be considered only if the assignments on hand as on 7 days before due date of proposal including those for which LOA has been received from the Client do not exceed.

3 (three) for Bridge Engineer, Pavement Engineer and Material cum Geo Technical Expert.
6 (six) for Traffic cum safety Expert, Social R & R Expert, Senior Quantity Surveyor and Financial Expert,

…….. Date

(Signature of Key Personnel) (Day/Month/Year)

Certification by the firm

The undersigned on behalf of ----------(name of consulting firm) certify that the qualification and experience details of Shri ------ (name of the proposed personnel and address) as described in the CV has been checked and found to be correct. It is also certified that Shri-------- (name of proposed personnel) to the best of our knowledge has neither been debarred by **PWD CG/**Govt. of C.G. nor left his assignment with any other consulting firm engaged by **PWD CG/** Govt. of C.G. Contracting firm (firm to be supervised now) for the ongoing projects. We understand that if the information about leaving the past assignment is known to **PWD CG**, **The PWD CG** would be at liberty to remove the personnel from the present assignment and debar him for an appropriate period to be decided by **PWD CG**.

…….. Date : ……
(Day/Month/Year)

(Signature of authorized representative of the Firm)

Note:-

a) Personnel are to affix his recent photograph on first page of CV.
b) Complete address and phone number of the Personnel is to be provided.
c) Document for proof of age is to be enclosed.
d) Document for proof of qualification is to be enclosed.
e) Age of the personnel shall not be more than as specified.
f) Experience Certificates from Employers to be attached.

APPE NDIX B -6: TIME SCHEDULE FOR PROFESSIONAL PERSONNE L

A. Activity Schedule

Sl. No.	Na me	Position	Month wise Program (in form of Bar Chart) [1st, 2nd , etc. are months from the start of assignment]												
			1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th and subse-quent	Number of Month s
1															Sub total (1)
2															Sub total (2)
3															Sub total (3)
4															Sub total (4)
-															-
-															-

APPENDIX B -7 : ACTIVITY (WORKS) SCHEDUL E

A. Activity Schedule

		Month wise Program (in form of Bar Chart) [1st, 2nd, etc. are months from the start]											
S l. No.	Item of Activity (Works)	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
1	……												
2	……												
3	……												
4	……												
-	……												
-	……												

B. Completion and Submission of Reports

S .No	**Reports :**	**Programme : (Date)**
1	Monthly reports (Design and Construction)	
2	Quarterly Re ports	
3	Various others reports as provide d in the Concession Agreement such as Completion Re port	

SECTION 5: FORMAT FOR SUBMISSION OF FINANCIAL PROPOSAL

Appendix C - 1 Financial proposal submission form

Appendix C - 2 Summary of costs

Appendix C - 3 Costs for Feasibility, DPR, Bid documents etc.

Appendix C - 4 Costs for PMC Works

Appendix C - 5 Break down of local currency costs

APPENDIX C-1 : FINANCIAL PROPOSAL SUBMISSION FORM

FROM : (Name of Firm) **TO :**

Engineer in Chief
Public Works Department
Sirpur Bhawan Civil Lines,
Behind All India Radio
Raipur (C.G.) 492001
Website https://pwd.cgeprocurement.gov.in
email ID : einc.pwd.cg@nic.in
Ph : 0771 – 2425035,
Fax : 0771-2425913

Subject : Consultancy services for preparation of DPR including Project management of Two or more lane Road Projects in the state of Chhattisgarh.

Package no……..

We, the undersigned, offer to provide the consulting services for the above in accordance with your Request for Proposal dated 21/04/2015 and our proposal. Our attached financial proposal is for the sum of Rs…… [Amount in words and figures]. This amount is inclusive of all the taxes except Service tax which we have estimated at Rs……(Amount in Words and Figures).

Our financial proposal shall be binding upon us subject to the modifications resulting from contract negotiations, up to the expiration of the validity period of the proposal, i.e……., [Date].

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

Commission and gratuities, if any, paid or to be paid by us to agents relating to this proposal and contract execution, if we are awarded the contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity
.....	.....	……..……
.....	.....	……

We understand you are not bound to accept any proposal you receive. We remain,

Yours sincerely,

Managing Director/Head of the firm
/Authorized Representative of the firm

Name of the firm

Address

APPENDIX C-2: SUMMARY OF Overall COSTS –

Package no	Cost For Preparation of DPR, Bid Documents, etc. as per Appendix C 3	Cost For PMC Works as per Appendix C 4	Total Cost For the Package **(including all taxes except Service tax)**
(1)	(2)	(3)	(4) = (2)+(3)

Note: Payments will be made as per stipulations of the Conditions of Contract.

Managing Director/Head of the firm
/Authorized Representative of the firm

Name of the firm

Address

APPENDIX C-3 : SUMMARY OF COSTS – DPR and Bid Document preparation

Package No	Total Length of Roads in kms	Rate Per km of Length (in INR)		Amount For the Package (In INR)
		In Figures	In Words	
(1)	(2)	(3)	(4)	(5) = (2) x (3)

Note:
1. Payments will be made as per stipulations of the Conditions of Contract.
2. In case of discrepancy between figures and words, the rates quoted in words would be considered as final rates.
3. All the cuttings & overwriting shall be clearly initialed.

Managing Director/Head of the firm
/Authorized Representative of the firm

Name of the firm

Address

APPENDIX C-4:
SUMMARY OF COSTS – PMC WORKS

S.No	Description	Amount (INR)	Remarks
1	Remuneration for Professional & Sub professional staff		
2	Office Staff		
3	Out of Pocket expenses		
Total Amount for package			

Note: Payments will be made as per stipulations of the Conditions of Contract..

Managing Director/Head of the firm
/Authorized Representative of the firm

Name of the firm

Address

Appendix C 5 – Breakdown of Local Currency Costs

I.(A) Remuneration for Local Professional Staffs for DPR and Bid Document Preparation

S.No	Position	Name	No.	Rate	No.of Man Month	Amount
1.	Sr. Highway Engineer cum Team Leader				4	
2.	Pavement Engineer				4	
3.	Bridge Engineer				4	
4.	Traffic and Saftey Expert				2	
5.	Material cum Geo Technical Engineer				2	
6.	Senior Survey Engineer				3	
7.	Social R&R Expert				1	
8	Quantity Surveyor/Documentation Expert				1	
9	Field Surveyor				3	
10	CAD expert				2	
	Total				26	

I(B) Remuneration for Local Professional Staffs for PMC works

S.No	Position	Name*	Year 1-2		
			Rate	No. of Man Months	Amount
Key Personnel (Professional Staff)					
1	Team Leader Cum Senior Highway Engineer			24	
2	Bridge Engineer			24	
3	Pavement Engineer			24	
4	Senior Quality cum material Engineer			24	
5	Senior Quantity Surveyor			24	
	Sub Total			**120**	
Sub-Professional					
1	Resident Engineer			24	
2	Field Engineer			24	
3	Quality Control Engineer			24	
	Sub Total			**72**	
	Grand Total			**192**	

*All positions to be named.

II. Remuneration for Office Staff

S.No	Name of Position	Name	Rate	No. of Man Month	Amount
1	Office manager cum Accountant			1x24	
2	Computer Operator			2x24	
3	Peon			1x24	
4	Night Watchman			1x24	
	Total			120	

Note : No extra payment shall be made on any account other than above.

III. Out of pocket expenses

S.No	Particulars	Charge/Month	Consulting Period	Amount
1	Car Rentals (2 vehicles for team leader office and 1 each vehicles for Resident Engineer office total 7 vehicles are to be provided) during construction period		7x24	
2	Motor Cycle/Bike Rental (one for each Resident Engineer's office)		5x24	
3	Office Stationary , Printing Charges i/c misc. cost for computer, printer, photo copies 1. For TL Office 2. For RE Office		1x24 5x18	
4	Communication (TEL/Fax/Postage etc) 1. For TL Office 2. For RE Office		1x24 5x18	
5	Office Accommodation including furnishing 1. For TL Office 2. For RE Office		1x24 5x18	
	Total			

Managing Director/Head of the firm
/Authorized Representative of the
firm

Name of the firm

Address

SECTION - 6

TERMS OF REFERENCE (TOR) PART-I

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT AND BID DOCUMENT

TERMS OF REFERENCE OF CONSULTANCY SERVICES FOR PREPRATION OF DETAILED PROJECT REPORT & BID DOCUMENT (TOR PART-I)

1. General

1.1 Government of Chhattisgarh **P W D** plans to take up the development of selected roads of the State.

1.2 **Public works department CG (PWD CG)** has been entrusted to implement the development projects for few selected stretches/corridors.

1.3 **PWD CG** will be the employer and executing agency for the project and expects that the standards of output required from the consultants are of international level both in terms of quality and adherence to the agreed time schedule.

1.4 The appointed consultant shall be expected to adhere high level quality standards and to complete the work within the stipulated time schedule.

2. Objective

2.1 The main objective of the consultancy service is to prepare Detailed Project Reports(DPR) for construction of new roads and rehabilitation, upgrading and widening of the existing state highways/MDRs to two lane or more lane roads.

The project is to be designed as a partially access controlled facility shall be established taking into account the requirements with regard to rehabilitation, upgrading and improvement based on highway design, pavement design, type of intersections, rehabilitation and widening of existing and/or construction of new roads, bridges and structures, road safety features, quantities of various items of works and cost estimates vis-à-vis the investment and financial return through toll and other revenues.

2.2 The Detailed Project Report would inter-alia include surveys and investigations, detailed highway design, condition and performance, design of pavement and overlays with options for flexible or rigid pavements, design of bridges and cross drainage structures, grade separated structures, design of service roads, truck laybyes, bus stops, quantities of various items, detailed working drawings, detailed cost estimates, economic and financial viability analysis, environmental and social feasibility, social and environmental action plans as appropriate, detailed traffic survey and financial analysis and documents required for tendering the project on commercial basis for international / local competitive bidding.

2.3 The DPR Consultant should ensure detailed project preparation incorporating aspect of value engineering, quality audit and safety audit requirement in design and implementation.

3. Scope of Services

~~The main scope of the consultancy service is to establish the technical, economical, and financial viability with due consideration to environmental and social safeguards and prepare detailed project reports for construction of Various Roads given in RFP.~~

3.1 As far as possible, the widening work shall be within the existing right of way avoiding land acquisition, except for locations having inadequate width, alignment corrections, improvement of intersections are considered necessary and practicable and cost effective.

3.2 Consultant is required to prepare all Land Acquisition papers (i.e. all necessary schedules as per L.A. Act) for acquisition of land under C.G. Land Acquisition Act. The L.A, utility relocation plan and tree cutting plan shall be strictly submitted within 3 months of issue of L.O.A.

3.3 ~~The project is envisaged to be implemented on Public Private Partnership (PPP) and the project would be taken up on Annuity basis. Accordingly, the consultant is required to prepare and deliver the bid documents.~~

3.4 ~~It may be proposed to collect fees as per CG toll policy from the users on the improved facilities and therefore, the Consultant has to keep this important aspect in mind while carrying out the study.~~

3.5 ~~The Consultant shall study the possible locations and design of toll plaza. required on tolled roads.~~

3.6 The general scope of services is given in the sections that follow. However, the entire scope of services would, inter-alia, include the items mentioned in the Letter of Invitation and the TOR.

3.7 Deleted.

3.8 All 'good for construction' drawings shall be prepared.

3.9 Consultant will also obtain incorporate the estimates for shifting of utilities of all types involved from concerned local authorities in the DPR.

3.10 Consultant shall obtain all types of necessary clearances (Except "Mining clearance") required for implementation of the project on the ground from the concerned agencies. The Employer shall provide the necessary supporting letters and any official fees as per the demand note issued by such concerned agencies from whom the clearances are being sought to enable implementation.

3.11 The 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 State, as may be amended from time to time. Accordingly the consultant will prepare the reports on environmental aspects including Initial Environmental Examination and environmental monitoring and management plans (EMMPs). The Consultant will also assist **PWD CG** in discussions and presentations to Ministry of Environment and Forest, Govt. of India/ Govt. of CG if necessary, for obtaining the necessary clearances.

3.12 ~~In case of Railway Over Bridges, preparation of all detailed designs and drawings including GAD and approval from the Railways will be obtained by the consultant. However, if Railways require proof checking of the drawings prepared by the consultants, the same will be got done by **PWD CG** and payment to the proof checking consultant shall be made by **PWD CG** directly.~~

3.13 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 **PWD CG** shall provide the necessary supporting letters and any official fees.

3.14 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.

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

4. General

4.1 Primary Tasks

General Scope of Services shall cover but be not limited to the following major tasks (additional requirements for Feasibility Studies and preparation of Detailed Project Report for Bridges are given in **Supplement I**):

i. review of all available reports and published information about the project road and the project influence area
ii. detailed reconnaissance;
iii. traffic studies including traffic surveys and axle load survey and demand forecasting for next thirty years;
iv. inventory and condition surveys for road;
v. inventory and condition surveys for bridges, cross-drainage structures and drainage provisions;
vi. detailed topographic surveys using Total Stations and GPS;
vii. pavement investigations;
viii. 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;
ix. identification of sources of construction materials;
x. detailed design 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 of bridges, structures preparation of GAD and detailed drawings for bridges, construction drawings and cross-drainage structures, under passes, etc.
xi. identification of the type and the design of intersections;
xii. design of complete drainage system and disposal point for storm water
xiii. ~~economic and financial analyses;~~
xiv. preparation of road wise DPRs and Bid documents (packaging and Bid documentation would be done as per directions of **PWD CG**.)
xv. 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 and land acquisition requirements including schedule for LA: reports documents and drawings arrangement of estimates for cutting of trees and shifting of utilities from the concerned department;
xvi. ~~financial viability of project and financing options.~~

xvii. preparation of detailed project report, cost estimate, construction drawings, rate analysis, detailed bill of quantities, bid documents including Concession Agreement with schedules for execution of civil works ~~**on Annuity basis.**~~

xviii~~. Design of toll plaza and identification of their numbers and location and office cum residential complex including working drawings.~~

xix. ~~Any other user oriented facility enroot toll facility.~~

xx. Environmental, poverty and social impacts, including those related to cultural properties, indigenous people natural habitats, involuntary resettlement, etc.

xxi. 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;

xxii. ~~Detailed reconnaissance;~~

xxiii. 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;

~~**xxiv. Bid documents appropriate for single stage bidding standard bidding documents for execution of civil works on Annuity basis.**~~

xxv. Tie-in of on-going/sanctioned works of MORT&H/ GoCG/PWD CG/ other agencies;

xxvi. Resettlement framework, preparation of resettlement plans as per guidelines of Govt. of India R&R Policy.

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

4.3 ~~The consultant shall study the possible locations and design of toll plaza, required and arboriculture along the highway shall also be planned.~~

4.4 Standards and Codes of Practices

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). 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 finalize this in consultation with **PWD CG** and reflect the same in the inception report.

2. All notations, abbreviations and symbols used in the reports, documents and drawings shall be as per IRC: 71-1977.

4.5 Deleted

4.6 Quality Assurance Plan (QAP)

1. The Consultants should have detailed Quality Assurance Plan (QAP) for all field studies including topographic surveys, traffic surveys, engineering surveys and investigations, design and documentation activities. 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, economic & financial analysis, drawings and documentation, preparation, checking, approval and filing of calculations, identification and tractability 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 feasibility study and project preparation, since inception to the completion of work. The detailed Draft QAP Document must be discussed and finalized with the concerned **PWD CG** officers immediately upon the award of the Contract and submitted as part of the inception report.

2. It is imperative that the QAP is approved by **PWD CG** before the Consultants start the field work.

4.7 Review of Data and Documents

1. The Consultants shall collect the available data and information relevant for the Study. 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 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. Type and location of existing utility services (e.g. Fiber Optical Cable, O/H and U/G Electric, Telephone line, Water mains, Sewer, Trees etc.)
   xii. Speed and delay characteristics; if available;
   xiii. Commodity-wise traffic volume, if available;
   xiv. Accident statistics;
   xv. Vehicle loading behavior (axle load spectrum), if available;
   xvi. Environmental setting and social baseline of the project

4.8 Traffic Surveys

All traffic surveys and studies will be completed in feasibility studies.

4.8.1 Number and Location of Survey Stations

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

S.N.	Description	Number of Survey Stations per 50 km
1.	Classified Traffic Volume Count	2
2.	Origin-Destination and Commodity Movement Characteristics	Minimum of 2 per 100 km.
3.	Axle loading characteristics	2
4.	Intersection Volume Count	All Major Intersection

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 **PWD CG** proposals regarding the total number as well as the locations of the traffic survey stations as put of inception report. Suitable maps and charts should accompany the proposals clearly indicating the rationale for selecting the location of survey stations.

3. The methodology of collection and analysis of data, number and location of traffic survey stations shall be finalized in consultation with **PWD CG**.

4.8.2. Axle Load Surveys

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 finalized in consultation with **PWD CG**. However, a few buses may be weighed in order to get an idea about their loading behavior. 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.

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.

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. 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.

4.9 Classified Traffic Volume Count Survey

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="4">Motorised Traffic</th><th>Non-Motorised Traffic</th></tr>
<tr><td colspan="4">2-Wheeler</td><td>Bi-Cycle</td></tr>
<tr><td colspan="4">3-Wheeler</td><td>Cycle-Rickshaw</td></tr>
<tr><td colspan="4">Passenger Car</td><td>Animal Drawn Vehicle (ADV)</td></tr>
<tr><td colspan="4">Utility Vehicle (Jeep, Van etc.)</td><td>Hand Cart</td></tr>
<tr><td colspan="4"></td><td>Other Non-Motorised Vehicle</td></tr>
<tr><td>Bus</td><td colspan="3">Mini Bus
Standard Bus</td><td></td></tr>
<tr><td>LCV</td><td colspan="3">LCV-Passenger
LCV-Freight</td><td></td></tr>
<tr><td>Truck</td><td colspan="3">MCV : 2-Axle Rigid Chassis</td><td></td></tr>
<tr><td></td><td colspan="3">HCV : 3-Axle Rigid Chassis</td><td></td></tr>
<tr><td rowspan="2"></td><td rowspan="2">MAV</td><td>Semi Articulated</td><td></td></tr>
<tr><td>Articulated</td><td></td></tr>
</table>

2. All results shall be presented in tabular and graphical form. The survey data shall be analysed 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.

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 PWD shall be suitably explained.

4.9.1. Origin-Destination and Commodity Movements Surveys

1. The Consultants shall carry out 1-day (24 hour, both directions) O-D and Commodity Movement Surveys at locations finalized in consultation with **PWD CG**. 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.
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.

~~4.9.2. Toll Rate Surveys~~

~~1. The consultants shall carry out Stated Preference surveys along the project road route to estimate the acceptable user fee levels for the different vehicle categories. The~~

~~questionnaire to be used to record the response by trained staff should be properly structured so as to avoid ambiguities. The scenarios in the questionnaire should represent the current speed, vehicle operating costs (VOC) and travel time levels and the probable effect on them due to traffic growth for both "do minimum" (i.e. no improvement and widening) and "with project" (i.e. improvement and widening implemented) cases. The findings of these surveys shall be compared with the user fees being collected for the ongoing projects in the country. As the sample sizes for these surveys are generally low as compared to other interviews, the sample should be selected judiciously.~~

~~2. The detailed toll analysis should take into account traffic diversion rates and willingness/ability to pay. The analysis should bring out an appropriate toll structure and the mechanisms for toll increases.~~

~~3. The analysis should be carried out with the user fee levels linked to various benefits to the users. The proposed methodology for data collection and analysis should be finalised in consultation with **PWD CG**.~~

4.10. Traffic Demand Estimates

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 behavior should also be taken into account while working out the traffic demand estimates.

2. It is envisaged that road sections covered under this TOR would be completed and opened to traffic in 2018. The traffic demand estimates shall be done for the period, 20017-2047. 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

3. 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. 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.

5. The traffic forecasts shall also be made for both diverted and generated traffic.
6. Overall traffic forecast thus made shall form the basis for the design of each pavement type and other facilities/ancillary works

4.11. Engineering Surveys and Investigations

4.11.1. Reconnaissance and Alignment

1. The Consultants should make an in-depth study of the available land width (ROW) topographic maps, satellite imageries and air photographs of the project area and other available relevant information collected by them concerning the existing alignment. Consultant himself has to arrange the required maps and the information needed by him from the potential sources. Consultant should make efforts for minimizing land acquisition.

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. preliminary identification of improvement requirements including treatments and measures needed for the cross-roads;
   - iv. traffic pattern and preliminary identification of traffic homogenous links;
   - v. sections through congested areas;
   - vi. 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:
   - vii. critical areas requiring detailed investigations; and,
   - viii. requirements for carrying out supplementary investigations.
   - ix soil (textural classifications) and drainage conditions
   - x. type and extent of existing utility services along the alignment (within ROW).
   - xi Possible alignment alternatives, vis-à-vis, scheme for the widening of the existing road;
   - xii Realignment requirements including the provision of Bypasses, ROBs / underpasses/ overpasses and subways for pedestrian crossings with possible alignment alternatives;

3. The data derived from the reconnaissance surveys are normally utilised 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.

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.

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 **PWD CG's** comments. The data and the charts should also accompany the rationale for the selection of traffic survey stations.

4.11.2. Topographic Surveys

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.

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 responsive for any inaccuracy in surveys.

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 meter) oil and gas lines etc. falling within the extent of survey.

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 divided carriageway. Normally the surveys should extend a minimum of 20 m beyond either side of the centre line of the proposed divided carriageway or land boundary whichever is more.

   ii. The width of the surveyed corridor will be widened appropriately where developments and /or encroachments have resulted in a requirement for adjustment in the alignment, or where it is felt that the existing alignment can be improved upon through minor adjustments.

iii. 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.

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 500 m apart, incase Bench Mark Pillar coincides with Reference Pillar, only one of the two need be provided.

ii. Establishing Benchmarks at site connected to GTS Bench marks at a interval of 500 meters on Bench mark pillar made of RCC as mentioned above with RL and BM No. marked on it with red paint.

4.11.2.1 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 20 m interval, at the locations of curve points, small streams, and intersections and at the locations of change in elevation.

ii. Cross sections at every 40 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"). At feasibility study stage cross sections at 200m interval may be taken.

4.11.2.2 Details of utility Services and Other Physical Features

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 fiber 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.

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 the extent of land acquisition with L.A schedule, utility removals of each type 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.

4.11.3. Road and Pavement Investigations

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

4.11.3.1 Road Inventory Surveys

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. Design speed of existing road

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.

4.11.3.2 Pavement Investigation

1. Pavement Composition

i. The data concerning the pavement composition may be already available with the **PWD**. However, the consultants shall make trial pits to ascertain the pavement composition. The test pit interval will be as per Para 4 below.
ii. For each test pit, the following information shall be recorded:
iii test pit reference (Identification number, location):
iv pavement composition (material type and thickness); and
v sub- grade type (textural classification) and condition (dry, wet)

2. Road and Pavement Condition Surveys

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

iv. embankment condition; and
v. drainage condition

Pavement

- cracking (narrow and wide cracking), % of pavement area affected;
- Traveling, % of pavement area affected;
- Potholing, % of pavement area affected;
- Edge break, length (m); and,
- rut depth, mm

	Shoulder Paved: Same as for		
	Unpaved: material loss,		
	corrugation,		
	Edge drop, mm.		
	Embankment general condition; and		

- extent of slope erosion

vi. 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.
vii 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.
viii. 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.
ix. For sections with severe distresses, additional investigations as appropriate shall be carried out to determine the cause of such distresses.
x. Middle 200m could be considered as representative sample for each one km. of road and incase all other things are considered similar.

Drainage

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

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: 81-1997.

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 prevalent Technical Publications and duly got authenticated by established laboratory/institution acceptable to the Employer..

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 directions.

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. Pavement Structural Strength

i. The Consultants shall carry out structural strength surveys for existing pavements using Falling Weight Deflectometre as per IRC procedures.

4.11.3.3 Sub-grade Characteristics and Strength

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, 1993).
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 is, therefore, proposed as given under:

   i. For the widening of existing road within the kROW, 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.

   ii. For the roads along new alignments, the test pits for sub-grade soil shall be @5 km or for each soil type, whichever is more. A minimum of three samples should be tested corresponding to each homogenous segment.

3. The testing for sub-grade soil shall include:
   i. in-situ density and moisture content at each test pit
   ii. Field CBR using DCP at each test pit
   iii. Characterization (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. 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 **PWD CG** officers after the problematic soil types are identified along the road sections.

4.11.4 Investigations for Bridges and Structure

4.11.4.1 Inventory of Bridges, Culverts and Structures

The Consultants shall make an inventory of all the structures (bridges, viaducts, ROBs, culverts, etc.) along the road under the project. The inventory for the bridges, viaducts and ROBs shall include the parameters required as per the guidelines of IRC-SP:35-1990. The inventory of culverts shall be presented in a tabular form covering relevant physical and hydraulic parameters.

4.11.4.2 Hydraulic and Hydrological Investigations

1. The 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:5-1998 ("Standard Specifications & Code of Practice for Road Bridges, Section I General Feature of Design"). These investigations shall be carried out for all existing drainage structures along the road sections under the study.

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.

3. The Consultants shall collect information on high flood level (HFL), ordinary flood level (OFL), 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.

4.11.4.3 Condition Surveys for Bridges, Culverts and Structures

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; 35-1990. The condition and structural assessment survey of the bridges / culverts / structures shall be carried out by senior experts of the Consultants.

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.

3. The assessment of the load carrying capacity or rating of existing bridges shall be carried out under one or more of the following scenarios:

   i. when the design live load is less than that of the statutory commercial vehicle plying or likely to ply on bridge;

   ii. if during the condition assessment survey and supplementary testing the bridge is found to indicate distress of serious nature leading to doubt about structural and / or functional adequacy, and

iii. design live load is not known nor are the records and drawings available.

4. The evaluation of the load carrying capacity of the bridge shall be carried out as per IRC-SP: 37 ("Guidelines for Evaluation of Load Carrying Capacity of Bridges"). The analytical and correlation method shall be used for the evaluation of the load carrying capacity as far as possible. When it is not possible to determine the load carrying capacity of the bridge using analytical and correlation method, the same shall be carried out using load testing. The consultant has to exhaust all other methods of evaluation of strength of bridges before recommending to take up load testing of bridges. Road closure for testing, if unavoidable, shall be arranged by PWD CG for limited duration say 12 hrs. or so.

5. Consultant shall carryout necessary surveys and investigations to establish the remaining service life of each retainable bridge or structure with and without the proposed strengthening and rehabilitation according to acceptable international practice in this regard.

4.11.4.4 Geo-technical Investigations and Sub-Soil Exploration

1. The Consultants shall carry out geo-technical investigations and sub-surface explorations for the proposed Bridges/Road over bridges 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:

Sn.	Description	Location of Boring
1.	Overall length = 6 – <30 m	One abutment location
2.	Overall length = 30 – 60 m	Each abutment location and at least one intermediate location between abutments.

3. Over all length >60 m Each abutment location and at an interval of max.30 meter in between abutment.

2. The deviation(s), if any, by the Consultants from the scheme presented above should be got approved by **PWD CG**.

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 finalised the bore hole locations in consultation with the **PWD CG** officers.

4. Sub-soil investigations will be done as per IRC 78-2000.

5. The scheme for the borings locations and the depth of boring shall be prepared by the Consultants and submitted to **PWD CG** for approval. These may be finalised in consultation with **PWD CG**.

6. **The sub-soil exploration and testing should be carried out through the Geo-technical Consultants empanelled by the MORTH/NIT, Raipur** The soil testing reports shall be in the format prescribed in relevant IRC Codes.

7. For the road pavement, bore holes at each major change in pavement condition or in deflection readings or at 2 km intervals whichever is less shall be carried out to a depth of at least 2 m below embankment base or to rock level and are to be fully logged. Appropriate tests to be carried out on samples collected from these bore holes to determine the suitability of various materials for use in widening of embankments or in parts of new pavement structure.

4.11.5. Material Investigations

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.

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.

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

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.

4.12 Detailed Design of Road and Pavements, Bridges, Structures etc.

4.12.1. General

1. The Consultants are to carryout detailed designs and prepare working drawings for the following:

   i. design of pavement and overlay for the existing road, paved shoulders, medians, verges;
   ii. bridge, and structures wherever required etc.

iii. prepare alignment plans, longitudinal sections and cross-sections @ 50m intervals;
iv. designs for road furniture and road safety/traffic control features;
v. ~~toll plazas and office cum residential complex for PIU.~~
vi. drainage design showing location of turnouts, out falling structures, separate drawings sheet for each 5 km. stretch**.**
vii. bridges and structures rehabilitation plan with design and drawings
viii. Geometric design of highway with appropriate level of service;
ix At-grade intersections;
x ~~ROB for railway crossings as per the requirement and the standards of the Indian Railways; and,~~
xi Designs and drawings for service road/ (provided no land acquisition is involved) tree planting/fencing at locations where necessary/required;
xii Traffic amenities (Parking Areas, Weighing Station and Rest Areas, etc.);
xiii Other safety features.

2. Wherever feasible within the constraints of the available land, one side symmetrical widening of the existing carriageway shall be done.

4.12.2. Design Standards

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) for approval by PWD CG.
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.

4.12.3. Geometric Design

1. The project is to be developed as a partially access controlled highway facility with appropriate measures to provide access to all having access at the present. The design of geometric elements shall, therefore, take into account the essential requirements of such facilities.
2. 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.
3. 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, including refuge lane (50m) at every 2kms.
   iv. junctions, intersections.
   v. bypasses.
4. 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.

5. 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 if required with respect to the different horizon periods taking into account special problems such as road segments with isolated steep gradients. The requirement for separate climbing lanes along steep gradients for heavy trucks shall be investigated and operational analysis shall be carried out for the provision.

4.12.4. Pavement Design

1. The detailed design of pavement shall involve:

   i. strengthening of existing road pavement.
   ii. design of new pavement for the additional width if required.
   iii. pavement design for Bypasses; and,
   iv. design of shoulders.

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 and TRL wherever appropriate on approval by **PWD CG.**

3. The design of pavement shall be rigorous and shall make use of the latest Indian and International practices. The design alternatives shall include both rigid and flexible design options. The most appropriate design, option shall be established on life-cycle costing and techno- economic consideration**.**
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.
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 included.
6. The paved shoulders shall be designed as integral part of the pavement for the main carriageway. The design requirements for the carriageway pavement shall, therefore, be applicable for the design of shoulder pavements. The design of granular shoulder should take into account the drainage considerations besides the structural requirements.
7. The pavement design task shall also cover working out the maintenance and strengthening requirements and periodicity and timing of such treatments.

4.12.5. Design of Embankments

1. The embankments design should provide for maximum utilization of locally available materials consistent with economy. Use of fly ash wherever available with in economical leads must be considered. In accordance with Government instructions, use of fly ash within 50kms from Thermal Power Stations is mandatory.
2. The Consultants shall carry out detailed analysis and design for all embankments of height greater that 6 m based on relevant IRC publications.
3. The design of embankments should include the requirements for protection works and traffic safety features.

4.12.6. Design of Bridges and Structures

1. The Consultant shall prepare General Arrangement Drawing (GAD) and Alignment Plan showing the salient features of the bridges and structures proposed to be constructed / reconstructed 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 **PWD CG** to approve the best alternative. After approval of alignment and GAD the Consultant shall prepare detailed design as per IRC codes /guidelines and working drawings for all components of bridges and structures

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 separately to the **PWD CG**. The Consultant shall pursue the Indian Railways Authorities or/and any statutory authority of State/Central Government for approval of the GAD from concerned Authorities.

3. GAD for bridges/structures across irrigation/water way channels shall be got approved from the concerned Irrigation/Water way Authorities. Subsequent to approval of GAD and alignment plan by **PWD CG** the Consultants shall prepare detailed design as per IRC codes/guidelines for all components of the bridges and structures.

4. Dismantling/ reconstruction of existing structures shall be avoided as far as possible except where considered essential in view of their poor structural conditions/ inadequacy of the provisions etc. 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.

5. 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.

6. 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 inthe 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.

7. The Consultants shall also carry out the design and make suitable recommendations for protection works for bridges and drainage structures.

8. The consultants shall also carry out the design and make suitable recommendations for protection works for bridges and drainage structures.

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

4.12.7. Drainage System

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.

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.

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.

4.12.8. 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.

4.12.9. Arboriculture and Landscaping

The Consultants shall work out appropriate plan for planting of trees (specifying type of plantation), horticulture, on the surplus land of the right-of-way. The existing trees/ plants shall be retained to the extent possible.

~~4.12.10. Toll Plaza~~

~~1. The Consultants shall identify the possible toll plaza location(s) based on the data and information derived from the traffic studies and a study of the existing physical features including the availability of land. The location of the plaza should keep in view collecting toll on rational basis from as much of the vehicular traffic as possible consistent with economy of collection and operations.~~

~~The location of the toll plaza should be finalised in consultation with **PWD CG.**~~

2. ~~The Consultants shall design the toll plaza as per IRC 84 and layout based on the consideration of traffic segregation, acceptable queue length and the average waiting time for the vehicle during the analysis period. The variations of traffic are to be considered in the estimation of the inflow rate. The Consultants shall clearly bring out the comparison of the available systems and describe the operational characteristics including the advantages of the recommended toll collection system for **PWD CG's** acceptance.~~
3. ~~The design of pavement for the toll plaza shall take into account the lay out features and the various stresses induced by the acceleration, deceleration, braking of vehicles and the effect of possible oil spillage from stationary vehicles.~~
4. ~~The setting up, operation and administration costs for the proposed toll collection system shall be worked out by the Consultants.~~
5. ~~The consultant shall select suitable site for weighing stations, parking areas and rest areas and prepare suitable separate design in this regard. The common facility like petrol pumps, first aid medical facility, police office, restaurants, vehicle parking etc should be included in general layout of planning. For petrol pumps, the guidelines issued by OISD of Ministry of Petroleum shall be followed. The facility should be planned to be at 50 km intervals.~~

~~4.12.11. Office-cum-Residential Complex for PIU~~

~~The consultant shall select suitable site for providing office-cum residential complex for the Project Implementing Unit (PIU) of **PWD CG** for civil package. The consultant is required to carryout planning exercise giving general layout of the PIU complex for the package, after ascertaining availability of land from local competent authority. These complexes should be designed in such a manner that after execution of road improvement works; these could serve as maintenance station with Guesthouse facilities.~~

4.12.12. Estimation of Quantities and Project Costs

1. The Consultants shall prepare detailed estimates for quantities (considering designs and mass haul diagram) and project cost for the entire project (road wise and package wise). 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 as defined in this TOR.

2. While preparing bill of quantities for Road works, culverts and bridge works prevailing SOR issued by E-In-C, PWD, Raipur Chhattisgarh to be adopted. The Consultants shall make detailed analysis for computing the unit rates for the different items of works, which are not covered in above SOR. 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.

3. The project cost estimates so prepared for **PWD CG** projects are to be checked against rates for similar on-going works in India/CG under road sector projects.

4.12.13. Viability and Financing Options

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

2. The values of input parameters and the rationale for their selection for the economic and commercial analyses shall be clearly brought out and got approved by **PWD CG**.

3. For models to be used for the economic and the commercial analyses, the calibration methodology and the basic parameters adapted to the local conditions shall be clearly brought out and got approved by **PWD CG.**

4. The economic and commercial analyses should bring out the priority of the different homogenous links in terms of project implementation.

4.12.14. Economic Analysis

1. The Consultants shall carry out economic analysis for the project. 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.

2. 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 30 year period. In calculating the EIRRs, identify the tradable and non-tradable components of projects costs and the border price value of the tradable components.

3. Economic Internal Rate of Return (EIRR) and Net Present Value (NPV), "with" and "without time and accident savings" should be worked out based on these cost-benefit streams. 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 15% and Base Benefits
   Scenario - III Base Costs and Base Benefits minus 15%
   Scenario - IV Base Costs plus 15% and Base Benefits minus 15%

   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. ~~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.~~

~~4.12.15. Financial Analysis~~

1. **~~It is envisaged that the project stretch should be implemented on Annuity/ BOT (Toll)/any other suitable financial model, therefore, the Consultant shall study the financial viability of the project under a commercial format and under different user fee scenarios and funding options. The Consultants shall submit and finalize in consultation with the CGRDC officers the format for the analysis and the primary parameters and scenarios that should be taken into account while carrying out the commercial analysis. The financial model so developed shall be the property of CGRDC.~~**
2. **~~The Financial analysis for the project should cover financial internal rate of return, projected income statements, balance sheets and fund flow statements and should bring out all relevant assumptions. The sensitivity analysis should be carried out for a number of probabilistic scenarios.~~**
3. **~~The financial analysis should cover identification, assessment, and mitigating measures for all risks associated with the project. The analysis shall cover, but be not limited to, risks related to 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. The consultant shall suggest positive ways of enhancing the project Viability and~~

~~furnish different financial models for implementing on BOT format.~~

4.12.16. Time period for the service

1. Time period envisaged for the Feasibility study , DPRs and Bid preparation of projects is **4 Months**. The final reports, drawings and documentation shall be completed within this time schedule.

2. **The PWD CG** shall arrange to give approval on all sketches, drawings, reports and recommendations and other matters and proposals submitted for decision by the Consultant in such reasonable time so as not to delay or disrupt the performance of the Consultant's services.

4.12.17. Project Team and Project Office of the Consultant

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.
2. List of suggested key personnel to be fielded by the consultant with appropriate man-month of each consultancy services is given in Enclosure I as per Employer's assessment.

3. A Manning Schedule for key personnel mentioned above is enclosed as Enclosure I along with broad job- description and qualification as Enclosure II. The information furnished in Enclosures I & II are to assist the Consultants to understand the Employer's perception about these requirements and shall be taken by the Consultants for the purpose of Financial Proposal and deployment schedule etc. in technical proposal to be submitted by them. Any deviation proposed may be recorded in the comments on TOR. 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 in respect of points to be given as part of evaluation criteria as mentioned in Data sheet. The personnel concerned should sign the bio-data of the key personnel on every sheet and the authorized signatory of the Consultants should also sign the last sheet of each bio-data.

4. The Consultants shall establish an office at the project site to be attended by senior key personnel during the course of the surveys and investigations. Day to day activity of the Consultant shall be reported to the officials of **PWD CG**. The commencement of every visit of Senior Key Personnel of Project site will be communicated to the officials of **PWD CG**. The address of the site office including the personnel manning it including their Telephone and FAX numbers will be intimated by the Consultant to **PWD CG** before commencement of the services.

4.12.18. Reports to be submitted by the Consultant to PWD CG

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.

2. Project preparation activities will be split into three stages as brought out below.

Stage 1: Inception Report & Quality Assurance Plan.

Stage 2: Strip Plan and Clearances

Stage 3: Preliminary Project Report (PPR)

Stage 4: Detailed Project Report (DPR)

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 Employer, all the different stages of study within the time frame indicated in the schedule of submission pertaining to Reports and Documents for becoming eligible for payment for any part of the next stage.

4.12.19 Reports and Documents to be submitted by the Consultant to PWD CG

1. The Consultant shall submit to the Employer 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 III. Further, the reports shall also be submitted in floppy diskettes / CD's in addition to the hard copies as mentioned in Enclosure-III. Consultant shall submit all other reports mentioned specifically in the preceding paras of the TOR.

2. The time schedule for various submissions prescribed at S.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 S.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. 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

4.12.20 Quality Assurance Plan (QAP) Document

1. Immediately upon the award, the Consultants shall submit three copies of the QAP document covering all aspects of field studies, investigations design and economic financial 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, economic & financial analysis, drawings and documentation; preparation, checking, approval and filing of calculations, identification and tractability 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 feasibility study and project preparation, since inception to the completion of work. The field and design activities shall start after the QAP is approved by **the PWD CG**.

2. The data formats proposed by the Consultants for use in field studies and investigations shall be submitted within 14 days after the commencement of services and got approved by **the PWD CG**.

4.12.21 Inception Report (IR)

1. 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 **PWD CG** 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. Design standards and proposed cross-sections;
vii. Key plan and Linear Plan;
viii. Quality Assurance Plan (QAP) finalized in consultation with **PWD CG**;
ix. Draft design standards; and

2. The requirements, if any, for the construction of Bypasses should be identified on the basis of data derived from reconnaissance and traffic studies. The available alignment options should be worked out on the basis of available maps. The most appropriate alignment option for Bypasses should be identified on the basis of site conditions and techno-economic considerations. Inception Report should include the details regarding these aspects concerning the construction of Bypasses for approval by **the PWD CG.**

STAGE 2:

4.12.22 Strip Plan and Clearances

1. The Consultants shall submit the following documents:

i. Details of the centre line of the existing/proposed Road along with the existing and proposed right-of- way limits to appreciate the requirements of land acquisition;
ii. 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;
iii. Strip plans showing the position of existing utilities and services indicating clearly the position of their relocation;
iv. Separate strip plan showing shifting / relocation of each utility services in consultation with the concerned local authorities;
v. 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;
vi. Detail schedules for acquisition of additional land and additional properties in consultation with the revenue authorities; and
vii. Land Acquisition Plan.

2. The strip plans and land acquisition plan shall be prepared on the basis of data from reconnaissance and detailed topographic surveys.
3. The Report accompanying the strip plans should cover the essential aspects as given under:

i. Kilometer-wise Land Acquisition Plan (LAP) and schedule of ownership thereof and Costs as per Revenue Authorities and also based on realistic rates.
ii. Details of properties, such as buildings and structures falling within the right-of-way and costs of acquisition based on realistic rates.
iii. Kilometer-wise Utility Relocation Plan (URP) and costs for relocation of civil construction package as per concerned authorities.
iv. Kilometer-wise account in regard to felling of trees of different type and girth and value estimate of such trees based on realistic rates obtainable from concerned District forest office.

4. The strip plans shall clearly indicate the scheme for widening. The views and suggestions of the State PWD should be duly taken into account while working out the widening scheme (left, right or symmetrical). The widening scheme shall be finalised in consultation with **PWD CG.**
5. Kilometer-wise Strip Plans for each section (Package) shall be prepared separately for each concerned agency and suggested by **PWD CG**.

4.12.23 Land Acquisition Report

1. The Land acquisition report shall be prepared and submitted separately. The report shall include detail schedules about acquisition of land holdings as per revenue records and their locations in a strip plan and also the costs as per district authorities. Details shall be submitted in land acquisition Performa to be supplied by LAO. The land acquisition report shall be submitted in both Hindi and English languages.
2. The land acquisition report should be prepared in consultation with affected persons, non-governmental organizations and concerned government agencies and should cover land acquisition plan and cost. It should also include plan of compensating afforestation, its land requirement with specific locations and cost involved for undertaking all activities in this regard.

STAGE: 3

4.12.24 Preliminary Project Report- PPR

1. The Draft PPR shall be prepared separately for each construction package and shall contain the following:

Volume – I: Preliminary Design Report

- Executive summary
- Project description
- Updated cost estimates
- Updated economic and financial analyses
- Suggested methods of procurement and packaging
- Conclusions and recommendations

Volume – II: Design Report

- Road and bridge inventory

- Summary of survey and investigations data
- Proposed design basis, standards and specifications
- Proposed pavement design and preliminary bridge designs

Volume – III: Drawings

- Location map
- Layout plans
- Typical cross sections showing pavement details
- Drawings for cross-drainage and other structures
- Road junction designs
- Indicative land acquisition plans

STAGE: 4

4.12.25 Draft Detailed Project Report (DPR)

1. The draft DPR Submission shall consist of Main Report, Design Report, Materials Report, Engineering Report, Drainage Design Report, Economic and Financial Analysis Report.
2. The Report volumes shall be submitted as tabulated in Enclosure-III..
3. The Documents and Drawings shall be submitted for each section (Package) and shall be in the following format:

Reports

i. **Volume-I, Main Report:** This report will present the project background, details of surveys and investigations carried out, analysis and interpretation of survey and investigation data, traffic studies and demand forecasts, designs, cost estimation, economic and commercial analyses and conclusions. The report shall include Executive Summary giving brief accounts of the findings of the study and recommendations.
The Report shall also include maps, charts and diagrams showing locations and details of existing features and the essential features of improvement and upgrading.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.

ii. **Volume - II, Design Report:** 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 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. 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.

iii. **Volume - III, Materials Report:** The Materials Report shall contain details concerning the proposed borrows 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.

The materials Report shall also include details of sampling, testing and test results obtained in respect physical properties of sub-grade 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.

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 stabilization (cement, lime, mechanical) should be included in the Report.

iv. **Volume - IV,** Environmental Assessment Report including Environmental Management Plan (EMP) & Resettlement Action Plan (RAP): The Report shall be prepared conforming to the Guidelines of the Government of India, State Government and World Bank / ADB as appropriate for construction package.

v. **Volume - V, Technical Specifications:** The MORT&H's Technical Specifications for Road and Bridge works shall be followed for this study. However, Volume - IV: Technical Specifications shall contain the special technical specifications which are not covered by MOST Specifications for Roads and Bridges (latest edition/revision) and also specific quality control norms for the construction of works.

vi. **Volume- VI, Rate Analysis:** 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.

vii. **Volume- VII, Cost Estimates :** This volume will present the cost of each item of work as well as a summary of total cost.

viii. **Volume- VIII, Bill of Quantities:** This volume shall contain the detailed Bill of Quantities for all items of works.

ix. **Volume- IX**, **Drawing Volume** : All drawings forming part of this volume shall be 'good for construction' drawings. 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:

a. Horizontal Alignment and Longitudinal Profile.
b. Cross-section @ 50m interval along the alignment within ROW

c. Typical Cross-Sections with details of pavement structure.
d. Detailed Working Drawings for individual Culverts and Cross-Drainage Structures.
e. Detailed Working Drawings for individual Bridges and Structures.
f. Detailed Drawings for Improvement of At-Grade Intersections.
g. Drawings for Road Sign, Markings, Toll Plazas, office-cum-residential complex for PIU, and other Facilities.
h. Schematic Diagrams (linear chart) indicating but be not limited to be following:
   i. Widening scheme;
   ii. location of traffic signals, traffic signs, road markings, safety features; and,
   ~~iii. locations of toll plazas,~~

i ~~Drawings for toll plazas,~~

All drawings will be prepared in A2 size sheets. The format for plan, cross-section and profile drawings shall be finalised in consultation with the concerned **PWD CG** officers. 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, and delineators. The typical cross-section drawings should indicate the scheme for future widening of the carriageway

x. **Volume - X**, **Civil Work Contract Agreement**: A civil works contract agreement shall be submitted.

xi. **Volume-XI, Project Clearances** – All the necessary(project related) clearances (such as from MOEF, Water Resources Deptt. and any other concerned agencies) shall be obtained by the consultant and submitted to **PWD CG** so that project implementation can straight away proceed without any hold up.

4.12.26 Final Detailed Project Report, Documents and Drawings (6 Sets)

The Final DPR consisting of Main Report, Design Report, Drainage Design Report and Materials Report, incorporating all revisions deemed relevant following receipt of the comments from **PWD CG** on the draft DPR shall be submitted as per the schedule given in Enclosure- III.

Interaction with PWD CG

1. During entire period of services, the Consultant shall interact continuously with **PWD CG** and provide any clarification as regards methods being followed and carry out modification as suggested by **PWD CG**. A programme of various activities shall be provided to **PWD CG** and prior intimation shall be given to **PWD CG** regarding start of key activities such as boring, survey etc. so that inspections of **PWD CG** officials could be arranged in time.
2. The **PWD CG** officers and other Government officers may visit the site at any time, individually or collectively to acquaint themselves with the field investigation and survey works.

3. The consultant shall be required to send 3 copies of concise monthly Progress Report by the 5th day of the following month to the designated officer at his Head Quarter so that progress could be monitored by the **PWD CG**. 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 site office or in **PWD CG** office at Raipur are foreseen during the currency of project preparation.

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.

4.12.27. Payment Schedule

The Consultant will be paid consultancy fee as per agreement:

~~Sn.~~	~~Description~~	~~No of Days/Months~~	~~Payment~~
~~1~~	~~On submission of Inception Report & QAP~~	~~15 days~~	~~10%~~
~~2~~	~~On Submission of Field data reports, strip plan, utility relocation plan and land acquisition plan~~	~~3 months~~	~~20%~~
~~3~~	~~On Submission of final Preliminary Project Report (PPR)~~	~~4 months~~	~~15%~~
~~4~~	~~On Submission of Draft Detailed Project Report (DPR) and Bidding Documents~~	~~6 months~~	~~25%~~
~~5~~	~~On approval of Final Detailed Project Report (DPR)~~	~~7 months~~	~~20%~~
~~6~~	~~On submission of required project clearances from the concerned agencies~~	~~8 months~~	~~10%~~
	~~**Total**~~		~~100%~~

~~After completion of services the final contract amount shall be worked out on the basis of inputs and services actually carried out and the payment shall be adjusted accordingly.~~

3.12.28. Data and Software

1. The floppy diskettes/CD's 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 **PWD CG** 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), Falling Weight Deflectometre test, Material Investigation including test results for sub- grade soils, Traffic Studies (traffic 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;**~~

~~**2. Software: The Consultant shall also hand-over to PWD CG CD's containing any general software including the financial model which has been specifically developed for the project.**~~

~~**2. The floppy diskettes/CD's should be properly indexed and a catalogue giving contents of all floppies/CD's and print- outs of the contents (data from field studies topographic data and drawings) should be handed over to PWD CG at the time of submission of the Final Report.**~~

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SUPPLEMENT I

ADDITIONAL POINTS TO BE CONSIDERED FOR BRIDGES IN ADDITION TO POINTS COVERED IN MAIN TOR

For bridge, the main objective of the consultancy services is to establish the aesthetic, technical, economical and financial viability of the Project and prepare Detailed Project Reports for construction of 2 Lane Bridge along with approach roads, at least about 0.500 KM. length on each side of the Bridge.

Sitting of bridges, feasibility studies and project preparation shall be primarily carried out in accordance with IRC : 5 and IRC Manual for Project Preparation of bridges and other Codes and Specification and in consultation with respective Irrigation / Waterways Authorities.

For bridges requiring model study, the same shall be got done at a recognized Institution. The consultant will be responsible for identifying the Institution, supplying requisite data and coordinating the model study. The amount to be paid to the Institution shall be borne by the Employer.

S. No.	Clause No. of TOR	*Additional points*
1.	4.1	Primary Tasks The scope of services shall also cover the following : i. Inventory and condition surveys for existing river bank training/ protection works. ii. Detailed Design of approach roads (extending at least up to approximately 2 km an each side of the bridge). iii. Detailed Design of Bridge, cross drainage structures, (R.O.B.S) underpasses & other structures as required. iv. Preparation of GAD, construction drawings etc. v. Strip plan for bridge and approach road. vi. Design discharge and scour depth.
2.	4.7	Review of Data and Documents The data and documents of major interest shall also include the following: **a) Existing geological maps, catchment area maps,**
		contour plans etc. for the project area b) Hydrological data, catchment area characteristics, river/channel characteristics, flood flow data and seismological data etc. c) Condition of existing riverbank / protection works, if any. d) Sub surface and geo-technical data for existing nearby bridges. Detailed drawings of nearby existing bridges.

3.	4.11.1	Reconnaissance and Alignment a) The consultant should make an in depth study of available geological maps, catchment area maps, contour plans, flood flow data and seismological data. b) The primary tasks to be accomplished during the reconnaissance surveys also include: i. Typical physical features along the approach roads ii. Possible bridge locations, land acquisition problems, nature of crossings, likely length of approaches and bridge, firmness of banks, suitability of alignment of approach roads
4.	4.11.2	Topographic surveys a) The detailed field surveys would essentially include the topographic surveys along the proposed location of bridge and alignment of approach road. b) The detailed topographic surveys should be carried out along the approach roads alignment and location of bridge approved by PWD CG.
5.	4.11.2.1	Longitudinal and Cross sections The topographic surveys for longitudinal and cross sections shall cover the following: Cross section of the channel at the site of proposed crossing and few cross sections at suitable distance both upstream and downstream, bed level upto top of
		banks and ground levels to a sufficient distance beyond the edges of channel, nature of existing surface soil in bed, banks & approaches, longitudinal section of channel showing site of bridge etc.

6.	4.11.4.2	Hydraulic and Hydrological Investigations a) The consultant shall also collect information on observed maximum depth of scour. b) History of hydraulic functioning of existing bridge, if any, under flood situation, general direction of river course through structure, afflux, extent and magnitude of flood, effect of backwater, if any, aggradations/degradation of bed, evidence of scour etc. shall be used to augment the available hydrological data. The presence of flood control/irrigation structures, if affecting the hydraulic characteristics like causing obliquity, concentration of flow, scour, silting of bed, change in flow levels, bed levels etc. shall be studied and considered in design of bridges. The details of any future planned work that may affect the river hydraulics shall be studied and considered.
7.	4.11.4.4	Geo-technical Investigations and Sub soil Exploration Investigation shall be carried out to determine the nature and properties of existing soil in bed, banks and approaches with trial pits and bore hole sections showing the levels, nature and properties of various strata to a sufficient depth below the level suitable for foundations, safe intensity of pressure on the foundation soil, proneness of site to artesian conditions, seismic disturbance and other engineering properties of soil etc.
8.	4.12.1	**General** The consultants are also to carry out detailed designs and prepare working drawings for the followings ; a) Design of pavement for approach road b) Design of river bank protection / training works

9.	4.12.6	Design of Bridges and Structures
		The data collected and investigation results shall be analyzed to determine the following : i. HFL and OFL ii. LWL iii. LBL iv. Erodibility of bed/scour level v. Design discharge vi. Linear waterway and effective linear waterway vii. Likely foundation depth viii. Safe bearing capacity ix. Engineering properties of sub soil x. Artesian conditions xi. Settlement characteristics xii. Vertical clearance xiii. Horizontal clearance xiv. Free board for approach road xv. Severity of environment with reference to corrosion xvi. Data pertaining to seismic and wind load xvii. Requirement of model study etc.

PROFORMA FOR SURVEY DATA OF BRIDGES

Division:-

…….

A.		**GENERAL DATA:**
	1.	Name of the river:-
		Road:- _____
		Location of bridge site: - Km. _____ Nearest Village and Distance:-
		Nearest Railway station and Distance:-
	2.	Type of bridge proposed :-
	3.	Site :
		Proposed alternative sites for investigations with merits and demerits along with proposal of Diversion:-

Site-1: at ……. Meter U/S or D/S

Site-2: at ……. Meter U/S or D/S

Site-3: at ……. Meter U/S or D/S

Whether the site is approved by competent authority and when:

Yes/No,

Date ……

Designation of Competent Authority:

……

Note:- Competent Authority is Executive Engineer PWD up to 30 Meter, Superintending Engineer 30 Meter to 60 Meter, Chief Engineer beyond 60 Meter

4. Details of G.T.S. Bench Marks :

   Location Value Reference

5. Details of traffic intensity

   a) Latest traffic intensity: …… PCUS

   b) Likely traffic intensity on opening of the bridge: …….
      PCUS

6. Details of rainfall :

   Source of the information:-

   ……

Year	Rainfall in mm
2007	
2008	
2009	
2010	
2011	
2012	
2013	
2014	

7. If there is any irrigation/water Supply dam on the upstream or downstream of the proposed bridge site following details may be furnished.

   a) Distance from bridge site:
   b) Full tank level of the dam (with reference to GTS):
   c) Maximum discharge through the Waste Weir:

8. Can electric power be made available for bridge construction:

B. DETAILS OF EXISTING RAIL OR RAOD BRIDGES NEARBY ON THE RIVER:

1. Name of the road or railway line:
2. Location of the bridge:
3. Distance from proposed road bridge:
4. Length of Bridge:
5. Span arrangement:
6. Formation level/Rail Level:
7. Soffit Level:
8. Overall width of the bridge;
9. Clear width of the bridge:

10. Record of flood for previous 10 Years: (Attach separate sheet)
11. Highest flood level ever recorded:
12. Linear waterway of the river at the bridge at H.F.L.:
13. Type of Foundation and Foundation strata
    - Pier:
    - Abutment:
14. Foundation levels
    - Pier:
    - Abutment:
15. Type of pier:
16. Type of abutment:
17. Type of decking:
18. Present condition:
19. Year of construction:
20. Whether the waterway of existing bridge is found to be adequate:
21. Following additional information may be furnished in respect of existing submersible bridges & causeways.
    a) Number of submergence in as year:
    b) Maximum duration of submergence:
    c) Total period of submergence:
    d) Height of submergence:
    e) Length of submergence of road on either side:

C. PRELIMINARY DATA:

The preliminary data should be collected as per clause 101 of I.R.C. Code Section I. Following data is required to be collected.

1. **Index map** (Scale 1 CM = 500 M. or 1/50000)**: Drawing No.** ……

   (Showing important details like River/Nalla, Roads, Important town/villages etc)

2. <u>Site Plan</u> (Scale 1 CM = 30 M)**: Drawing No.**

……..

(Showing location/direction/alignment of River/Nalla Bank, Water flow spread line during survey, Outcrops of rock in river/Nalla bed, Existing bridge and Road, Proposed Bridge (giving distance from existing bridge), Alternative sites (giving distances from existing bridge) investigated and rejected giving reasons, L- Section line of River/Nalla, Flow of river, Angle of skew, Cross sections lines (giving distances from existing bridge), Borings (with identification no.), Nallas in approaches, Building, Places of worships, Wells, Electric/Telephone polo, Water supply pipe line, Other obstructions affecting alignment of approaches, Approaches to meet the existing road i/c details of CD structure in approaches, Permanent and temporary Bench Mark with references/co-ordinates and RLs, Center line reference pillars of proposed bridge site and approaches (turning point) with co-ordinates, Name of nearest town/village on either side, Table showing chainage and Bearings/Co-ordinates of reference points.

Note:- In case the River/Nalla is meandering in the vicinity of Bridge site, two loops on either side of the proposed site be plotted on the site plan

3. <u>Contour Survey Plan</u> : **Drawing No.**

……..

Extending Upstream and Downstream of the proposed site up to

- 100 m for CA < 3 Sq. Km. (Scale 1 CM = 10 M)
- 300 m for CA 3 to 15 Sq. Km. (Scale 1 CM = 10 M)
- 1.5 Km or width between the Banks whichever is more foe CA > 15 Sq. Km. (Scale 1 CM = 50 M)

4. <u>Catchment area plan:</u> Drawing No. ……

(According to the extent of the catchment.)

Scale 1 CM = 500 M or 1 CM = 2500 M

i) Certificate of correctness of catchment area and references of top sheet should be recorded on the catchment area plan by Divisional Manager of PWD CG.

ii) Is there any possibility of subsequent changes in the nature of the catchment area (Like a forestation, deforestation urban development etc) : Yes/No.

If yes give a brief report.

5. Longitudinal section: **Drawing No.** ……..

Scale : Horizontal 1cm =30

Vertical 1cm =10

(One Km upstream to one Km downstream along deepest channel with HFL and LWL marked at respective cross sections)

6. Cross Sections:

Scale : Horizontal 1cm =10 or 1/1000

Vertical 1cm = 1 m or 1/100

i) At proposed site. **Drawing No.**

……..

ii) At 100 / 300 M Up Stream. **Drawing No.**

……..

iii) At 500 M Up Stream. **Drawing No.**

……..

iv) At 100 / 300 M Down Stream. **Drawing No.**

……..

v) At 500 M Down Stream. **Drawing No.**

……..

Note:- 1. At least 3 Cross sections, At proposed site, one at 100 M Up Stream and one at 100 M Down Stream for CA up to 3 Sq. Km. At least 3 Cross sections, At proposed site, one at 300 M Up Stream and one at 300 M Down Stream for CA up to 3 to 15 Sq. Km.

2. At least 3 Cross sections, At proposed site, one at 500 M Up Stream and one at 500 M Down Stream for CA > 15 Sq. Km.

3. Each Cross section must extend up to sufficient distance beyond the point where the HFL cuts the Natural Ground.

4. Each Cross section must include Extra Ordinary Flood Level HFL, LWL and Name of nearest village at each end

5. Cross section at proposed site should also include details of boring marks at respective locations showing the details of strata met with different RLs, GL to sufficient distance beyond the point where Formation level cuts the Natural Ground.

6. If the difference in discharges, thus calculated, is more than 10%, the discrepancy has to be investigated. Average of these discharges has to be considered.

7. <u>Water Levels:</u>

Record of following water levels may be collected:

7.1 Flood levels for previous five years, if recorded by any authority near existing bridge:

Year	Flood Level
2010	
2011	
2012	
2013	
2014	

7.2 Highest Ever flood Level recorded/observed:

7.3 Year when HFL/ Extra Ordinary Flood Level occurred:

7.4 Ordinary Flood Level:

7.5 Source of information:

7.6 Whether the information has been confirmed by local enquiry.

7.7 H.F.L. recommended for the purpose of design:

7.8 <u>Certificate</u>

Certificate that the Highest Flood Level has been verified by me, by local enquiry and from the record available and it is R.L. ……(GTS). This is a correct Highest Flood Level.

Signature:

(Competent Authority approving the site)

7.9 Water level in the first fortnight of November: Water level in the first fortnight of June: Lowest water level recorded:

Lowest water level Recommended:

8. State if the flood is affected by the Back Water. If so, give the following records.

1. Distance of the confluence of the river from the bridge site:
2. Highest Flood level of river.
3. Length of backwater spread:

9. <u>Observed velocities, if recorded by any authority near existing bridge:</u>

SN	Flood levels	Date	RL of water level	Observed velocities	Method of observation	Observed by	Remarks
	1	2	3	4	5	6	7
1	Highest floods.						
2	Moderate floods.						
3	Other low water levels.						

D- <u>SUBSOIL INVESTIGATION :-</u>

1.1 <u>Trial pits and bore results:</u>

The record of trial pits or subsoil exploration shall be carried out as per Appendix-2 of IRC:78-2000 and record shall be presented as per Performa No. 1 & 2 attached with Appendix.

Drawing number indicating bore results:

1.2 <u>Nature of soil:</u>

Location	Founding level	Nature of soil	Safe Bearing Capacity
1	2	3	4
Pier			
Abutment			

Basis: Actual plate bearing test or Field/Laboratory test of strata met with at foundation level

(Discretion of Competent Authority approving site.)

Certified that the Safe Bearing Capacities of soil are as indicated in the above table.

Signature:

E. HYDRAULIC CALCULATIONS:

Following additional data is required for carving out hydraulic calculation.

1. Nature of the stream:

   Nature of the stream is required for assessing the value of Coefficient of Rugosity values given in the following table may be adopted.

   Rugosity coefficient:

   Values of 'n' in the formula $V = 1/n \times R^{2/3} \times S^{1/2}$

	Surface	Perfect	Good	Fair	Bad
	Nature of streams:				
1	Clean, Straight bank full stage, No. rifts of deep pools.	0.025	0.0275	0.030	0.033
2	Same as (1), But some weeds and stones.	0.030	0.33	0.035	0.040
3	Winding, some pools and shoals, clean.	0.035	0.040	0.045	0.050
4	Same as (3) lower stages, more ineffective sloe & sections.	0.040	0.045	0.050	0.055
5	Same as (3) same weeds and stones.	0.033	0.035	0.040	0.045
6	Same as (4) story section.	0.045	0.050	0.055	0.060
7	Sluggish river reaches, rather weedy or with very deep pools.	0.050	0.060	0.070	0.080
8	Very weedy reaches	0.075	0.100	0.125	0.150

Nature of stream:

Recommended value of n =

2. Nature of the bed material:

   This is required for finding out Lacey's Silt Factor (f). Extracts of the table in clause 110.1.3 of IRC: 5-1998 (Section I) are given here.

Type of Bed Material	Mean dia. of particle in mm	Value of (f)
Coarse silt	0.040	0.350
Silt / Fine sand	0.081 to 0.158	0.500 to 0.700
Medium sand	0.233 to 0.505	0.850 to 1.250
Coarse sand.	0.725	1.500
Fine bajri and sand.	0.988	1.750
Heavy sand	1.290 to 2.000	2.000 to 2.420

Note: - Mean Diameter of Particle shall be determined as per

Appendix-2 of IRC: 5-1998

From this table, following values pertaining to the river stream is given:

Type of bed material :

Mean diameter of particle in mm: Value of (f) :

3. Whether the river is in deep forest or wherein floating trees are observed.

4. Nature of Catchment Area: The value of coefficient (C) in Dicken's formala depends upon the nature of the catchment area. The following values may be adopted for different type of
catchment areas in M.P.

		Value of
1.	Annual Rainfall 60-120 cm	11-14
2.	Annual Rainfall >120 cm	14-19

Nature of Catchment Area (Annual Rainfall) :

Recommended value of C :

5. Design Discharge:-

This may be calculated from the following empirical formula:

5.1. By Dicken's formula:

$Q = CM^{3/4}$

Where Q = Discharge in Cumecs.

C= Constant

M= Catchment area in sq. Km.

5.2. By Manning's formula (Area Velocity method):

Q= A x V

Where Q is Discharge in Cumecs

$$V = 1/N \times R^{2/3} \times S^{1/3}$$

A= Area of stream in Sq. M. under HFL

V= Velocity in M/Sec

n= Rugosity Coefficient

R= Hydraulic mean depth in M

R= A/P in M.

P= wetted perimeter of river in M.

S= Longitudinal Bed Slope

5.3 By Rational formula for Peak run-off from Catchment (CA up to 15 Sq. Km.)

As per Article 4.7 of IRC: SP: 13-2004

$$Q = \frac{0.056\ A\ Io\ f\ P}{t_c + 1}$$

Where Q is Discharge in Cumecs

A= Catchment Area in Hectares

I_O= One hour rainfall in the region in cm

f= Coefficient as per Fig. 4.2 of IRC: SP: 13-2004

P= Coefficient as per Table given below

$$t_c = \left[0.87 \times \frac{L^{0.385}}{H}\right]$$

t_c= Concentration time in hours

L= Distance from the Critical point to Structure in Km.

H= Fall in level from the Critical point to Structure in Meter

Table

Catchment Area Characteristics	**P**
Steep, bare rock and also city pavements	0.90
Rock, steep but wooded	0.80
Plateaus, lightly covered	0.70
Clayey soils, stiff and bare	0.60
……..do…..... lightly covered	0.50
Loam , lightly cultivated or covered	0.40
…....Do….. Largely cultivated	0.30
Sandy soil, light growth	0.20
…..do….. covered, heavy brush	0.10

5.4. Summary of discharges:

1) By Catchment area method : Cumecs

2) By area velocity method : Cumecs

(Average of discharge at different cross sections)

3) By Rational Formula : Cumecs

5.5. Design discharge : Cumecs

Note: - The highest of these (three) values should be adopted as Design discharge provided it does not exceed the next highest discharge by more than 50%. If it does not, restrict it to that limit.

6. Design velocity:

$$V = \frac{\text{Design discharge}}{\text{Area of cross section at bridge Site below design H.F.L.}}$$

7. Design flood level: R.L. ……. (As indicated in Para **C 7.8**)

8. Scour depth:

a) Observed scour depth.

If the proposed bridge site is neat an existing railway or road bridge, the scour depth at the pier of existing bridge may be observed and recorded.

b) Calculated scour depth: To provide for an adequate margin of safety, the foundation shall be designed for an enhanced discharge, as given below, over the design discharge as determined at 5.5 above.

Catchment Area in Sq. Km.	**% Increase over Design Discharge**
0-3,000	30
3,000-10,000	30-20
10,000-40,000	20-10
Above 40,000	10

Note: - For intermediate values of Catchment Area, linear interpolation may be done.

$$\text{Normal Scour depth } D = 1.34 \left(\frac{q^2}{f}\right)^{1/3}$$

Where q= Linear discharge per meter width in Cumecs (calculated as per formula below)

f= Silt factor (As per table given at **E 2**).

$$q = \frac{\text{Enhanced Design discharge}}{\text{Min. of Clear width between the faces of Abutments at HFL or Theoretical linear waterway}}$$

Theoretical linear waterway = C □ Q in meter

Where

C = A Constant ranging from 4.5 to 6.3 (usually taken 4.8 for regime , condition)

Q = Design discharge as determined at 5.5 above

Scour depth at pier = 2 x D below HFL

Scour depth at abutment = 1.27x D or Lowest Bed level whichever is max. Below HFL

Calculated values of

(a) Scour level at pier : R.L. ……

(b) Scour level at abutment : R.L. ……..

Note :- For Seismic condition and other conditions, scour depth shall be calculated as per clause 703.3 of IRC:78-2000.

9. Afflux: Calculated by Molesworth formula

$$\text{Afflux} = \{V^2/17.88 + 0.015\} \times \{(A/a)^2 - 1\} \text{ in M}$$

V = Average velocity of the stream in m/Sec.

A = Unobstructed Area of the cross section at HFL in Sq. M.

A = Area of clear waterway under the bridge at HFL in Sq. M.

Calculated afflux = …… M

Note: - If calculated afflux is less than 0.15 M, adopt value of Afflux as 0.15 M.

F. SUMMARY.

1. Summary of hydraulic data:

1.	Catchment area	:
2.	Design discharge	:
3.	Design Velocity	:
4.	Normal Scour depth	:
5.	Scour level at	
	i) Pier	: RL
	ii) Abutment	: RL
6.	H.F.L.	: RL
7.	Afflux	:
8.	Afflux flood level	: RL
9.	L.W.L.	: RL
10.	Minimum vertical clearance required	:

2. Tentative proposals of the bridge:
   a) Proposed site
   b) Length of the bridge
   c) Span arrangement
   d) Formation level
   e) Soffit level
   f) Foundation Level
      - Pier
      - Abutment
   g) Type of Foundation
   h) Type of Substructure
   i) Type of bearings
   j) Type of decking
3. List of drawings enclosed.
   1) Index map.
   2) Contour survey plan.
   3) Site plan.
   4) Cross sections (3 Nos.)
   5) Longitudinal section of River/Nalla.
   6) Catchments area plan.
   7) Trial pit or Bore data.
   8) A plan indicating layout of approaches and
   9) L-section of approaches.

Enclosure-I

List of Key personnel
(For Preparation of DPRs)

Package no. ……

S.N.	Key Personnel	Expected Requirement(months/person)	
		No.	Months
1.	Sr. Highway Engineer-cum-Team Leader	1	4
2.	Pavement Engineer	1	4
3.	Bridge Engineer	1	4
4.	Traffic and Safety Expert	1	2
5.	Material-cum-Geo-technical Engineer	1	2
6.	Senior Survey Engineer	2	3
7	Social R&R Expert	1	1
8	Quantity Surveyor/Documentation Expert	1	1
9	CAD Expert	1	2
10	Field Surveyor	6	3

Note : The entire project for preparation of DPR is to be completed within 4 months from the date of agreement as such , the time schedule as mentioned in TOR Clause 4.12.27 and Enclosure III of TOR Part 1 shall be strictly adhered to, with the help of adequate support staff. Please note that time is the essence and **the PWD CG** will not tolerate any deviation from the prescribed time schedule.

Enclosure-II

Qualification and Experience Requirement of Key Personnel
Senior Highway Engineer-cum-Team Leader

i)	**Educational Qualification**	
	Essential	Post Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Highway projects	Min. 10 years in Planning, Project preparation and design of Highway projects.
	c) Experience in similar capacity	Two laning of highway projects (NH/SH/Expressways) of aggregate length of 200 km
iii)	**Age Limit**	60 yrs. on the date of submission of proposal

Pavement Engineer

i)	**Educational Qualification**	
	Essential	Graduate in Civil Engineering
ii)	**Experience**	
	a) Total Professional Experience	Min. 10 years
	b) Experience in Highway projects	Minimum 5 years experience in pavement design and maintenance
	c) Experience in Similar capacity	Pavement design for highway projects (NH/SH/ Expressways) of aggregate length of 200 km
iii)	**Age Limit**	60 years on the date of submission of proposal

Bridge Engineer

i)	**Educational Qualification**	
	a) Essential	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 10 years
	b) Experience in Bridge projects	Min. 5 years in project preparation and design of bridge projects.
	c) Experience in Similar Capacity	Bridge Engineer in highway design consultancy projects (NH/SH/ Expressways) involving design of minimum two major bridges (length more than 60m)
iii)	**Age Limit**	60 years on the date of submission of proposal

Traffic and Safety expert

i)	**Educational Qualification**	
	a) Essential	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 10 years
	b) Experience in Highway projects	Min. 5 years on similar projects.
	c) Experience in Similar Capacity	Traffic Engineer in highway Projects (NH/SH/Expressways) involving 2 laning of aggregate length of 200 km
iii)	**Age Limit**	60years on the date of submission of proposal

Material Engineer – cum – Geo-technical Engineer

i)	**Educational Qualification**	
	Essential	Graduate in Civil Engineering or M.Sc. Geology
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 10 years
	b) Experience in Similar type of work in infrastructure	Min. 5 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)of
		aggregate length of 200 km or more including at least one major bridge
iii)	**Age Limit**	60 years on the date of submission of proposal

Senior Survey Engineer

i)	**Educational Qualification**	
	Essential	Graduate in Civil Engineering or Diploma in Civil Engineering or Diploma in Surveying
ii)	**Essential Experience**	
	a) Total Professional Experience	Min.10 years
	b) Experience in Highway projects	Min. 5 years on similar projects in project preparation and 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) Involving 2 laning of aggregate length of 200 km
iii)	**Age Limit**	60 years on the date of submission of proposal

Social R&R Specialist

i)	**Educational Qualification**	
	Essential	Masters/Bachelor in Social Works or equivalent
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 7 years
	b) Experience in Environmental aspects of road projects	Min. 5 years
	Capacity	Highway Projects (NH/SH/ Expressways) involving 2 laning of aggregate length of 200 km
iii)	**Age Limit**	60 years on the date of submission of proposal

Quantity Surveyor/Documentation Expert

i)	**Educational Qualification**	
	Essential	Graduate in Civil Engineering
ii)	**Essential Experience**	
	a) Total Professional Experience	Min. 10 years
	b) Experience in Highway Projects	Min. 5 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 of 200 km
iii)	**Age Limit**	60 years on the date of submission of proposal

~~Financial Analyst~~

~~i)~~	**~~Educational Qualification~~**	
	~~Essential~~	**~~Graduate with MBA (Finance) degree or equivalent~~** **~~OR~~** **~~Master Degree in Transport Planning with major field as finance~~** **~~OR~~** **~~Chartered Accountant~~**
~~ii)~~	**~~Essential Experience~~**	
	~~a) Total Professional~~	**~~Min. 6 years~~**
	~~Experience~~	
	~~b) Experience in similar Capacity~~	**~~At least involved in any one infrastructure development project on BOT basis~~**
~~iii)~~	**~~Age Limit~~**	**~~60 years on the date of submission of proposal~~**

Enclosure-III

Schedule for Submission of Reports and Documents

Submission Time w.e.f Date of Commencement of Consultancy Services (in months)			
Stage No.	**Activity**	**No. of copies**	**Time Period for assignment**
			4 Months
1	Monthly Reports	3	Every month
2	Inception Report & QAP	3	15 days
3	Submission of Field Data Reports, strip plan, utility relocation plan and land acquisition plan	3	30 days
4	P.P. REPORT i) Draft PPR including details and Drawings for repair/rehabilitation of existing bridges. ii) Final PPR including details and drawings for repair/rehabilitation of existing bridges	 3 3	 45 days 60 days
5	D.P. REPORT i) Draft DPR (including drawings and draft bidding (ICB) Documents). ii) Final DPR (including drawings and draft bidding (ICB) documents)	 3 6	 75 days 100days
6	Project clearances /NOC from concerned State agencies like Forest, Irrigation etc. and Central Govt. Deptt. like MOEF	Original Letters from the concerned agencies and 5 photocopies of each.	120 days

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. All the Reports must be submitted road wise.
3. The Bid Documents must be prepared road wise/package wise. The packaging should be done in consultation /approval of **PWD CG**.

Appendix-II

(Form-I)

TECHNICAL PROPOSAL

FROM: TO:

_____ _____

_____ _____

_____ _____

_____ _____

Sir:

Subject: Hiring of Consultancy Service for Preparation of Detailed Project Report for Construction of Various road projects under Package No----------in the state of Chhattisgarh.

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)

Details of projects for which Technical and Financial Proposals have been submitted

Sn.	***Name of Project***	Names of Proposed Key Personnel (H-T.L.., P.E., B.E., T & SE., M-G.E., S.S.E., S R&R, Q.S./D, F.A.
2		
3		
4		

(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 current USD) : 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

(Certificate from Employer regarding experience should be furnished)

(Form-IV**)**

CONSULTANT NAME:

APPROACH PAPER ON METHODOLOGY
PROPOSED FOR PERFORMING THE ASSIGNMENT

The approach and methodology will be detailed precisely under the following topics.

1) Composition of the team [not more than ½ of a page]

2) Methodology for services, surveying, data collection [not more than ½ of a page]and analysis

3) Quality Assurance system for consultancy assignment [not more than ½ of a page]

Note: 1) 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

I. Technical/Managerial Staff

Sn.	Name	Position	Task Assignment
1			
2			
3			
4			
..			
..			
..			

II. Support Staff

Sn.	Name	Position	Task Assignment
1			
2			
3			
4			
..			
..			
..			

(Form-VII)

Format of Curriculum Vitae (CV) For Proposed Key Staff

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

10. Total experience in highways: _____ Yrs

11. 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 :

1 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

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

2. The CVs should be accompanied with the Photo copies of the proof of Age and Educational Qualification Certificates.

(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)

Sn.	Item of Work / Activities	Months							
1									
2									
3									
..									
..									

B. COMPLETION AND SUBMISSION OF REPORTS

Sn	Reports	Programme
	(As per TOR)	
1		
2		
3		
4		
..		
..		

(Form – X)

Format for furnishing additional information TOR Part 1

Sn.	Details of activity	*To be Carried out / prepared by* (Name/Designation)	To be Checked/ Verified by (Name/Designation)
1	Fixation of all TBM's		
2	Physical surveys (give separate details for various studies)		
3	Traffic studies (give separate details for various studies)		
4	…….		
5	……		
6	……..		

(In column 2 all relevant activities since inception to the completion of feasibility study and project preparation)

SECTION - 7

TERMS OF REFERENCE (TOR) PART-II

CONSULTANCY SERVICES OF PROJECT MANAGEMENT CONSULTANT (PMC) FOR SUPERVISION OF ROAD PROJECT

TERMS OF REFERENCE FOR PROJECT MANAGEMENT CONSULTANT

1 Scope

1.1 These Terms of Reference for the Project Management Consultant(**the "TOR"**) are being specified pursuant to the Scope of Development for 30 roads in 3 packages in the State of Chhattisgarh and a copy of which is annexed here to and marked as Annex-A of 'Information to consultants'.

2 Definitions and interpretation

2.1 The words and expressions beginning with or in capital letters used in this TOR and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.

2.2 References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.

2.3 The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Agreement shall apply, *mutatis mutandis*, to this TOR.

3 Role and functions of the Project Management Consultant

3.1 The role and functions of the Project Management Consultant shall include the following:

(i) review of the Drawings and Documents as set forth in Paragraph 4;

(ii) review, inspection and monitoring of Construction Works as set forth in Paragraph 5;

(iii) conducting Tests on completion of construction and issuing Completion/ Provisional Certificate as set forth in Paragraph 5;

(iv) review, inspection and monitoring as set forth in Paragraph 6;

(v) review, inspection and monitoring of Divestment Requirements as set forth in Paragraph 7;

(vi) determining, as required under the Agreement, the costs of any works or services and/or their reasonableness;

(vii) determining, as required under the Agreement, the period or any extension thereof, for performing any duty or obligation;

(viii) assisting the Parties in resolution of disputes as set forth in Paragraph 9; and

(ix) undertaking all other duties and functions in accordance with the Agreement.

3.2 The Project Management Consultant shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.

4 Development Period

4.1 During the Development Period, the Project Management Consultant shall undertake a detailed review of the Drawings along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys and traffic surveys. The Project Management Consultant shall complete such review and send its comments/observations to the **PWD CG** within 15 (fifteen) days. Such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.

4.2 The Project Management Consultant shall review any modified Drawings or supporting Documents sent to it by the **PWD CG/** and furnish its comments within 7 (seven) days of receiving such Drawings or Documents.

4.3 The Project Management Consultant shall review the Drawings and furnish its comments thereon to the **PWD CG** and within 7 (seven) days of receiving such Drawings. The Project Management Consultant shall also review the Safety Report and furnish its comments thereon to the **PWD CG** within 15 (fifteen) days .

4.4 The Project Management Consultant shall review the detailed design, construction methodology, quality assurance procedures and the procurement, engineering and construction time schedule .

4.5 Upon reference by the **PWD CG,** the Project Management Consultant shall review and comment on the contract for construction, of the Project Highway, and furnish its comments within 7 (seven) days from receipt of such reference from the **PWD CG.**

5 Construction Period

5.1 ~~In respect of the Drawings, Documents and Safety Report received by the Project Management Consultant for its review and comments during the Construction Period, the provisions of Paragraph 4 shall apply, *mutatis mutandis.*~~

5.2 The Project Management Consultant shall prepare the monthly progress report and send its comments thereon to the **PWD .**

5.3 The Project Management Consultant shall inspect the Construction Works and the Road projects and make out a report of such inspection (the **"Inspection Report"**) setting forth an overview of the status, progress, quality and safety of construction, including the work methodology adopted, the materials used and their sources, and conformity of Construction Works with the Scope of the Project and the Specifications and Standards. In a separate section of the Inspection Report, the Project Management Consultant shall describe in reasonable detail the lapses, defects or deficiencies observed by it in the construction of the Road projects. The Inspection Report shall also contain a review of the maintenance of the existing lanes in conformity with the provisions of the Agreement. The Project Management Consultant shall send a copy of its Inspection Report to the **PWD CG** ~~and the Concessionaire~~ within 7 (seven) days of the inspection.

5.4 ~~The Project Management Consultant may inspect the Road projects more than once in a month if any lapses, defects or deficiencies require such inspections.~~

5.5 For determining that the Construction Works conform to Specifications and Standards, the Project Management Consultant shall require to carry out, or cause to be carried out, tests on a sample basis, to be specified by the Project Management Consultant in accordance with Good Industry Practice for quality assurance. For purposes of this Paragraph 5.5, the tests specified in the IRC Special Publication-11 (Handbook of Quality Control for Construction of Roads and Runways) and the Specifications for Road and Bridge Works issued by MOSRTH (the "Quality Control Manuals") or any modification/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance. The Project Management Consultant shall issue necessary directions to the Concessionaire for ensuring that the tests are conducted in a fair and efficient manner, and shall monitor and review the results thereof.

5.6 The sample size of the tests, to be specified by the Project Management Consultant under Paragraph 5.5, shall comprise 25% (twenty five per cent) of the quantity or number of tests prescribed for each category or type of tests in the Quality Control Manuals; provided that the Project Management Consultant may, for reasons to be recorded in writing, increase the aforesaid sample size by up to 25% (twenty five per cent) .

5.7 The timing of tests referred to in Paragraph 5.5, and the criteria for acceptance/ rejection of their results shall be determined by the Project Management Consultant in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent

of, the tests that may be carried out by the Contractor for its own quality assurance in accordance with Good Industry Practice.

5.8 In the event that the Contractor carries out any remedial works for removal or rectification of any defects or deficiencies, the Project Management Consultant shall require the Contractor to carry out, or cause to be carried out, tests to determine that such remedial works have brought the Construction Works into conformity with the Specifications and Standards, and the provisions of this Paragraph 5 shall apply to such tests.

5.9 In the event that the Contractor fails to achieve any of the Project Milestones, the Project Management Consultant shall undertake a review of the progress of construction and identify potential delays, if any. If the Project Management Consultant shall determine that completion of the Road projects is not feasible within the time specified in the Agreement, it shall require the Contractor to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Contractor, the Project Management Consultant shall review the and send its comments to the **PWD CG** and the Contractor forthwith.

5.10 If at any time during the Construction Period, the Project Management Consultant determines that the Contractor has not made adequate arrangements for the safety of workers and Users in the zone of construction or that any work is being carried out in a manner that threatens the safety of the workers and the Users, it shall make a recommendation to the **PWD CG** forthwith, identifying the whole or part of the Construction Works that should be suspended for ensuring safety in respect thereof.

5.11 In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and Users, it may, by notice in writing, require the Project Management Consultant to inspect such works, and within 3 (three) days of receiving such notice, the Project Management Consultant shall inspect the suspended works and make a report to the **PWD CG** forthwith, recommending whether or not such suspension may be revoked by the **PWD CG.**

5.12 If suspension of Construction Works is for reasons not attributable to the Contractor, the Project Management Consultant shall determine the extension of dates set forth in the Project Completion Schedule, to which the Contractor is reasonably entitled, and shall notify the **PWD CG** of the same.

5.13 The Project Management Consultant shall carry out, or cause to be carried out, all the Tests specified in Schedule-I and issue a Completion Certificate or Provisional Certificate, as the case may be and shall act under and accordance with provision of article14 &schedule-I, after verification from **PWD CG.**

5.14 Upon reference from the **PWD CG,** the Project Management Consultant shall make a fair and reasonable assessment of the costs of Construction works and services and certify the reasonableness of such costs for payment by the **PWD CG** to the Contractor.

5.15 ~~The Project Management Consultant shall aid and advise the Concessionaire in preparing the Maintenance Manual.~~

6. Deleted

7 Termination

7.1 At any time, not earlier than 90 (ninety) days prior to Termination but not later than 10 (ten) days prior to such Termination, the Project Management Consultant shall, in the presence of a representative of the Contractor, inspect the Road projects for determining compliance by the Contractor with the Divestment Requirements and, if required, cause tests to be carried out at the Contractor cost for determining such compliance. If the Project Management Consultant determines that the status of the Road projects is such that its repair and rectification would require a larger amount than the sum, it shall recommend retention of the required amount in the Escrow Account and the period of retention thereof.

7.2 The Project Management Consultant shall inspect the Road projects once in every 15 (fifteen) days during a period of 90 (ninety) days after Termination for determining the liability of the Contractor under, in respect of the defects or deficiencies specified therein. If any such defect or deficiency is found by the PMC, it shall make a report in reasonable detail and send it forthwith to the **PWD CG** and the Contractor.

8 Determination of costs and time

8.1 The Project Management Consultant shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.

8.2 The Project Management Consultant shall determine the period, or any extension thereof, that is required to be determined by it under the Agreement.

9 Assistance in Dispute resolution

9.1 When called upon by either Party in the event of any Dispute, the Project Management Consultant shall mediate and assist the Parties in arriving at an amicable settlement.

9.2 In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the Project Management Consultant shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

10 Other duties and functions

The Project Management Consultant shall perform all other duties and functions specified in the Agreement.

11 Miscellaneous

11.1 The Project Management Consultant shall notify its program of inspection to the Contractor, who may, in their discretion, depute their respective representatives to be present during the inspection. The inspection note issued after such visits must be necessarily endorsed/intimated to **PWD CG**..

11.2 A copy of all communications, comments, instructions, Drawings or Documents sent by the Project Management Consultant to the Concessionaire pursuant to this TOR, and a copy of all the test results with its comments thereon shall be furnished by the Project Management Consultant to the **PWD CG** forthwith.

11.3 The Project Management Consultant shall obtain, and the Concessionaire shall furnish in two copies thereof, all communications and reports required to be submitted, under this Agreement, by the concessionaire to the PMC, whereupon the Project Management Consultant shall send one of the copies to the **PWD CG** along with its comments thereon.

11.4 The Project Management Consultant shall retain at least one copy each of all Drawings and Documents received by it, including 'as-built' Drawings, and keep them in its safe custody.

11.5 Upon completion of its assignment hereunder, the Project Management Consultant shall duly classify and list all Drawings, Documents, results of tests and other relevant records, and hand them over to the **PWD CG** or such other person as the **PWD CG** may specify, and obtain written receipt thereof. Two copies of the said documents shall also be furnished in micro film form or in such other medium as may be acceptable to the **PWD CG.**

12. PERFORMANCE CLAUSE

PMC shall be expected to fully comply with all the provisions of the Terms of Reference', and shall be fully responsible for supervising the Designs and Construction of the facility takes place in accordance with the provisions of the construction Agreement and other schedules. Any failure of the

Project Management Consultant in notifying to **PWD CG** and the Contractor on non-compliance of the provisions of the Construction Agreement and non adherence to the time schedule prescribed under contract shall amount to non performance. The Project Management Consultant shall issue, the Provisional Completion Certification and Completion Certificate, only after verification from the **PWD CG** and shall carry out any such task as may be decided by **PWD CG.** The PMC shall take prior approval of **PWD CG** before issuing Provisional Completion Certification and Completion Certificate.

13. CONSULTANT'S PROPOSAL

13.1 List of key personnel to be fielded by the Consultants shall be as below:

i. Team Leader Cum Senior Highway Engineer
ii Pavement Engineer
iii Senior Quality Cum Material Engineer
iv Bridge Engineer
v Senior Quantity Surveyor
vi Resident Engineer
vii Field Engineer
viii Quality Control Engineer

13.2 Broad job-description and minimum qualification for key personnel mentioned above is **e**nclosed as **Enclosure–B**. However, higher marks shall be accorded to the Candidate with higher relevant qualification and experience. The Consultant should feel free to submit their proposal on the basis of the man-months given in the document. All the CV's of the personals mentioned in Data Sheet shall be evaluated at the time of evaluation of technical proposal. The **age of the Key Personnel should not be more than 60 years on the date of submission of proposal. Age Limit for the positions of Team Leader, Resident Engineer, Senior Pavement Specialist and Senior Quality cum Material Expert is relaxable by 5 years i.e. upto 65 years of age.** 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 in respect of points to be given as part of evaluation criteria. 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 authorized signatory for the Consultant. The key personnel shall also certify at the end of their bio data proforma that they have not left any of the **PWD CG/** Govt. of CG works without completing of their assignment and have not accepted any other offer at the time of signing of the bio-data and as such shall be available to work with the PMC, if the Project is awarded. In case the key personnel leaves the assignment without approval of **PWD CG** and **PWD CG** would be at liberty to take any appropriate action against that key personnel including debarment.

13.3 In addition to above, consultants are required to propose other key personnel, sub-professional staff and other field engineers as detailed in **Enclosure-A** and the minimum qualification requirements for the same is enclosed in **Enclosure–B**.

14. PERIOD OF SERVICES

14.1 The services of Project Management Consultant will be in phases as Per Contract Agreement.

14.1.1 The appointment of the Project Management Consultant shall initially be for 24 months. The proposed manpower deployment for this period shall be matching the activities to be performed during the said period. The time frame for services during the deployment of key personnel during this period shall be as shown in **Enclosure A**.

Enclosure-A

MAN -MONTHS INPUT FOR KEY PROFESSIONAL STAFF PMCS

Man Month Input For Supervision, Time - 24 Months

S.No.	Details of Key personnel			
		Package 1	Package 2	Package 3
A	Key Personnel	143 Km.	103 Km.	67.60 Km.
		06 Roads	13Roads	11Roads
1	Team Leader cum Senior Highway Engineer	24	24	24
2	Bridge Engineer	24	0	0
3	Pavement Engineer	24	24	24
4	Senior Quality cum Material Engineer	24	24	24
5	Senior Quantity Surveyor	24.	24.	24.
6	Resident Engineer	3×24	2×24	2×24
7	Field Engineer	6×4x24	4×4x24	4×4x24
8	Quality Control Engineerr	3x24	2x24	2x24

Note: The qualification and experience of sub-professional staff would not be accounted in the evaluation. However, Consultant shall have to get their CVs approved from **PWD CG** before mobilization. The other inputs like support staff shall also be provided by the Consultant of an acceptable type commensuration with the roles and responsibilities of each position.

Enclosure B

QUALIFICATION OF KEY PERSONNEL

1. TEAM LEADER CUM SENIOR HIGHWAY ENGINEER

This is the senior most position and the expert engaged as the team leader shall be responsible for reviewing the entire Project preparation and implementation activities of the Concessionaire. He shall check all the Plants and Machineries engaged on works as per norms and specifications specified by MORT&H, Designs being prepared by the Concessionaire, ensure execution of works on site as per specification and standards, and continuously interact with the Concessionaire and the **PWD CG**. He shall undertake Project site visits and shall guide, supervise, coordinate and monitor the work of other experts in his team as well as those of the Concessionaire. The candidate is required to be a Senior Highway Engineer, who should have a proven record of supervising, organizing and managing of construction of highway projects and also of Project preparation of large magnitudes projects, as defined below, financed by international lending agencies and others. Knowledge of Project management shall be an added advantage.

He should have the following qualification / experience.

(1) **Essential Qualifications**.

(a) Graduate in Civil Engineering from recognized university.

(b) Total Professional Experience of 20 years.

(c) At least 5 years experience in Highway Development Project.

(d) He should have handled as Team Leader/Project Manager or similar capacity in Construction Supervision/ IE involving 2 lane or more Highway/Expressway of minimum aggregate length of 600 kms.

(e) He should have handled as Team Leader or similar capacity in project Preparation of major highway Project of 2 lane or more lane of National Highway / State Highway/Expressway of minimum aggregate length of 600 kms.

(2) Only those projects will be considered for evaluation at Sl. No. 1(d) &1(e) above, where the input of the personnel is 1 ½ years & 6 months respectively.

Note: (1) Similar Capacity includes the following positions

i) On behalf of Consultants : Team Leader/Resident Engineer

ii) On behalf of Contractor: Project Manager (Construction /Construction Supervision

iii) Government Organization: Superintending Engineer (or equivalent(and above

2) Only those projects will be considered for evaluation at Sr. No. 1(d) & 1(e) above, where the input of the personnel is 1 ½ years & 6 months respectively

2. BRIDGE ENGINEER

The Bridge Design Engineer cum Bridge Engineer shall be responsible for checking the designs and supervision of bridges, ROBs, interchanges and any other structure to be constructed in the road projects. He shall also review the rehabilitation measures to be proposed by the Concessionaire for existing structures based on site condition and structural requirement basis. His expertise shall include computer aided design methods for Civil/Structural Engineering with particular reference to Structural design.

He should have the following qualification / experience.

(1) Essential Qualifications.

(a) Graduate in Civil Engineering from a recognized University.
(b) Professional Experience of 15 years in Bridge Design.
(c) 10 years out of total 15 years experience in similar capacity for design of major highway bridges.
(d) Experience of designing of 4 major Highway Bridges.
(e) Experience of Supervision of 3 major Highway Bridge

3. PAVEMENT ENGINEER

The Highway Engineer shall be responsible for the review of highway designs and drawings using sophisticated computer software and also construction and O&M works. Should be a graduate in Civil Engineering from a recognized University (higher qualifications will be preferable); His expertise shall include computer aided design methods for Civil/Highway Engineering with particular reference to CAD application to the geometric design for highway rehabilitation and/or upgrading projects. He should have the following qualification / experience.

(1) Essential Qualifications.

(a) Graduate in Civil Engineering from a recognized University.
(b) Professional Experience of 15 years in highway works.
(c) Experience of at least 5 years (out of total 15 years) in Highway Designing works
(d) He should have handled as Highway Design Engineer at least 2 Projects of major 2 laning or more improvement projects having aggregate length 600 Km.
(e) Exposure of Computer Software Programmes for Design of Highways.
(f) Experience of supervision of two major highway projects of two laning or more having length of aggregate 200 km or more.

4. SENIOR QUALITY CUM MATERIAL ENGINEER

The Quality/Material Expert shall review the test results of bore holes, quarry and borrow area material to find out their strength characteristics and suitability for using them in construction. He shall inspect Concessionaire field laboratories to ensure that they are adequately equipped and capable of performing all the specified testing requirements of the contract. He shall look into the quality assurance aspect of the construction works and supervise the setting-up of the various Concessionaire rock crushers, WMM , Concrete and Bituminous Mixing Plants to ensure that the specified requirements for such equipments are fully met. Experience in latest Quality Management techniques in highway projects shall have added advantage. He should have the following qualification / experience.

(1) Essential Qualifications.

(a) Graduate in Civil Engineering from a recognized University.
(b) Professional Experience of 15 years.
(c) Experience of at least 5 years as Senior Quality/ Material Expert or in similar capacity in Construction /Construction Supervision /major highway projects
(d) Experience as Senior Quality/ Material Expert or in similar capacity in handling of at least 2 similar highway projects having length 200 Km each.

~~5. CONTRACT SPECIALIST~~

~~**(1) Essential Qualifications.**~~

~~(b) Graduate in Civil Engineering/MBA from a recognized University.~~
~~(b) Professional Experience of 20 years.~~
~~(c) Experience of at least 10 years in preparation and execution of contracts relating to road projects~~
~~(d) Experience as Contract Specialist or in similar capacity in handling of similar highway projects, having aggregate length of 600 km. or more.~~

~~6 . TRAFFIC CUM SAFETY EXPERT~~

~~Shall be responsible for the overall Road Safety Aspect of the Project. He shall ensure that safety provisions as per relevant codes are strictly followed at site during Construction of Road and also during the Maintenance Period.~~

~~**(1) Essential Qualifications.**~~
~~(a) Post Graduate Degree in Traffic Transportation/Safety Engineering.~~
~~(b) Professional Experience of 15 years.~~
~~(c) Minimum 10 years experience in Road Safety works of Major Highway Projects (2 laning or more projects)~~
~~(d) Experience in Road Safety Audit of at least 2 nos. 2 laning or more highway /expressway project including 1 nos at design stage.~~

~~**7. CAD EXPERT**~~

~~He should be Graduate in Civil Engineering/Computer Science, having experience in computer related design method for highway engineering. The incumbent should have 5 years experience and should have handled at least one road project.(NH/SH/Expressway Projects)~~

8. SENIOR QUANTITY SURVEYOR

(1) Essential Qualifications.

(a) Graduate in Civil Engineering from a recognized University with a professional experience of 12 years OR Diploma in Civil Engineering with a professional experience of 17 years

(d) Minimum five years in Preparation of Bill of Quantities, Contract documents and documentation for major highway projects involving 2 lane and above.

SUB PROFESSIONAL

1. RESIDENT ENGINEER

Resident Engineer shall be in-charge of all roads of the package and shall be responsible for supervising the works of highway to be constructed by the Concessionaire for this project. He shall also inspect the pavement , rehabilitation and repair works to be undertaken by the Concessionaire.

The position requires a graduate in Civil Engineer, preferable Post Graduate in Civil Engineering. He should have a minimum of 15 years of Professional Engineering experience in supervision of highway projects, including 5 years in similar capacity for major highway projects. He should have handled at least 2 major highway projects of 50 km length in similar capacity.

2. ~~DEPUTY RESIDENT ENGINEER~~

~~Deputy Resident Engineer shall be responsible for supervising the works of road projects to be constructed by the Concessionaire for this project. He shall also inspect the pavement rehabilitation and repair works to be undertaken by the Concessionaire.~~

~~The position requires a graduate in Civil Engineer, preferable Post Graduate in Civil Engineering. He should have a minimum of 12 years of professional engineering experience in supervision of highway projects including 5 years in similar capacity for major highway projects. He should have handled at least 2 major highway projects of 50 km length in similar capacity~~

3. FIELD ENGINEER

Field Engineer shall be responsible for supervising the works of road projects to be constructed by the Concessionaire for this project. He shall also inspect the pavement rehabilitation and repair works to be undertaken by the Concessionaire.

The position requires a graduate in Civil Engineer, preferable Post Graduate in Civil Engineering. He should have a minimum of 5 years of professional engineering experience in supervision of highway projects including 5 years in similar capacity for major highway projects. He should have handled at least 2 major highway projects of 50km length in similar capacity

4. ~~SURVEY ENGINEER~~

~~The candidate should be Diploma in Civil Engineering/Survey with at least 5 years experience in the field of surveying out of which 3 years should be for highway projects. He should have involved in at least 1 similar highway projects. Firm may field Survey Engineer with diploma in Civil Engineering/Survey having at least 10 years experience in the field of surveying out of which at least 5 years should be in highway projects and they should have also dealt with at least 1 project of similar nature. This position requires thorough understanding of modern computer based method of surveying with total station digital level et .~~

5 ~~LAB TECHNICIANS~~:

~~He should be Diploma in Civil engineering. with three years relevant experience or Graduate in Science with 5 years relevant experience. Relevant experience means experience as Lab Technician on Highway Projects.~~

SECTION - 8

DRAFT CONTRACT AGREEMENT FOR CONSULTANCY SERVICES

DRAFT CONTRACT AGREEMENT

Between

Public Works Department
Chhattisgarh

And

M/s ……..……..

For

Consultancy Services for preparation of Detailed Project Reports including Project Management of two or more lane road projects in the state of Chhattisgarh under package no…….

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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
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DRAFT CONTRACT
FOR
CONSULTANT'S SERVICES

CONTRACT FOR CONSULTANT'S SERVICES

Consultancy Services for Project Management including preparation of Detailed Project Reports of two or more lane road projects in the state of Chhattisgarh under package no…….

This CONTRACT (hereinafter called the "Contract") is made on the ---------- day of the month of ----------2015 , between, on the one hand, **Chief Engineer Public Works Department ..... Zone .....** (hereinafter called the "Client") and, on the other hand, M/s ---------- ---------- (hereinafter called the "Consultants").

WHEREAS

(A) the Client 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 Client 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 "GC");

(b) The Special Conditions of contract (hereinafter called "SC");

(c) The following 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 Client
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: Copy of Bank Guarantee for Performance Security
Appendix-J: Minutes of the pre-bid meeting

2. The mutual rights and obligations of the Client 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) Client 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
(Public Works Department CG)

By
Chief Engineer PWD
---------- zone --------

Witness

1. Signature
   Name
   Address

2. Signature
   Name
   Address

FOR AND ON BEHALF OF
(Consultant)

By
Authorised Representative

Witness

1. Signature
   Name
   Address

2. 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 in India as effective in the state of Chhattisgarh as they may be issued and in force from time to time;

(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 GC 2.1;

(d) "Foreign currency" means any currency other than the currency of the Government;

d (i) "Final Authority" means the Managing Director of **PWD CG**

(e) "GC" means these General Conditions of Contract;

(f) "Government" means the Government of Chhattisgarh;

(g) "local currency" means the currency of the Government of India;

(h) deleted

(i) "Personnel" means persons hired by the Consultants or by any Sub consultant 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;

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

(k) "Services" means the work to be performed by the Consultants pursuant to this Contract for the purposes of the Project, as described in Appendix A hereto;

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

(m) "Sub consultant" means any entity to which the Consultants subcontract any part of the Services in accordance with the provisions of Clause GC 3.7; and

(n) "Third Party" means any person or entity other than the Government, the Client, the Consultants or a Sub consultant.

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 Client 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 **Governing Law and Jurisdiction**

This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Laws of India and the Courts at Raipur shall have exclusive jurisdiction over matters arising out of or relating to this Agreement.

1.4 **Language**

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

1.5 Table of Contents and **Headings**

The table of contents, headings or sub-headings in this agreement is for convenience for reference only and shall not be used in, and shall not limit, alter or affect the construction and interpretation 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, facsimile or e-mail to such Party at the address specified in the SC.

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

1.6.3 A party may change its address for notice hereunder by giving the other Party notice of such change pursuant to the provisions listed in the SC with respect to Clause GC 1.6.2.

1.7 **Location**

The Services shall be performed at such locations as are specified in **Letter of Acceptance(Appendix-I)** hereto and, where the location of a particular task is not so specified, at such locations, whether in India or elsewhere, as the Client may approve.

1.8 **Deleted**

1.9 **Authorized Representatives**

Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Client or the Consultants may be taken or executed by the officials specified in the SC.

1.10 **Taxes and Duties**

Unless otherwise specified in the SC, the Consultants shall pay all such taxes, duties, fees and other impositions as may be levied under the Applicable Law. PWD CG shall reimburse only Service tax on production of project specific proof of payment of Service tax.

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 Client's notice to the Consultants instructing the Consultants to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the SC have been met.

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 SC, either Party may, by not less than four (4) weeks' 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 as shall be specified in the SC.

2.4 Expiration of Contract

Unless terminated earlier pursuant to Clause GC 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 as shall be specified in the SC.

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 setforth herein.

2.6 Modification

Modification of the terms and conditions of this Contract, including any modification of the scope of the Services, may only be made by written agreement between the Parties. Pursuant to Clause GC 7.2 hereof, however, each party shall give due consideration to any proposals for modification made by the other Party.

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 Majeure 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**

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultants shall be entitled to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Services after the end of such period.

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 Client 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 Client**

The Client 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 Clause2.9.1, 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 Client may have subsequently approved in writing;

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

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

(d) 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

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

(f) if the consultant, in the judgment of the client has engaged in corrupt, fraudulent, collusive and coercive practices in competing for or in executing the contract for the purpose of this clause –

"Corrupt practice" means the offering , giving , receiving or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution.

"fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the borrower, and includes collusive practice among consultants (prior to or after submission of proposals) designed to establish prizes at artificial non competitive levels and to deprive the borrower of the benefits of free and open competition.

"Collusive practices" means a scheme or arrangement between two or more consultants with or without the knowledge of the Client, designed to establish prices at artificial, non-competitive levels;

"Coercive practices" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a

procurement process, or affect the execution of a contract.

(g) **Post preparation of DPR** - if the client is not in the position of taking the work forward for any reason and decides to terminate this Contract. In such event the Consultant shall be entitled to a payment limited to quoted by the Consultant in Section 5, Appendix C–3 (Cost for preparation of DPR, Bid documents etc.) only.

2.9.2 **By the Consultants**

The Consultants may, by not less than thirty (30) day's written notice to the Client, 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 Client 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 Client 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 Client 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 Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause 9 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 Client, 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 Client shall make the following payments to the Consultants (after offsetting against these payments any amount that may be due from the Consultant to the Client):

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

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

(iii) except in the case of termination pursuant to paragraphs (d) of Clause 2.9.1 hereof, reimbursement of any reasonable cost incident to the prompt and orderly termination of the Contract including the cost of the return travel of the Consultants' personnel and their eligible dependents.

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 here under 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 Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with Sub consultants 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 Sub consultants, as well as the Personnel and agents of the Consultants and any Sub consultants, comply with the Applicable Law. The Client 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**

If the consultants, as part of the services, have the responsibility of advising the client on the procurement of goods, work or services, the consultant shall comply with any applicable procurement guidelines of the client (PWD CG) and or associates bank or of the association, as the case may be, and other funding agencies and shall at all times exercise such responsibility in the best interests of the client. Any discounts or commissions obtained by the consultants in the exercise of such procurement responsibility shall be for the account of the client.

3.2.3 **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.

3.2.4 **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 in the Government's country 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 in the SC.

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 relation to the Project, the Services, this Contract or the Client's business or operations without the prior written consent of the Client.

3.4 **Liability of the Consultants**

Subject to additional provisions, if any, set forth in the SC, the Consultants' liability under this Contract shall be as provided by the Applicable Law.

3.5 **Insurance to be taken out by the Consultants**

The Consultants (i) shall take out and maintain, and shall cause any Sub consultants to take out and maintain, at their (or the Sub consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage, as shall be specified in the Special Conditions (SC), and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid.

3.6 **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 Client 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 Client. (iii) Shall permit the Client to inspect the consultants accounts and records relating to the performance of the consultant and to have them audited by auditors appointed by the client.

3.7 **Consultants' Actions requiring Client's prior Approval**

The Consultants shall obtain the Client's prior approval in writing before taking any of the following actions:

(a) Appointing such members of the Personnel as are listed in Appendix B;

(b) Entering into a subcontract for the performance of any part of the Services, it being understood (i)the consultant may sub contract part of the consultancy services with the prior approval of the Client in writing, up to 50% of the contract value (ii)that the selection of the Sub-consultant and the terms and conditions of the subcontract shall have been approved in writing by the Client prior to the execution of the subcontract, and (iii) that the Consultants shall remain fully liable for the performance of the Services by the Sub-consultant and its Personnel pursuant to this Contract;

(c) any other action that may be specified in the SC.

3.8 **Reporting Obligations**

The Consultants shall submit to the Client the reports and documents specified in **Appendix A/E** hereto, in the form, in the numbers and within the time periods set forth in the said Appendix.

3.9 **Documents prepared by the Consultants to be the Property of the Client**

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 Client, and the Consultants shall, not later than upon termination or expiration of this Contract, deliver all such documents in bound form road wise and package wise to the Client, together with a detailed inventory thereof. The Consultants may retain a copy of such documents. Restrictions about the future use of these documents shall be as specified in the SC.

3.10 **Equipment and Materials furnished by the Client**

Equipment and materials made available to the Consultants by the Client, or purchased by the Consultants with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultants shall make available to the Client an inventory of such equipment and materials and shall dispose of such equipment and materials in accordance with the Client's I instructions. While in possession of such equipment and materials, the Consultants, unless otherwise instructed by the Client 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 engagement in the carrying out of the Services of each of the Consultants' Key Professional / Sub Professional Personnel are described in Appendix B.

(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 Professional / Sub Professional Personnel set forth in Appendix B may be made by the Consultants by written notice to the Client, provided
(i) that such adjustments shall not alter the originally estimated period of engagement of any individual by more than 10% or one week, whichever is larger, and
(ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set forth in Clause 6.1 (b) of this Contract. Any other such adjustments shall only be made with the Client's written approval.

(c) If additional work is required beyond the scope of the Services specified in Appendix A, the estimated periods of engagement of Key Personnel set forth in Appendix B may be increased by agreement in writing between the Client and the Consultants**.**

4.3 **Approval of Personnel**

The Key Personnel and Sub consultants listed by title as well as by name in Appendix B are hereby approved by the Client. In respect of other Key Personnel which the Consultants propose to use in the carrying out of the Services, the Consultants shall submit to the Client for review and approval a copy of their biographical data. If the Client 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 Client.

4.4 **Working Hours, Overtime, Leave, etc.**

(a) Working hours and holidays for Key Professional / Sub Professional Personnel are set forth in Appendix C hereto. To account for travel time, foreign Personnel carrying out Services inside the Government's country shall be deemed to have commenced (or finished) work in respect of the Services such number of days before their arrival in (or after their departure from) the Government's country as is specified in Appendix C hereto.

(b) The Key Professional / Sub Professional Personnel shall not be entitled to be paid for overtime nor to take paid sick leave or vacation leave except as specified in Appendix C hereto, and except as specified in such Appendix, the Consultants' remuneration shall be deemed to cover these items. All leave to be allowed to the Personnel is included in the staff- months of service set for in Appendix B. Any taking of leave by Personnel shall be subject to the prior approval of the Client by the Consultants, who shall ensure that absence for leave purposes will not delay the progress and adequate supervision of the Services.

4.5 **Removal and/or Replacement of Personnel**

Removal and/or replacement of Personnel shall be regulated as under:

4.5.1 In case notice to commence services pursuant to Clause 2.1 of this Contract is not ordered by Client within 120 days of negotiations the key personnel can excuse themselves on valid grounds, e.g., selection on some other assignment, health problem developed after contract negotiation, etc. In such a case no penalty shall be levied on the Firm or on the person concerned. The firm shall however be asked to give a replacement by an equal or better scoring person, whenever mobilization is ordered.

4.5.2 (a). Replacement of key personnel during DPR preparation:

Replacement of key personnel during DPR preparation activities having selected Consultants among other things, on the basis of an evaluation of proposed key professional staff, the Employer expects to negotiate, within the proposal validity period, a contract on the basis of the staff named in the proposal and, prior to contract negotiations, will require assurances that the staff will be actually available. The Employer will not consider substitutions during contract negotiations except in cases of incapacity of key personnel for reasons of health. Similarly, after award of contract the Employer expects all of the proposed key personnel to be available during implementation of the contract. The Employer will not consider substitutions during contract implementation except under exceptional circumstances up to maximum of 25 percent of key personnel (considering equal weightage for each key personnel) and that too by only equally or better qualified and experienced personnel. During the course of providing services, substitution of key personnel may call for following deductions

Key Personnel	Deduction for First Substitution of Key Personnel (In Rupess)
Senior Highway Engineer – cum - Team Leader	4,00,000.00
Bridge Engineer/Pavement Engineer/Material cum Geo Tech. Engineer	80000.00
Traffic - cum- Safety Expert	40000.00
Senior Survey Engineer/Quantity Surveyor	70000.00
CAD Expert	60000.00
Social R&R expert	40000.00
Field Surveyor	40000.00

In the case of a second substitution above deductions shall be doubled and any further substitution may lead to disqualification of the Applicant or termination of the Agreement.

4.5.2 (b). Replacement of key personnel during PMC activities

In case notice to commence services is given within 120 days of negotiations the replacement shall be as below:

a. Replacement up to 33%: Replacement shall be by an equal or better scoring person. There will not be any Reduction in remunerations for the balance period.

b. Replacement of more than 33% and up to 50% : Replacement shall be by an equal or better scoring person. Reduction in remunerations for the balance period shall be @ 10% of the monthly rate.

c. Replacement beyond 50% and upto 66% . Replacement shall be by an equal or better scoring person. Reduction in remunerations for the balance period shall be @ 15% of the monthly rate.

d. Replacement beyond 66 %shall normally not be considered. However in exceptional circumstances, where it becomes absolutely essential the remunerations of the substitute shall be reduced by 50 % of the original person replaced. Replacement shall be by an equal or better scoring person , The **PWD CG** may initiate action for termination/debarment of such consultant for future projects of **PWD CG** for a period of 6 months to 24 months depending upon the severity of case.

4.5.3 Replacement after original contract period is over:

There shall be no limit on the replacements and no reduction in remunerations shall be made. The replacement shall however be of equal or better score.

4.5.4 If the Employer (i) finds that any of the Personnel has committed serious misconduct or has been charged with having committed a criminal action or (ii) has reasonable ground to be dissatisfied with the performance of any of the Personnel, then the consultant shall, at the Employer's written request specifying the grounds therefore, forthwith provide a replacement with qualifications and experience acceptable to him.

4.5.5 If the team leader or any other key personnel/ specialist considered pivotal to the project is replaced, the substitute may be interviewed by **PWD CG** to assess their merit and suitability.

4.5.6 If any member of the approved team of a consultant engaged by **PWD CG** leaves that consultant before completion of the job, he shall be barred for a period of 6 months to 24 months from being engaged as a team member of any other consultant working (or to be appointed) for any other **PWD CG/** MORT&H projects.

4.6 **Resident Project Manager**

If required by the SC, the Consultants shall ensure that at all times during the

Consultants' performance of the Services in the Government's country a resident project manager, acceptable to the Client, shall take charge of the performance of such Services.

5. OBLIGATION OF THE CLIENT

5.1 Assistance and Exemptions Unless otherwise specified in the SC, the Client shall use its best efforts to ensure that the Government shall:

(a) provide the Consultants, Sub consultants and Personnel with 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 prompt clearance through customs of any property required for the Services;

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

5.2 Access to Land

The Client warrants that the Consultants shall have, free of charge, unimpeded access to all land in the Government's country in respect of which access is required for the performance of the Services. The Client 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

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost or reimbursable expenses incurred by the Consultants in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultants under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amounts specified in Clause 6.1(b),

5.4 Services, Facilities and Property of the Client

The client shall make available to the Consultants and the Personnel, for the purposes of the Services and free of any charge, the services, facilities and property described in Appendix D at the times and in the manner specified in said Appendix D, provided that if such services, facilities and property shall not be made available to the Consultants as and when so specified, the Parties shall agree on (i) any time extension that may be

appropriate to grant to the Consultants for the performance of the Services, (ii) the manner in which the Consultants shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Consultants as a result thereof pursuant to Clause 6.1(c) hereinafter.

5.5 **Payment**

In consideration of the Services performed by the Consultants under this Contract, the Client 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 Cost Estimates ; Ceiling Amount

(a) An abstract of the cost of the Services payable is in **Indian Rupees as** set forth in **Appendix E.**

(b) Except as may be otherwise agreed under Clause 2.6 and subject to Clause 6.1(c), the payments under this Contract shall not exceed the ceiling specified in the SC. The Consultants shall notify the Client as soon as cumulative charges incurred for the Services have reached 80% of the ceiling.

(c) Notwithstanding Clause 6.1(b) hereof, if pursuant to Clauses 5.4 hereof, the Parties shall agree that additional payments shall be made to the Consultants in order to cover any necessary additional expenditures not envisaged in the cost estimates referred to in Clause 6.1(a) above, the ceiling set forth in Clause 6.1(b) above shall be increased by the amount or amounts, as the case may be, of any such additional payments.

6.2 Currency of Payment

(a) The payment shall be made in Indian Rupees.

6.3 Mode of Billing and Payment

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

(a) The Client shall cause to be paid to the Consultants no advance payment as specified in the TOR.

(c) (i) Payment Schedule for DPR preparation
The consultant will be paid stage wise as a percentage of the contract value as per the schedule given below:-

S.no	Description	No of Days/Months	Payment
1	On submission of Inception Report & QAP	15 days	10%
2	On Submission of Field data reports, strip plan, utility relocation plan and land acquisition plan	3 months	20%
3	On Submission of final Preliminary Project Report (PPR)	4 months	15%
4	On Submission of Draft Detailed Project Report (DPR) and Bidding Documents	6 months	25%
5	On approval of Final Detailed Project Report (DPR)	7 months	20%
6	On submission of required project clearances from the concerned agencies	8 months	10%
	Total		100%

(ii) Payment Schedule for Supervision

Amount quoted by the consultant for supervision work is for the entire project completion. The payment for supervision shall be made(to the consultant)in propotion of the work actually carried out by the contractor

Note: Consultants have to provide a certificate that all key personnel as envisaged in the Contract Agreement has been actually deployed in the project. They have to submit this certificate at the time of submission of bills to **PWD CG** from time to time .

(c) No payment shall become eligible for the next stage till the consultant completes to the satisfaction of the client the work pertaining to the preceding stage. Any adjustment in the payment to the consultants will be made in the final payment only.

(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 Client. The Services shall be deemed completed and finally accepted by the Client and the final report and final statement shall be deemed approved by the Client as satisfactory one hundred and eighty (180) calendar days after receipt of the final report and final statement by the Client unless the Client, within ninety(90) day period, gives written notice to the Consultants specifying in detailed 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 Client 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 Client within thirty (30) days after receipt by the

Consultants of notice thereof. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with the above.

(e) All payments under this Contract shall be made to the account of the Consultants specified in the TOR.

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. The designs and drawings should be based as per latest IRC/BIS codes of practice and MORTH guidelines, Specifications and estimate as per current schedule of Rate applicable in **C.G.P.W.D**

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 **PWD CG**/Proof checking Agency appointed by **PWD CG**. The designs and drawings not signed by the three persons mentioned above shall not be accepted. The Consultant shall indemnify the Client against any inaccuracy / deficiency in the designs and drawings of the bridges and structures noticed during the construction and even thereafter and the Client 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 5% of the contract value shall be retained for accuracy of design and quantities submitted and the same will be released after the completion of civil contract works or after 3 years from completion of consultancy services, whichever is earlier. The retention money will however be released by the Client on substitution by Bank Guarantee of the same amount valid up to the period as above.

7.3. Penalty

7.3.1. Penalty for Error/Variation

i) If variation in any of the main quantities of work like earth work including sub grade, GSB, WMM, Bituminous works (BM/DBM/AC/BC),drains, total concrete quantities and reinforcing steel in bridge works or overall project cost, found during execution is more than +/- 10%, the penalty equivalent to 5% of the contract value shall be imposed. 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.

ii) For inaccuracies in survey/investigation/design work the penalties shall be imposed as per details given in Table below:

Sl. No.	Item	Penalty (%age of contract value)
1	Topographic Surveys	0.5 to 1.0
	a) The horizontal alignment does not match with ground condition.	
	b) The cross sections do not match with existing ground.	
	c) The co-ordinates are defective as instruments of desired accuracy not used.	
2	Geotechnical Surveys	0.5 to 1.0
	a) Incomplete surveys	
	b) Data not analysed properly	
	c) The substrata substantially different from the actual strata found during construction.	
3	Traffic data found to be varying by more than 25% on resurvey at a later date, unless there are justifiable reasons.	0.2 to 0.5
4	Axle load data found to be varying by more than 25% on resurvey at a later date, unless there are justifiable reasons.	0.20 to 0.5
5	Structural Designs found to be unsafe or grossly over safe.	1.0 to 2.0

7.3.2 Penalty for delay

In case of delay in completion of services, a penalty equal to 0.02% of the contract price per day subject to a maximum 10% 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.

7.3.3 Total amount of recovery from all penalties shall be limited to 15% of the Consultancy Fee.

7.4 ACTION FOR DEFICIENCY IN SERVICES

7.4.1 Consultants liability towards the Client

Consultant shall be liable to indemnify the client 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 **PWD CG**, other penal action including debarring for certain period may also be initiated by **PWD**

CG.

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; within 30 days of the receipt of notice/request of any disputes raised by any party of the contract, the same shall be referred to the **EinC PWD CG** as final Authority.

9.2 Dispute Settlement

Any dispute between the Parties as to matters arising pursuant to this 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 may be submitted by either Party for settlement in accordance with the provisions specified in the SC.

10. Change of Scope

The change of Scope on account of variation of individual road length, as well as total length of the package from the indicative length as given at Annex-1 of section-I, 'Information to consultants' shall be dealt as follows :

i) During the course of consultancy services in case it is considered necessary to increase/decrease the scope of services (of total length of two or more lane length as compared to indicative Length as given in the RFP) by the client the same shall be notified by Change of scope notice. Similarly, if the Consultant determines that change of scope is needed, he shall inform of the same to the Client. The Client will examine and shall either reject the proposal or issue change of scope notice.

ii) The Consultancy fee shall be revised on account of change of scope as below: In case the total length of project increase/ decrease up to more 5% of indicative length given in the RFP **: No change in Consultancy Fees** In case the increase/ decrease in total length of project is more than 5% of the indicative length as given in the RFP**:** the consultancy fee shall be increased/ decreased in the same proportion in which the length of the project road is increased/ decreased beyond 5% and proportionately the stipulated period of completion of services may be increased / decreased.

iii) Length of Bypass / realignment shall not be treated as additional length to the existing length of the roads of package for the purpose of change / variation in length. Increase /decrease in length on account of bypasses shall not be considered as change of scope. However, the total length of the project roads of package (including bypasses and realignment) along the finally approved alignment shall be compared with the indicative length in the RFP for the purpose of variation.

SPECIAL CONDITIONS OF CONTRACT

Number of GC Clause

A. Amendments of, and Supplements to, Clauses in the General Conditions

1.4 The language is: **English**
1.6.1 The addresses are:

For the Client : **Public Works Department C.G.**
Represented by the Chief Engineer PWD
---------- zone ----------

Attention : **Chief Engineer PWD ---------- zone ----------**

Phone : ....., Fax : .....
E-mail Address : .....

For the Consultants:

Attention: **Name**

Designation

Address

Tel: **Fax:** **E-mail address**

1.6.2 Notice will be deemed to be effective as follows:

(a) In the case of personal delivery or registered mail, on delivery;
(b) In the case of facsimiles, 24 hours following confirmed transmission.
(c) In case of E mail, 24 hours following confirmed transmission.

1.9 The Authorized Representatives are:

For the Client : (--)
Chief Engineer PWD ----------zone ----------.

For the Consultant: Name
Designation

1.10 The Consultants and the personnel shall pay the taxes, duties, fees, levies and other impositions levied under the existing, amended or enacted laws (prevailing 7 days before the last date of submission of bids) during life of this contract and the Client shall perform such duties in regard to the deduction of such tax as may be lawfully imposed.

2.1 **The effectiveness conditions are the following:**

a) The contract has been approved by Empowered Committee of **Govt. of Chhattisgarh.**

b) The consultant will furnish within 15 days of the issue of letter of acceptance, an unconditional Bank Guarantee from the Bank (Generally, by SBI or its subsidiaries or any Indian nationalized bank or IDBI or ICICI or ICICI Bank or by a foreign bank through a correspondent bank in India) for an amount equivalent to **5 %** of the total contract value to be received by him towards Performance Security valid for a period of ***three years*** beyond the date of completion of services.

2.2 The time period shall be "120 days" or such other time period as the parties may agree in writing.

2.3 The time period shall be "fifteen days" or such other time period as the Parties may agree in writing.

2.4 The time period shall be 90 days or such other time period as the parties may agree in writing.

3.4 Limitation of the Consultants' Liability towards the Client

(a) Except in case of negligence or willful misconduct on the part of the Consultants or on the part of any person or firm acting on behalf of the Consultants in carrying out the Services, the Consultants, with respect to damage caused by the Consultants to the Client's property, shall not be liable to the Client:

(i) for any indirect or consequential loss or damage; and
(ii) for any direct loss or damage that exceeds (A) the total payments for Professional

Fees and Reimbursable Expenditure made or expected to be made to the Consultants hereunder, or (B) the proceeds the Consultants may be entitled to receive from any insurance maintained by the Consultants to cover such a liability, whichever of (A) or (B) is higher.

(b) This limitation of liability shall not affect the Consultants' liability, if any, for damage to Third Parties caused by the Consultants or any person or firm acting on behalf of the Consultants in carrying out the Services.

3.5 The risks and the coverage shall be as follows:
(a) Third Party motor vehicle liability insurance as required under Motor Vehicles Act, 1988 in respect of motor vehicles operated in India by the Consultants or their Personnel or any Sub consultants or their Personnel for the period of consultancy.

(b) Third Party Liability Insurance with a minimum coverage, for Rs. Ten lacs for the period of consultancy.

(c) (i) The Consultant shall provide to **PWD CG** Professional Liability Insurance (PLI) for a period of **Five years** beyond completion of Consultancy services or as per Applicable Law, whichever is higher.

(ii) The Consultant will maintain at its expense PLI including coverage for error and omissions caused by Consultant's negligence in the performance of its duties under this agreement, **(A)** For the amount not exceeding total payments for Professional Fees and Reimbursable Expenditures made or expected to be made to the Consultants hereunder OR **(B)** the proceeds, the Consultants may be entitled to receive from any insurance maintained by the Consultants to cover such a liability, whichever of **(A) or (B) is higher**.

iii) The policy should be issued only from an Insurance Company operating in India.

iv) The policy must clearly indicate the limit of indemnity in terms of "Any One Accident" (AOA) and "Aggregate limit on the policy" (AOP) and in no case should be for an amount less than stated in the contract.

v) deleted.

vi) The contract may include a provision thereby the Consultant does not cancel the policy midterm without the consent of **PWD CG**. The insurance company may provide an undertaking in this regard.

(d) Employer's liability and workers' compensation insurance in respect of the Personnel of the Consultants and of any Sub consultant, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel or other insurance as may be appropriate; and all insurances and policies should start from the date of commencement of services and remain effective as per relevant requirements of contract agreement.

3.9 The Consultants shall not use these documents for purposes unrelated to this Contract without the prior written approval of the Client.

4.6 The person designated as Team Leader cum Senior Highway Engineer in Appendix B shall serve in that capacity, as specified in Clause 4.6.

6.1.b The ceiling amount in local currency is Rs ……Excluding

6.3 (a) No advance payment will be made.

9.2 Disputes shall be settled by arbitration in accordance with the following provisions:

9.2.1 **Selection of Arbitrators**

Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an "Arbitral Tribunal" composed of three arbitrators, in accordance with the following provision:

(a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within Sixty (60) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the President, Indian Roads Congress, New Delhi/MORTH/NAHAI for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the president, Indian Roads Congress, New Delhi/MORTH/NAHAI shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute.

(b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultants shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the later of the two arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by Secretary, the Indian Council of Arbitration, New Delhi.

(c) "Where the parties agree, in the dispute concerns a technical matter, may agree to appoint C.E. of NH, Raipur as sole Arbitrator and one legal expert a lawyer empanelled as member of Indian Council of Arbitration (ICA) shall be Arbitral Tribunal."

9.2.2 Rules of Procedure

Arbitration proceedings shall be conducted in accordance with procedure of the Arbitration & Conciliation Act 1996, of India unless the Consultant is a foreign national/firm, where arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract.

9.2.3 Substitute Arbitrators

If for any reason an arbitrator is unable to perform his function, a substitute shall be appointed in the same manner as the original arbitrator.

9.2.4 Qualifications of Arbitrators

As above in Para 9.2.1 (c)

9.2.5 Miscellaneous

In any arbitration proceeding hereunder:

(a) Proceedings shall, unless otherwise agreed by the Parties, be held in DELHI

(b) the English language shall be the official language for all purposes.

(c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

(d) The maximum amount payable per Arbitrator in Arbitration clauses shall be as under

S.No	**Particulars**	**Maximum amount payable per Arbitrator/ per case**
1	Arbitrator fee	Rs 15,000/- per day subject to a maximum of Rs 4 .00 lacs or Rs 2.5 lacs (lump sum) subject to publishing the award within 12months.
2	Reading charges	Rs 15,000/-
3	Secretarial Assistance and Incidental	Rs 20,000/-
4	Charges for publishing/ declaration of the award	Rs 20,000/-
5	Other expenses (As per actual against bills subject to maximum of the prescribed celling given below)	
	Traveling expenses Lodging and Boarding	Economy class (by air), First class AC (by train) and AC Car (by road) a) Rs 15,000/- per day (in metro cities) b) Rs 7,000/- per day (in other cities) c) Rs 3,000/- per day if any Arbitrator makes own arrangements.
6		
7	Extra charges for days other than hearing/ meeting days (maximum for 2 days)	Rs 3,500/- per day
Note:-	1. Lodging boarding and traveling expenses shall be allowed only for those members who are residing 100 kms. Away from place of meeting. 2. Delhi, Mumbai, Chennai, Kolkata, Bangalore and Hyderabad shall be considered as	

In exceptional cases, such as cases involving major legal implications/ wider ramifications/ higher financial stakes etc., a special fee structure could be fixed in consultation with the Contractor/ Supervision Consultants and with the specific approval of the **Chief Engineer PWD ------zone ---------** before appointment of the Arbitrator,

Appendix A

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

Appendix B

Consultant's Sub consultants, Key Personnel and Sub Professional Personnel

Appendix C

Hours of work for Consultants' Personnel

The Consultant's personnel shall normally work for 8 hours in a day and six days a week. Normally Sundays shall be closed for working. In addition they shall also be allowed to avail holidays as observed by the Client's office in the relevant state without deduction of remunerations. In case any person is required to work on Sunday or Holiday due to exigency of work, he/she shall be given compensatory leave within the next 15 days.

Appendix D

Duties of the Client

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 (For individual work)

BANK GUARANTEE FOR PERFORMANCE SECURITY

To,

Chief Engineer,
Public Works Department
---------- zone ----------

In consideration of "**Public Works Department** " (hereinafter referred as the "Client", which expression shall, unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s……having its office at …….. (Hereinafter referred to as the "Consultant" which expression shall repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a contract by issue of client's Contract Agreement no. / Letter of Acceptance No. …….. dated …… and the same having been unequivocally accepted by the Consultant, resulting in a Contract valued at Rs……../- (Rupees…..…….) excluding service tax for "Consultancy Services for Project Management including preparation of Detailed Project Reports of two lane or more than two lane road projects in the state of Chhattisgarh under package no……. (Hereinafter called the "Contract"), and the Consultant having agreed to furnish a Bank Guarantee to the Client as "Performance Security as stipulated by the Client in the said contract for performance of the above Contract amounting to Rs……./- (Rupees…….).

We, ……..having registered office at …….., a body registered/constituted under the …….(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 client immediately on demand any or, all money payable by the Consultant to the extent of Rs. ……..(Rupees……..……..) as aforesaid at any time up to ……..without any demur, reservation, contest, recourse or protest and/or without any reference to the consultant. Any such demand made by the client on the bank shall be conclusive and binding notwithstanding any difference between the Client 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 Client discharges this guarantee.

The Client shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee, from time to time to vary or to extend the time for performance of the contract by the Consultant. The Client 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 consultant and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Client and the Consultant any other course or remedy or security available to the Client. The bank shall not be relieved of its obligations under these presents by any exercise by the Client 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 Client or any other indulgence shown by the Client 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 Client 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 Client may have in relation to the Consultant's liabilities.

Notwithstanding anything contained herein,

a) Our liability under this Bank Guarantee is limited to Rs. ……..(Rupees……) and it shall remain in force up to and including ……and shall be extended from time to time for such period as may be desired by M/s……., on whose behalf this guarantee has been given.

b) This Bank Guarantee shall be valid up to ……..

c) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ……(date of expiry of Guarantee).

(Signature of the Authorised Official)

(Name & Designation with Bank Stamp)

NOTE:

(i) The bank guarantee(s) contains the name, designation and code number of the officer(s) signing the guarantee(s).

(ii) The address, telephone no. and other details of the Head Office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing Branch.

(iii) The bank guarantee for Rs. 10,000 and above is signed by at least two officials (or as per the norms prescribed by the RBI in this regard).

Appendix J : Reply to Queries of the CONSULTANT

Appendix K :

POWER OF ATTORNEY

Know all men by these presents, we, ... (name of Firm and address of the registered office) do hereby constitute, nominate, appoint and authorise Mr / Ms..... son/daughter/wife and presently residing at .....**,** who is presently employed with us and holding the position of ..... as our true and lawful attorney (hereinafter referred to as the "**Authorised Representative**") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our Proposal for and selection as the Consultant for Preparation of Feasibility Report for the ..... Project**,** proposed to be developed by the ..... (the "**Authority**") including but not limited to signing and submission of all applications, proposals and other documents and writings, participating in pre-bid and other conferences and providing information/ responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts and undertakings consequent to acceptance of our proposal and generally dealing with the Authority in all matters in connection with or relating to or arising out of our Proposal for the said Project and/or upon award thereof to us till the entering into of the Agreement with the Authority.

AND, we do hereby agree to ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Authorised Representative pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Authorised Representative in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, ... THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS ..... DAY OF ....., 20.....

For .....

(Signature, name, designation and address)

Witnesses:
1.
2.
Notarised

Accepted
.....
(Signature, name, designation and address of the Attorney)

Notes:

- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the*

required procedure. The Power of Attorney should be executed on a non-judicial stamp paper of Rs. 100 (hundred) and duly notarised by a notary public.

- *Wherever required, the Applicant should submit for verification the extract of the charter documents and other documents such as a resolution/power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Applicant.*

SCHEDULE–3