

Consultancy Services as Authority's Engineer for Supervision of Four laning of Balachera to Harangajao section of NH-54 (Ext) from km 275.000 to Km 244.000 in the State of Assam on EPC mode.

February-2025

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD

(MINISTRY OF ROAD TRANSPORT & HIGHWAYS, GOVT. OF INDIA)

1ST & 2ND FLOOR, TOWER-A, WORLD TRADE CENTRE, NAUROJI NAGAR, NEW

DELHI – 110029

CONTENT

Sr. No.	Particulars	Page Nos.
1	SECTION 1: Information to Consultants	3-8
2	SECTION 2: Letter of Invitation	9-19
	Datasheet	20-24
	Appendix-EC	25-38
3	SECTION 3: Format for Submission of Firms Credentials.	39-42
4	SECTION 4: Format for Submission of Technical Proposal.	43
	Appendix B-1-Technical proposal submission form.	44
	Appendix B-2-Site Appreciation	45
	Appendix B-3-Approach paper on methodology for performing the assignment	46
	Appendix B-4-Facility for field investigation and testing	47
	Appendix B-5-Composition of the Team and Task(s) of each Team member	48
	Appendix B-6-Curriculum vitae of proposed Professional staff.	49-50
	Appendix B-7-Time schedule for deployment of Professional staff	51
	Appendix B-8-Activity (works) schedule.	52
	Appendix B-9-Affidavit – Correctness of Experience claimed by the Firms	53
	Appendix B-10-Integrity Pact	54-56
	Appendix B-11-BANK GUARANTEE FORMAT FOR BID SECURITY	57-58
5	SECTION 5 : Format for submission of Financial proposal.	61
	Appendix C-1 Financial proposal submission form	62-63
	Appendix C-2 Summary of costs	64
	Appendix C-3 Breakdown of costs	65-68
6	SECTION 6: Terms of Reference.	69-85
	Enclosure-A	86-87
	Enclosure-B	88-93
	Annexure I- Daily Inspection Report in construction period	94
	Annexure II- Daily Inspection Report in O&M period	95
	Annexure III- Weekly Inspection Report in O&M period	96-99
	Annexure IV- Month of survey for equipment-based road condition assessment	100-101
	Annexure V- Monthly Progress Report in Construction Phase	102-156
	Annexure VII: Output Format from Network Survey Vehicle And FWD Testing	157-185
7	SECTION 7: Draft Form of Contract.	186-227

REQUEST FOR PROPOSAL (RFP)

SECTION 1: INFORMATION TO CONSULTANTS

NHIDCL/Assam/NH-54(Ext.)/B-H/AE/2024

Dated: 03.02.2025

Consultancy Services as Authority's Engineer for Supervision of Four laning of Balachera to Harangajao section of NH-54 (Ext) from km 275.000 to Km 244.000 in the State of Assam on EPC mode.

1. The National Highways & Infrastructure Development Corporation Limited (NHIDCL) (the 'Employer') invites proposals from eligible Consultants for engaging an Authority's Engineer (AE) on the basis of International Competitive Bidding for the following contract package in the State of Assam.

TABLE1: DETAILS OF PROJECT

SI. No.	Consultancy Package	NH No./State	Stretch	excl. GS1	Assignment period Construction + Maintenance (months)
1	Four laning of Balachera to Harangajao section of NH-54 (Ext) from km 275.000 to Km 244.000 in the State of Assam on EPC mode.	NH-54(Ext.)/ Assam	275.000 to Km	Length –25.25 Km Awarded Cost – 658.86 Cr .	00 Months + 48 Months

- 2. **The RFP has also been uploaded on "INFRACON" (**www.infracon.nic.in). As such before submitting the proposal, the Consultant shall mandatorily register and enlist themselves (the firm and all key personnel), on the MoRTH portal "INFRACON" and furnish registration details along with its RFP. A copy of Infracon Operation Procedure is also enclosed for bidder's reference.
- 3. All the bidders registered on Infracon shall form a Team on Infracon and which would be assigned unique Infracon Team ID. Bidders while submitting the proposal shall quote the Infracon TeamID.
- 4. Bid must be submitted online at e-tender portal of NHIDCL, https://eprocure.gov.in as per the date and time mentioned in Datasheet. The BID document can be viewed downloaded complete / www.eprocure.gov.inand can be viewed on official portal of NHIDCL http://www.nhidcl.com
- 5. Selection of AE shall be as per selection procedures given in the Contract Agreement for Engineering Procurement and Construction. The selected AE shall be intimated to the Contractor.
- 6. The proposal shall be submitted in English Language and all correspondence would be in the same language.
- 7. National Highways & Infrastructure Development Corporation Limited (NHIDCL) intends to appoint a Consultant to act as Authority's Engineer for implementation of the following EPC project. As per the Terms and Conditions of the EPC Agreement(s), the Authority's Engineer shall perform all the duties as per TOR given in this RFP along with any amendment thereof. The selection of Authority's Engineer shall follow the laid down procedures given in the Contract Agreement

signed between Employer and Contractor.

- 8. The interested consultancy firms may download the RFP document from the official website of the NHIDCL w. e. f. 03.02.2025 to 04.03.2025 upto 1200 hrs. The bidders shall deposit the cost of the RFP document of Rs. 5,900/- (Non Refundable) including GST online (RTGS/NEFT/Other online mode) facility provided by the IndusInd Bank to the NHIDCL's Bank account. The RFP will be invited through etendering portal. Refer procedure under e-tendering for submission of RFP through-tendering. For further details and step by step process regarding e-BG and online payment, NHIDCL Office Order dated 22nd March 2023 may be referred, which is attached as Appendix-A.
- 9. The Consultant shall furnish as part of its Proposal, a Bid Security of Rs. 2,00,000/(Rupees Two lakhs only) in the form of, Insurance Surety Bond (issued by Insurance Company authorized by Insurance Regulatory and Development Authority of India in the format at Appendix-B-12), E- Bank Guarantee (as per the format specified in Appendix B11 of this RFP document) or in the form of Demand Draft (the "Bid Security") or may be deposited through online facility provided by the IndusInd Bank in favour of National Highways & Infrastructure Corporation Ltd. payable at New Delhi, valid for 45 days beyond the validity of the Proposal. The Proposal submitted without Bid Security will be summarily rejected. The Bid Security of the successful Consultant will be returned when the Consultant has signed the Contract Agreement with the Client and has furnished the required Performance Guarantee as specified in the document within 15 days from the receipt of the Letter of Acceptance. The Bid Security will be forfeited:
 - (a) If a consultant withdraws its bid during the period of bid validity; or
 - (b) If the Consultant fails to accept the Employer's corrections of arithmetic errors in the Consultant's bid (if any); or
 - (c) If the Successful Consultant fails to sign the contract agreement with the Employer within the prescribed period; or
 - (d) If the Successful Consultant fails to furnish the Performance Security within the stipulated time.

Unsuccessful Consultants would be informed regarding their non-qualification, without any explanation and thereafter Bid Security would be returned unopened after the evaluation of the financial proposal and signing the contract agreement with the successful Consultant.

Please refer NHIDCL Office order dated 22.03.2023 for further details and step by step process regarding e-BG and online payment, which is attached as Appendix-A

SI. No.	Event Description	Date
1.	Invitation of RFP (NIT)	03-02-2025
2.	Last date for receiving queries	18-02-2025 (1100 hrs)
3.	Pre-BID meeting at venue	25-02-2025 (1500 hrs)
4.	Authority response to queries latest by	28-02-2025 (1500 hrs)

SI. No.	Event Description	Date
5.	Last date of Request for BID Document	04-03-2025 (1200 hrs)
6	BID Due Date	04-02-2025 (1500 hrs)
7.	Physical Submission of BID Security /POA etc.	04-02-2025 (1500 hrs)
8.	Opening of Technical BIDs at venue 2.11.4 (i)	05-02-2025 (1600 hrs)
9.	Declaration of eligible / qualified Bidders	To be intimated later
10.	Opening of Financial BID	To be intimated later
11.	Letter of Acceptance (LOA)	To be intimated later
12.	Return of signed duplicate copy of LOA	To be intimated later
13.	Validity of BID	120 days from bid due date

- 10. Unqualified bidders would be informed regarding their non qualification, without any explanation.
- 11. The proposal should be submitted by consultancy firms in two parts. The two parts of the proposal are **Part1**: **Technical Proposal** and **Part2**: **Financial Proposal**. For this bid, Stage -1 of the Evaluation shall consider the evaluation of the Technical Proposal (i.e. Part 1). The firms scoring the qualifying marks (minimum 75%) as mentioned in RFP shall only be considered for further evaluation. Under stage 2, the financial proposal of such firms as selected above shall be opened and evaluated. Proposals will finally be ranked according to their combined technical and financial scores as specified in clause 5 of section 2.
- 12. The total time period for the assignment as Authority's Engineer will be for Construction Period of 00 Months + Maintenance Period of 48 Months with reduced man power.
- 13. Consultants may apply either as a sole firm or forming Joint Venture with other consultants. In case of Joint Venture, the maximum number of Joint Venture partners is limited to 2 (i.e. one lead + 1 JV partners). Formulation of more than one JV/association with different partners for the same work is not allowed and all such proposal involving the firms shall be treated as non-responsive. If the Consultant submits bids as sole applicant and also in JV/Association with another consultant, both bids shall be summarily rejected. No Consultant shall submit more than one bid.
- 14. (A) The Applicant whether a sole applicant or lead member with joint venture may include any number of Associate to provide technology in assignment (refer para 10(iii) of data sheet). The Associate firm can provide equipment based road inspection services for any of the 4 equipment viz., (i) Network Survey Vehicle including all modules required as per technical specifications, (ii) Falling Weight Deflect meter, (iii) Mobile Bridge Inspection Unit and (iv) Retro Reflect meter. However, the Associate(s) cannot be common for 2 or more bidders. If any Associate is common with 2 or more bidders, all those bids shall be declared non-responsive. Hence, the bidder may ensure on his own that the associate proposed by him is not proposed by any other bidder participating in the same assignment and the bidder is solely responsible in this regard.
 - (B) In addition, the applicant whether a sole applicant or lead member with joint venture may also include an Associate for providing key personnel. In such case,

the applicant should submit an MOU with associate regarding role and responsibility of Associate Company. However, the maximum no. of key personnel from Associate firm during RFP proposal and implementation of contract should be limited to two (2).

- 15. The Applicant, by submitting its Application pursuant to this RFP, shall be deemed to have acknowledged that without prejudice to the NHIDCL any other right or remedy hereunder or in law or otherwise, the Applicant shall be debarred from participating in the future projects of the NHIDCL in the following situations
 - (a) If an Applicant withdraws its Proposal during the period of its validity as specified in this RFP and as extended by the Applicant from time to time.
 - (b) In the case of a Selected Applicant, if the Applicant fails to sign the Agreement.
 - (c) For determining the eligibility of bidder from a country which shares a land border with India the following shall apply:-
- i. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority
- ii. "Bidder (including the term 'tenderer', 'consultant' or 'service provider in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated herein before, including any agency branch or office controlled by such person, participating in a procurement process.
- iii. 'Bidder from a country which shares a land border with India' for the purpose of this Order means:
 - a. An entity incorporated, established or registered in such a country; or
 - b. A subsidiary of an entity incorporated, established or registered in such a country; or
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country, : or
 - d. An entity whose beneficial owner is situated in such a country; or
 - e. An Indian (or other) agent of such an entity; or
 - f. A natural person who is a citizen of such a country; or
 - g. A consortium or joint venture where any member of the Consortium or joint venture falls under any of the above
- iv. The beneficial owner for the purpose of para (iii) above will be as under:
 - 1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means,

Explanation—

- a. "Controlling ownership interest" means Ownership of or entitlement to more than twenty-five percent of shares or capital or profits of the company;
- b. "Control" shall include the right to appoint the majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting

agreements;

- 2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership
- 3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more
- 4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial Owner is the relevant natural person who holds the position of senior managing official:
- 5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership
- v. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
- vi. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

Model Certificate for Tenders (for transitional cases as stated in para 3 of this Order) (
As per Appendix-B-12) "

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I hereby certify that this bidder is not from such a country or, if from such a country has been registered with the Competent Authority and is eligible to be considered."

Model Certificate for Tenders

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a Country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached]"

Model Certificate for Tenders for Works involving possibility of sub-contracting

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or; if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority, I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered [Where applicable, evidence of valid registration by the Competent Authority shall be attached.)"

Model Certificate for GeM:

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this vendor/bidder is not from such a country or, if from such a country, has been registered with the

Competent Authority. I hereby certify that this vendor,' bidder fulfills all requirements in this regard and is eligible to be considered for procurement on GeM. [Where applicable, evidence of valid registration by the Competent Authority shall be attached."

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

A). Eligibility criteria for sole applicant firm.

S. No.	Experience of the firm in last 7	Annual Turnover	
	Preparation of DPR	Project Supervision/IC	
	(NH/SH/Equivalent)	(NH/SH/Equivalent)	
1 (a).	The firm should have minimum experience of preparation of detailed Project Report/ Feasibility Study cum Preliminary Design Report of 2/4/6**- laning project of aggregate length equal to 2 times or more of similar category for which RFP is Invited.	The firm should have minimum experience of Project Supervision /Independent Engineer/Authority's Engineer of 2/4/6**- laning project of aggregate length equal to 3 times or more of similar category** for which RFP is invited.	Annual turnover (updated average of last 3 years) of the firm from consultancy business should be equal to or more than 2% of Estimated Project Cost.
1 (b)		Firm should also have experience of Project Supervision/ Independent Engineer/ Authority's Engineer of at least one project of similar category of two/four/six** laning work of length equal to 40% of project length.	

** Similar project means 2/4/6 lane as applicable for the project for which RFP is invited. For 2-lane projects experience of 4/6 lane also to be considered with a multiplication factor of 1.5. Experience of 4/6 lane shall be considered interchangeably for 4/6 laning projects. For 4/6 laning projects, experience of 2 lane will be considered with a multiplication factor of 0.4, but only for those 2 lane projects whose cost of consultancy services was more than Rs.3.0 crores.

B) Eligibility Criteria for partners in case of JV (not more than 1 JV partners shall be allowed) shall be as under:

The lead partner must fulfill at least 50% of requirements at 1(a) of table in para (A) above and other JV partner should fulfill at least 30% of eligibility criteria as indicated at 1(a) of table in para (A) above. Also the lead partner and JV partner jointly should meet the eligibility criteria as mentioned at 1(a) of table in para (A) above. Lead partner should meet the criteria 1 (b) of table in para (A) above.

Note: 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 firm in the respective assignment. If the applicant firm has completed projects as JV with some other firms, weightage shall be given as per the JV share***. However if the applicant firm has executed the project as associate with some other firms, 25% weightage shall be given to the applicant firm for the projects completed under such association.

*** For weightage of experience in any past Consultancy assignment, experience certificate from the client along with JV agreement shall be submitted. In absence of clear demarcation of JV share in client certificate& in JV agreement, the weightage

will be treated as 60 % for lead partner and 40% for minor partner. 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.

- 17. In case the financial figures and values of services provided are in foreign currency 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.
- 18. The Bidder including individual or any of its Joint Venture Member should, in the last 2 years, have neither failed to perform for the consultancy services pertaining to Expressways, National Highways, ISC (Inter State Connectivity) & EI (Economic Importance) works, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder including individual or any of its Joint Venture Member, as the case may be, nor has been expelled or terminated by Ministry of Road Transport & Highways or its implementing agencies for breach by such Bidder including individual or any of its Joint Venture Member. Consultants (sole firm or lead firm and any of the JV partners) who do not fulfill the aforesaid condition as on last date of submission of proposal, need not apply as their RFP proposal will not be entertained.
- 19. Employer will not be responsible for any delay, loss or non-receipt of RFP document sent by post/courier. Further, Employer 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.
- 20. The two parts of the Proposal (Technical proposal and Financial proposal) must be submitted on-line only with all pages numbered serially, along with an index of submission as per procedure under e-tendering. Physical submission of the proposal shall not be accepted. In the event, any of the instructions mentioned herein have not been adhered to, the Employer may reject the Proposal.
- 21. Employer will be at liberty to keep the credentials submitted by the Consultants at bidding stage, in public domain and the same may be uploaded by Employer on Employer's web-site. Consultants should have no objection if Employer uploads the information pertaining to their credentials as well as of their key personnel.
- 22. The individual key personnel proposed in the bid by the consultants or any replacement thereof should undertake that they shall have no objection in uploading/hoisting of their credentials by Employer in public domain.

23. Participation of Consultant in bidding process of NHIDCL

The bidder either as individual firm or in JV or in association, who are having (three) or more on—going Authority's Engineer Consultancy Contract(s) in NHIDCL, as on date of bid submission, shall not be eligible to bid for this Authority's Engineer Consultancy Contract (Issuance of LOA will be considered as an on-going Authority's Engineer Consultancy contracts).

The bidder shall not be awarded more than 3 (three) Authority's Engineer Consultancy Contracts for current bidding process in NHIDCL

Stands debarred by the Authority as a natural consequence of termination of any Consultancy Contract of the Authority.

24. Deleted

25. The bidder including individual or any of its JV members or its related parties, who are already having three or more on-going Authority Engineer Consultancy contract(s) in NHIDCL, as on date of financial bid opening, shall not be eligible to bid for this project.

Explanation:

- (i) An LOA issued for any project shall be counted as an on going project.
- (ii) Projects with consultancy fee of Rs.1.5 Crores or less shall not be counted for this purpose.
- (iii) In case of a company, the Related Parties means Related Parties as defined in the Companies Act, 2013, and in case of a bidder other than a company, the Related Parties means bodies in which the bidder or its partners are partner, trustee or directors in other bodies whether incorporated or not.

To substantiate this, the bidder shall provide an undertaking giving list of all such Related Parties and projects being executed by the Related Parties in NHIDCL. A certificate in this regard from Statutory Auditor (with UDIN) shall also be provided by the bidder

26. RFP submission must be received not later than **1500 hrs on 04.03.2025** in the manner Specified in the RFP document at the address given below.

Address of Employer:

Naveen Kumar Jain
DGM (Technical),
Assam-III, HQ, NHIDCL,
1st & 2nd Floor, Tower-A,
World Trade Centre, Nauroji Nagar,
New Delhi – 110029, Ph. 011-26768929

Email: dgmt.hq@nhidcl.com, ed1@nhidcl.com

SECTION 2: LETTER OF INVITATION TO CONSULTANTS

1 INTRODUCTION

- 1.1 Bids are invited from consulting firms either as a sole firm/ joint venture with other Consultant willing to act as AE to submit a proposal for providing consulting services required for the assignment named in the attached letter of Invitation.
- 1.2 A brief description of the assignment and its objectives are given in the Terms of Reference (TOR).
- 1.3 The assignment shall be implemented in Construction Period (00 Months) and Maintenance Period (48Months).
- 1.4 This RFP is neither an agreement nor an offer 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 and assumptions, which reflect various assessments arrived at by the Authority 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 Client and the project site, sending written queries to the client, before the date and time specified in the DataSheet.
- 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) Employer 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 Consultant have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or than may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant
- Or theterminationofitsContractand/oranyotheractionasdeemedfitbytheAuthority at any stage.
- 1.7 It is the NHIDCL policy that the consultants observe the highest standard of ethics during the selection and execution of such contracts. In pursuance of this policy, the NHIDCL:
 - (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 Client, designed 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 engaged in corrupt or fraudulent practices in competing for, or in executing, a contract; and
- (d) willhavetherighttorequirethataprovisionbeincludedrequiringconsultants to permit the Employer to inspect their accounts and records relating to the performance of the contract and to have them audited by authorized representatives of Employer.
- 1.8 Consultants, their JV partner, their Sub-Consultants, and their associates shall not be under a declaration of ineligibility for corrupt and fraudulent practices. Furthermore, the Consultants shall be aware of the provisions on fraud and corruption stated in the specific clauses in the General Conditions of Contract.
- 1.9 Consultants shall furnish information on commissions and gratuities, if any, paid or 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.
- 1.10 The Data Sheet indicates how long Consultants' Proposals must remain valid after the submission date. During this period, Consultants shall maintain the availability of Professional staff nominated in the Proposal. The Client will make its best effort to complete the process within this period. Should the need arise, however, the Client 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 their confirmation of extension of validity of the Proposal, consultants could seek replacement upto a maximum of 50% key personnel .If any Consultant seeks any replacement(s), while extending the bid validity, then the same shall be evaluated for ascertaining suitability of replacement as per the provisions of the RFP and remuneration shall not be reduced for any such replacement(s). However, the technical evaluation shall take into account of the originally submitted CV(s) only irrespective of replacement sought.

2. CLARIFICATIONS AND AMENDMENT OF REPDOCUMENTS

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 Client's address indicated in the Data Sheet. The Client 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 NHIDCL website.

At any time before the submission of Proposals, the Client 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 Employer's website which will be binding on them. The Client may at its discretion extend the deadline for the submission of Proposals.

3. PREPARATION OF PROPOSAL

3.1 You are requested to submit your proposal in Two Parts strictly using the formats enclosed herewith (refer section 3,4and 5). 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. In case of JV or inclusion of Associate company, a MoU indicating the specific Projects, input and role of each Partner etc. shall be submitted with the proposal.

Part 1: Technical Proposal

3.2 You are expected to examine all terms and conditions included in the documents.

Failure to act or to provide all requested information will be at your own risk and may result in rejection of your proposal.

- **3.3** During preparation of the Technical proposal, you 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 Client's 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.
 - The Consultants should prefer to field as many of their permanent staff as possible. 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. Applicant shall submit the details of the period of employment of the proposed personnel with the firm.
- iii. 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 datasheet
- **3.4** Your Technical Proposal must provide the following in formation, using but not limited to the formats attached in the Section 3 &4.
 - i. A brief description of the firm's organisation and an outline of recent experience of the Consultants and, in the case of Joint Venture, for each partner, on assignments of a similar nature. The information which you shall provide on each assignment should indicate, *inter-alia*, the profiles of the staff provided, duration, contract amount and firm's involvement. *The details of assignments on hand shall also be furnished by the* Consultant *and their JV partner, separately.*
 - 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. Site Appreciation: limited to four A4 size pages in 1. 5 space and 12 font including photographs, if any;
 - iv. Proposed methodology for the execution of the services illustrated with bar charts of activities, including any change proposed in the methodology of services indicated in the TOR, and procedure for quality assurance: Maximum 4pages;
 - v. The proposed methodology should be accompanied by the consultants initial view, key challenges they for esee and potential solutions. It should also include details on adoption of superior technology along with proof: limited to six A4 size pages in 1.5 space and 12 font including photographs;
 - vi. The proposal shall indicate as to whether the firm is having the facilities for carrying out the following field activities or these are proposed to be outsourced to specialized agencies.
 - Surface defects detection and roughness measurement using Network Survey Vehicle
 - Pavement strength measurement using FWD
 - Bridge inspection using Mobile Bridge Inspection Unit
 - Road signs inspection using Retro Reflectometer
 - vii. Proposed Quality Audit Methodology including Quality Assurance Plan.
 - viii. In case the Consultant envisages out sourcing any or all of the above services to the expert agencies, the details of the same indicating the arrangement made with the agencies need to be furnished. These agencies

would however, be subject to approval of the client to ensure quality in put by such agencies before award of the work. For out-sourced services, proposed firms/consultants should have such experience on similar projects.

- ix. The composition of the proposed staff team, the tasks which shall be assigned to each and their timing;
- x. Requirement for submission of CVs.
 - The CVs of following [key personnel in the format as per Appendix- B-6 is to be furnished on INFRACON portal.
 - 1. Team Leader Cum Senior Highway Engineer
 - 2. Resident cum Highway Engineer
 - 3. Bridge/Structural Engineer
 - 4. Senior Pavement Specialist
 - 5. Senior Quality cum Material Expert
 - 6. Road Safety Expert

[Team leader cum Senior Highway Engineer, Resident cum Highway Engineer, Senior Pavement Specialist, Senior Quality cum Material Expert, and Road Safety Expert in case of Normal Highway Project]

It may please be ensured that the format is strictly followed and the information furnished therein is true and correct. The CV must indicate the work in hand and the duration till which the person will be required to be engaged in that assignment. The Firm shall ensure that details furnished in the CV by the personnel are correct. If any information is found incorrect/fake/inflated in CV, at any stage, debarment of key personnel from future NHIDCL projects upto 2 years may be taken by NHIDCL.

- b. Key information should include years with the firm and degree of responsibility held in various assignments. In CV format, at summary, the individual shall declare his qualification & total experience (in years) against the requirements specified in TOR for the position (Ref. Enclosure-B of TOR). If case, the information contained in the CV for the duration in which the key personnel was employed by the firm, proposing his candidature is found incorrect/fake/inflated at any stage, action including termination of the consultancy agreement and debarment of the firm upto 2 years from future NHIDCL projects shall be taken by NHIDCL.
- c. 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 or for which Consultant has been declared as H1 are such that the key personnel is able to proportionately devote the given man months for this project. In case, the information contained in the CV for the duration in which the key personnel was employed by the firm proposing his candidature is found incorrect/Fake/inflated at any stage, the consultancy firms will have to refund the salary and perks drawn in respect of the person apart from other consequences.
- 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.

- e. Minimum 75% marks required. CV of Key Personnel will be evaluated. CV of proposed Team Leader should score at least 75% marks. If not, the proposal shall not be considered further.
- f. If a CV score less than 75% marks, whatever marks it score will be carried forward for maximum 3 nos. key personnel for determining the total score of the firm. However, if the Key Personnel does not fulfill the minimum academic qualification (as mentioned at Enclosure-B of TOR 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-B of TOR 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 3 nos. key personnel for determining the total score of the firm. In case a firmisH-1, then all such Key Personnel (whoseCVscoreslessthan75% or who does not fulfill the minimum qualification) will have to be replaced by the firm before signing the contract. The reduction in remuneration of such replacements shall be 10% for each replacement. In case more than 3 CV scores less than 75% marks or Team leader cum Senior Highway Engineer scores less than 75% marks, the proposal shall be considered non-responsive.
- g. In case, the information contained in the CV for the duration in which the key personnel was not employed by the firm proposing his candidature is found incorrect/Fake/inflated at any stage, the consultancy firms will have to refund the twice of salary and perks drawn in respect of the person. In the event the penalty is not paid by the Consultancy Firm, the same shall be recovered from encashment of performance security of the firm.
- h. It is also clarified that any key personnel, if debarred during the period betweenreceiptofbidandawardofthecontractandisrequiredtobereplaced as per the provisions of the RFP, then the replacement shall not be considered as part of replacement by the Authority's Engineer and hence no deduction in remuneration shall be affected. However, in this case the original CV will be considered for evaluation purpose
- xi. Deployment Schedule for each key personnel should be formulated and incorporated in the Technical Proposal which will be reviewed on quarterly basis.
- xii. 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.
- xiii. In case, consultant Firm's experience/ document is found to be false at any stage i.e. from bidding to completion of services, the Consultancy contract shall be terminated and consultant firm shall be debarred for a period of 2 years.
- **3.5** The technical proposal must NOT include any financial information.

Part2: Financial Proposal

3.6 Your Financial Proposal must be strictly using the formats attached in Section 5.
No

additionalitems/quantitiesotherthanthatspecifiedintheformatsshouldbepropose d by the Consultants since the same shall not be considered for the evaluation/award. Consultants shall be paid billing rates for services as per financial proposal submitted by them basis. Beginning 13th months from the last date of submission of bid, billing rates shall be increased to cover all items of the contract i.e., remuneration, vehicle hire, office rent, consumables, furniture etc. @5% every 12 months. However, for evaluation and award of the Bid proposals, the quoted initial rate (as applicable for first 12 months from last date of submission of bid) shall be multiplied by the total time input for each position on this contract, i.e. without considering the increase in the billing rates. All payments shall be made in Indian Rupees and shall be subjected to applicable Indian laws withholding taxes if any.

- 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 may express the price of their services in the Indian Rupees only.
- 3.9 Goods & Service tax as applicable shall be paid to the Consultant while making payment for services rendered. The consultants shall then deposit the same with the tax authorities and provide a proof of having done so within next 90 days in line with policy circulars issued by Employer. Employer shall pay only the Goods & service tax.

4. SUBMISSION, RECEIPT AND OPENING OFPROPOSALS

4.1 PREPARATION & SUBMISSION OF APPLICATIONS:

- A. Detailed RFP may be downloaded from E-tendering portal of Employer and the Application may be submitted online following the instructions appearing on the screen.
- B. The following shall be the form of various documents in the Application:

(I) Technical Proposal {Only Electronic Form (to be uploaded on the Etendering portal of Employer)}

- (a) Power of Attorney for signing the Application
- (b) If applicable, the Power of Attorney for Lead Member of JV;
- (c) Copy of Memorandum of Understanding between JV partners, if applicable;
- (d) Copy of Memorandum of Understanding with Associate, if applicable.
- (e) Firm's credentials as per format prescribed in SECTION-3 OF RFP. (The details are to be submitted through INFRACON only)
- (f) Technical proposal as per format prescribed in SECTION-4 OF RFP. (The details are to be submitted through INFRACON only.)
- II) Financial proposal as per format prescribed in section 5 of RFP

- (III) Online Payment Receipt towards cost of RFP of Rs. 5,900/- (Rupees Five thousand Nine Hundred only) including GST in favour of NHIDCL facility provided by the IndusInd Bank. For further details and step by step process regarding e-BG and online payment, NHIDCL Office Order dated 22nd March 2023 may be referred, which is attached as Appendix-A
- (IV) Bid Security (for the amount given in section 1 of this document) in the form of Insurance Surety Bond a Bank Guarantee or Demand Draft and the format specified in this document; or may be deposited through online facility provided by the Induslnd Bank and the format specified in this document; For Further, details and step by step process regarding e-BG and online payment, NHIDCL Office order dated 22nd march 2023 may be referred, which is attached as Appendix-A
- (V) Bidders have to comply with the OM No. 13030/09/2008-vig dated 28th January, 2013(copy enclosed) regarding Integrity pact.
- C. The successful bidder shall submit the original documents specified above in point no.4.1 B (I) (a), (b), (c)& (d) above together with their respective enclosures to the Authority before signing of the Agreement.
- D. The Applicant shall upload scanned copies of the Technical Proposal and Financial Proposal as specified in point nos. **4.1 (B) (I),(II), (III) & (IV)** above on the Etendering portal of Employer before 15:00 hours Indian Standard Time on the Bid due date i.e. **04.03.2025**. Financial Proposal is to be submitted online only and no hard submission is to be made.

4.2 Modification / Substitution / Withdrawal of bids:

- (i) The Bidder may modify, substitute or withdraw its e-bid, prior to the Bid Due Date. No Bid shall be modified, substituted or withdrawn by the Bidder on or after the Bid Due Date.
- (ii) Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid Due Date, unless the same has been expressly sought for by the Employer, shall be disregarded.
- (iii) For modification of e-bid, bidder has to detach its old bid from e-tendering portal and upload / resubmit digitally signed modified bid.
- (iv) For withdrawal of bid, bidder has to click on withdrawal icon at e-tendering portal and can withdraw its e-bid.
- (v) Before withdrawal of a bid, it may specifically be noted that after withdrawal of a bid for any reason, bidder cannot re-submit e-bid again.

4.3 OPENING AND EVALUATION OF APPLICATIONS:

(i) Opening of Proposals will be done through online for both Financial Proposal and Technical Proposal.

- (ii) For participating in the tender, the authorized signatory holding Power of Attorney shall be the Digital Signatory. In case the authorized signatory holding Power of Attorney and Digital Signatory are not the same, the bid shall be considered non-responsive.
 - The Employer will open the Technical Proposal at 16:00 hours Indian Standard Time on 05.03.2025 in the presence of the Applicants who choose to attend and evaluate the Applications in accordance with the provisions set out in the RFP.
- (iii) The Financial Proposal will be opened of the short-listed applicants who qualify for financial opening as per RFP. The date of opening of Financial Proposal will be notified later on.

5 PROPOSAL EVALUATION

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

Technical Proposal

5.3 The Evaluation Committee appointed by the Employer 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 (ST.) Only those Applicants whose Technical proposal score 75 marks or more out of 100 shall qualify for further consideration. However, if the number of such prequalified applications is less than two, the Employer may, in its sole discretion, prequalify the applicant(s) whose technical score is less than 75marks.

Financial Proposal

- 5.4 After the evaluation of Technical Proposals is completed and the shortlist of firms is finalized, the Employer may notify those consultants whose proposals were not considered as per conditions of RFP. The Employer shall simultaneously notify the shortlistedfirmsindicatingthedateandtimesetforopeningoftheFinancialProposals.
- 5.5 The Financial Proposals shall be opened publicly in the presence of the consultants' 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 Client shall prepare minutes of the public opening.
- 5.6 The Evaluation Committee will determine whether the submitted Financial Proposals are complete (i.e. whether they 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.) and without computational error. In case under such circumstances, if Client 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 lowest financial proposal (FM) will be given a financial score (SF) of 100 points. The financial scores of other proposals will be computed as follows:

 $S_F = 100 \times F_M/F$ (F = amount of financial proposal)

5.8 Proposals will finally be ranked according to their combined technical (ST) and financial (SF) scores as follows:

 $S = S_T \times Tw + S_F \times Fw$

Where S is the combined score, and Tw and Fw are weights assigned to Technical Proposal and Financial Proposal that shall be **0.75** and **0.25** respectively.

5.9 The selected Authority's Engineer shall be the first Ranked Applicant (H-1, having the highest combined score). In the event the proposals of two or more consultants have the same scores in the final ranking, the proposal with the highest technical score should be ranked first.

6 AWARD OFCONTRACT

6.1 The Client shall issue letter of award to selected Consultant and ask the Consultant to provide Performance Security as in Para 7 below. If the selected Consultant fail to provide performance security within the prescribed time or the Consultant fail to sign the Contract Agreement within prescribed time, the Client may invite the 2ndhighest ranking bidder Consultant and follow the procedure outlined in Para 6 and 8 of this Letter of Invitation.

7 PERFORMANCE SECURITY

- 7.1 The successful consulting firm shall have to submit a E- Bank Guarantee (BG) for an amount of 5% of the Contract Value within 15 days of issue of LOA. The BG shall be valid for a period of [48+2=50] i.e. upto 2months beyond the expiry of the Contract period of [48 Months]. The BG shall be in the format specified in Appendix H of draft contract form and furnished from Public Sector Banks or Scheduled Private Banks having the Net Worth of Rs 1,000/- crores or more as per the latest annual report of the bank, in favour of the Authority. The list of such banks is mentioned at NHIDCL website. The Authority reserves the right to add or remove any of names bank on which BG shall be accepted based on advisories from the Govt./RBI. The BGs issued by 'Foreign Banks' and Banks not mentioned in the given list shall not be accepted. In case of JV, the BG shall be furnished on behalf of the JV and not individually by the members.
- 7.2 In the event the Consultant fails to provide the security within 15 days of date of LOA, it may seek extension of time for a period of 15(Fifteen) days on payment of damages for such extended period in a sum of calculated at the rate of 0.1% (Zero Point One Percent) of the contract price for each day until the performance security is provided. For the avoidance of doubt the agreement shall be deemed to be terminated on expiry of additional 15 days time period.
- 7.3 Notwithstanding anything to the contrary contained in this Agreement, the Parties agree that in the event of failure of the Consultant to provide the

Performance Security in accordance with the provisions of Clause 7.1 within the time specified therein or such extended period as may be provided by the Authority, in accordance with the provisions of Clause 7.2 and thereupon all rights, privileges, claims and entitlements of the Consultant under or arising out of this Agreement shall be deemed to have been waived by, and to have ceased with the concurrence of the Consultant, and LoA shall be deemed to have been withdrawn by mutual agreement of the Parties. Authority may take action debar such firm for future projects for a period of 1-2 years.

8. Signing of Contract Agreement

After having received the performance security and verified it, the Client shall invite the selected bidder for signing of Contract Agreement on a date and time convenient to both parties within 15 days of receipt of valid Performance Security.

DATA SHEET

(As Mentioned in Letter of Invitation to Consultants)

Sub clause No. in Letter of Invitation to Consultants

- Pre-Proposal Conference shall be held at: Employer's Office at NHIDCL, 1st & 2nd Floor, Tower-A, World Trade Centre, Nauroji Nagar, New Delhi 110029 on 25.02.2025 at 1500 Hr.
- The proposal shall be valid for 120 days after the last date of submission.
- 3 Clarification may be requested 7 days prior to Pre-Proposal Conference. The address for requesting clarifications:

Address of Employer:

Name:	Naveen Kumar Jain
Designation:	DGM (Technical)
Address:	National Highway & Infrastructure Development Corporation Ltd., 1st
	& 2nd Floor, Tower-A, World Trade Centre, Nauroji Nagar, New Delhi-
	110029
Tel. No.:	Ph. 011-26768929
E-mail:	dgmt.hq@nhidcl.com, ed1@nhidcl.com

- 4 The Language of documents and correspondence will be English.
- All the personnel shall have working knowledge of English and all the reports etc. shall be written in English.
- 6 NHIDCL shall reimburse only Goods and Service Tax (GST). Authority's Engineer has to assess all other taxes and should inbuilt them in their financial proposal. These taxes (other than Goods and service tax) should not be provided separately. Consultants are requested to consult Tax Consultants for details.
- The Consultants to ensure that their firms and key personnel should register their credentials / modules on www.infracon.nic.in stipulated in MoRT&H Circular No. RW-NH-35075/1/2010-S&R® dt. 28.10.2015.
- 8 The Consultants to state cost in INR.
- 9 The time and date of submission: **04.03.2025** at **1500** Hr.
- 10 The points assigned to Technical Evaluation criteria are:

Sr. No.	Description	
1	Relevant experience for the assignment	
2	Experience in use of technology for road inspection	20
3	Qualifications and competence of the key staff for the assignment	
	Total	100

i. Sub criteria for Relevant Experience of the firm for the assignment

Average Annual Turnover (last 3 years) from consultancy business (Min 5 crore)	2
Nos of Highway Professionals with the firm *The professionals who possess degree in Civil Engineering/Transport Planning/Transport Economics/Traffic Management / Geology/ Environment Science or Engineering and 8 years' experience in highway/bridge/tunnel with employment in the firm for more than one year. The current Employment Certificate shall be uploaded by Key Personnel on INFRACON.	
Experience as Independent Engineer / Authority Engineer/ Construction Supervision in Number of Highway Projects of length equal to 40% of project length of similar category for which RFP invited of 2/4/6**-laning or more in last 7 years*	
Experience in DPR preparation for Number of Highway Projects (of length 40% of project length of similar category for which RFP invited of 2/4/6** - laning or more) In last 7 years*	
In hand DPRs for Authority (Ministry/NHAI/NHIDCL-As applicable) Projects (presently under progress)	
Experience in Construction Supervision/DPR/Design Review of Major structures having length of more than 500 meter in last 7 years.	

* 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. This list of the completed works should also include those assignments which are substantially (90% of Contract value) completed. No Qualification/Experience etc. shall be considered without proof of experience.

Experience of Authority's Engineer for having offered consultancy services to a private organization shall not be considered as relevant experience for current assignment.

- ** Similar projects means 2/4/6 lane as applicable for the project for which RFP is invited. For 2-lane projects, experience of 4/6 lane also to be considered with a multiplication factor of 1.5. Experience of 4/6 lane shall be considered inter changeably for 4/6 laning projects. For 4/6 laning projects, experience of 2 lane will be considered with a multiplication factor of 0.4, but only for those 2 lane projects whose cost of consultancy services was more than Rs.3.0crores.
- *** In case the project includes any specialized nature of work such as tunnels, specialized structures etc. in substantial quantum, this requirement/Marks may be included by suitably adjusting marks of other attributes.

In case of JV the turnover and experience details of Lead and JV Employer's certificate should be submitted substantiating the experience claimed by the firm.

ii. Sub criteria for Experience in use of technology for road inspection

Sr. No.	Description	Maximum Points	Sub-Points
1	Experience in Network Survey Vehicle (NSV) or better	7	
	technology for pavement inspection		
1.1	Equipment	4	
	(a) Equipment on MOU with Associate or on hiring basis		2
	(b) Own Equipment		4
1.2	Experience	3	
	(a) 1-2projects		1
	(b) 3-5projects		2
	I >5projects		3
^	Experience in Falling Weight Deflectometer (FWD) or better	4	
2	technology for pavement strength measurement	4	
2.1	Equipment	2	
	(a) Equipment on MOU with Associate or on hiring basis		1
	(b)) Own Equipment		2
2.2	Experience	2	
	(a) 1-3projects		1
	(b) > 3projects		2
3	Experience in Mobile Bridge Inspection Unit or better technology for bridge inspection	5	
3.1	Equipment	2	
	(a) Equipment on MOU with Associate or on hiring basis		1
	(b) Own Equipment		2
3.2	Experience	3	
	(a) 1-2projects		1
	(b) 3-5projects		2
	I 5projects		3
4	Experience in Retro reflectometer technology	4	
4.1	Equipment	2	
	a) Equipment on MOU with Associate or on hiring basis		1
	(b)Own Equipment		2
4.2	Experience	2	_
7.6	(a)1-3 projects		1
	(b)> 3 projects		2
	Total	20	_
			1

Note: A. The Authority's Engineer owning the equipment's shall be required to submit proof of ownership.

B. The experience of the associate firms in use of technology shall also be counted in the evaluation. The experience of firm or associate firm in NSV or equivalent technology, FWD or equivalent technology, MBIU or equivalent technology and Retro reflectometer or equivalent technology shall be supported by experience certificate. The experience of a firm/associate firm for a private concessionaire/contractor shall be considered on self-certification along with the principal Authority/client .Any false certification shall attract provision of Clause 1.8, Section -2 (Letter of Invitation) read with clause 2.9.1 (g) of GCC."

C. In case, Ownership document of equipment of Consultancy/Associate Firm is found to be false. The consultancy/Associate firm, as the case may be, shall be put on holiday listing (temporary debarment) for a period upto 12 months.

Qualification and competence of following professional/sub-professional staff for the assignment shall be evaluated. The weightage for various key staff are as under: -

Normal Highway Project:

S.No.	Staff Position	Marks
1	Team Leader Cum Senior Highway Engineer	10
2	Resident cum Highway Engineer	48
3	Bridge/Structural Engineer	7
4	Senior Pavement Specialist	10
5	Senior Quality cum Material Expert-I	7
6	Road Safety Expert-I	7
	Total	72

Sub criteria for qualification of Key Personnel (i.e. Professional staff)

General qualifications	25
Adequacy for the project	70
Employment with firm	5
Total	100

The technical proposal should score at least 75 points to be considered responsive for financial evaluation.

- v) Detailed evaluation criteria which is to be used for evaluation of technical bids is as indicated below as Appendix-EC.
- vi) The Authority's Engineer should carryout self-evaluation based on the evaluation criteria at Appendix-EC. While submitting the self-evaluation along with bid, Authority's Engineer shall make references to the documents which has been relied upon in his self-evaluation.
- vii) Result of technical evaluation shall be made available on the website giving opportunity to the bidders to respond within 7 days in case they have any objection.
- viii) The single currency for price conversion is INR. For evaluation of bid proposals, the foreigncurrencyconversationrateof1US Dollar=Rs.And1Euro=Rs. Shall be used. (This will be the exchange rates as per Reserve Bank of India rounded off to nearest Rupee applicable at the time of RFP invitation).
 - ix) The weightage given to technical proposal is 75%.
 - The weightage given to financial proposal is 25%.
 - 11 Commencement of Assignment: The firm shall begin carrying out the services within one month of signing of the Consultancy Agreement.

The NHIDCL's Bank Account detail for online fee deposit is as given below:

Sl. No.	Particulars	Details
1.	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited
2.	Beneficiary Bank Account No.	90621010002610
3.	Beneficiary Bank Branch Name and Address	Canara Bank, Transport Bhawan, 1st Parliament Street, New Delhi110001
4.	Beneficiary Bank Branch IFSC	CNRB0019062

Appendix-EC

1. Evaluation Criteria for Assessment of Experience of the Firm.

S.No.	Des	cription	Max. Marks	Reference/Details of projects Claimed for self-assessment	Marks self- assessed by the bidder
1	Average Annual Turn	over (last 3 years) from	2		
	consultancy business				
	<2% of TPC. – 0marks				
	2% of TPC 1.5marks	•			
		over 0.25 (Zero point two			
	five) marks for every 7 TPC. subject to maxim	1 %of TPC above 2% of um 0.5 marks.			
2	Nos. of Highway Profe	ssionals with the firm *	10		
2.1	<10	0			
2.2	10-20	8			
2.3	>20 but ≤30	9			
2.4	>30	10			
*The	nrofessionals who no	ossess degree in Civil I	- -naine	ring/Transport Plannir	ug /Transnor
		nt / Geology/ Environment S employment in the firm for r		• • •	•
Certif	icate shall be uploaded b	y Key Personnel on INFRAC	CON.		
3	Engineer/ Construction Highway Projects of 2/4	ndent Engineer/Authority Supervision in Number of /6-laning** of length equal th) or moreinlast7years.	10		
	completed assignment Engineer/Independent E point five) marks extra for	d 1(one) mark extra for of Authority Engineer and add 0.5 (Zero or completed assignment acy subject to maximum 2			
4	Preliminary Design Rep of Highway Projects of 2	//Feasibility Study cum ort preparation for Number /4/6-laning** of length equal n) or more in last 7 years.	5		
		Add 0.5 (Zero point five) dditional project subject to			
	In hand DPRs of Highw (presently under progre	ay/Bridge/Tunnel Projects ss)	10		
5.1	<2	0			
5.2	2-5	5			

S.No.	Des	cription	Max. Marks	Reference/Details of projects Claimed for self-assessment	Marks self- assessed by the bidder
5.3	>5	10			
6	Experience in Construction Supervision/DPR/Design Review of Major structures having length of more than 500 meter in last 7 years.		3		
	1 project – 2.0 marks Add 0.5 (Zero point five) marks extra for each additional project subject to maximum 1.0 marks				

Note 1: In case of JV, the turnover and experience details of Lead and JV partners to be added.

Note 2: Employer's certificate/ certificate from Statutory Auditor should be submitted substantiating the experience/turnover claimed by the firm.

Note 3: ** For 4/6 laning projects, experience of 2 lane will be considered with a multiplication factor of 0.4, but only for those 2 lane projects whose cost of consultancy services was more than Rs.3.0crores.

2. Evaluation Criteria for assessment of experience in use of technology for road inspection

S. No	Description		Maximum Points	Reference/Details of projects Claimed for self- assessment	Marks self- assessed by the bidder
1	Experience in Network better technology for pa	Survey Vehicle (NSV) or avement inspection	7		
1.1	Equipment		4		
	(a) Equipment on MOU basis- 2 marks (b) Own Equipment – 4	with Associate or on hiring marks			
1.2	Experience		3		
(i)	1-2 projects	1			
(ii)	3-5 projects	2			
(iii)	> 5 projects	3			
2	Experience in Falling Weight Deflectometer (FWD) or Better technology for pavement strength measurement		4		
2.1	Equipment		2		

		·		Reference/Details	Marksself-
S. No	Description		Maximum Points	of projects Claimed for self- Assessment	assessed bythe bidder
	(a) Equipment on MOU	with Associate or on hiring			
	basis- 1 mark				
	(b) Own Equipment – 2	marks			
2.2	Experience		2		
(i)	1-3 Projects	1			
(ii)	>3 Projects	2			
3	Experience in Mobile Bri- technology for bridge in	dge Inspection Unit or better spection	5		
3.1	Equipment		2		
	(a) Equipment on MOU basis- 1 mark (b) Own Equipment – 2	with Associate or on hiring			
3.2	Experience	manto	3		
(i)	1-2 Projects	1			
(ii)	3-5 Projects	2			
(iii)	> 5 Projects	3			
4	Experience in Retro ref	ectometer technology	4		
4.1	Equipment	37	2		
	· ' '	with Associate or on hiring			
	(b) Own Equipment – 2	marks			
4.2	Execution with owned/h Associate	ired Equipment/through	2		
(i)	1-3 Projects	1			
(ii)	>3 Projects	2			
	Total		20		

- (i) The Consultants owning the equipment shall be required to submit proof of ownership.
- (ii) The experience of the associate firms in use of technology shall also be counted in the evaluation. The experience of firm or associate firm in NSV or equivalent technology, FWD or equivalent technology, MBIU or equivalent technology and Retro reflectometer or equivalent technology shall be supported by experience certificate. The experience of a firm/ associate firm for a private concessionaire/ contractor (client) shall be considered on self-certification along with the client certificate. Any false certification shall attract provisions of Clause 1.8, Section -2 (letter of Invitation) read with Clause 2.9.1(g) of GCC.
- (iii) In case, Ownership document of equipment of Consultancy/Associate Firm is found to be false. The consultancy/Associate firm, as the case may be, shall be put on holiday listing (temporary debarment) for a period upto 12 months.

3 Evaluation Criteria for assessment of score of Key Staff for adequacy of the Assignment.

3.1 Team Leader cum Senior Highway Engineer

S. No.	Description		Max. Points	Reference/Details of projects Claimed for self-assessment	Marks self- assessed by the bidder
1	General Qualification		25		
i)	Graduate in Civil Engineering	21			
ii)	Post-Graduation in Management/ Construction/ Transportation/Highway Engineering/Structural Engineering or equivalent specialised stream of civil engineering	04			
2	Adequacy for the Project		70		
a)	Professional Experience in Highway Projects:				
i)	_	n	10		
	< 12 years -0				
	12 years -8 marks				
	Add 1 mark extra for each additional of experience subject to maximum 2 (tw marks.	-			
ii)	Experience as Team Leader or similar in Highway Development Projects configuration(2/4/6laning**) and above	(similar	15		
	< 5 years -0				
	5 years -11 marks				
	Add 1 mark extra for each additional y experience subject to maximum 4 marks.				
iii)	Experience as Team Leader or similar in Highway Development projects (of ler of project length or more of configuration (2/4/6laning**) and ab EPC 1project -4 marks add 1 mark extra for a projects subject to maximum 1 (one)	ngth 40% similar ove) on additional mark	5		
b)	Experience as Team Leader or similar of project Preparation including domajor highway Project (of length 40% of length or more of similar confictive (2/4/6laning**) and above).	esign of of project	15		

	< 2 projects -0		
	2 Projects -11 marks		
	Add 2 marks for each additional project subject		
	to maximum 4marks.		
c)	Experience in position of Team Leader/Project	20	
	Manager or similar capacity in Construction		
	Supervision/IC involving length 40% of project		
	length or more of similar configuration (2/4/6**		
	laning) and above		
	< 2 projects – 0		
	2 Projects – 16 marks		
	Add 2 marks extra for each additional project		
	subject to maximum 4(four) marks		
d)	Experience as Team Leader or similar capacity	5	
	in Operation and Maintenance of Major Highway		
	(of length 40% of project length or more of similar		
	configuration (2/4/6laning**) and above).		
	1 project – 4 marks		
	Add1markextraforeachadditionalproject		
	subjecttomaximum1(one)mark		
3	Employment with the Firm	5	
	< 1 year -0		
	1 year – 3 marks		
	Add0.5marksforeachsubsequentyearsubject to		
	maximum 2marks		
	Total:	100	

- (1) Similar Capacity includes the following positions
 - i) On behalf of Consultant: Team Leader/Resident Engineer (Construction Supervision/IE/AE/DPR).
 - ii) On behalf of Contractor: Project Manager (Construction/Construction Supervision)
 - iii) In Government Organizations: Superintending Engineer (or equivalent) and above
- (2) Only those projects will be considered for evaluation at S. No. 2(b) where the input of the personnel is not < 9 months.
- (3) Only those projects will be considered for evaluation at S. No. 2I, (d) where the input of the personnel is not < 12months.
 - (4) In case of experience on behalf of Authority's Engineer or Contractor, the experience shall be dulyendorsedbytherespectiveGovernmentagency.Incaseofnon-availabilityofendorsement from Govt. Agency, the experience uploaded on INFRACON Portal will be taken into consideration. However, the key personnel/ bidder will be solely responsible for any fake information/ CV, which may result in debarment.

3.2 Resident cum Highway Engineer

S. No.	Description		Max. Points	Reference/Details of projects Claimedfor self-assessment	Marks self- assessed by the bidder
1	General Qualification		25		
i)	Graduate in Civil Engineering	21			
ii)	Post Graduation in Transportation/Highway Engineering/Structural Engineering/Geotechnical Engineering or equivalent	04			
2	Adequacy for the Project		70		
	Professional Experience				
i)	Total Professional Experience in handling Highway projects < 12 years -0 12 years -16 marks Add 1 mark extra for each additional year of experience		20		
ii)	subject to maximum 4(four) marks. Experience as Resident Engineer/Project Director/Project Manager/Superintending Engineer or equivalent/Executive Engineer or equivalent on construction works/Authority Engineer/Independent Engineer Projects (similar configuration (2/4/6laning*) and above). < 5 years -0; 5 years -15 marks Add 1 marks extra for each additional year of		20		
iii)	experience subject to maximum 5(five) marks. Experience in similar capacity in handling major 2/4/6-laning**projects(oflength40%ofprojectlengthormore of similar configuration (2/4/6 laning**) and above) < 2 nos0 2 nos19 marks Add 3 marks extra for each additional project subject to maximum 6 (Six)marks.		25		
iv)	Experience in similar capacity of High Construction/Construction Supervision/IC (oflength40%ofprojectlengthormoreofsir configuration(2/4/6laning**)and above 1 Project- 4 marks Add1(one)mark extra for each additional subject to maximum1(one)mark	on EPC Mode nilar e)	5		

3	Employment with the Firm	5	
	< 1 year -0		
	1 year – 3 marks		
	Add0.5marksforeachsubsequentyearsubjectto maximum 2marks		
	Total:	100	

- (1) Similar Capacity includes the following positions
 - i) On behalf of Consultant: Resident / HighwayEngineer
 - ii) On behalf of Contractor: Resident Engineer/ Highway Engineer / Project Manager (Construction/ConstructionSupervision)
 - iii) In Government Organizations: Executive Engineer (or equivalent) and above
- (2) Only those projects (in numbers) will be considered for evaluation above, where the input of the personnel is not < 12months
- (3) In case of experience on behalf of Authority's Engineer or Contractor, the experience shall be dulyendorsedbytherespectiveGovernmentagency.Incaseofnon-availabilityofendorsement from Govt. Agency, the experience uploaded on INFRACON Portal will be taken into consideration. However, the key personnel/ bidder will be solely responsible for any fake information/ CV, which may result indebarment.

3.3 Bridge/StructuralEngineer

S. No.	Description		Max. Point s		Marks self- assessed by the bidder
1	General Qualification		25		
i)	Graduate in Civil Engineering	21			
ii)	Post-Graduation in Structural Engineering or equivalent	04			
2	Adequacy for the Project	•	70		
i)	Total Professional Experience in handling Highway/Bridge projects < 10 years -0 10 years -11 marks Add one mark extra for each additional 2 year subject of maximum 4(four) marks	:o	15		
ii)	Experience in similar capacity in Design/Construction/Construction Supervision of Bridges/ROB/Flyover/Interchanges/any other such structures (similar configuration(2/4/6laning**) and above) < 5 years -0; 5 years -15 marks Add 1 (one) mark extra for each additional completedyearofexperiencesubjecttomaximum5 (five)marks		20		
iii)	ExperienceinsimilarcapacityinsupervisionofMajor Highw Bridges/ROB/Flyover/ Interchanges/ any otherstructure < 2 Bridges -0 02 Bridge -15 marks		20		

	Add2.5markextraforeachadditionalbridgesubject to maximum 5marks		
iv)	Experienceinsimilarcapacityinsupervisionof Rehabilitation and repair of Major Bridges/ROB/Flyover/ Interchanges/ any other structures < 2 nos. – 0 2 nos8 marks > 3 nos 10	10	
V)	Experience in similar capacity of modern bridge constructiontechnologyviz.,PrecastSegmental, Balanced Cantilever Construction, Extra dosed Bridge,FullSpanLaunching,IncrementalLaunching. Experience in 1 project – 4 marks More than one project – 5 marks	5	
3	Employment with the Firm < 1 year -0 1 year -3 marks Add0.5marksforeachsubsequentyearsubjectto maximum 2marks	5	
	Total:	100	

- (1) Similar Capacity includes the following positions
 - i) On behalf of Consultant/Contractor: Bridge Engineer/Project Manager(Bridges)
 - ii) On behalf of Government: ExecutiveEngineer
- (2) Only those projects (in numbers) will be considered for evaluation above, where the input of the personnel is not < 12months
- (3) In case of experience on behalf of Authority's Engineer or Contractor, the experience shall be dulyendorsedbytherespectiveGovernmentagency.Incaseofnon-availabilityofendorsement from Govt. Agency, the experience uploaded on INFRACON Portal will be taken into consideration. However, the key personnel/ bidder will be solely responsible for any fake information/ CV, which may result indebarment.

3.4 Senior Pavement Specialist

S. No.	Description		Max. Points	Reference/Details of projectsClaimedfor self-assessment	Marks self- assessed by the bidder
1	General Qualification		25		
I)	Graduate in Civil Engineering	21			
II)	Post-Graduation in Transportation/Highway Engineering/Pavement engineering or equivalent	04			
2	Adequacy for the Project		70		
	Professional Experience				
i)	TotalProfessionalExperienceofPavement Design/Construction and Maintenance of Highways/Roads/Air FieldRunway < 10 years -0 10 years -15 marks Addonemarkextraforeachadditionalyearof experiencesubjecttomaximum5(five)marks.		20		
ii)	Experience in Similar capacity in		20		

	Construction/Construction Supervision of 2/4/6-laning**ofmajorHighwayProjects(similar configuration(2/4/6laning**)andabove) < 5 years -0; 5 years -15 marks Addonemarkextraforeachadditionalyearof experiencesubjecttomaximum5(five)marks.		
iii)	ExperienceinsimilarcapacityasPavement/Geotechnical Engineer in construction/ construction supervision of Major Highway projects (of length 40%ofprojectlengthormoreofsimilarconfiguration (2/4/6 laning**) andabove) < 2 nos0 2 nos20 marks Add2.5marksextraforeachadditionalproject subjecttomaximum5marks.	25	
iv)	ExperienceinsimilarcapacityonEPCProjects(of length40%ofprojectlengthormoreofsimilar configuration(2/4/6laning**)andabove) 1 Project- 4 marks Add1(one)markextraforeachadditionalproject subjecttomaximum1(one)mark	5	
3	Employment with the Firm < 1 year -0 1 year – 3 marks Add0.5marksforeachsubsequentyearsubjectto maximum 2marks	5	
	Total:	100	

- (1) Similar Capacity includes the following positions
 - i) On behalf of Consultant/Contractor: Pavement Specialist/ Pavement Engineer/ Pavement Expert / HighwayEngineer
 - ii) On behalf of Government: ExecutiveEngineer
- Only those projects (in numbers) will be considered for evaluation above, where the input of the personnel is not < 6months
- (3) In case of experience on behalf of Authority's Engineer or Contractor, the experience shall be dulyendorsedbytherespectiveGovernmentagency.Incaseofnon-availabilityofendorsement from Govt. Agency, the experience uploaded on INFRACON Portal will be taken into consideration. However, the key personnel/ bidder will be solely responsible for any fake information/ CV, which may result in debarment.

3.5 Senior Quality/Material Expert

S. No.	Description		Max. Points	Reference/Details of projectsClaimedfor self-assessment	Marks self- assessed by the bidder
1	General Qualification		25		
	I) Graduate in Civil Engineering	21			
	II) Post Graduation in Geotechnical				
	Engineering/FoundationEngineering/Soil	04			
	Mechanics/ RockMechanics or equivalent				
2	Adequacy for the Project	•	70		
	Professional Experience				

i)	TotalProfessionalExperienceinhandling Highway/Bridgeprojects < 10 years -0 10 years -11 Addonemarkextraforeachadditionalyearof experiencesubjecttomaximum4(four)marks.	15	
ii)	Experience in similar capacity in Construction/Construction Supervision of major Highway Projects ((similar configuration (2/4/6 laning**) and above)) < 5 years -0; 5 years -19 Add2.0(two)marksextraforeachadditionalyearof experiencesubjecttomaximum6(Six)marks.	25	
iii)	Experience in similar capacity in handling Similar Highwayprojects(oflength40%ofprojectlengthor moreofsimilarconfiguration(2/4/6laning**)and above) < 2 nos0 2 nos 25 Add2.5marksextraforeachadditionalproject subjecttomaximum5(five)marks.	30	
3	Employment with the Firm < 1 year – 0 1 year – 3 Add0.5marksforeachsubsequentyearsubjectto maximum 2marks	5	
	Total:	100	

- (1) Similar Capacity includes the following positions
 - i) On behalf of Consultant/Contractor: Quality Expert/ Material Engineer/Material Expert/ Quality Engineer/ Geo-Technical Expert.
 - ii) On behalf of Government: ExecutiveEngineer
- Only those projects (in numbers) will be considered for evaluation above, where the input of the personnel is not < 12months
- (3) In case of experience on behalf of Authority's Engineer or Contractor, the experience shall be dulyendorsedbytherespectiveGovernmentagency.Incaseofnon-availabilityofendorsement fromGovt.Agency,theexperienceuploadedonInfraconPortalwillbetakenintoconsideration. However, the key personnel/ bidder will be solely responsible for any fake information/ CV, which may result indebarment.

3.6 Road SafetyExpert

S. No.	Description		Max. Points	Reference/ Details of projects Claimed forself- assessment	Marks self- assessed by the bidder
1	General Qualification		25		
l)	Graduate in Civil Engineering	21			
II)	Post-Graduation in Traffic/ Transportation/ Safety	04			
	Engineering or equivalent				
2	Adequacy for the Project		70		
	Professional Experience				
i)	TotalProfessionalExperienceinhandlingHighway/Bridge		15		
	projects				
	< 10 years -0				

			I
	10 years -11 marks		
	Add one mark extra for each additional year of experience		
	subject to maximum 4 (four) marks.		
ii)	ExperienceinsimilarcapacityinRoadSafetyworkson	15	
	MajorHighwayProject(similarconfiguration(2/4/6laning**)		
	andabove).		
	<5years-0		
	5 years -11 marks		
	Add one mark extra for each additional year of experience		
	subject to maximum 4 (four) marks.		
iii)	ExperienceinsimilarcapacityinRoadSafetyAuditsof2/4/6-	20	
,	laning**Highwayprojectsatdifferentstagesincludingat least		
	one at designstage		
	< 2 nos0		
	2nos15marks		
	Add2.5marksextraforeachadditionalprojectsubjectto		
	maximum 5marks.		
iv)	Experience in similar capacity in identification and	10	
'''	improvement of black spots on Major Highway Project	10	
	(similar configuration (2/4/6 laning**) and above)		
	< 2 nos0		
	2 nos8 marks		
	Add2marksextraforeachadditionalimprovementofblack		
	spotssubjecttomaximum2marks.		
V)	ExperienceinsimilarcapacityofpreparingRoadSafety	5	
"	ManagementPlansforInterUrbanHighway	3	
	1 project -4marks		
	2 or more -5marks		
ı di \		-	
vi)	ExperienceinsimilarcapacityinfieldofRoadSafety	5	
	ManagementPlan		
	1 project -4marks		
	2 or more -5marks		
3	Employment with the Firm	5	
	<1 year- 0		
	1 year – 3 marks		
	Add0.5marksforeachsubsequentyearsubjectto maximum		
	2marks		
	Total :	100	

Note:

- (1) Similar Capacity includes the following positions
 - i) On behalf of Consultant/Contractor: Road SafetyExpert
 - ii) In Government Organizations: Executive Engineer (or equivalent) and above
- Only those projects (in numbers) will be considered for evaluation above, where the input of the personnel is not < 6months

SECTION3: 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 three years)

Note: The Firm shall submit Certificate of Incorporation and audited balance sheet for the last three years [FY 2021-2022, FY 2022-2023 and FY 2023-24]. For claiming experience of Highway 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	Country	Type of Organization			
	Establish ment		Individual	Partnership	Corporation	Other
Individual/Lead Partner(of JV)/ Minor Partner of JV/Associate						

NOTE:- Year of Establishment of Lead Partner of JV shall be considered.

*Copy of Certificate of incorporation shall be submitted.

- iii. Office/ Business Address/Telephone nos. /Cable Address.
- iv. Narrative description of firm (Not more than 2sheets)
- 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 three years.**

SI. No.	Particul	<2021-22>	<2022-23>	<2023-24>
	ar			
i.	Annual turnover from Consulting			
	business			
ii.	Total Assets			
iii.	Current Assets			

Balance Sheet/ Auditor Certificate of last 3 years < 2021-22, 2022-23 and 2023-24 > shall be submitted as evidence of Annual Turnover.

- ** a) The amount shall be stated in INR.
 - b) Deleted
- vii. Experience as Authority Engineer/Independent Consultant/Construction supervision of Highway projects, separately for PPP and non-PPP Projects during the last 7 years.***

S	Projects	Type of	Description	Client (with	Total Fee	Fee received	%ageof	Approx.	Period
No	Name / Year	Services	ofHighway	complete	for the	byApplicant(in	total fee	Cost of	
	Sole	rendered	Project/	address,	Consultancy	case of	received	Highway	
	Consultant/		Length	contact	Assignment	JV/Association)	by the	Project	
	Prime		(kms)	person,	(INR)		firm		
	Consultant of			Telephone					
	JV / minor			Nos. and					
	Authority's			Fax Nos.)					
	Engineer of								
	JV/ /as								
	associate								
	consultant								
		•	eted / Subst	antially com	pleted projec	cts:			
		1.							
			2.						
		3.							
		B. Projects inprogress:							
		1.							
		2.							
		3.							

viii. Experience in DPR/ Feasibility Study cum Preliminary Design Report preparation of 2/4/6 laning / Bridge Highway Projects separately for the PPP and non-PPP projects during the last 7 years.***

S No	Projects Name /	Туре	Length	Client	Total Fee	Fee received by	%age of	Period
	Year		of	(with	for the	Applicant	total fee	
1	Sole	of	Project	Complete	Consultancy	(in case of	received	
	Consultant/	Services	(kms)	address,	Assignment	JV/Association)	bythefirm	
	Prime	Rendered		contact	(INR)	ca		
	Consultant of JV /			person,		se of JV)		
	minor Authority's			telephone				
	Engineer of JV/ /as			Nos.and				
	associate			FaxNos.)				
	consultant							
1	2	3	4	5	6	7	8	9

- ***a) 2/4/6 lane/Bridge work as applicable for the project for which RFP is invited. For 2-lane projects experience of 4/6 lane also to be considered with a multiplication factor of 1.5. Experience of 4/6 lane shall be considered interchangeably for 4/6 laning projects. For 4/6 lane projects, experience of 2 lane will be considered with a multiplication factor of 0.4, but only for those 2-lane projects whose cost of consultancy services was more than Rs.3.0 crores. For standalone bridge projects, experience in bridgework (either standalone projector as a part of road project) only be considered.
- b) Only those projects, to be included in the table which are Highways Projects and for which clients certificates from the concerned Government agencies are enclosed with the proposal.
- c) Thedetailsofbridgeshavinglengthmorethan200m(500mincasetheprojectconsist of bridges of length more than 500m) in the listed projects is to be specifically mentioned.
- d) 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 firm in the respective assignment. If the applicant firm has completed projects as JV with some other firms, weightage shall be given as per the JV share***. However if the

- applicant firm has executed the project as associate with some other firms, 25% weightage shall be given to the applicant firm for the projects completed under such association
- e) For weightage of experience in any past Consultancy assignment, experience certificate from the client shall be submitted. In absence of clear demarcation of JV share in client certificate, the weightage will be treated as 60 % for lead partner and 40% for minor partner. Annual turnover duly certified by Chartered Accountant shall be accepted. In case of non-availability of such documents no weightage of turnover/experience will beconsidered.
- (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	Sole, Lead/ OtherinJVor sub-consultant	Date of letter of Acceptance	Date of Agreement if signed	Present status of Assignment		embers by the f	provided irm Position
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

Key Personnel	Number of key personnel employed			
	Sole Applicant (Lead Member in case of JV)	JV (1)		
Team Leader cum Senior Highway Engineer (1Nos)				
Resident cum Highway Engineer (1Nos)				
Bridge/Structural Engineer (1Nos)				
Senior Pavement specialist (1Nos)				
Senior Quality cum Material Expert (1Nos)				
Road Safety Expert (1Nos)				

SECTION 4: FORMAT FOR SUBMISSION OF TECHNICAL PROPOSAL

Appendix B-1	Technical proposal submission form.
Appendix B-2	Site Appreciation
Appendix B-3	Approach paper on methodology for performing the assignment
Appendix B-4	Facility for field investigation and testing
Appendix B-5	Composition of the Team and Task(s) of each Team member
Appendix B-6	Curriculum vitae of proposed Professional staff.
Appendix B-7	Time schedule for deployment of Professional staff
Appendix B-8	Activity (works) schedule.
Appendix B-9	Affidavit – Correctness of Experience claimed by the Firms
Appendix B-10	Integrity Pact
Appendix B-11	BANK GUARANTEE FORMAT FOR BID SECURITY
Appendix B-12 Certificate regarding Compliance with Restrictions under 144 (xi) of the General Financial Rules (GFRs)	
Appendix B-13	FORM FOR INSURANCE SURETY BOND

APPENDIX B-1-Technical proposal submission form.

FROM (Name of Firm)	To: (Name and Address of Client)
Ladies/Gentlemen:	
	Financial Proposal for engagement as of Consultancy Services as Authority's
Four laning of Balachera to Harangajao section o in the State of Assam on EPC mode.	f NH-54 (Ext) from km 275.000 to Km 244.000
We, the undersigned, offer to provide the consul your Request for Proposal dated (Date), and o Proposal, which includes this Technical Propo separate envelope for the above mentioned wo	our Proposal. We are hereby submitting our sal and a Financial Proposal sealed under a
My/Our registration No. on Infracon is And	d my/our Infracon Team ID is
Our Proposal is binding upon us. We understar receive	nd you are not bound to accept any Proposal you
We remain,	
	Yourssincerely,
	Managing Director/Head ofthefirm/ Authorised Representative of the firm +* Name of thefirm Address
	*I and Mamber in case of W

APPENDIX B-2: SITE APPRECIATION

ShallgivedetailsofsiteasperactualsitevisitanddataprovidedinRFPandcollectedfromsite supported by photographs to demonstrate that responsible personnel of the Authority's Engineer have actually visited the site and familiarized with the salient details/ complexities and scope of services.

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

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

- 1) Methodology for services, surveying, road condition data collection and analysis [not more than 2 pages]
- 2) Key challenges foreseen and proposed solutions in carrying out the assignment [not more than1page]
- 3) Quality Audit methodology including Quality Assurance Plan [not more than 6pages]

APPENDIXB-4: FACILITY FOR FIELD INVESTIGATION ANDTESTING

- 1. State whether applicant has in-house (created in house at site)/ outsourced/ not available facility for
 - Surface defects detection and roughness measurement using Network Survey Vehicle
 - Pavement strength measurement usingFWD
 - Bridge inspection using Mobile Bridge InspectionUnit
 - Road signs inspection using RetroReflectometer
- 2. In-caseanswerto1isavailable(createdinhouseatsite)alistoffieldinvestigationand testing equipment is to beattached
- 3. In case answer to 1 is outsourced/not available arrangements made or proposed to be made for each of the above field investigations is to beattached
- 4. For experience in NSV, FWD, MBIU and reflectometer, references need to be provided in the following format:

REFERENCES

Relevant Services Carried Which Best Illustrate Qualifications

The following information should be provided in the format below for each reference assignmentforwhichyourfirm, eitherindividually as a corporate entity or a sone of the major companies within a consortium, was legally contracted by the client:

Assignment Name:		Country:		
Location within Coun	try:	Professional Staff Provided by your firm:		
Name of Client :		No. of Staff:		
Address :		No. of Staff Months :		
Technology Used:				
Start Date	Completion Date	Approx. Value of Services in INR/current USD):		
(Month / Year)	(Month / Year)			
Name of JV/Associat	ion Firm(s)if any:	No. of Months of Professional Staff provided by		
		Associated Firm(s)		
Status of your Company in the Assignment i.e., Sole/Lead Member/Other Member/Associate				
Narrative Description of Project :				
Description of Actual	Services Provided by your Co	ompany:		

Signature of Authorised Representative (Certificate from Employer regarding experience should be furnished)

APPENDIX B-5: COMPOSITION OF THE TEAM PERSONNEL, AND TASK(S) OF EACH TEAM MEMBER

Technical/Managerial Staff

Sl. No.	Name	Position	Task
1			
2			
3			
4			

SupportStaff

Sl. No.	Name	Position	Task
1			
2			
3			
4			

APPENDIX B-6 : FORMATOF CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONALSTAFF

Proposed Position:		Photograph		
Name ofFirm:				
NameofStaff:				
Profession:				
Date of Birth :				
YearswithFirm/Entity:	Nationality:		Membership	of
Professional Societies :				
Detailed Task Assigned	: Please attach printout of CV a	long with all	the relevant det	ails
uploaded on infracon poi	rtal.			

Certification by the Candidate

I, the undersigned, (Name and Address) undertake that this CV correctly describes myself, my qualifications and my experience and Employer 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 TOR is found incorrect. I further undertake that I have neither been debarred by NHIDCL or any other central/stage government organization nor left any assignment with the consultants engaged by Employer / contracting firm (firm to be supervised now) for any continuing work of Employer 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 ofthework, Employer would be at liberty to debar me from taking any assignment in any of the Employer works for an appropriate period of time to be decided by the Employer. I have no objection if my services are extended by the Employer for this work infuture.

IfurtherundertakethatmyCVisbeingproposedforthisprojectby ----- (the applicantfirm) and I have not given consent to any other consultant(s) to propose my CV for any position for this project.

I further undertake that if due to my inability to work on this project due to unavoidable circumstances, due to which consultant's firm is forced to seek replacement. In such unavoidable circumstances, Ishall not undertake any employment in Employer projects during the period of assignment of this project and Employer shall consider my CV invalid till such time.

I undertake that I have no objection in uploading/hosting of my credentials by Employer in public domain.

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 priortodue dateforsubmissionofproposal) including those for which LOA has been received by the firm and the inputs in these assignments shall not effect the work of the current assignment.

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

The Authority's Engineer should carryout self-evaluation based on the evaluation criteria at Appendix-EC and furnish the same here. While submitting the self-evaluation along with bid, Authority's Engineer shall make references to the documents which have been relied upon in his self-evaluation.

Certification by the firm

The undersigned on behalf of (name of consulting firm) certifythatShri (name
of proposed personnel) to the best of our knowledge has neither been debarred by NHIDCL or
any other Central/State Government organization nor left his assignment with any other
consultingfirmengagedbytheEmployer/Contractingfirm(firmtobesupervisednow)forthe
ongoing projects. We understand that if the information about leaving the past assignment is
known to the Employer, Employer would be at liberty to remove the personnel from the
present assignment and debar him for an appropriate period to be decided by the Employer.

......Date......(Day/Month/Year)

[Signature of authorized representative of the Firm]

- a) Deleted.
- b) Deleted.
- c) Deleted.
- d) Deleted.
- e) Deleted.
- f) Deleted

APPENDIXB-7: TIME SCHEDULE FOR PROFESSIONAL PERSONNEL

A. ActivitySchedule

Sl. No.	Name	Position		Month wise Program(in form of Bar Chart) [1st, 2nd, etc. are months from the start of assignment]										
NO.			1st	T -	ı -	ı -		6 th			10 th	11th	12 th and subsequent	Number of
1													year	Subtotal(1)
2														Subtotal(2)
3														Subtotal(3)
4														Subtotal(4)
-														-
-														-

${\bf APPENDIXB-8: ACTIVITY (WORKS) SCHEDULE}$

B. ActivitySchedule

					_	-				Bar Cha of assi	ırt) gnmeı	ıt]	
Sr.No.	Item of Activity (Works)	1 st	2nd	3rd	4th	5 th	6 th	7 th	8th	9th	10 th	11 th	12 th
1													
2													
3													
4													
-													
-													

C. Completion and Submission ofReports

Sr.No	Reports :	Programme Date)
1	Monthly reports	
	(Design and Co n struction)	
2	Quarterly Reports	
3	Various others reports as provided in the Concession Agreement such as	
	Completion Report	

APPENDIX B-9: AFFIDAVIT FOR CORRECTNESS OF CV OF KEY PERSONNEL AND EXPERIENCE CLAIMED BY THE FIRMS

(To be submitted on non-judicial Stamp Paper)

I, the undersigned, onbehalfofsubmittingtheproposal),doherebycertifythatthedetakey personnel and experience claimed by the firm/fiknowledge andbelief.	1 1
	Managing Director/Head

Managing Director/Head
oftheFirm/Authorised Representative
of thefirm*
Address
*Lead Member in case ofJV

APPENDIX B-10: INTEGRITY PACT

(TobeexecutedonplainpaperandsubmittedalongwithTechnicalBid/Tenderdocumentsfor tenders having a value between Rs.5 Cr and 100 Cr. To be signed by the bidder and same

signatory competent/ authorized to sign the relevant contract on behalf of the NHIDCL)
Tender No
This integrity Pact ismadeaton thisdayof2019.
Between
NHIDCL, hereinafterreferred to as " The Principal ", which expressions hall unless repugnant to the meaning or contract thereof include its successors and permitted assigns.
And
hereinafter referred to as "The Bidder/Contractor
/Concessionaire/Consultant " and which expression shall unless repugnant to be meaning or context thereof include its successors and permitted assigns.

Preamble

Whereas, the Principal intends to award, under laid down organizational procedures, contract/s for for "Authority Engineer Services -----Name for the project of ***** in the state of----- on EPC Mode"The Principal values full compliance with all relevantlawsoftheland,rulesofland,regulations,economicuseofresourcesandoffairness/transparency in its relations with its Bidder(s) and/ or Contractor(s)/Concessionaire(s)/Consultant(s).

And whereas to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact (hereafter referred to as Integrity Pact) the terms and conditions of which shall also be read as integral part and parcel of the Tender documents and contract between the parties. Now, therefore, inconsideration of mutual covenants stipulated in this pact, the parties hereby agree as follows and this pact witnesses a sunder:-

Article-1 Commitments of the Principal

- 1. The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
 - a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self, or third person, any material of immaterial benefit which the person is not legally entitledto.
 - b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, providetoallBidder(s)thesameinformationandwillnotprovidetoanyBidder(s)confiden tial/additional information through which the Bidder(s) could obtain an advantage in

relation to the tender process or the contract execution.

- c. The Principal will exclude all known prejudiced persons from the process, whose conduct in the past has been of biasednature.
- 2. If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act or any other Statutory Acts or if there be a substantivesuspicioninthisregard,thePrincipalwillinformtheChiefVigilanceOfficer and in addition can initiate disciplinary actions as per its internal laid down Rules/Regulations.

Article - 2 Commitments of the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s).

The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

- (a) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not, directlyorthroughanyotherpersonorfirm,offer,promiseorgivetoanyofthe Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is notlegallyentitledto,inordertoobtaininexchangeanyadvantageofanykind whatsoever during the tender process or during the execution of thecontract.
- (b) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not enter withotherBiddersintoanyundisclosedagreementorunderstanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission or bids or anyotheractionstorestrictcompetitivenessortointroducecartelizationinthe biddingprocess.
- (c) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not commit any offence under the relevant IPC/PC Act and other Statutory Acts; further the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not use improperly, for purposes of completion or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmittedelectronically.
- (d) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) of foreignorigin shall disclose the name and address of the Agents/ Representatives in India, if any. Similarly the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) of Indian Nationality shall furnish the name and address of the foreign principle, ifany.
- (e) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will, when presenting his bid, disclose any and all payments he has made, is committed to orintendstomaketoagents,brokersoranyotherintermediariesinconnectionwith the award of the contract. He shall also disclose the details of services agreed upon for such payments.

- (f) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not instigatethirdpersonstocommitoffencesoutlinedaboveorbeanaccessoryto such offences.
- (g) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not bring any outside influence through any Govt. bodies/quarters directly or indirectly on the bidding process in furtherance of hisbid.

Article-3 Disqualification from tender process and exclusion from future contracts.

- If the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s), before award or during execution has committed a transgression through a violation of any provision of Article-2, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) from the tenderprocess.
- 2. If the Bidder/ Contractor/ Concessionaire/ Authority's Engineer has committed a transgressionthroughaviolationofArticle-2suchastoputhisreliabilityorcredibility into question, the Principal shall be entitled to exclude including blacklist and put on holdthe Bidder/ Contractor/ Concessionaire/ Authority's Engineer for any future tenders/ contract award process. The imposition and duration of the exclusion will be determinedbytheseverityofthetransgression. Theseveritywillbedeterminedbythe Principal taking into consideration the full facts and circumstances of each case particularly taking into account the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder/ Contractor/ Concessionaire/ Authority's Engineer and the amount of the damage. The exclusion will be imposed for a minimum of 1 year.
- 3. A transgression is considered to have occurred if the Principal after due consideration of the available evidence concludes that "On the basis of facts available there are no materialdoubts".
- 4. The Bidder/ Contractor/ Concessionaire/ Authority's Engineer with its free consent andwithoutanyinfluenceagreesandundertakestorespectandupholdthePrincipal's absolute rights to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legaladvice.
- 5. The decision of the Principal to the effect that a breach of the provisions of this Integrity Pact has been committed by the Bidder/ Contractor/ Concessionaire/ Authority's Engineer shall be final and binding on the Bidder/ Contractor/ Concessionaire/ Consultant.

- 6. On occurrence of any sanctions/ disqualification etc arising out from violation of integrity pact, the Bidder/ Contractor/ Concessionaire/ Authority's Engineer shall not be entitled for any compensation on thisaccount.
- 7. Subject to full satisfaction of the Principal, the exclusion of the Bidder/ Contractor/ Concessionaire/ Authority's Engineer could be revoked by the Principal if the Bidder/ Contractor/ Concessionaire/ Authority's Engineer can prove that he has restored/ recoupedthedamagecausedbyhimandhasinstalledasuitablecorruptionprevention system in hisorganization.

Article - 4 Compensation for Damages.

- 1. If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Arcticle-3, the Principal shall be entitled to forfeit the Earnest Money Deposit/ Bid Security or demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security (equivalent to 1% of Contract Price) apart from any other legal right that may have accrued to the Principal.
- 2. In addition to 1 above, the Principal shall be entitled to take recourse to the relevant provisions of the contract related to Termination of Contract due to Contractor/ Concessionaire/Consultant's Default. In such case, the Principal shall be entitled to forfeit the Performance Bank Guarantee of the Contractor/Concessionaire/Authority's Engineer and/or demand and recover liquidated and all damages as per the provisions of the contract/concession agreement againstTermination.

Article-5 PreviousTransgression

- 1. The Bidder declares that no previous transgressions occurred in the last 3 years immediately before signing of this Integrity Pact with any other Company in any countryconformingtotheanticorruption/TransparencyInternational(TI)approach or with any other Public Sector Enterprise/ Undertaking in India or any Government Department in India that could justify his exclusion from the tenderprocess.
- 2. IftheBiddermakesincorrectstatementonthissubject,hecanbedisqualifiedfromthe tender process or action for his exclusion can be taken as mentioned under Article-3 abovefortransgressionsof Article-2andshallbeliableforcompensationfordamages as per Article-4above.

Article-6 Equal treatments of all Bidders/ Contractors/ Concessionaires/ Consultants/ Subcontractors.

- 1. The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) undertake(s) to demandfromallsub-contractors acommitmentinconformity withthisIntegrityPact, and to submit it to the Principal before contractsigning.
- 2. The Principal will enter into agreements with identical conditions as this one with all Bidders/ Contractors/ Concessionaires/ Consultants and Subcontractors.

3. The Principal will disqualify from the tender process all Bidders who do not sign this Pact or violate itsprovisions.

Article - 7 Criminal charges against violating Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s)/ Sub-contractor(s).

If the Principal obtains knowledge of conduct of a Bidder/ Contractor/ Concessionaire/ Authority's Engineer or Subcontractor, or of an employee or a representative or an associate of a Bidder/ Contractor/ Concessionaire/ Authority's Engineer or Subcontractor, which constitutescorruption,orifthePrincipalhassubstantivesuspicioninthisregard,thePrincipal will inform the same to the Chief VigilanceOfficer.

Article-8 Pact Duration

ThisPactbeginswhenbothpartieshavelegallysignedit.(IncaseofEPCi.e.forprojectsfunded by Principal and consultancy services). It expires for the Contractor/ Authority's Engineer 12 months after his Defect Liability period is over or 12 months after his last payment under the contract whichever is later and for all other unsuccessful Bidders 6 months after this Contract has been awarded. (In case of BOT Projects) It expires for the concessionaire 18 Months after his concession period is over and for all other unsuccessful Bidders 6 months after this Contract has been awarded.

If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by NHIDCL.

Article - 10 Other Provisions.

- 1. This pact is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e........
- 2. Changes and supplements as well as termination notices need to be made inwriting.
- 3. If the Bidder/Contractor/Concessionaire/Authority's Engineer is a partnership or a consortium, this pact must be signed by all partners or consortiummembers.
- 4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 5. Anydisputes/differencesarisingbetweenthepartieswithregardtotermofthispact, anyactiontakenbythePrincipalinaccordancewiththisPactorinterpretationthereof shall not be subject to anyArbitration.
- 6. 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.

In witness whereof the parties have signed and executed this Pact at the place and date first done mentioned in the presence of following witness:-

(For & On behalf of the Principal)	(For & On behalf of the Bidder/
	Contractor/ Concessionaire/ Authority's
	Engineer)
(Office Seal	
)Place	
Date	
Witness 1:	
(Name & Address):	
Witness 2 :	
(Name & Address): <u></u>	

Appendix B-11

BANK GUARANTEE FORMAT FOR BID SECURITY

(To be stamped in accordance with Stamp Act if any, of the country of issuing bank)

Ref.: 1ender No, dated	
Bank Guarantee:	
Date:	
WHEREAS,(Name of Bidder) _ (hereinafter called "the bidder") has submitted his bedated (date) for the Tender No. , dated (hereinafter called "the Bid").	id
dated (date) for the render No, dated (herematic canculate bld).	
KNOW ALL MEN by these presents that We, [Name of Bank]	of
[Name of Country] having our registered office at[Name of Clients and[Name of Clients are housed unto[Name of Clients and[Name of Clients are housed unto[Name of Clients and[Name of Clients are housed unto[Name of Clients are housed unto	 \t1
(hereinafter called "the Bank") are bound unto [Name of Client (hereinafter called "the Client") in the sum of Rs (Rupees Lakhs Only) for which payment will a	nd
truly to be made to the said Client the Bank binds himself, his successors and assigns by these presents.	
SEALED with the Common Seal of the said Bank thisday of 201_	
THE CONDITIONS of this obligation are:	
1. If the Bidder withdraws his Bid during the period of bid validity specified in the Bid document; or	
2. If the Bidder does not accept the correction of arithmetical errors of his Bid Price in accordance with t	he
Instructions to Bidder; or	. ,
3. If the Bidder having been notified of the acceptance of his Bid by the Client during the period of by validity,	10
a. fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders	if
required; or	
b. fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders,	
we undertake to pay the Client up to the above amount upon receipt of his first written demand, without t	
Client having to substantiate his demand, provided that in his demand the Client will note that the amou claimed by him is due to him owing to the occurrence of one or any of the conditions, specifying the occurr	
condition or conditions.	зu
This Guarantee will remain in force up to and including the date 180 (one hundred and eighty) days after t	
deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extend	
by the Client, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarant should reach the Bank not later than the above date.	ee
Should reach the bank not later than the above date.	
Notwithstanding anything contained herein before, our liability under this guarantee is restricted to Rs.	
(Rs) and the guarantee shall remain valid till Unless a claim or a demand in writing	
is made upon us on or before all our liability under this guarantee shall cease.	
This guarantee shall also be operatable at our New Delhi Branch located at, from whom, confirmati	on
regarding the issue of this guarantee or extension / renewal thereof shall be made available on demand. In t	
contingency of this guarantee being invoked and payment there under claimed, the said branch shall accept su	ch
invocation letter and make payment of amounts so demanded under the said invocation	
DATE	
SIGNATURE OF THE BANK	
SEAL OF THE BANK	
SIGNATURE OF THE WITNESS	
Name and Address of the Witness	

The bank guarantee shall be issued by a bank (Nationalized/Scheduled) located in India

NOTE for Issuing Bank (Not to be included in the BG):-

- 1. The stamp papers of appropriate value shall be purchased in the name of bank, who issues the "Bank Guarantee".
- 2. The bank guarantee shall be from a Nationalized Indian Bank or reputed foreign commercial Bank acceptable to client for Foreign Consultant with counter guarantee from Nationalized Bank. Bank guarantee furnished by Foreign consultant shall be confirmed by any Nationalized Bank in India.
- 3. The bank guarantee(s) contain(s) the name, designation and Code number of the officer(s) signing the guarantee(s).
- 4. 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.
- 5. 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).
- 6. The Bank Guarantee shall be transmitted through SFMS gateway to our banker with following details:

S	Particulars	Details
N		
0		
1	Name of	National Highways & Infrastructure Development
	Beneficiary	Corporation Limited
2	Beneficiary	90621010002659
	Bank Account	
	No.	
3	Beneficiary	CNRB0019062
	Bank Branch	
	IFSC	
4	Beneficiary	Transport Bhawan, New Delhi
	Bank Branch	•
	Name	
5	Beneficiary	Canara Bank (erstwhile Syndicate Bank) Transport
	Bank Address	Bhawan, 1st Parliament Street, New Delhi-110001
6	PAN No	AAECN7759E

7. The confirmation with supporting details if any shall be specifically mentioned in the covering letter issued with the Bank Guarantee.

Appendix-B-12

Appendix-B-12

(To be on the letter head of the Bidder/ Each Member of the JV/Associates)
Certificate regarding Compliance with Restrictions under Rule 144 (xi) of the General
Financial Rules
(GFRs)

hammad Khalid
General Manager (Technical)
National Highways & Infrastructure
Development Corporation Ltd.
2nd Floor, PTI Building,
4- Parliament Street, New Delhi- 110001
Contact No. 011-23461696
ut5@nhidcl.com.
@gmail.com

Sub: BID for "Name of work...."

Dear Sir,

With reference to your RFP document dated *** **\$, I, having examined the Bidding Documents and understood their contents, hereby undertake and confirm as follows:

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors/Consultant from such countries; I certify that this Bidder is not from such a country or, if from such a country, has been registered with the Competent Authority, specified in Annexure-I of Order (Public Procurement No. 1) issued by Ministry of Finance, Department of Expenditure Public Procurement Division vide F. No. 6/18/2019-PPD, dated 23rd July 2020 and will not sub-contract any work to a contractor/Consultant from such countries unless such contractor/Consultant is registered with the said Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. Yours faithfully,

Date:

Place:

(Signature of the Authorised signatory) (Name and designation of the of the Authorised signatory) Name and seal of Bidder/Each Member of the Consortium

Notes:

{Where applicable, evidence of valid registration by the Competent Authority shall be attached} In case the above certification is found to be false, this would be a ground for immediate rejection of Bid/termination and further legal action in accordance with law.

OM F. No. 6/18/2019-PPD, dated 23rd July 2020 along MoRT&H Om dt 04.08.2020 are enclosed herewith for ready reference.

Appendix B-13: FORM FOR INSURANCE SURETY BOND

(See Clauses 2.21)

[Performance Security/Additional Performance Security]

To

Contract.

[name of Authority]
[address of Authority]
WHEREAS[name and address of Contractor] (hereafter called the "Contractor") has undertaken, in pursuance of Letter of Acceptance (LOA) NoDated for construction of[Name of the project] (hereinafter called the "Contract")
AND WHEREAS the Contract requires the Contractor to furnish an {Performance Security, Additional Performance Security} for due and faithful performance of its obligations, under and in accordance with the Contract, during the {Construction Period/ Defects Liability Period and Maintenance Period} in a sum of RsCr. (Rupees
AND WHEREAS we, through our branch at
have agreed to furnish this Surety Bond by way of Performance Security.
NOW, THEREFORE, the Surety Insurer hereby, unconditionally and irrevocably, guarantees and affirms as follows:
1. The Surety Insurer hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the {Construction Period/ Defects Liability Period and Maintenance Period} under and in accordance with the Contract, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demunder reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Surety Bond Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from the Authority, under the hand of an officer not below the rank of [General

body, or by the discharge of the Contractor for any reason whatsoever.

Manager of National Highways & Infrastructure Development Corporation Limited], that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Contract shall be conclusive, final and binding on the **Surety Insurer**. The **Surety Insurer** further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Contract and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or

¹ Surety Bond Amount for Performance Security and Additional Performance Security shall be calculated as per

- 3. In order to give effect to this **Surety Bond**, the Authority shall be entitled to act as if the **Surety Insurer** were the principal debtor and any change in the constitution of the Contractor and/or the **Surety Insurer**, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the **Surety Insurer** under this **Surety Bond**.
- 4. It shall not be necessary, and the **Surety Insurer** hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the **Surety Insurer** its demand under this **Surety Bond**.
- 5. The Authority shall have the liberty, without affecting in any manner the liability of the **Surety Insurer** under this **Surety Bond**, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfillment and/or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the **Surety Insurer** from its liability and obligation under this **Surety Bond** and the **Surety Insurer** hereby waives all of its rights under any such law.
- 6. This **Surety Bond** is in addition to and not in substitution of any other **Surety Bond** or security now or which may hereafter be held by the Authority in respect of or relating to the Contract or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Contract.
- 7. Notwithstanding anything contained hereinbefore, the liability of the **Surety Insurer** under this **Surety Bond** is restricted to the **Surety Bond** Amount and this **Surety Bond** will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the **Surety Insurer** under this **Surety Bond** all rights of the Authority under this **Surety Bond** shall be forfeited and the **Surety Insurer** shall be relieved from its liabilities hereunder.
- 8. The **Surety Bond** shall cease to be in force and effect on *****. Unless a demand or claim under this **Surety Bond** is made in writing before expiry of the **Surety Bond**, the **Surety Insurer** shall be discharged from its liabilities hereunder.
- 9. The **Surety Insurer** undertakes not to revoke this **Surety Bond** during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this **Surety Bond** and the undersigned has full powers to do so on behalf of the **Surety Insurer**.

\$Insert date atleast 2 (two) years from the date of issuance of this Surety Bond (in accordance with Clause 2.21 of the RFP). The Contractors can submit the Surety Bond for periods of two years at one time and keep on renewing the same till the DLP is over if they have problems in getting the Surety Bond in one go for the entire DLP.

10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the **Surety Insurer** at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent

by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

- 11. This **Surety Bond** shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Contract.
- 12. This **Surety bond** is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

Signed and sealed this day of, 20 at	
	SIGNED, SEALED AND DELIVERED
For and on behalf of the Bank by:	
(Signature)	
(Name)	
(Designation)	
(Code Number)	
(Address)	

<u>SECTION 5</u>: FORMAT FOR SUBMISSION OF FINANCIAL PROPOSAL.

Appendix C-1 Financial proposal submission form

Appendix C-2 Summary of costs

Appendix C-3 Breakdown of costs

APPENDIX C-1: FINANCIALPROPOSALSUBMISSIONFORM

FROM :(NameofFirm)		TO :	
	NT	77	. .

Naveen Kumar Jain DGM (Technical) NHIDCL. 1st & 2nd Floor, World Trade Centre Nauroji Nagar, New Delhi-110029 Ph. 011- 26768229 Email: dgmt.hq@nhidcl.com,

Subject:

We, the undersigned, offer to provide the consulting services for the above in accordance with your Request for Proposal dated [Date], and our proposal. Our attached financial proposal is forthesumof[Amountinwordsandfigures]. This amount is exclusive of the local taxes which we have estimated at (Amount in Words and Figures).

The percentage of overhead charges on the remuneration as mentioned in Serial no. I of Appendix C-2 (Summary of cost) w.r.t. the professional staff shall be [Amount in words and figures].

Our financial proposal shall be binding upon us upto 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 bo	und to accept any proposal you re	eceive.
We remain, Yours sincerely,		

Managing Director/Head of the firm/ Authorised Representative of the firm* Name of the firm Address *Lead Member in case of JV

APPENDIX C-2: SUMMARY OF COSTS

No.	Description	Amount (Rs.)
1	Remuneration for Local Professional Staff	
П	Supporting Staff	
III	Transportation	
IV	Duty Travel to Site	
V	Office Rent	
VI	Office Supplies, Utilities and Communication	
VII	Office Furniture and Equipment	
VIII	Reports and Document Printing	
IX	Road Survey Equipment	
Х	Contingencies	
	Sub Total	
	Goods and Services Tax Payable in India	
	Total Costs (Including Tax)	

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

APPENDIX C-3: BREAKDOWN OF LOCAL CURRENCY COSTS

I. REMUNERATION FOR LOCAL PROFESSIONALSTAFF

Normal Highway Project

For Project with Construction Period of 00 months with 48-month DLP period

Sr.	Position	Name	Construction Period 00 months + DLP 48 months			
No.			Rate	No. of man- months*	Amount	
	Professional Staff					
1.	Team Leader cum Senior Highway Engineer			1*10		
2.	Resident cum Highway Engineer (1 Nos.)			1*48		
3.	Bridge/Structural Engineer			1*7		
4.	Senior Pavement Specialist			-		
5.	Senior Quality cum Material Expert			-		
6.	Road Safety Expert			1*7		
	Sub – Total			72		
	Sub-professional					
1.	Survey Engineer (1 Nos.)			1*7		
2.	Assistant Highway Engineer			1*48		
3.	CAD Expert			1*3		
4.	Environmental Engineer			-		
5	Assistant Bridge Engineer			-		
3	Assistant Quality cum Material Engineer			-		
4	Quantity Surveyor			1*6		
5	Lab Technician			-		
	Sub Total			64		
	Total			136	-	

^{*}Man months against each Key personnel/Sub professional be same as specified in Enclosure A of TOR.

II. Support Staff

No.	Position	Name	Staff Months (Construction Maintenance)	Billing Rate ()	Amount ()
1.	Office Manager cum Accountant (1no)	TBN	1*48		
2.	Steno cum Computer Operator (1no)	TBN	1*48		
3.	Office Boy (1 no)	TBN	1*48		

Note: Billing rates as indicated above shall be increased in accordance of clause 6.2(a)Special Conditions of Contract for the personnel of all categories namely (i) key Personnel; (ii) sub-Professional personnel and (iii) Support staff. The increase as above shall be payable only on the remuneration part of Key Personnel, Sub-Professional Personnel and support staff. However, for evaluation of Bid proposals, the quoted initial rate shall be multiplied by the total time input for each position on this contract, i.e. without considering the increase in the billing rates

III. <u>Transportation</u> (Fixed rate on rental basis)

The vehicles provided by the Consultants shall include the cost for rental, drivers, operation, maintenance, repairs, insurance, etc. for all complete approx. 3000km/month run

Sr.No	scription of Vehicles	Qty. (No. of vehicle-month)		Total	Rate/ Vehicle-	Amount
		During Construction During Period Development and O&M Period			Month	
1	Innova/Scorpio or equivalent (not more than 2 years old)	-	1 x 48			
	Total					

IV. <u>Duty Travel to Site (Fixed Costs) (For all Lengths of projects)</u>: Professional and Sub-Professional Staff

Trips	Number of Trips	Rate*	Amount
Employer's Head Office	6		
Employer's Regional Office	6		

Rate quoted includes Hotel charges, travel cost etc. complete.

V. Office Rent (Fixed Costs)-Minimum 200 sqm area of office shall be rented.

The rent cost includes electricity and water charges, maintenance, Cleaning, repairs, etc. complete.

Period	Nos. of Months	Rate/month	Amount
Construction	-		
1 Office should be rented only after the consultation of ED (P)			
regarding the location of the same.			
Maintenance Period:	1*48		
1 office should be rented only after the consultation of ED (P)			
regarding the location of the same.			

VI. Office Supplies, Utilities and Communication (Fixed Costs)

No	Item	Months	Monthly Rate	Amount in Rs.
1.	Office Supplies	1*48		
2.	Drafting Supplies	1*48		
3.	Computer Running Costs	2*48		
4.	Domestic and International Communication	1*48		

VII. Office Furniture and Equipment (Rental)

The cost shall include rental charges towards all such furniture and equipment as required

for proper functioning of office. Office furniture shall include executive tables, chairs, visitor chairs, steel almirahs, computer furniture, conference table etc. Office equipment shall include as a minimum of telephone (2 external & 10 internal lines), photocopier (15ppm, 12000 copies per month with A3 & A4 input), PCs (5 No., Intel Core i7, 19" colour TFT, Cache-6MB, RAM-2 GB, HDD-250 GB, DVD Writer, Key board, optical scroll mouse, MS-Windows 8/10, pre-loaded anti-virus etc.), laser/colour printers (2 no., 14 ppm, 266 MHZ, 5000 pages per month, 600x600 dpi or better etc.), Engineering Plan printer (1 no.), binding machine (1 no.), plotter A0 size, overhead projector, AC (4 no., 1.5 Ton), Water Coolers (as required)etc.

Nos. of Months	Rate/month	Amount
48		

VIII. Reports and Document Printing

No.	•	No. of Reports	Copies per	Total Nos. of copies	Rate per Copy ()	Amount
1	Monthly reports (Construction and Maintenance)	48	3	144		
2	Half yearly Reports	8	3	24		
3	Various others reports as provided in the Contract Agreement such as Completion Report		3	144		

IX. Road Survey Equipment

The cost shall include carrying out survey using equipment, manpower, software and report processing.

Item	Kms	Rate per km (INR)		Amount (INR)
Surface defects detection and roughness measurement using Network Survey Vehicle	25.25		8	
Pavement strength measurement using FWD	25.25		4	
Bridge inspection using Mobile Bridge Inspection Unit	0.200		8	
Road signs inspection using Retro Reflectometer	25.25		8	
			Total	

X. Contingencies

A fixed amount of Indian Rupees 10 (ten) Lakh shall be included in the Financial Proposal. The provisions of Contingency shall be operated with the specific approval from the Competent Authority in NHIDCL.

SECTION 6: TERMS OF REFERENCE FOR AUTHORITY'S ENGINEER

[Note: The term "Agreement" and clauses thereof refer to the EPC Agreement dated----entered between Authority and ------(the Contractors) for the work of Consultancy services as Authority's Engineer for Supervision of

Four laning of Balachera to Harangajao section of NH-54 (Ext) from km 275.000 to Km 244.000 in the State of Assam on EPC mode.

1. Scope

- 1.1 These Terms of Reference (the "TOR") for the Authority's Engineer are being specified pursuant to the EPC Agreement dated............. (the "Agreement"), which has been entered into between the Authority and (the "Contractors") for Four laning of Balachera to Harangajao section of NH-54 (Ext) from km 275.000 to Km 244.000 in the State of Assam on EPC mode on Engineering, Procurement, Construction (EPC) basis, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.
- 1.2 The TOR shall apply to construction and maintenance of the Project Highway.

2 Definitions and interpretation

- 2.1 The words and expressions beginning with or in capital letters 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 reference 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 General

- 3.1 The Authority's Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.
- 3.2 The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority before determining.
 - (a) any Time Extension.
 - (b) Any additional cost to be paid by the Authority to the Contractor;
 - (c) The Termination Payment; or
 - (d) Any other matter which is not specified in (a), (b) or (c) above and which creates

- anobligationorliabilityoneitherPartyforasumexceedingRs.5,000,000 (Rs. Fifty lakh.)
- 3.3 The Authority's Engineer shall submit regular periodic reports, once every month, to the Authority in respectofits duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10(ten) days of the beginning of every month.
- 3.4 The Authority's Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority's prior approval in accordance with the provisions of Clause 18.2 EPC Agreement.
- 3.5 The Authority's Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article13.
- 3.6 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 Authority's Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

4. Role and responsibility of Officers of the Authority

The officer in-charge of the Authority (e.g. PD/RO/CGM/Member in the case of NHAI; RO/CE/ADG in the case of MoRTH projects executed through the State PWDs; and PD/ED/Director in the case of NHIDCL) is responsible for the overall supervision and monitoring of the execution of project as the representative of the owner of the project. The Authority's Engineer is appointed to assist the Authority for carrying out the functions as detailed under clause 18.2 of the EPC Agreement. As such, an officer of the Authority is vested with all such powers and responsibilities as are enjoined upon the Authority's Engineer and is fully competent to issue any instructions for proper monitoring and supervision of the project, either by himself or through the Authority's Engineer. Instructions issued by the concerned officer of the Authority shall have the same effect as that of the Authority's Engineer in terms of this Agreement. Wherever such concerned officer issues any instructions or notice to the Contractor, he shall endorse a copy thereof to the Authority's Engineer.

5 Construction Period

- During the Construction Period, the Authority's Engineer shall review and approve the Drawings furnished by the Contractor along with supporting data, including the geotechnical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, and the recommendations of the Safety Consultant in accordance with the provisions of Clause 10.1.6 of EPC Agreement. The Authority's Engineer shall complete such review and approve and send its observations to the Authority and the Contractor within 15(fifteen) days of receipt of such Drawings; provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended upto 30 (thirty) days. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.
- 5.2 The Authority's Engineer shall review and approve any revised Drawings sent to it by Page **73** of **238**

the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings. The review/approval of drawing should be authenticated by Authority's Engineer.

- Quality Assurance Manual and Plan forms the basis of quality of the work. It is therefore ensure that the Quality Assurance Plan prepared by the Contractor be checked and approved by Authority's Engineer with 21 days' time period of its submission by Contractor. The Authority's Engineer shall ensure that the contents of the Quality Assurance Plan is as per IRC: SP: 112 and ISO: 9001. A copy of the approved Quality Assurance Plan will be sent by Authority's Engineer to the Contractor and the Authority. The Authority's Engineer will after review and approve the methodology within 10 days of its receipt from the Contractor and the Authority. Authority's Engineer will review that the methodology of the different components of works are prepared keeping in view the specifications & standards and machinery deployed by the contractor. The Authority's Engineer may also offer their comments for modifying/improving either of the document, the Authority's Engineer shall review and formally approve the same.
- 5.4 The Authority's Engineer shall grant written approval to the Contractor, where necessary, for interruption and diversion of the flow of traffic in the existing lane(s) of the Project Highway for purposes of maintenance during the Construction Period in accordance with the provisions of Clause 10.4 EPC Agreement.
- 5.5 The Authority's Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the contractor within 7 (seven) days of receipt of such report.
- On a daily basis, the concerned key personnel of Authority Engineer shall inspect the Construction Works. Following activities need to be undertaken during the visits.
 - Review of construction including progress, quality and safety of construction
 - Inspection of defects and deficiencies in construction works
 - Witnessing quality inspection tests at labs established by Concessionaire on a sample basis

Review of quality of work shall be done in reference to Quality Assurance Plan (QAP)/Manual and ISO 9001:2008, IRC: SP: 47-1998 and IRC: SP: 57-2000 for road bridges and roads respectively. The Authority's Engineer also needs to capture following documents and send to NHIDCL field office via email on a daily basis

- Scanned copy of filled RFI (Request for Inspection) form including commentary on 'Satisfactory/Unsatisfactory' nature of work completed by Concessionaire
- Daily inspection report Proforma as provided in Annexure I
- Readings of quality inspection tests witnessed by the Consultant
- Minimum 6 high resolution photographs supporting the remarks made by the Authority's Engineer in RFI form Team Leader will be responsible for sending daily emails to NHIDCL office
- 5.7 On a monthly basis, the Authority Engineer shall prepare a **Monthly Inspection Report** in accordance with the format prescribed in **Annexure V** 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 ConstructionWorkswiththeScopeoftheProjectandtheSpecificationsandStandards. In a separate section of the Inspection Report, the Authority Engineer shall describe in reasonable detail the lapses, defects or deficiencies observed by it in the construction of the Project Highway. The Authority Engineer shall send a copy of its Inspection Report to the Authority and the Contractor latest by 7th of every month. Key sections of the Monthly Progress Report are as follows.

S No.	Section	Sub-Sections		
		1.1 Construction progress in current month		
1	Executive Summary	1.2 Summary of strip plan		
'	Executive Summary	1.3 Detailed strip plan		
		1.4 Current issues and recommended actions by AE		
		2.1 Salient Features of the Project		
2	Project Overview	2.2 Project Milestones		
	Project Overview	2.3 Location Map		
		2.4 Key Plan		
3	Critical issues and Action	3.1 Pending issues and action log		
3	log	3.2 Obligations as per contract		
4	Physical Progress	4.1 Detailed physical progress by component		
		5.1 LA summary		
		5.2 LA detail by CALA		
5	Land Acquisition and	5.3 LA detail by village		
"	Clearances	5.4 Manpower with each CALA		
		5.5 Clearances summary		
		5.6 Status of utility shifting		
6	Change of Scope	6.1 Status of pending COS proposals		
7	Mobilization of Resources	,		
8	Financial Progress Details	8.1 Pen picture- Escrow		
	_	8.2 Escrow details		
9	Summary of quality control	9.1 Tests witnessed by IE/AE		
	tests	9.2 Tests conducted by IE/AE		
	Monitoring of maintenance	10.1 Critical issues and action log		
10	obligations during	10.2 Cumulative defects and deficiencies		
	construction phase	10.3 Status of damages		
11	Safety features	11.1Penpictureonsafetyfeaturesatconstructionsite		
		11.2 Accident report		
		Annex 1: Detailed list of physical components as per		
12	Annexures	Schedule G		
		Annex 2 onwards: Additional details provided by AE		

If at any time during the Construction Period, the Authority Engineer determines that the Concessionaire has not made adequate arrangements for the safety of workers and Users in the zone of construction or that anywork is being carried out in amanner that threatens the safety of the workers and the Users, it shall make a recommendation to the Authority for this, identifying the whole or part of the Construction Works that should be suspended for ensuring safety in respect thereof.

5.9

reports and standard samples of manufactured Materials, and such other Materials as the Authority's Engineer may require.

- 5.10 For determining that the Works conform to Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out, or cause to be carried out, tests at such time and frequency and in such manner as specified in the Agreement and in accordance with Good Industry Practice for quality assurance. For purposes of this, 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 MORT&H (the "Quality Control Manuals") or any modifications/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance.
- 5.11 The Authority's Engineer shall witness all the quality control tests carried out by the Contractor at its site laboratory/main laboratory/field/plants. These include tests for all materials, mixes, products, etc. Authority's Engineer shall proprietary products like bearing in the manufacturers' laboratory as mandated in respective standards. Authority's Engineer will also conduct review of quality control documents in respect of factory manufactured materials/proprietary products, etc. as per IRC: SP: 112.
- 5.12 The timing of tests referred to in Paragraph 5.10, and the criteria for acceptance/rejection of their results shall be determined by the Authority's Engineer in accordance with the MoRTH specifications for Road & Bridge works and respective Indian Road Congress Standards/Guidelines/Manuals together with any other Indian/International standards referred thereto. 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.

"Notwithstanding 100% test check by the AE, nothing shall relieve the contractor of its obligations and labilities under this Agreement in any manner nor shall the Authority's Engineer or the Authority be liable for the same in any manner; and if errors, omissions, ambiguities, inconsistencies, inadequacies or other Defects are found in Quality, they and the construction works shall be corrected at the Contractor's cost.

- 5.13 In the event that results of any tests conducted under Clause 11.10 establish any Defects or deficiencies in the Works, the Authority's Engineer shall require the Contractor to carry out remedial measures.
- 5.14 The Authority's Engineer may instruct the Contractor to execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 of EPC Agreement shall apply.
- 5.15 In the event that the Contractor fails to achieve any of the Project Milestones, the Authority's Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Authority's Engineer shall determine that completion of the Project Highway 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 take to expedite progress, and the period within which the Project Completion Date shallbe achieved. Upon receipt of a report from the Contractor, the Authority's Engineers hall review the same and send its comments to the Authority and the Contractor for thwith.

- 5.16 TheAuthority'sEngineershallobtainfromtheContractoracopyofalltheContractor's quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.2 of EPC Agreement.
- 5.17 Authority's Engineer may recommend to the Authority suspension of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measure, the Authority's Engineer shall inspect such remedial measures for thwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.
- 5.18 IntheeventthattheContractorcarriesoutanyremedialmeasurestosecurethesafety of suspended works and users, and requires the Authority's Engineer to inspect such works, the Authority's Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- 5.19 The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and issue a Completion Certificate or Provisional Certificate as thecasemaybe. For carrying out is functions under this Paragraph 4.18 and all matters incidental thereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K. The Authority's Engineer shall use following equipment in carrying out the tests.

S No	Key metrics of Asset	Equipment to be used
1	Surface defects of pavement	Network Survey Vehicle (NSV)
2	Roughness of pavement	Laser Profilometer
3	Strength of pavement	Falling Weight Reflectometer (FWD)
4	Bridges	Mobile Bridge Inspection Unit (MBIU)
5	Road signs and road markings	Retro-reflectometer

6 Maintenance Period

- 6.1 The Authority's Engineer shall aid and advise the Contractor in the preparation of its monthly Maintenance Programme and for this purpose carry out a joint monthly inspection with Contractor.
- 6.2 The Authority's Engineer shall undertake regular inspections, at least once every month to evaluate compliance with the Maintenance Requirements and submit a Maintenance Inspection Report to the Authority and the Contractor.

6.3 Visual Inspection of project highway

6.3.1 The Authority Engineer shall carry out visual inspection of entire highway stretch as per the frequency defined in the following table

Natu	re of defect or deficiency	Frequency of		
501		inspection		
ROA				
(a)	Carriageway and paved shoulders	D - 21		
(i)	Breach or blockade	Daily		
(ii)	Pot holes	Daily		
(iii)	Cracking	Weekly		
(iv)	Rutting	Weekly		
(v)	Bleeding/skidding	Weekly		
(vi)	Ravelling/Stripping of bitumen surface	Weekly		
(vii)	Damage to pavement edges	Weekly		
(viii)	Removal of debris	Daily		
(b)	Hard/earth shoulders, side slopes, drains and culverts	•		
(i)	Variationbymorethan2%intheprescribedslopeofcamber/crossfall	Weekly		
(ii)	Edge drop at shoulders	Weekly		
(iii)	Variationbymorethan15%intheprescribedside(embankment)slopes	Weekly		
(iv)	Rain cuts/gullies in slope	Weekly		
(v)	Damagetoorsiltingofculvertsandsidedrainsduringandimmediately preceding the rainy season			
(vi)	Desilting of drains in urban/semi-urban areas	Daily		
(c)	Road side furniture including road signs and pavement marking			
(i)	Damage to shape or position;	Daily		
/ ₄ /\	poor visibility or loss of retro-reflectivity			
(d)	Street lighting and telecom (ATMS)	Deiby		
(i)	Any major failure of the system	Daily		
(ii)	Faults and minor failures	Daily		
(iii)	Streetlight with Lux Meter	Weekly		
(e)	Trees and plantation			
(i)	Obstruction in a minimum head-room of 5 m above carriageway or obstruction in visibility of road signs	Daily		
(ii)	Deterioration in health of trees and bushes	Weekly		
(iii)	Replacement of trees and bushes	Weekly		
(iv)	Removal of vegetation affecting sight line and road structures	Weekly		
(f)	Rest areas/Wayside amenities			
(i)	Cleaning of toilets	Daily		
(ii)	Defects in electrical, water and sanitary installations	Daily		
(g)	Toll plaza[s]			
(i)	Failure of toll collection equipment including ETC or lighting	Daily		
(ii)	Damage to toll plaza	Weekly		
(h)	Other Project Facilities and Approach roads	<u> </u>		
(i)	DamageordeteriorationinApproachRoads, -[pedestrian facilities, trucklay-bys,bus-bays,bus-shelters,cattlecrossings,TrafficAidPosts,	Daily		
(j)	Medical Aid Posts and other works] Incident Management			

Natu	re of defect or deficiency	Frequency of inspection		
(i)	InstancesofIncidentManagementasreportedincludingtimeofcall,			
(')	responsetime,servicesrenderedandtimeofclearingoftheHighway.	Daily		
(ii)	List of the Incident Management Services rendered.	Weekly		
BRID	IGES			
(a)	Superstructure of bridges			
(i)	Cracks	Weekly		
(ii)	Spalling/scaling	Weekly		
(b)	Foundations of bridges			
(i)	Scouring and/or cavitation V			
(c)	Piers, abutments, return walls and wing walls of bridges			
(i)	Cracks and damages including settlement and tilting	Weekly		
(d)	Bearings (metallic) of bridges			
(i)	Deformation	Weekly		
(e)	Joints in bridges			
(i)	Loosening and malfunctioning of joints	Weekly		
(f)	Other items relating to bridges			
(i)	Deforming of pads in elastomeric bearings	Weekly		
(ii)	Gatheringofdirtinbearingsandjoints;orcloggingofspouts,weepholes and vent-holes	Weekly		
(iii)	Damage or deterioration in parapets and handrails	Weekly		
(iv)	Rain-cuts or erosion of banks of the side slopes of approaches	Weekly		
(v)	Damage to wearing coat	Weekly		
(vi)	Damageordeteriorationinapproachslabs,pitching,apron,toes,flooror guide bunds	Weekly		
(vii)	Growth of vegetation affecting the structure or obstructing the waterway	Weekly		

- 6.3.2 All elements which have daily inspection frequency shall be inspected weekly as well. Similarly, all elements which have weekly inspection frequency shall be inspected monthly aswell.
- 6.3.3 Dailyinspectionreportformatandweeklyinspectionreportformathasbeenprovided in Annexure II and III of this document respectively. Manpower which needs to conduct visual inspection and mode of reporting is defined in the following table

Frequency of inspection	Inspection to be carried out by	Mode of reporting
Daily	Sub-professional staff	Soft copy by Email
Weekly	Key personnel	Soft copy by Email
Monthly	Key personnel	HardcopyandSoftcopy

- 6.3.4 Highresolutionphotographsandvideoofthehighwaystretcheshavingdefectsand/or deficiencies shall be submitted along with Weekly Inspection Report and Monthly Status Report. Summary of key observations around defects and deficiencies in highway stretch shall be reported in Monthly Progress Report and detailed inspection report shall be provided as Annexure to Monthly ProgressReport.
- 6.3.5 The Authority's Engineer shall also be responsible for inspection and monitoring of WaysideAmenities. ETC (Electronic Toll Collection) and ATMS (Advanced Traffic

Management System) and incident management.

6.4 Road conditions surveys

6.4.1 The carrying out of condition surveys will be one of the most important and crucial field tasks under the project. The Authority Engineer shall carry out condition surveys using equipment and following a frequency as definedunder.

S No	Key metrics of Asset	Equipment to be used	Frequency of condition survey	
1	Surface defects of pavement	Network Survey Vehicle (NSV)	Atleasttwiceayear(Asper surveymonthsdefinedforthe statebasisrainyseason)	
2	Roughness of pavement	Laser Profilometer	Atleasttwiceayear(Asper surveymonthsdefinedforthe statebasisrainyseason)	
3	Strength of pavement	Falling Weight Reflectometer (FWD)	At least once a year	
4	Bridges	Mobile Bridge Inspection Unit (MBIU)	Atleasttwiceayear(Asper surveymonthsdefinedforthe state basis rainy season)	
5	Road signs	Retro-reflectometer	Atleasttwiceayear(Asper surveymonthsdefinedforthe state basis rainy season)	

Thefirstequipmentbasedinspectionshallbeconducted at the timeofcompletion testing. The other inspections shall be conducted before and after the rainy seasons as per the schedule defined in Annexure IV, except for FWD testing which shall be conducted once ayear.

Calibration of equipment, wherever needed, is required to be done in presence of Competent Authority. Once approval of equipment, the settings and a sample data set is provided by Competent Authority, network level data for entire project stretch can be collected. Month of survey for each state has been defined in Annexure IV of this document.

6.4.2 Measurement of pavement surface defects androughness

i. The Authority Engineer shall use Network Survey Vehicles mounted with equipment such as Laser based automatic crack detection, high resolution digital cameras for RoW and pavement, high accuracy DGPS receiver and in vehicle data processing software or better technology to accurately measure following pavement surfaceproperties

Surface defect	Dimensions to be reported		
	Length		
Cracking	Width		
	• Depth		
Potholes	Area		
Totiloles	• Depth		
Raveling	Indicator		

Surface defect	Dimensions to be reported
	• %
	Area
Butting	Depth
Rutting	 Width
Concrete Joint/ Faulting	Length
Roughness	IRlinbothwheelpaths

- ii. The following criteria shall be met by the process of defects detection
 - Measurement of 3D road profile using such technologies as laser scanning or other proventechnologies.
 - ☐ Ability to operate (collect data) at different speeds with a minimum speed of 30km/hr and upto at least 75 km/hr.
 - ☐ Profile depth accuracy of 0.5 mm
 - ☐ Capability for lane tracking to control driver wander' and ensure high repeatability of data betweensurveys.
 - ☐ Measure at least 3.5m width of highwaylane.
 - □ Transverse Profile including rut depth measurement of pavement surface widths of both carriageway and shoulders. The rut depth data must be convertible to different straightedge lengths (1.8m to 3.5m) and meet industry standards (ASTM E1703 /E1703M).
 - Pavement images with capability to automatically identify and ratedistresses
 - Roughness measurement with outputs of both raw longitudinal profiles and InternationalRoughnessIndex(IRI)calculationshallbereportedatleast100m referenced to the preceding Location Reference Post (LRP). The roughness must meet ASTM-E950 (equivalent to Class I road profiler). The IRI shall be determined in both wheelpaths.
 - ☐ Ability to record images at user-defined intervals (e.g. every 5, 10m,etc.)
 - ☐ Minimum images resolution of 1600x1200
 - Outputs must include Standard JPEG image or similar industrystandard
 - \square Distance resolution of <1mm.
 - $\ \square$ Capable of achieving distance accuracy of 0.1% (i.e. within 1m over 1km distance)
 - ☐ All data outputs should be in a non-proprietary format (e.g. .CSV, .MDB, Excel) and not require specialist software in order to view or formatdata
 - Data should also be capable of being easily formatted into data compatible with HDM-4
- iii. The following are the set of deliverables which should be submitted after completion of survey as part of Monthly ProgressReport
 - ☐ RawdatageneratedfromtheequipmentwhicharepartofNetworkSurvey covering the parameters mentioned in above table. It should also include
 - o Survey ID, Description, Date, Lane
 - o GPS referenced data for GISmapping
 - U Videologging
 - Pavement imagery(AVI/JPEG)
 - 360 degree imagery(JPEG)
 - ☐ Interpretation report covering summary of entire survey and analysis of defects

anddeficiencies

6.4.3 Measurement of pavementstrength

- (i) The Authority Engineer shall carry out structural strength surveys for existing pavements using Falling Weight Deflectometer technique in accordance with the procedure given in IRC:115-2014 (Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique) and IRC: 117-2015 (Guidelines for the Structural Evaluation of Rigid Pavement by Falling WeightDeflectometer)
- (ii) The interval at which deflection measurements are to be taken up are as per IRC:115-2014 / IRC:117-2015. For flexible pavements, the sample size and the interval of the data to be collected depends on the length of the uniform section calculated and condition of the pavement section i.e. 'good', 'fair' and 'poor' for each lane, established onthepavementconditiondatabasedonthecriteriongiveninIRC:115-2014.Forrigid pavements, the deflection data may be collected at interiors, corners, transverse joints and longitudinal joints in the outer lanes at intervals as specified inIRC:117-2015.
- (iii) The following are the set of deliverables which should be submitted after completion of inspection test as part of Monthly ProgressReport
 - Data report covering following parameters
 - o Deflection Bowl (Transient Deflections at seven differentpoints)
 - Corrected Elastic Modulus BituminousE1
 - o Corrected Elastic Modulus GranularE2
 - Corrected Elastic Modulus SubgradeE3
 - SubgradeCBR
 - Interpretation report covering summary of entire survey results and analysis of keyparameters
- 6.4.4 The Authority Engineer shall carry out the condition and structural assessment survey of the bridges in accordance with IRC-SP; 35 with the use of Mobile Bridge Inspection unit (MBIU) or bettertechnology.
- (i) The following criteria shall be met by the process of bridge conditionassessment
 - Automatic folding and unfolding ofplatform
 - □ 90 degree rotation ofplatform
 - Sufficient safety features to be incorporated such as dedicated power supply, emergency cut off system,etc
 - Complete access to hidden parts of the bridge by theraters
- (ii) Detailed bridge inspection report shall be submitted as per the Inspection Proforma provided in IRC-SP35

6.4.5 Measurement of retroreflection of roadsigns

(i) The Authority Engineers hall measure Coefficient of retroreflected luminance R_A (night time

retro reflection) of road traffic signs using a portable retroreflectometer.

(ii) The following criteria shall be met by the process of road signs retro reflection measurement

MeasurementofretroreflectivesignsshallbeconductedinaccordancewithASTM E1709 and ASTME2540

Measurement time after pressing trigger shall be less than or equal to 1sec

Observation angle adjustment from 0.2 degrees to 2.0degrees

☐ Entrance angle adjustment from -45 degrees to +45degrees

☐ Self-contained commercially available battery

☐ Inbuilt data storage of at least 2,000 measurements so that data transfer requirement is minimized while the survey is beingconducted

☐ Interface for transferring data from device toComputer

Built in GPS to capture GPS coordinates of roadsign

☐ Range shall be at least 0-2000cd/lx/m²

(iii) The following are the set of deliverables which should be submitted after completion of survey as part of Monthly ProgressReport

 \square System generated coefficient of retro reflected luminance R_A (nighttime retro reflection) of all roadsigns

 $\begin{tabular}{ll} \hline \mathbb{I} Interpretation report covering analysis of road signs falling in different range of R_A and actions to betaken \\ \hline \end{tabular}$

6.5 TheAuthorityEngineershallcarryoutfollowinginspectionsofETC lanesattollplazas on a monthbasis:

(i) Infrastructure:

□ Availability of civil infrastructure at toll plazas required for installation of ETCsystems

Adequacyofhardware,softwareandotherrelateditemsasperIHMCL/ NHIDCLtechnical specifications andrequirements

(ii) Operations:

Adherence of various stakeholders (acquirer bank, system integrator, toll operator, issuer bank etc) of the ETC system to the service levelagreements

☐ Efficacy of the ETC system (RFID tagging, AVC, WIM etc) in terms of accuracy and uptime

Tracking and reporting toll plaza experience metrics such as average waiting time, transaction times for different modes of payment (RFID, cash, smart cards, QRcodesetc) and congestion levels (eg. length of queue in different lanes) across 4 different times in a day

☐ Robustness of dispute resolution mechanisms in place for the tag holder and toll operators by the issuer and acquirerbanks

The Authority Engineershall prepare a Monthly Status Reportin O&M phase of project in respect of its duties and functions under this Agreement and in accordance with the format prescribed in Annexure VI. 1st deliverable of the report which is an executive summary to the main report (Section 1) shall be submitted to the Authority and updated on the PMIS and project specific website by 4th of every month. Main report (Section 2 onwards) shall be submitted to the Authority and updated on the PMIS and project specific website by 7th of every month. Key sections of the Monthly Status Report are as follows;

S.No	Sections	Sub sections
		1.1 Overall road condition
		1.2 Key reporting metrics
	Evenutive Cummons	1.3 Key maintenance activities undertaken
1	Executive Summary	1.4 Pending issues
		1.5 Recommended actions by AE
		1.6 Strip plan for maintenance
		2.1 Key project details
		2.2 Location map
2	Project Overview	2.3 Key plan
		2.4 Summary of project features
		2.5 RoW availability
		3.1 Issue and action log
•	Critical issues and action	3.2 Summary of deficiencies
3	taken	3.3 Obligations as per contract
		3.4 Inspection schedule
4	Monthly Inspection Report	4.1 Summary of NCR issued
4		4.2 Equipment based inspection report
		5.1 Monthly ETC Report
5	Monitoring of ETC Lanes	5.2 On-ground infrastructure report
		5.3 On ground ETC operations & SLA adherence
		6.1 Damages for non completion of project facilities
6	Status of damages	6.2 Damages for breach of maintenance activities
•	Status of damages	6.3Damagesfornoncompletionofmajormaintenance works
7	Change of Scope proposals	7.1 Change of Scope proposals
8	Status of pending disputes	8.1 Status of pending disputes
9	Reports	9.1 Toll collection statement
9	Reports	9.2 Accident Report
		9.3 Details of user complaints
		9.4 Encroachment list
		9.5 Lane closure report
10	Annexures	Annexl-Detailedvisualinspectionreportofproject highway
10	AIIIICAUICS	Annex II onwards- Additional details provided by AE

- 6.7 The Authority's Engineer shall specify the tests, if any, that the Contractor shall carry out,orcausetobecarriedout,forthepurposeofdeterminingthattheProjectHighway is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and remedial measures, if any, taken by the Contractor in this behalf.
- 6.8 In respect of any defect or deficiency referred to in Paragraph 3 of Schedule-E, the Authority's Engineer shall, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standardsandshallalsospecifythetimelimitforrepairorrectificationofanydeviation or deterioration beyond the permissible limit.
- 6.9 TheAuthority'sEngineershallexaminetherequestoftheContractorforclosureofany lane(s)oftheProjectHighwayforundertakingsmaintenance/repairthereof,andshall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Contractor. Upon expiry of the permitted period ofclosure,theAuthority'sEngineershallmonitorthereopeningofsuchlane(s),andin caseofdelay,determinetheDamagespayablebytheContractortotheAuthorityunder Clause 14.5 of EPCAgreement

7 Determination of costs and time

- 7.1 The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.
- 7.2 TheAuthority'sEngineershalldeterminetheperiodofTimeExtensionthatisrequired to be determined by it under theAgreement.
- 7.3 The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5 of EPCAgreement.

8 Payments

- 8.1 TheAuthority's Engineershall withhold payments for the affected works for which the Contractor fails to revise and resubmit the Drawings to the Authority's Engineer in accordance with the provision of Clause 10.2.4 (d) of EPCA greement.
- 8.2 Authority's Engineershall
 - (a) within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, determine the amount due to the Contractorandrecommendthereleaseof90(ninety)percentoftheamountso determined as part payment, pending issue of the Interim Payment Certificate; and
 - (b) within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, deliver to the Authority and the Contractor an Interim Payment Certificate certifying the amount due and payable to the Contractor, after adjustments in accordance with the provisions of Clause 19.10 of EPC Agreement.
- 8.3 The Authority's Engineer shall, within 15 (fifteen) days of receipt of the First stage

Maintenance Payment Statement from the Contractor pursuant to Clause 19.6 of EPC Agreement, verify the Contractor's statement and certify the amount to be paid to the Contractor in accordance with the provisions of the Agreement.

8.4 The Authority's Engineer shall certify final payment with 30 (thirty) days of the receipt of the final payment statement of Maintenance in accordance with the provisions of Clause 19.16 of EPC Agreement.

9 Other duties and functions

The Authority's Engineers hall perform all other duties and functions as specified in the Agreement.

10 Miscellaneous

- All key personnel and sub professional staff of the Authority Engineer shall use the fingerprint based (biometric) attendance system for marking their daily attendance. Attendance shall be marked at least once a day and any time during the day .1 Biometric Attendance System shall be installed by the Authority Engineer at its own cost at the site office in order to facilitate the attendance marking. More systems can be installed near the project highway upto a maximum of 1 system per 50 km in order to encourage frequent visits of project highway by key personnel and sub professional staff. A copy of monthly attendance records shall be attached with Monthly Status Report. Proper justification shall be provided for cases of absence of key personnel/ sub professional staff which do not have prior approval from Project Director of concerned stretch
- 10.2 A copy of all communications, comments, instructions, Drawings or Documents sent by the Authority's Engineer to the Contractor pursuant to this TOR, and a copy of all the test results with comments of the Authority's Engineer thereon, shall be furnished by the Authority's Engineer to the Authority forth with.
- 10.3 The Authority's Engineer 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.
- 10.4 Within 90 (ninety) days of the Project Completion Date, the Authority's Engineer shall obtainacompletesetofasbuiltDrawingsin2(two)hardcopiesandinmicrofilmformor in such other medium as may be acceptable to the Authority, reflecting the Project Highwayasactuallydesigned,engineeredandconstructed,includinganas-builtsurvey illustrating the layout of the Project Highway and setback lines, if any, of the buildings and structures forming part of project Facilities; and shall hand them over to the Authority against receipt thereof.
- 10.5 The Authority's Engineer, if called upon by the Authority or the Contractor or both, shallmediateandassistthePartiesinarrivingatanamicablesettlementofanyDispute between the Parties.
- 10.6 The Authority's Engineer shall inform the Authority and the Contractor of any event of Contractor's Default within one week of its occurrence.

11. PERFORMANCECLAUSE

Authority's Engineers shall be expected to fully comply with all the provisions of the `Terms of Reference', and shall be fully responsible for supervising the Designs, Construction and maintenance and operation of the facility takes place in accordance with the provisions of the EPC Agreement and other schedules. Any failure of the Authority Engineer in notifying to Employer and the Contractor on non-compliance of the provisions of the EPC Contract Agreement and other schedules by the EPC Contractor, non-adherence to the provision of ToR and non-adherence to the time schedule prescribed under ToR shall amount to non-performance.

The Authority Engineer shall appoint its authorized representative, who shall issue on behalf of the AE, Completion Certificate along with the Team Leader and shall carryout any such task as may be decided by Employer. The AE shall take prior approval of Employer before issuing Completion Certificate. The proposal submitted shall also include the name of the authorized representative along with the authorization letter and power of attorney.

Note: Regarding Non-Performance, Guidelines issued by MoRT&H vide letter No. RW/NH-33044/24/2020-S&R (P&B) dated 06.01.2021 (copy enclosed) and vide letter No. RW/NH-33044/76/2021-S&R (P&B) dated 07.10.2021 (copy enclosed) will be followed and accordingly, suitable action will be taken as per these guidelines.

12. CONSULTANT'SPROPOSAL

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

Normal Highway Project:

- i. Team Leader Cum Senior Highway Engineer
- ii. Resident cum Highway Engineer
- iii. Bridge/Structural Engineer
- iv. Senior Pavement Specialist
- v. Senior Quality cum Materia lExpert
- vi. Road Safety Expert
- 12.2 Broad job-description and minimum qualification for key personnel mentioned above is enclosed as **Enclosure-B**. However, higher marks shall be accorded to the Candidate with higher relevant qualification and experience. All the CV's of the personals mentioned in Para5.3 (iii) of Data Sheet shall be evaluated at the time of evaluation of technical proposal. The age of the Key Personnel should not be more than 65 years on the date of submission of proposal. Consultants are advised in their own interest to frame the technical proposal in an objective manner as far as possible so that these couldbeproperlyassessedinrespectofpointstobegivenaspartofevaluationcriteria. 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 authorisedsignatoryfortheConsultant.Thekeypersonnelshallalsocertifyattheendoftheir bio- data proforma that they have not left any of the Employer 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 Authority Engineer, if the Project is awarded. In case the key personnel leaves the assignment without approval of Employer, Employer would be at liberty to take any appropriate action against that key personnel including debarment. The CV submitted by selected firm/JV shall be hoisted on official website of Employer.

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

13. PERIOD OFSERVICES

- 13.1 The services of an Authority's Engineer will be in phases as per Contract Agreement.
- 13.1.1 The appointment of the Authority's Engineer shall initially be as per details given below.

Period of service (in months)	Construction period (in months)	Maintenance/ DLP Period (in months)
Construction Period+ DLP Period as per Civil Contract Agreement	00 Months	DLP Period as per civil Contract Agreement 48 months

Theproposedmanpowerdeploymentforthisperiodshallbematchingtheactivities 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**. Extension of Time for providing services of the Authority's Engineer may be_- extended concurrently with the Extension of Time granted, if any, to the EPC Contractor for the project, Subject to satisfactory| performance of the Authority's Engineer and limited to original period of consultancy services.

14. Project Coordinator

The Firmshall appointagers on nelfrom its head office to act as Project Coordinator for assignment. He will be authorized to communicate with the Authority in respect of all matters pertaining to the project. The cost of the Project Coordinator shall be incidental to the Consultancy Assignment.

Enclosure-A

MAN – MONTHS INPUT FOR KEY PROFESSIONAL STAFF AUTHORITY ENGINEER

Normal Highway Project

No.	Position	Name	Construction Period 00 months + DLP 48 months		
			Rate	No. of man- months*	Amo unt
	Professional Staff				
1.	Team Leader cum Senior Highway Engineer I-1No			1*10	
2.	Resident cum Highway Engineer-1 Nos			1*48	
3.	Bridge/Structural Engineer			1*7	
4.	Senior Pavement Specialist- 1 No			-	
5.	Senior Quality cum Material Expert- 1 Nos			-	
6.	Road Safety Expert-1No			1*7	
	Sub – Total			72	
	Sub-professional				
1.	Survey Engineer (1 Nos.)			1*7	
2.	Assistant Highway Engineer (1 No.)			1*48	
3.	CAD Expert			1*3	
4.	Environmental Engineer			-	
5.	Assistant Bridge Engineer (1 Nos)			-	
3	Assistant Quality cum Material Engineer (1 Nos)			-	
4	Quantity Surveyor (1 Nos)			1*6	
5	Lab Technician (1 Nos)			-	
	Sub Total			64	
	Total			136	

Note:

- 1. The other inputs like support staff shall be provided by the Consultant of an acceptable type commensurate with the roles and responsibilities of each position
- 2. In case of project having different construction period, Man Month Input shall be adjusted proportionately
- 3. The Financial Expert or Legal expert or Contract Specialist may be required for the project for specific needs. Their deployment shall be arranged by the Consultant on specific requisition from the Authority and the payment shall be made as per the actual deployment. The Financial Expert or Legal expert or Contract Specialist shall be paid at the rates quoted for Senior Pavement Specialist.

QUALIFICATION OF KEY PERSONNEL

TEAM LEADER CUM SENIOR HIGHWAYENGINEER

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 Designs being prepared by the Concessionaire, ensure execution of works on site as per specification and standards, and continuously interact with the NHIDCL and the Concessionaire. 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 at least 12 years in handling Highway Projects.
- c) At least 5 years experience as Team Leader/Project Manager or similar capacity in Highway Development Project.
- d) He should have handled as Team Leader/Project Manager or similar capacity of at least two projects in Construction Supervision / IC (of length 40% of project length or more of similar configuration (2/4/6laning**)
- e) He should have handled as Team Leader or similar capacity of at least two Projects of project Preparation of major highway Project (of length 40% of project length or more of similar configuration (2/4/6laning**).
- f) Experience as Team Leader/Project Manager or similar capacity in Operation and Maintenance of Major Highway Projects(of length 40% of project length or more of similar configuration (2/4/6laning**).

2. Preferential Qualifications.

- a) Post Graduate Degree in Construction Management/Transportation/Highway Engineering//Structural Engineering/ any specialised stream of Civil Engineering.
- b) Highway Development Projects (of length 40% of project length or more of similar configuration (2/4/6 laning**) taken up under EPC.
- c) Degree/Diploma/Certificate in Project Management

Note: (1) Similar Capacity includes the following positions

i. On behalf of Consultant: Team Leader / Resident Engineer (Construction Supervision/IE/AE).

- ii. On behalf of Contractor: Project Manager (Construction/ Construction Supervision)
- iii. In Government Organizations: Superintending Engineer (or equivalent) and above
- (2) Only those projects will be considered for evaluation at Sl. No. 1(d), 1(e) & 1(f) above, where their put of the personnel is 12months, 9months and 12 months respectively.

RESIDENT CUM HIGHWAY ENGINEER

The Resident cum Highway Engineer 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.

He should have the following qualification / experience.

1. Essential Qualifications.

- a) Graduate in Civil Engineering from a recognized University.
- b) Professional Experience of at least 12 years in Highway Projects.
- c) At least 5 years experience in similar capacity in Highway Development Project.
- d) Should have handled at least 2 major projects(of length 40% of project length or more of similar configuration (2/4/6 laning**) and above).

2. Preferential Qualifications.

- a) Post Graduate Degree in Transportation/Highway Engineering/Structural Engineering/GeotechnicalEngineering/anyspecialisedstreamofCivilEngineering.
- Experience of Highway Project (of length 40% of project length or more of similar configuration (2/4/6 laning**) and above) of Construction / Construction Supervision / IC of Highway projects

BRIDGE & STRUCTURAL ENGINEER

The Bridge& Structural Engineer shall be responsible for checking the designs of bridges, ROBs, interchanges and any other structure to be constructed in the Project highway and supervising the works of bridges, interchanges and any other structure to be constructed by the Concessionaire for this project. He shall also inspect the bridge rehabilitation and repair works to be undertaken by the Concessionaire. He should have thorough understanding and experience with international 'best practices' of modern bridge construction technology.

He should have the following qualification / experience.

1. Essential Qualifications.

- a) Graduate in Civil Engineering from a recognized University.
- b) Professional Experience of at least 10 years in handling Highway/Bridge projects.
- c) Atleast5yearsexperienceinConstruction/ConstructionSupervisionofbridge/

interchange / any other structures.

- d) Experience in similar capacity in supervision of at least 2 Major Highway Bridges.
- e) Experience in supervision of Rehabilitation and repair of 2 nos Major Bridges.

2. Preferential Qualifications.

- a) Post Graduate Degree in Structural Engineering.
- b) He should have thorough understanding and experience of modern bridge construction technology .viz., Precast Segmental, Balanced Cantilever Construction, Extradosed Bridge, Full Span Launching, Incremental Launching.

SENIOR PAVEMENT SPECIALIST

The expert shall be continuously interacting with the Concessionaire, for the review of highway designs and drawings using sophisticated computer software and also constructionandO&Mworksandtoensurelifecyclecosteffectivenessandviabledesignof pavement including appropriate rehabilitation / strengthening of the existing two-lane pavement which is significantly distressed. He shall also be responsible for ensuring complete adherence to maintenance standards during Construction and Operation period. Thus, the position requires a pavement specialist with thorough knowledge and understanding of international 'best practices' in the field of Design, Construction and maintenance of flexible/rigid type of pavements including latest Codal stipulations and specifications.

He should have the following qualification / experience.

1. Essential Qualifications.

- a) Graduate in Civil Engineering from a recognized University.
- b) Professional Experience of at least 10 years in Pavement Design / Pavement Construction / Pavement Maintenance of Highways / Roads / Airfield Runways
- c) Experience of at least 5 years in similar capacity in Construction / Construction Supervision of 2/4/6 laning** of major highway projects.
- d) Experience as Pavement / Geotechnical Engineer in Construction/Construction Supervisionofatleast2majorhighwayprojects(oflength40%ofprojectlengthor more of similar configuration (2/4/6 laning**) and above).

2. Preferential Qualifications.

a) Post Graduate Degree in Highway Engineering / Pavement Engineering /Transportation Engineering Experience as a Pavement Specialist/Pavement Engineer in Highway project(of length 40% of project length or more of similar configuration (2/4/6 laning**) and above).

SENIOR QUALITY/MATERIAL EXPERT

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. Heshallins pectthe Concessionaire's 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's rock crushers and bituminous mixing plants to ensure that the specified requirements for such equipment are fully met. Experience in latest Quality Management techniques in highway projects shall have added advantage.

He should have the following qualification / experience.

1. EssentialQualifications.

- a) Graduate in Civil Engineering from a recognizedUniversity.
- b) Professional Experience of at least 10 years in handling Highwayprojects.
- c) Experience of at least 5 years as Senior Quality/ Material Expert or in similar capacity in Construction / Construction Supervision / major highwayprojects
- d) Experience as Senior Quality/ Material Expert or in similar capacity in handling of at least 2 similar highway projects.(of length 40% of project length or more of similar configuration (2/4/6 laning**) and above)

2. Preferential Qualifications.

a) Post Graduate Degree in Geotechnical Engineering / Foundation Engineering / Soil Mechanics.

ROAD 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. EssentialQualifications.

- a) Graduate in Civil Engineering from a recognizedUniversity.
- b) Professional Experience of at least 10 years in handling Highwayprojects.
- c) Minimum5yearsexperienceinRoadSafetyworksofMajorHighwayProjects(4/6 laningprojects)
- d) Experience in similar capacity in Road Safety Audit of at least 2 nos. 2/4/6 lane** highway / expressway project including 1 nos. at designstage
- e) Experience in similar capacity in the field of Road Safety ManagementPlan.

2. PreferentialQualifications

- a) Post Graduate Degree in Traffic Transportation/SafetyEngineering.
- b) Experience in similar capacity in identification and improvement of black spots on Major HighwayProject.
- c) Experience in similar capacity in Preparation of Road Safety Management Plan for inter urban Highways.

SUB PROFESSIONAL

SURVEY ENGINEER

The candidate should be Graduate in Civil Engineering Firm may field Survey Engineer with diplomainCivilEngineering/Surveyhavingatleast5yearsexperienceinthefieldofsurveying outofwhichatleast3yearsshouldbeinhighwayprojectsandtheyshouldhavealsodealtwith at least 1 project of similar nature. This position requires thorough understanding of modern computer based method of surveying with total station digital leveletc.

ASSISTANT HIGHWAY ENGINEER

The Candidate should be Graduate in Civil Engineering.

CAD EXPERT

He should be Graduate in Civil Engineering/Computer Science having experience in computer related design method for highway engineering.

ENVIRONMENTAL ENGINEER

The Candidate should be Graduate in Civil Engineering/Environmental Engineering or other relevant qualification. He should have at least 6 years experience out of which 2 years in highway projects. He should have good knowledge of MOEF guidelines/requirements for

mitigation measures.

ASSISTANT BRIDGE ENGINEER

The Candidates hould be Graduate in Civil Engineering with 3 years experience. He should have handled at least 1 major bridge project.

ASSISTANT QUALITY CUM MATERIAL ENGINEER

The Candidate should be Graduate in Civil Engineering or diploma in Civil Engineering with 3 years experience.

QUANTITY SURVEYOR

He should be Graduate or equivalent in Civil Engineering having Min. 5 years of professional experience in preparation of highway project estimates. He should have Min. 3 years experience in Preparation of Bill of Quantities/estimates for major highway projects costing Rs.100 Crore or above.

Lab Technician:

They should be at least Graduate in Civil Engineering or Diploma in civil engineering with 1 year experience or B.Sc with 3 year experience in handling the quality control tests laboratories for road/bridge works.

Annexure I- Daily Inspection Report in construction period

Component	Item Description	Description of inspection work carried out	Results of lab tests conducted (Test conducted, Pass/Fail)	Name of key personnel inspecting the work
Road works including culverts, and minor bridges	Embankment/ Sub Grade/GSB/WMM/ DBM/BC			
2.MajorBridge works, Flyovers, ROB, RUB,VUP, PUP	Foundation/ Sub structure/ Super structure			
3. Approach to ROB/RUB/ Major Bridges/ Viaduct / RE wall	Foundation/ Sub structure/ Super structure			
4. Other Works				

Annexure II- Daily Inspection Report in O&M period

Nature of defect/ deficiency	Defect found (Yes/No)	If defect found, Chainage & side	Compliance of previous defect (Yes/No/NA)	AE Remarks
ROADS				
Carriageway and paved shoulde	rs	T		
Breach or blockade				
Pot holes				
Removal of debris				
Hard/earth shoulders, side slope	es, drains a	nd culverts		
Desilting of drains in urban/semi-				
urban areas				
Road side furniture including road	ad signs an	d pavement ma	rking	
Damagetoshapeorposition;poor				
visibility or loss of retro-reflectivity				
Street lighting and telecom (ATI	MS)			
Any major failure of the system				
Faults and minor failures				
Trees and Plantation				
Obstruction in a minimum head-				
roomof5mabovecarriagewayor				
obstructioninvisibilityofroadsigns				
Rest areas				
Cleaning of toilets				
Defects in electrical, water and				
sanitary installations				
Toll plaza[s]	·		•	
Failure of toll collection equipment				
including ETC or lighting				
Other Project Facilities and App	roach roads	3	1	ı
Damage or deterioration in				
ApproachRoads, -[pedestrian				
facilities, truck lay-bys, bus-bays,				
bus- shelters, cattle crossings,				
TrafficAidPosts,MedicalAidPosts				
and other works]				

Annexure III- Weekly Inspection Report in O&M period

Natur	re of defect or deficiency	Defect found (Yes/No)	If defect found, Chainage &side	Compliance of previous defect (Yes/No/NA)	AE Remarks
ROAI	OS .				
(a)	Carriageway and paved shoulders				
(i)	Breach or blockade				
(ii)	Roughnessvalueexceeding2,500 mm in a stretch of 1 km (as measured by a standardisedroughometer/bum pintegrator)				
(iii)	Pot holes				
(iv)	Crackinginmorethan5%ofroad surfaceinastretchof1km				
(v)	Ruttingexceeding10mminmore than2%ofroadsurfaceinastretch of1km(measuredwith3mstraight edge)				
(vi)	Bleeding/skidding				
(vii)	Ravelling/Stripping of bitumen surface exceeding 10 sq m				
(viii)	Damage to pavement edges exceeding 10 cm				
(ix)	Removal of debris				
(b)	Hard/earthshoulders,sideslopes, culverts	drainsand			
(i)	Variationbymorethan2%inthe prescribedslopeofcamber/cross fall				
(ii)	Edgedropatshouldersexceeding 40mm				
(iii)	Variationbymorethan15%inthe prescribed side (embankment) slopes				
(iv)	Rain cuts/gullies in slope				

Natui	re of defect or deficiency	Defect found (Yes/No)	If defect found, Chainage &side	Compliance of previous defect (Yes/No/NA)	AE Remarks
(v)	Damagetoorsiltingofculvertsand sidedrainsduringandimmediately precedingtherainyseason				
(vi)	Desiltingofdrainsinurban/semi- urbanareas				
(c)	Roadsidefurnitureincludingroadsi pavementmarking	gnsand			
	Damage to shape or position;				
(i)	poor visibility or loss of retro- reflectivity				
(d)	Street lighting and telecom (AT	MS)			
(i)	Any major failure of the system				
(ii)	Faults and minor failures				
(e)	Trees and plantation				
(i)	Obstruction in a minimum head- roomof5mabovecarriagewayor obstructioninvisibilityofroadsigns				
(ii)	Deteriorationinhealthoftreesand bushes				
(iii)	Replacement of trees and bushes				
(iv)	Removalofvegetationaffecting sightlineandroadstructures				
(f)	Rest areas				
(i)	Cleaning of toilets				
(ii)	Defectsinelectrical,waterand sanitaryinstallations				
(g)	Toll plaza[s]				
(i)	Failureoftollcollectionequipment includingETCorlighting				
(ii)	Damage to toll plaza				
(h)	Other Project Facilities and App	roach road	s		

Nature of defect or deficiency		Defect found (Yes/No)	If defect found, Chainage &side	Compliance of previous defect (Yes/No/NA)	AE Remarks
(i)	Damage or deterioration in ApproachRoads, -[pedestrian facilities, truck lay-bys, bus-bays, bus- shelters, cattle crossings, TrafficAidPosts,MedicalAidPosts and otherworks]				
BRID	GES				
(a)	Superstructure of bridges				
(i)	Cracks				
(ii)	Spalling/scaling				
(b)	Foundations of bridges	1			
(i)	Scouring and/or cavitation				
(c)	Piers,abutments,returnwallsandvofbridges	vingwalls			
(i)	Cracksanddamagesincluding settlement andtilting				
(d)	Bearings (metallic) of bridges				
(i)	Deformation				
(e)	Joints in bridges				
(i)	Looseningandmalfunctioningof joints				
(f)	Other items relating to bridges				
(i)	Deformingofpadsinelastomeric bearings				
(ii)	Gatheringofdirtinbearingsand joints;orcloggingofspouts,weep holes andvent-holes				
(iii)	Damage or deterioration in parapets and handrails				
(iv)	Rain-cutsorerosionofbanksofthe sideslopesofapproaches				
(v)	Damage to wearing coat				

Natur	e of defect or deficiency	Defect found (Yes/No)	If defect found, Chainage &side	Compliance of previous defect (Yes/No/NA)	AE Remarks
(vi)	Damage or deterioration in approachslabs,pitching,apron, toes,floororguidebunds				
(vii)	Growthofvegetationaffectingthe structure or obstructing the waterway				

Annexure IV- Month of survey for equipment based road condition assessment

EquipmentbasedroadinspectionshallbedonebytheAuthority'sEngineertwiceayearasper the month of the year defined in the followingtable.

However, since the first survey shall be conducted at the time of completion testing, the following modification to the schedule shall be adopted. For example, if majority of highway length (>50%) passes through a state, where defined survey months are May and November, if completion testing is conducted in April, then the first equipment based survey shall be conducted in the month of April. This shall be conducted as the equipment based survey to be conducted in the month of May. The 2^{nd} equipment based survey shall be conducted in the month of May and so on. As regards FWD, the first test/survey shall be conducted at the time of completion in April. The 2^{nd} test/survey shall be conducted in April of next year and soon.

Region	State	Survey before rains	Survey after rains	
East	Bihar	May	Nov	
East	Chhattisgarh	May	Nov	
East	East Jharkhand		Nov	
East	Orissa	May	Nov	
East	West Bengal	May	Nov	
Central	Madhya Pradesh	May	Nov	
NE	Arunachal Pradesh	Mar	Oct	
NE	Assam	Mar	Oct	
NE	Manipur	Mar	Oct	
NE	Meghalaya	Mar	Oct	
NE	Mizoram	Mar	Oct	
NE	Nagaland	Mar	Oct	
NE	Sikkim	Mar	Oct	
NE	Tripura	Mar	Oct	
North	Chandigarh	May	Nov	
North	Delhi	May	Nov	
North	Haryana	May	Nov	
North	Himachal	May	Nov	
North	Jammu And Kashmir	May	Nov	
North	Punjab	May	Nov	
North	Uttar Pradesh	May	Nov	

Region	State	Survey before rains	Survey after rains	
North	Uttaranchal	Мау	Nov	
South	Andaman And Nicobar Islands	Apr	Nov	
South	Andhra Pradesh	Apr	Nov	
South	Karnataka	Apr	Nov	
South	South Kerala		Nov	
South	South Pondicherry		Jan	
South	Tamil Nadu	Jun	Jan	
West	West Dadar Nagar Haveli		Oct	
West	Daman And Diu	Apr	Oct	
West	Goa	May	Nov	
West	Gujarat	Apr	Oct	
West	West Maharashtra		Nov	
West	Rajasthan	Apr	Oct	

Annexure V- Monthly Progress Report in Construction Phase



[NATIONAL HIGHWAYS & INFRSTRUCTURE DEVELOPMENT CORPORATION LTD.]

Four laning of Balachera to Harangajao section of NH-54 (Ext) from km 275.000 to Km 244.000 in the State of Assam on EPC mode.

Authority Engineer

[NAME OF CONSULTING FIRM]

MONTHLY PROGRESS REPORT NO.[XX]

FOR THE MONTH OF: [MONTH],[YEAR]

Table of content

Contents

Page	Nos.

1	ExecutiveSummary
1.1	Construction progress in current month126
1.2	Current issues and recommended actions by IE/AE 126
1.3	StripPlan(Summary) 127
1.4	Strip Plan (Details)128
2	ProjectOverview
2.1	Salient Features of Project129
2.2	Project Milestones130
2.3	Location Map 131
2.4	KeyPlan 132
3	Critical Issues &ActionLog
3.1	Pending Issues &ActionLog 133
3.2	Obligations asperContract 134
4	PhysicalProgress
4.1	Detailed Scope of Work & Physical ProgressbyComponent 135
4.1 5	Detailed Scope of Work & Physical ProgressbyComponent 135 Land Acquisitionand Clearance
5	Land Acquisitionand Clearance
5 5.1	Land Acquisitionand Clearance
5 5.1 5.2	Land Acquisitionand Clearance
55.15.25.3	Land Acquisitionand Clearance
55.15.25.35.4	Land Acquisitionand Clearance
55.15.25.35.45.5	Land Acquisitionand Clearance
5 5.1 5.2 5.3 5.4 5.5 5.6	Land Acquisitionand Clearance
5 5.1 5.2 5.3 5.4 5.5 5.6 6	Land Acquisitionand Clearance
5 5.1 5.2 5.3 5.4 5.5 5.6 6 7 8 8.1	Land Acquisitionand Clearance 136 LASummary 136 LA Detail by CALA136 LA Detail by Village foreach CALA 136 Manpower details of CALA137 Clearances Summary 137 Status of utilities shifting 139 Change of Scope 139 Mobilization of Resources 140

9.1	Tests witnessed by IE/ AE142		
9.2	Tests conducted by IE/AE	143	
10	Monitoring of maintenanceobliga	ntions duringconstructionphase	144
10.1	Critical issues and actionlog	144	
10.2	Summary ofrepairwork 144		
10.3	Status of damages 146		
11	Safetyfeatures		146
11.1	Pen picture of safety features	146	
11.2	AccidentReport 147		
12	Annexures		149

1 Executive Summary

1.1 Construction progress in current month

Key reporting metrics	Value/ %/ Amount
Scheduled Physical Progress (%)	
Cumulative Physical Progress upto current month(%)	
Physical Progress during current month (%)	
Financial progress (%)	
Cumulative Expenditure till date (Rs Cr)	
Tests passed as % of total tests witnessed by IE	
Tests passed as % of total tests conducted by IE	
Number of pending COS proposals	
Amount for pending COS (Rs Cr)	

1.2 Current issues and recommended actions by IE /AE

- 1. <u>SlowProgressofStructures:</u>Theprogressofstructures(especially,major bridges, flyovers and ROB's) is very slow. Overall progress is only XX%. Out of the total YY underpasses not even single underpass structure and its approaches is completed so far. No bridge is open to trafficsofar.
 - a Recommendation: Concessionaire should improve the progress of structures.RequestforrevisedworkplanfromConcessionaireincluding specific activities onstructures.
- 2. <u>Status of Change of Scope Proposals:</u> Concessionaire has submitted *Xx No.* Change of Scope proposals. *Yy No.* of them are still pending for decision. Concessionaire has not submitted necessary clarifications /details for the following Changes of Scope in spite of several reminders.
 - **a Recommendation:** Concessionaire to submit all pending clarifications to Authority. Authority and Concessionaire to expedite pending COS proposals.

1.3 Strip Plan(Summary)

- 1. WorkfrontUnavailable &reason for Unavailability
- 2. Lengthcompleted bylayer(MCW)
- 3. Length completed by layer(Service Road)

	Lengt h (km)	% Total Pendin g Length		Lengt h (km)	% Total Lengt h		Lengt h (km)	% Total Lengt h
Total Length			Total			Total		
			Length			Length		
Total			Total			Total		
Workfront			Length			Length		
Unavailable			Complete			Complete		
			d(Till			d		
			DBM)			(Till DBM)		
Pending Land			BC			ВС		
Acq.			DBM			DBM		
Pending			WMM			WMM		
Clearances			GSB			GSB		
Encumbrance			Sub-			Sub-		
s			Grade			Grade		
			C&G			C&G		

1.4 Strip Plan(Details)



Page 109 of 238

Detailedreport

2 Project Overview

2.1 Salient Features of Project

Project Name	
NH No. (New/ Old)	
Scheme/ Phase	
Mode of the Execution (BOT Toll/BOTAnnuity/EPC/HAM/ Item Rate/Others)	
No. of Lanes/ Configuration	
Length of the Project (in Km)	
Total Project Cost (in Cr)	
No. of Bypasses (Name of Town, Length)	
No. of Major Bridges (Number and Location)	
No. of Toll Plazas (Number and Location)	
No. of Fly Overs (Number and Location)	
DPR Authority's EngineerName	
Lead & Consortium Members of Banks	
Concessionaire Name (SPV & Parent Company)	
Date of Award (LOA Date)	
Appointed Date	
Concession Period	
Construction Period (in Days)	
O&M Period (in Days)	_
Scheduled Date of Completion	
Authority Engineer	
IE / AE Agreement Date	
IE / AE Mobilization Date	

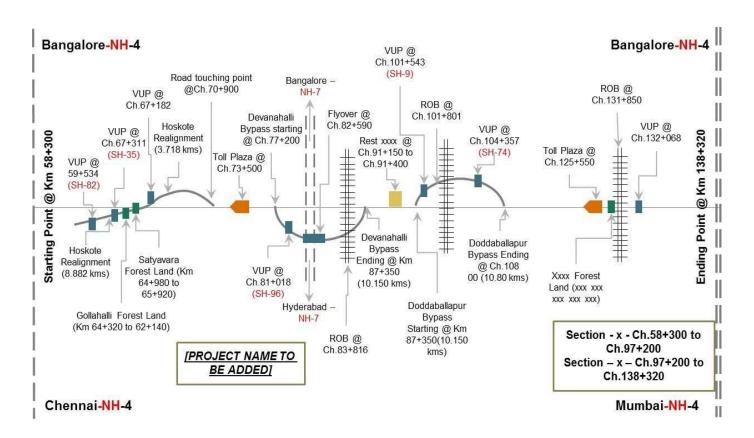
2.2 ProjectMilestones

Project	Descri ption	Pla	nned	Ac	tual	Delay (No. of	Current Status
Milestone	(Days from Appoi nted Date)	Physical Progress (%)	Scheduled Date	Physical Progress (%)	Revised Date	month	Status
Milestone I							
Milestone II							
Milestone II							
Schedule dCompletion							

2.3 Location Map

Location Map of the Project

2.4 Key Plan



[Above image is illustrative only. Please include chainage and name below the axis and list of features above the axis]

3 Critical Issues & ActionLog

3.1 Pending Issues & ActionLog

S.N o	Issue Description	Туре	Ongoin g/ New Issue/ Resolve d	Concerned Authority	Chainage(s)affected due tothe issue	Length affecte d(km)	Action(s) taken till now	Action(s) suggested by the AE	Expected date/Actual Date for resolving issue
1									
2									
3									

3.2 Obligations as perContract

Expected Contents & Structure

Please write a summary of non-compliances of contractual obligations highlighting reasons for delay, stating pending actions and their potential risk to the project's progress and recommended actions by the IE.

- Critical obligation sand constraints of concessionaire as percontract
- ☐ <u>Critical</u> obligations of authority as percontract
- ☐ <u>Critical</u> pending obligations of IE as per contract

NOTE: Please include important issues requiring intervention of various parties, giving details and background wherever necessary

4 Physical Progress

Compone nt	% Weightag e	Physical Progress(Durin g Current Month)	Physical Progress (Cumulativ e, Upto Current Month)
Road Works			
MajorBridgeworksandROB/RUB			
Structures			
Other Works			
Physical Progress			

4.1 Detailed Scope of Work & Physical Progress byComponent

Component	Cost Weightage in Project (%)	Item Description	Cost Weightage in Component (%)	Plannedin Scope(As perScope ofWork)		%Physical Progress	
1	2	3	4	5	6	7	8
1. Road works including culverts, minor bridges, underpasses, overpasses, approaches to ROB/RUB/ Major Bridges/ Structures (but excluding service roads)							
2. Major Bridge works and ROB/RUB							
3. Structures (elevated sections, reinforced earth)							
4.OtherWorks GRAND TOTAL							

ALL FIGURES & GRAPHS IN TEMPLATES ARE ILLUSTRATIVE. PLEASE ADD ACTUAL DETAILS

5 Land Acquisition and Clearance

5.1 LASummary

Description	TotalRequired (ha)	Total in possession at start (ha)	Total to be acquired (ha)
Existing ROW			
Pvt. Land To be Acquired			
Public Land To be Transferred			
Grand Total			

5.2 LA Detail by CALA

CALA	Total Land left to be Acquired (Ha)	3H Pend- ing(ha)	3HDon e(ha)	3G Pend- ing (ha)	3GDo ne(ha)	3DPendi ng(ha)	3DDo ne(ha)	3APendi ng(Ha)	3ADo ne(ha)	Amount Awarded (Crore Rs.)	Amount Deposited (Crore Rs.)	Amount Disbursed by CALA(Cro re Rs.)	(Crore
CALA1]													
[CALA2]													
[CALA 3]													
Grand Total													

5.3 LA Detail by Village for each CALA

CALA1

Village	Total Landleft to be Acquire d (Ha)	Pena -ina	3H Done (ha)	-ına	3G Done (ha)	3D Pendin g (ha)	3A Pendin g (Ha)	Awarde	Amount Deposite d (Crore Rs.)	Disburse	
[Village 1]											
[Village 2]											
[Village 3]											
Grand Total											

ALL FIGURES & GRAPHS IN TEMPLATES ARE ILLUSTRATIVE. PLEASE ADD ACTUAL DETAILS

5.4 Manpower details of CALA

CALA	Provided by NHIDCL / State Govt	Amins/ Surveyo rs	Patwaris/ Village accounta nt	Inspecto rs/	Tehsildar s/ Dep. Tehsildar s	Clerks/ Sahaya ks	Accounta	Comput er operato rs	Doone	Chainm an	Total
[CALA 1]											
[CALA 1]											
[CALA 2]											
[CALA 2]		_									
Grand Total											

5.5 ClearancesSummary

Environment											
Proposal Description	Status	Length Impacted	Current Stage	Issues/ Comments							
Forest Land											
Proposal Description	Proposal Description Status Length Impacted Current Stage Issues/ Comments										

	Wildlife											
Proposal Description	Status	Length Impacted	Current Stage	Issues/ Comments								
	Tro	eeCutting										
Proposal Description	Status	Length Impacted	Current Stage	Issues/ Comments								
	Railw	ay (ROBs/R	UBs)									
Proposal Description	Status	Length Impacted	Current Stage	Issues/ Comments								

5.6 Status of utilities shifting

Utility Categor y	Nam e	Status	Length affecte d	 Date of requestby Authority for estimate	Date when Estimate was Received from concerned dept.	Date of Approval	Deposit ofsuper-vision	SS	on from	e Amoun t	Issue/ Commen ts
Water											
Electric ity											
Others											

6 Change of Scope

S No.	Proposal Details	Date of first submission to AE	Current Status	COS Amount	ed/ Actual Date of Approval
1					
2					

7 Mobilization of Resources

S No.	Equipment Name	Mak e	Mode I	Age of Equipme nt	Planned/ Required Quantity	Deploye d During theMont h	Under/Over	Expected Delaydue toUnder- Mobilizati on	Remark s

8 Financial Progress Details (for PPPprojects)

8.1 Pen Picture -Escrow

TPC (Cr)	Cumulative inflow to Escrow till previous month (Cr)	Cumulative outflow from Escrow till previous month(Cr)	Inflow to Escrow during the month (Cr)	Outflow from Escrowduringthe month(Cr)

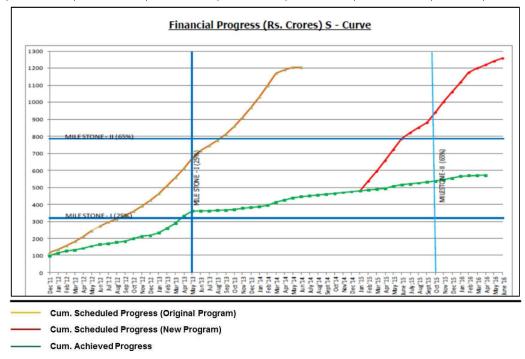
Are the Escrow withdrawals in accordance with the order of withdrawal as specified in the Concession Agreement?

Tick as applicable

If not, details to be provided below:

8.2 Escrowdetails

TPC (Cr)	Cumulative exp. till date (Cr)	EscrowPlan till date-Debt (BOT)(Cr)	Escrow Plan till date- Equity (BOT) (Cr)	EscrowPlan till date-VGF (BOT)(Cr)	Escrow Actual till date-Debt (BOT)(Cr)	(BOT)(Cr)	Escrow Actual till date- VGF (BOT) (Cr)



PLEASE EXCLUDE OUTSTANDING MOBILIZATION FEE/ ADVANCE IN S-CURVE

9 Summary of quality controltests

9.1 Tests witnessed by IE/AE

		Frequency of tests Uni		Total te Prev Mo	ious	to	Total tes Mo	st in T nth	his	Cumulat te:	ive No sts	. of	Remark s
"	No.	Qty.	,	Conducte d	Pas s	Fai I	Conducte d	Pas s	Fai I	Conducte d	Pas s	Fai I	5
Sub grade													
Granular S	ub Ba	ise											
100 (000													
Wet Mix Macadam													
Filter material													
Concrete													
Cement													
Water													
Prime Coat													
Tack coat				_									
Dense Bituminou													

Descriptio	Freq of te	uency ests	Uni	Total te Prev Mo	ious	to	Total tes	st in T onth	his	Cumulat te:	ive No sts	. of	Remark
n	No. s	Qty.		Conducte d	Pas s	Fai I	Conducte d	Pas s	Fai I	Conducte d	Pas s	Fai I	S
s Macadam													
Bituminou s Concrete													
Bitumen test													
DLC													
Steel													

9.2 Tests conducted by IE /AE

<Quality inspection test results to be reported in a table similar to the table provided in previous section>

ALL FIGURES & GRAPHS IN TEMPLATES ARE ILLUSTRATIVE. PLEASE ADD ACTUAL DETAILS

10 Monitoring of maintenanceobligations during construction phase

10.1 Critical issues and actionlog

SNo	Issue Description	Ongoing/New Issue	Concerned Authority	Chainage(s) affecteddueto theissue	Length affected (km)	Action(s) taken till now	Action(s) suggested by SC	Expected Date for resolving issue
1	Drying up of plants on median							
2	Large potholes							

10.2 Summary of repairwork

SNo	Description	Unit	Total	Work done uptoprevio us month	Work done during reporting month	Balance	Remarks
1	Carriageway and paved	shoulde	ers				
(a)	Pot Holes	Sqm					
(b)	Roughness value exceeding 2,500mm	mm					
(c)	Cracking in more than 5% of road surface	Sqm					
(d)	Ruttingexceeding10mm inmorethan2%ofroad surface	Sqm					
(e)	Bleeding/Skiding	Sqm					
(f)	Ravelling	Sqm					
(g)	Damage to pavement edges exceeding 10cm	m					
2	Hard/Earth Shoulders						

SNo	Description	Unit	Total	Work done uptoprevio us month	Work done during reporting month	Balance	Remarks
(a)	Raincuts/gulliesinslope	Cum					
(b)	Edge drop at shoulders exceeding 40 mm	m					
3	Drains and culverts						
(a)	Cleaning of Culvert	Nos					
(b)	Damage to or silting of culverts						
(c)	Silting of drains in urban/ semi urban areas						
4	Road furniture						
(a)	Sign Boards	Nos					
(b)	Kilometer Stones						
(c)	Metal Beam Crash Barrier						
(d)	Bus Shelters	Nos					
(e)	Junction signs	Nos					
(f)	Median Grills	Rmt					
(g)	Studs	Nos					
(h)	Delinators	Nos					
(i)	Road Marking	Sqm					
(j)	Kerb Painting	Sqm					
(k)	Guard Posts	Nos					
5	Street lighting and telec	om (AT	MS)				
(a)	Street lights	Nos					
(b)	Telecom	Nos					
6	Trees and plantation						
(a)	Removalofvegetation affectingsightlineand roadstructures	На					
(b)	Replacement of trees and bushes	Nos					

SNo	Description	Unit	Total	Work done uptoprevio us month	Work done during reporting month	Balance	Remarks
7	Buildings and bridges						
(a)	Rest areas						
(b)	Toll plazas						
(c)	Bridges						

10.3 Status ofdamages

SNo	Period	Amount of damages (Rs)
1		
2		
3		
4		
	Total	

11 Safetyfeatures

11.1 Pen picture of safetyfeatures

Details to be provided after assessment of the site requirement vis-à-vis provisions in the Concession Agreement:

Location of Black Spots	Suggested Remedial Measures within provisions of Concession Agreement	Additional Remedial Measures (if any)	Financial implications of additional Remedial Measures for Authority(Cr.)
			•

	SN	0	
	Date		
	Chainage no		
	Time of a	acciden	t
	Sex (N	//F)	
	Accident loc	ation	Α
	Nature of accident		В
	Classification of		С
	Causes		D
	Load conditions of		E
	Road condition		F
	Intersection type of		G
	Weather condition		Н
	Age of victim		-
	Type of victim		J
	Type of vehicle		×
	Fatal	TO BE	
	Major	No of affected persons	
	Minor		
	Help provided by		

Mapping of report fields to responses

Α	1. Urban 2. Rural
В	1.Overturned2.HeadOnCollision3.HitfromBack4.HittoFixObject5.RightturnCollision 6.LeftturnCollision7.VeeredOutoffTheRoad8.HitPedestrian9.Unknown/Hit&RanAway
С	1. Fatal 2. Major injury 3. Minor injury
D	1.Drunken2.OverSpeeding3.VehicleoutofControl4.Drivenonwrongside5.Mechanical Problem6.Drowsiness/NotApplicable7.FaultofDriver
Е	1. Normally Loaded 2. Overloaded/Handing 3. Empty 4. Unknown
F	1. Straight road 2. Slight Curve 3. Sharp Curve 4. Hump 5. Dip
G	1.T-Junction2.Y-Junction3.FourarmJunction4.StaggeredJunction5.Junctionwithmore than 6. Roundabout
Н	1.Fine/Clear2.Mist/Fog3.Cloudy4.LightRain5.HeavyRain6.StrongWind7.DustStorm8. Cold 9.Hot
I	1. 0-18 Years 2. 18-25 Years 3. 25-40 Years 4.40-60 Years 5. 60-80 Years
J	1. Driver 2. Passenger 3. Pedestrian 4. Cyclist 5. Others
К	1.TwoWheeler2.AutoRickshaw3.Car/Jeep4.Bus5.LightTruck6.HeavyTruck7.Tractor 8. Bicycle 9. Cycle Rickshaw 10. Hand Drawn Cart 11. Animal Drawn Cart

12 Annexures

Annex 1. Detailed List of Physical Components as per ScheduleG			
Component	Physical		
	Item		
	A- Widening and strengthening of existing road		
	(1) Earthwork up to top of the sub-grade		
	(2) Granular work (sub- base, base, shoulders)		
	(a) GSB		
	(b) WMM		
	(3) Shoulders		
	(4) Bituminous work		
	(a) DBM		
	(b) BC		
	(5) Rigid Pavement		
	Concrete work		
	(6) Widening and repair of culverts		
Road works	(7) Widening and repair of minor bridges		
including culverts,	B- New realignment/bypass		
minor bridges,	(1) Earthwork up to top of the sub-grade		
underpasses,	(2) Granular work (sub- base, base, shoulders)		
overpasses,	(a) GSB		
approaches to	(b) WMM		
ROB/RUB/ Major	(3) Shoulders		
Bridges/ Structures	(4) Bituminous work		
(but excluding service roads)	(a) DBM		
service roads)	(b) BC		
	(5) Rigid Pavement		
	Concrete work		
	C-Newculverts,minorbridges,underpasses,overpassesonexistingroad,		
	realignments, bypasses:		
	(1) Culverts		
	(2) Minor bridges		
	(a) Foundation		
	(b) Sub-structure		
	(c) Super-structure (including crash barriers etc. complete)		
	(3) Cattle/Pedestrian underpasses		
	(a) Foundation		
	(b) Sub-structure		
	(c) Super-structure (including crash barriers etc. complete)		
	(4) Pedestrian overpasses		
	(a) Foundation		
	(b) Sub-structure		
	(c) Super-structure (including crash barriers etc. complete)		
l	(5) Grade separated structures		
	(a) Underpasses		
	(a) ondorpasses		

	Physical		
Component	Item		
	(i) Foundation		
	(ii) Sub-structure		
	(iii)Super-structure(includingcrash barriersetc.complete)		
	(b) Overpass		
	(i) Foundation		
	(ii) Sub-structure		
	(iii)Super-structure(includingcrash barriers etc.complete)		
	(c) Flyover (i) Foundation		
	(ii) Sub-structure		
	(iii)Super-structure(includingcrash barriers etc.complete)		
	(d) Foot over Bridge		
	A- Widening and repairs of Major Bridges		
	(1) Foundation		
	(a) Open Foundation		
	(b) Pile Foundation/Well Foundation		
	(2) Sub-structure		
	(3) Super-structure (including crash barriers etc. complete)		
	B- Widening and repair of		
	(a) ROB		
	(1) Foundation		
	(2) Sub-structure		
	(3) Super-structure (including crash barriers etc. complete)		
	(b) RUB		
	(1) Foundation		
MajorBridge works	(2) Sub-structure (3) Super-structure (including crash barriers etc. complete)		
and ROB/RUB	C- New Major Bridges		
ana Rob/Rob	(1) Foundation		
	(a) Open Foundation		
	(b) Pile Foundation/Well Foundation		
	(2) Sub-structure		
	(3) Super-structure (including crash barriers etc. complete)		
	D- New rail-road bridges		
	(a) ROB		
	(1) Foundation		
	(2) Sub-structure		
	(3) Super-structure (including crash barriers etc. complete)		
	(b) RUB		
	(1) Foundation		
	(2) Sub-structure		
Structures (alaysted	(3) Super-structure (including crash barriers etc. complete) (1) Foundation		
,	(1) Foundation (2) Sub-structure		
•	(3) Super-structure (including crash barriers etc. complete)		
eai tii)	Not outpor-structure (intoluturing trasm partiers etc. complete)		

Component	Physical
Component	Item
	(4)ReinforcedEarthWall(includesApproachesofROB,Underpasses,
	Overpasses, Flyover etc.
	(i) Service roads/ Slip Roads
	(ii) Toll Plaza
	(iii) Road side drains
	(iv) Road signs, markings, km stones, safety devices,
	(a)Road signs, markings, km stones,
	(b) Concrete Crash Barrier/ W-Beam Crash Barrier in Road work
	(v) Project facilities
	(a) Bus bays
	(b) Truck lay-byes
Other Works	(c) Rest areas
Other Works	(vi) Repairs to bridges/structures
	(vii) Road side plantation
	(viii) Protection works
	(a) Boulder Pitching on slopes
	(b) Toe/Retaining wall
	(ix) Tunnel
	(a) Excavation
	(b) Construction of support systemincluding rock bolting, lining etc.
	(c) On complete completion of tunnel
	(x) Miscellaneous

^{*} The above list is illustrative and may require modification as per the actual scope of the work

Annex 2. Onwards

IE / AE should include comments, status update, data points and reports in following annexures which have not been included elsewhere in the main report. Such reports may include but not limited to:

- ☐ Review status of drawings/ designreports
- Review status of other documents
- ☐ Minutes of reviewmeeting
- Detailed Inspection report of projecthighway
- Correspondence details
- Weatherreport
- Organizational chart of Concessionaire / Contractor and IE /AE
- List of labequipment
- Details of usercomplaints
- Projectphotographs



[NATIONAL HIGHWAYS & INFRSTRUCTURE DEVELOPMENT CORPORATION LTD.]

Four laning of Balachera to Harangajao section of NH-54 (Ext) from km 275.000 to Km 244.000 in the State of Assam on EPC mode.

Authority Engineer

[NAME OF CONSULTING FIRM]

MONTHLY STATUS REPORT NO. [XX]

FOR THE MONTH OF: [MONTH], [YEAR]

Table of content

Contents Nos.	Page
1 Executive Summary	156
1.1 Overallroadcondition 156	
1.2 Keyreporting metrics 156	
1.3 Key maintenanceactivities undertaken 156	
1.4 Pending issues 157	
1.5 Recommended actions by Authority Engineer 157	
1.6 Strip Planformaintenance 158	
2 ProjectOverview	159
2.1 Key project details 159	
2.2 Location Map 160	
2.3 Keyplan 161	
2.4 RoWavailability 161	
2.5 Summary of project features 162	
3 Critical Issues and Action taken	163
3.1 Issue and action log 163	
3.2 Summary of items (CumulativeObservations/Deficiencies) 163	
3.3 Obligations asper contract 165	
3.4 Major maintenance and Inspectionschedule 166	
4 InspectionReport	167
4.1 Summary of NCR issued 167	
4.2 Equipment basedinspectionreport 167	
5 Monitoring of ETC lanes	169
5.1 MonthlyETCReport 169	
5.2 On-ground infrastructure report169	
5.3 On-ground ETC operations and SLA adherence170	
6 Status of Damages for breach ofmaintenanceactivities	170

6.1	Damages for non completion ofprojectfacilities 170
6.2	Damages for breach ofmaintenanceactivities 171
6.3	Damages for non completion of major maintenance/ periodicoverlay 171
7	Change of Scope proposals
8	Status ofpendingdisputes
9	Reports
9.1	Monthly Toll Collection Report (Applicable only if project highway istolled) 173
9.2	AccidentReport 174
9.3	Details of complaints 176
9.4	Encroachment list177
9.5	LaneClosure Report 177
10	Annexures

1 ExecutiveSummary

1.1 Overall road condition

Road condition	LHS	RHS
Satisfactory road condition	40 km	20 km
Poor road condition	50 km	70 km
Total length of project	90 km	90 km

1.2 Key reportingmetrics

Key metrics	Value/Amount
No of pending NCRs	35
Damages amount recommended on Concessionaire (Rs Cr)	Rs 5.9 Cr
No of pending Change of Scope proposals	2
No of pending disputes	2
Monthly toll collection (Rs Cr) (If applicable)	Rs 3.8 Cr
No of accidents	12
No of encroachments	47

1.3 Key maintenance activities undertaken

Asset	Maintenance activities undertaken
Pavement	 Concessionairehascommencedtheworkforrenewalandrepairofpavement ontheprojecthighwayw.e.f14thSeptember2016
Shoulder	
Drainage	□ Cleaningofdrainageinbuiltupareasnprogress
Median	
Road furniture	 ConcessionairehastakenuprepairsandmaintenanceofMBCBandelectric poles,etconissuanceofNCPsfromAuthorityEngineer
Bridges	
Buildings	AsperprovisionsofCAandpolicydecidedbyMoRTH/ <agency>,2ETClanes ateachtollplazahavebeenoperationalisedw.e.f.25thSeptember2016.The connectivity of ETC lanes with Central Clearing House (CCH) has been achievedandpresentlyETClanesareoperationalizedinHybridModedueto lessnumberoftagspurchasedbyhighwayusers</agency>
Horticulture	 PlantingofnewtreesfromChainage200+300to226+650 Trimmingofplantswhichwerecausingobstructiontohighwayusers

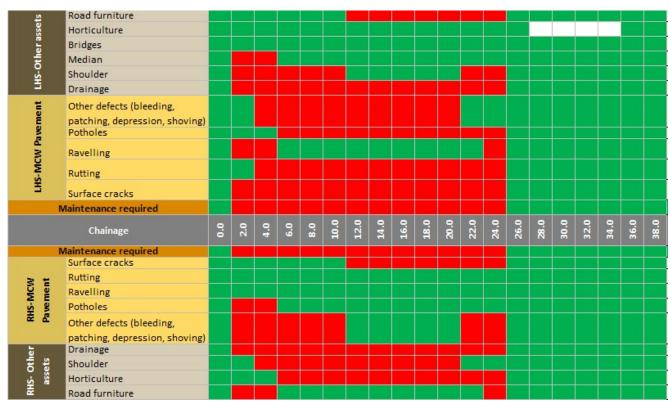
1.4 Pendingissues

- Overlay on the entire stretch of project length of 252 km and service roads has not been taken up by Concessionaire yet since the date of completion of overlay is due in next 25days
- Over all progress is very slow regarding repair of potholes and rutting on Main Carriageway which is causing inconvenience to highway users and is also a concern from road safety point of view.
- Street lightingin
 - Anantapur bypass completed on main carriageway and is energized but for service roads street lighting is pending on bothsides
 - ☐ **Kurnoolbypass**erectionofpolesonlycompletedinmaincarriagewaynotyet energized till to date, but for service roads notstarted

1.5 Recommended actions by AuthorityEngineer

- In spite of the repeated requests, there is no material change in status of works pertaining to repairs/ rectifications of defects on the project highway. AE has recommended the damages of Rs 5.9 Cr on the Concessionaire on account of delay in repairs of defects in road and bridge works in terms of the provision of Clause 15.8.1 of the Concession Agreement. Concessionaire shall be liable for imposition of further damages on similar lines till the date of completion
- Concessionaire is requested to take at most care for completing the overlay before 31.03.2017 since the existing road condition is getting deteriorated day by day causing much inconvenience to the traffic

1.6 Strip Plan formaintenance



Satisfactory road condition
(Maintenance not required)
Poor road condition (Maintenance required)

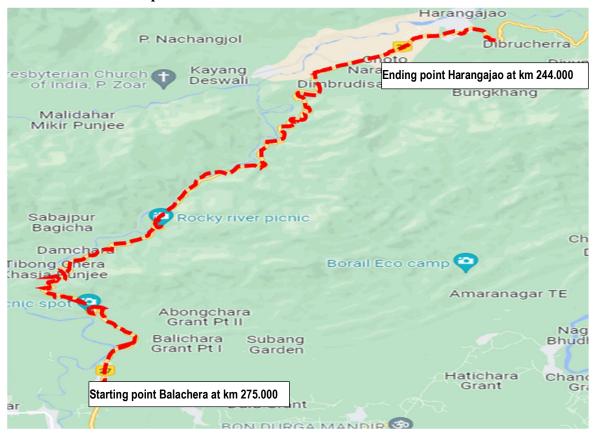
Mainreport

2 ProjectOverview

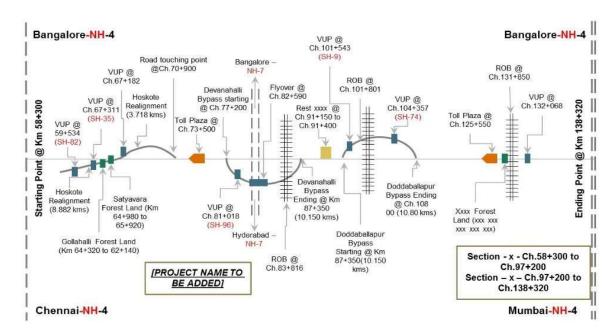
2.1 Key projectdetails

Project Name	
NH no (New/Old)	
Mode of the Project	
No. of Lanes	
Length of the Project	
Total Project Cost	
Concessionaire/ Contractor	
Date of Award (LOA date)	
Appointed Date	
Commercial Operation Date (COD)	
Concession Period	
O&M Period	
Authority Engineer	
AE Agreement Date	
AE Mobilization Date	
AE Scheduled Completion Date	
AE EOT (Extension Of Time)	

2.2 Location Map

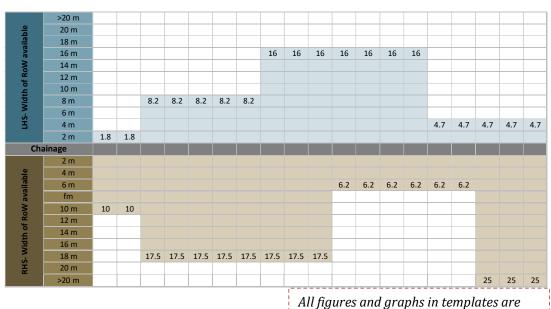


2.3 Keyplan



2.4 RoW availability

Width of RoW available on both sides of the highway



All figures and graphs in templates are illustrative. Please add actual details.

2.5 Summary of projectfeatures

SNo	Particulars	Value
1	No of flyovers	
2	Service Road	
3	ROBs	
4	ROB location (chainage)	
5	RUBs	
6	RUB location (chainage)	
7	No of Bypass	
8	Length of Bypass	
9	No of Major Bridges	
10	No of Minor Bridges	
11	No of Culvert	
12	No of VUP	
13	No of PUP/ Cattle Underpass	
14	No of Major Intersection/ Junction	
15	No of Toll Plaza	
16	Location of Toll Plaza (chainage)	
17	No of Truck Laybye	
18	No of Bus Bays	
19	No of Wayside Amenities	
20	Location of Wayside Amenities (chainage)	

3 Critical Issues and Actiontaken

3.1 Issue and actionlog

SNo	Issue Description	Ongoing/New Issue	Concerned Authority	Chainage(s) affecteddueto theissue	Length affected (km)	Action(s) taken till now	Action(s) suggested by SC	Expected Date for resolving issue
1	Drying up of plants on median	Ongoing	Concession aire	325+200 to 327+800	2.6	Irregular watering	Replacemen t of plants and daily watering	NA
2	Large potholes	New	Concession aire	387+300 LHS	0.1	None	Filling of potholes	<dd m<br="">M></dd>

All figures and graphs in templates are illustrative. Please add actual details.

3.2 Summary of items (Cumulative Observations/Deficiencies)

SNo	Description	Unit	Total	Work done uptoprevio us month		Balance	Remarks				
1	Carriageway and paved shoulders										
(a)	Pot Holes	Sqm	42	-	-	42					
(b)	Roughness value exceeding 2,500mm	mm									
(c)	Cracking in more than 5% of road surface	Sqm	7179	-	-	7179					
(d)	Ruttingexceeding10mm inmorethan2%ofroad surface	Sqm	5	-	-	5					
(e)	Bleeding/Skiding	Sqm									
(f)	Ravelling	Sqm									
(g)	Damage to pavement edges exceeding 10cm	m									
2	Hard/Earth Shoulders										
(a)	Raincuts/gulliesinslope	Cum	650	25	-	625					

SNo	Description	Unit	Total	Work done uptoprevio us month	Work done during reporting month	Balance	Remarks
(b)	Edge drop at shoulders exceeding 40 mm	m					
3	Drains and culverts						
(a)	Cleaning of Culvert	Nos	1	-	-	1	
(b)	Damage to or silting of culverts						
(c)	Silting of drains in urban/ semi urban areas						
4	Road furniture						
(a)	Sign Boards	Nos	456	-	-	456	
(b)	Kilometer Stones						
(c)	Metal Beam Crash Barrier						
(d)	Bus Shelters	Nos	72	4	-	68	
(e)	Junction signs	Nos	26	8	-	18	
(f)	Median Grills	Rmt	894	-	-	894	
(g)	Studs	Nos	5328	-	-	5328	
(h)	Delinators	Nos	8236	-	-	8236	
(i)	Road Marking	Sqm	1899	-	-	1899	
(j)	Kerb Painting	Sqm	4575	-	-	4575	
(k)	Guard Posts	Nos	3657	-	-	3657	
5	Street lighting and telec	om (ATI	MS)				
(a)	Street lights	Nos					
(b)	Telecom	Nos					
6	Trees and plantation						
(a)	Removalofvegetation affectingsightlineand roadstructures	На	77.42	-	3.57	73.85	
(b)	Replacement of trees and bushes	Nos	15072	-	-	15072	
7	Buildings and bridges						
(a)	Rest areas						
(b)	Toll plazas						
(c)	Bridges						

3.3 Obligations as percontract

Please write a summary of contractual obligations of Concessionaire and non-compliances of critical obligations highlighting reasons for delay and stating pending actions

<u>Critical obligations</u> of Concessionaire as percontract

Non compliances of critical contractualobligations

3.4 Major maintenance and Inspectionschedule

Item	Responsibility	Last completed on	Due date		
Major maintenance	Concessionaire	[DD/MM/YY]	[DD/MM/YY]		
Periodic overlay	Concessionaire	[DD/MM/YY]	[DD/MM/YY]		
Pavement inspection using NSV	Authority Engineer	[DD/MM/YY]	[DD/MM/YY]		
Roughness using Laser Profilometer Authority Engineer		[DD/MM/YY]	[DD/MM/YY]		
Pavement strength using FWD	Authority Engineer	[DD/MM/YY]	[DD/MM/YY]		
Bridge inspection using MBIU	Authority Engineer	[DD/MM/YY]	[DD/MM/YY]		
Road sign inspection using Reflectometer	Authority Engineer	[DD/MM/YY]	[DD/MM/YY]		
Other					

4 Inspection Report

4.1 Summary of NCRissued

SNo	Highway asset	Total NCR issued till previous month (A)	NCR issued in reporting month (B)	NCR closed in reporting month (C)	Balance NCR (A+B-C)
1	Pavement	48	12	25	35
2	Shoulder	7	0	3	4
3	Drainage				
4	Median				
5	Road furniture				
6	Bridges				
7	Buildings				
8	Horticulture				
9	[Other assets]				
	Total				

4.2 Equipment based inspection report

				Pavement Surface Defects					Roughness	Paver	nent St	trength	
Starting Chainage	Ending Chainage	Lane number	Cracks (cm)	Potholes (cm)	Raveling (cm)	Bleeding (cm)	Rutting depth (mm)	Texture depth (mm)	Skid Resistance	IRI (International Roughness Index)	Elastic Modulus Bituminous E1	Elastic Modulus	Elastic Modulus
0.000	0.500	L1	2X10	20X35	2.5X1.2	4X12	25	1.4		4.23	7110	34	14
0.500	1.000	L1	3X5	10X15	1.5X0.8	3X10	24	1.8		2.68	7430	36	15
1.000	1.500	L1											

Report of equipment based inspection needs be provided as an Annexure to monthly report as per the defined frequency. Following documents/media to be submitted for equipment based inspection.

- Uvideo footage of all cameras installed on Network Survey Vehicle- ROW cameras and pavementcamera
- Network Survey Vehicle report capturing dimensions of following key metrics of pavement
 - Cracks

	Potholes
	Raveling
	Bleeding
	Rutting
	Texture depth
	Skidresistance
	Roughness(IRI)
	g Weight Deflectometer (FWD) report capturing following key metrics of nentstrength
	Deflection Bowl (Transient Deflections at seven differentpoints)
	Corrected Elastic Modulus BituminousE1
	Corrected Elastic Modulus GranularE2
	Corrected Elastic Modulus SubgradeE3
	SubgradeCBR
	Bituminous layer coefficientA1
	Base layer coefficientA2
	Granular base layer coefficientA3
	Modified structuralnumber
Mobil	e Bridge Inspection Report (MBIU) capturing following key metrics ofbridges
	ConditionApproach
	Condition Signs
	Condition Debris
	ConditionJoint
	ConditionDeck
	ConditionRails
	ConditionProtect
	ConditionStream
	ConditionSuperstructure
	Condition Piers
	Condition Abutment
Retro	reflectometer report capturing following key metrics of roadfurniture
	Coefficient of retroreflected luminance R_{A} (night time retroreflection) of road trafficsigns

5 Monitoring of ETClanes

5.1 Monthly ETCReport

TY	PE OF V	/EHICLE	month o	esponding f previous ear	For Pre	evious Month	For Current Month			
			No of vehicles	Fee Collected	No of vehicles	Fee Collected	Fee per vehicle	No of vehicles	Fee Collected	
Α	Car	Total	3845	384500	4659	465,900.00	100	4289	428,900.00	
В	LCV	Total	1521	243360	1312	209,920.00	160	1399	223,840.00	
С	Bus	Total	2404	793386	2284	765,207.00	201	2349	786,915.00	
D	Truck	Total	1603	528924	1523	510,138.00	134	1566	524,610.00	
Е	3 Axle	Total	18990	6836400	16310	5,953,150.00	365	15127	5,521,355.00	
F	MAV	Total	16119	8381880	21111	11,188,830.00	530	18790	9,958,700.00	
G	Over Size Total		1	630	27	17,280.00	640	36	23,040.00	
	Total for the Month		49844	18,050,618	52963	19,898,834		49016	18,265,661	

5.2 On-ground infrastructurereport

Total number of plaza lanes =
Total number of dedicated ETC lanes =
Total number of hybrid lanes =

SNo	Description	Total units	Units working	Units damaged/ missing	Equipment owner/ provider	Equipmentas per specifications (Y/N)	Remarks
1	Hardware						
(a)	Over-head transceiver	4	3	1	ABC Co.	Y	
(b)	Hand-held reader						
(c)	Lane controller						
(d)	AVC						
(e)	Camera						
(f)	Weigh-in-motion						
(g)	Static weigh bridge						
(h)	Any other items						
2	Softwares						

SNo	Description	Total units	Units working	Units damaged/ missing	Equipment owner/ provider	Equipmentas per specifications (Y/N)	Remarks
(a)	Software – Lane/ Plaza level						
(b)	TMS						
(c)	Any other items						

5.3 On-ground ETC operations and SLAadherence

Lane	Average queue length during peak time	Average queue length during non peak time	Average Transaction time (cash)	Average transaction time (RFID)		Average transaction time(wallet)	tima
Lane 1	10 vehicles	5 vehicles	15 seconds	10 seconds	20 seconds	25 seconds	UPI-20 seconds
Lane 2							
Lane 3							_

- ☐ Average system uptime =80%
- \square Transactions uploaded (as per SLA) = 80%
- ☐ Blacklists uploaded (as per SLA) =50%
- ☐ Blacklists downloaded (as per SLA) =85%

6 Status of Damages for breach of maintenanceactivities

6.1 Damages for non completion of projectfacilities

SNo	Period	Amount of damages (Rs)
1	Upto June 2016	15,00,35,000
2	Jul 2016	2,00,88,000
3	Aug 2016	2,00,88,000
4	Sep 2016	1,94,40,000
	Total	20,96,51,000

Supporting Calculations for damages for Sep 2016

- \square No of days in Sep = 30
- Performance security is Rs 64,80,00,000
- $\hfill \Box$ As per CA Clause 12.3.2 damages payable is 0.1% of performance security per day = Rs6,48,000
- ☐ Total damages payable = 30 X 6,48,000 = Rs1,94,40,000

6.2 Damages for breach of maintenanceactivities

SNo	Period	Amount of damages (Rs)
1	Upto June 2016	1,00,35,000
2	Jul 2016	6.63,196
3	Aug 2016	6,63,196
4	Sep 2016	52,22,444
	Total	1,65,83,836

Supporting Calculations for damages for reporting month

S No	Nature of defect	Unit	Total Quantity	Rate	Cost o repair as estimated	Damages as per CA	Damages at higher side	Date of inspection	Noofdaysas perCA	Damages from	No of days damages	Damages amount

6.3 Damages for non completion of major maintenance/ periodicoverlay

SNo	Period	Amount of damages (Rs)
1	June 2016	6,48,000
2	Jul 2016	2,00,88,000
3	Aug 2016	2,00,88,000
4	Sep 2016	1,94,40,000
	Total	6,02,64,000

Supporting Calculations for damages for Sep 2016

- □ No of days in Sep = 30
- ☐ Performance security is Rs64,80,00,000
- $\hfill\Box$ As per CA Clause 12.3.2 damages payable is 0.1% of performance security per day = Rs 6,48,000
- □ Total damages payable = 30 X 6,48,000 = Rs1,94,40,000

All figures and graphs in templates are illustrative. Please add actual details.

7 Change of Scopeproposals

SN o	Proposal Details	Date offirst submission toAE	Current status	COS Amount	Expected/ Actualdate ofapproval
1	Construction of [Flyover Name] at [Chainage]		Approved in principle by Authority. Detailed quantitSCsinproperorder yettobesubmitted	[+/- Amount]	[DD/MM/YYY Y]
2	Nallah diversion through box culvert at [Chainage]	[DD/MM/YYYY]	Clarifications to be submitted by Concessionaire, expected date [DD/MM/YYYY]	[+/- Amount]	[DD/MM/YYY Y]

8 Status of pendingdisputes

SN o	Dispute Details	Date of first submission to AE	Suggested resolution by AE	Dispute Amount (if applicable)	Current stage
1	Increased tollablelength to be applicableintollfee calculations	[DD/MM/YYYY]	Nomeritinincreasingtollable lengthhencenoactionrequired by NHIDCL	NA	SAROD
2	Filling stations energized without obtainingNOCfrom ministry	[DD/MM/YYYY]	NHIDCL to consider the Concessionaire's request for intervention and assistance	[+/- Amount]	B/w Concession aire and NHIDCL

9 Reports

9.1 Monthly Toll Collection Report (Applicable only if project highway istolled)

TYPE OF VEHICLE		month o	esponding f previous ear	For Previous Month		For Current Month			
			No of vehicles	Fee Collected	No of vehicles	Fee Collected	Fee per vehicle	No of vehicles	Fee Collected
		Single	3845	384500	4659	465,900.00	100	4289	428,900.00
Α	Car	Return	1506	218370	1972	295,800.00	150	1758	263,700.00
		Local	769	38450	979	48,950.00	50	1029	51,450.00
		Single	1521	243360	1312	209,920.00	160	1399	223,840.00
В	LCV	Return	134	31490	162	38,880.00	240	132	31,680.00
		Local	1683	134640	1838	147,040.00	80	1461	116,880.00
		Single	2404	793386	2284	765,207.00	201	2349	786,915.00
С	Bus	Return	359	177903	173	87,567.00	303	203	102,717.00
		Local	277	45738	205	34,782.00	102	318	54,060.00
		Single	1603	528924	1523	510,138.00	134	1566	524,610.00
D	Truck	Return	240	118602	116	58,378.00	202	136	68,478.00
		Local	185	30492	136	23,188.00	68	212	36,040.00
		Single	18990	6836400	16310	5,953,150.00	365	15127	5,521,355.00
E	3 Axle	Return	131	70740	34	18,700.00	550	37	20,350.00
		Local	69	12420	84	15,540.00	185	131	24,235.00
		Single	16119	8381880	21111	11,188,830.00	530	18790	9,958,700.00
F	MAV	Return	2	1550	20	15,800.00	790	35	27,650.00
		Local	6	1560	18	4,770.00	265	8	2,120.00
	_	Single	1	630	27	17,280.00	640	36	23,040.00
G	Over Size	Return		0	0	-	965		-
	3126	Local		0	0	-	320		-
		for the onth	49844	18,050,618	52963	19,898,834		49016	18,265,661

_	S No			
1/1/17	Date			
1/1/17 382/050 05:25 RHS pm	Chainage no			
05:25 pm	Time of accident			
≤	Sex (M/F)			
2	Accident location	Α		
2	Nature of accident	Φ.		
ω	Classification of accident	ဂ		
4	Causes	D		
_	Load conditions of vehicle	т		
_	Road condition	m		
	Intersection type of control	G		
_	Weather condition	Ŧ		
ω	Age of victim	-		
_	Type of victim	د		
ω	Type of vehicle	_		
	Fatal 5 a			
_	Major	No o		
_	Minor Se St			
Ambu	Help provided by			

Mapping of report fields to responses

А	1. Urban 2. Rural
В	1.Overturned2.HeadOnCollision3.HitfromBack4.HittoFixObject5.RightturnCollision 6.LeftturnCollision7.VeeredOutoffTheRoad8.HitPedestrian9.Unknown/Hit&RanAway
С	1. Fatal 2. Major injury 3. Minor injury
D	1.Drunken2.OverSpeeding3.VehicleoutofControl4.Drivenonwrongside5.Mechanical Problem6.Drowsiness/NotApplicable7.FaultofDriver
Е	1. Normally Loaded 2. Overloaded/Handing 3. Empty 4. Unknown
F	1. Straight road 2. Slight Curve 3. Sharp Curve 4. Hump 5. Dip
G	1.T-Junction2.Y-Junction3.FourarmJunction4.StaggeredJunction5.Junctionwithmore than 6. Round aboutJunction
Н	1.Fine/Clear2.Mist/Fog3.Cloudy4.LightRain5.HeavyRain6.StrongWind7.DustStorm8. Cold 9.Hot
I	1. 0-18 Years 2. 18-25 Years 3. 25-40 Years 4.40-60 Years 5. 60-80 Years
J	1. Driver 2. Passenger 3. Pedestrian 4. Cyclist 5. Others
K	1.TwoWheeler2.AutoRickshaw3.Car/Jeep4.Bus5.LightTruck6.HeavyTruck7.Tractor 8. Bicycle 9. Cycle Rickshaw 10. Hand Drawn Cart 11. Animal Drawn Cart

9.3 Details of complaints

SNo	Toll plaza	Complaint No	Date	Name of the person	Contact details of person	Details of complaint	Compliance by the concessionaire
1		81	8/9/2016	Mr. Shailendra Gurjar, LIG- 44,RSS mohalla, ShivajiNagar, Bhopal(M.P.)		Mr. Shailendra Complaints regarding Pot holes on the Highway may cause accidents.	Pot holes are repaired
2		82	10/9/2016	Dr. Anil Diwakar, HIG Swarganga Complex Bus Stand Seoni(M.P.)		Dr. Diwakar complaints that presence of Animals and also Potholesonroad areobstructingthe drivingwhichmay causeaccidents.	Animals are continuously driven outfromtheRoad by the Highway Patrollingteamand Pot holes are repaired.
3		83	11/9/2016	Maj. Sidharth, 238Fdwksp C/o- 56APO		Maj. Sidharth while travelling in personal car wants Exemption from Toll Fee on production of I.D. Card	The Exemption underIndianToll (Army and Air force)Act1901,to army personnel travellinginprivate vehicle may be givenifonGovt. duty withrequisite pass as specified intheIndianToll (Army and Air Force Rules,1942)

All figures and graphs in templates are illustrative. Please add actual details.

9.4 Encroachment list

SNo	Stretch Chainage (km)	Side (LHS/RHS)	District/ Tehsil	Village	Encroachment type (Temporary/ Permanent)	Category (Tea stall, Temple, etc)	Establishment (New/ existing)	Distancefromroadedge(m)	Encroachment width and length	Name of Encroacher
1	212+50 0	LHS	Kurnool	Kurnool	Temporar y	Tea stall	New	7	5mX3.5m	Vijay Kumar Reddy
2	213+20 0	RHS	Kurnool	DinnedevaraP adu	Permanen t	Godow n	Existing	5	10.5m X 4m	Buddana

9.5 Lane ClosureReport

S.No	Date	Chainage (Km)		Chainage (Km)		Chainage (Km) Side Time of Closure		Reasons for Lane	Remarks
		From	То			Closure & Approval Details			
1	9/9/201 6	215+30 0	215+35 0	RHS	1pm-4pm	Patch work			

10 Annexures

Annexure 1: Detailed visual inspection report of project highway

Assets to be covered- Pavement, Shoulder, Drainage, Median, Bridges, Road furniture, Buildings, Horticulture, Service Road

SNo	NCP/ SNo	Date of issue	Descriptionof defect	Chainage	Side	AE Remarks
1	311	15.08.2016	Potholes	311+200	LHS	To berepaired
2	312	15.08.2016	Cracking	311+500	RHS	To be filled immediately
3						
4						

Annexure 2 onwards:

AE should include comments, status update, data points and reports in following annexures which have not been included elsewhere in the main report. Such reports may include but not limited to:

- Minutes of reviewmeeting
- Correspondence details
- Weatherreport
- □ Organizational chart of Concessionaire and AE
- Projectphotographs

Annexure VII-OUTPUT FORMAT FROM NETWORK SURVEY VEHICLE AND FWD TESTING



[NATIONAL HIGHWAYS & INFRSTRUCTURE DEVELOPMENT CORPORATION LTD.]

Four laning of Balachera to Harangajao section of NH-54 (Ext) from km 275.000 to Km 244.000 in the State of Assam on EPC mode.

Authority Engineer

[NAME OF CONSULTING FIRM]

OUTPUT FROM NETWORK SURVEY VEHICLE AND FWD TESTING

Table of contents

Contents		Page Nos.
SECTION 1	ROAD INVENTORY DATA	
		161
1.1.	Location Reference Post (LRP) Master	161
1.2.	Carriageway Type	162
1.3.	Road Type	162
1.4.	Pavement Type	163
1.5.	Pavement Width	164
1.6.	Shoulder Type	165
1.7.	Shoulder Width	166
1.8.	Topography	166
1.9.	Cross Section	167
1.10.	Drain Type	168
1.11.	Median Opening	169
1.12.	Right Of Way	170
1.13.	Pavement composition	171
1.14.	Carriageway Furniture	173
1.15.	Wayside Amenities	174
1.16.	Land Use	175
SECTION 2	ROAD CONDITION DATA	176
2.1.	Visual condition	176
2.2.	Roughness	179
2.3.	Rutting	180
2.4.	Texture Depth	181
2.5.	Skid Resistance	182
2.6.	Falling Weight Deflectometer (FWD)	183
2.7.	Falling Weight Deflectometer (FWD) Rigid	187

Annexure VII: OUTPUT FORMAT FROM NETWORK SURVEY VEHICLE AND FWD TESTING (SECTION 1: TESTING AT TIME OF COMPLETION, SECTION 2: FWD ATTRIBUTES - ANNUALLY, BALANCE PARAMETERS - BIANNUALLY AFTER CONSTRUCTION PHASE)

In addition to the reports being submitted on equipment based inspection as specified in Section 4.2 of the Monthly Progress Report in the O&M phase, the Authority Engineer (AE) shall submittelectronically in excel (.xls) format certain key parameters to the Project Director in the following format.

Worksheets under Section 1 ('Road inventory data') shall be updated from surveys conducted onlyonceatthetimeofcompletiontesting. Worksheets under Section 2 ('Road condition data') shall be updated from surveys carried out annually for FWD attributes and biannually for the remaining attributes.

The fields to be updated in each of the worksheets are described below. Each description is followed by an example of data for a sample project.

SECTION 1 - ROAD INVENTORY DATA

Roadinventorydataconsistsofparameterswhichprovidebasicinformationaboutroadssuch as pavement type, number of lanes, topography, etc. These parameters are largely static in nature, and therefore a survey to update this dataset shall be conducted only once at the time of completion testing. The road inventory data shall be used to update specific worksheets listedbelow.

1.1 Location Reference Post (LRP)Master

The following table lists the fields which need to be populated for the 'LRP Master' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
LRP Name	Name of location reference post (LRP)	Km stone 17
Chainage	Chainage of the survey point (in km)	17
Direction	Direction of survey	Increasing
	Increasing(chainage)	
	Decreasing(chainage)	
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Old NH Number	Old National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsofsection	HYD-VIJ (Hyderabad- Vijayawada)

NH Number	LRP Name	Chainage	Direction	Latitude	Longitude	Altitude	Survey Date	Old NH Number	Section Code
NH0xxx	Road Start	1.230	Increasing	9.98897	78.02671	63.07767	23-12-15	NH0yyy	ABC-DEF
NH0xxx	Km Stone 8	8.000	Increasing	9.98444	78.02934	68.60126	23-12-15	NH0yyy	ABC-DEF
NH0xxx	Km Stone 8	8.030	Increasing	9.98341	78.03004	68.15520	23-12-15	NH0yyy	ABC-DEF
NH0xxx	Km Stone	9.008	Increasing	9.98107	78.03078	65.17153	23-12-15	NH0yyy	ABC-DEF
NH0xxx	Km Stone	12.012	Increasing	9.96328	78.04160	56.03436	23-12-15	NH0yyy	ABC-DEF
NH0xxx	Km Stone 17	17.085	Increasing	9.95385	78.05255	56.24748	23-12-15	NH0yyy	ABC-DEF

1.2 CarriagewayType

The following table lists the fields which need to be populated for the 'Carriageway Type' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Code indicating starting and ending locations of section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Carriageway Type	Type of carriageway, classified into one of the below categories: Divided Undivided	Divided
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference

NHNumber	Section	Start Chainage	End Chainage	Carriageway Type	Dateof Survey	Latitude	Longitude
NH00xx	ABC-DEF	0.000	0.794	Undivided	06-05-17	9.98897	78.02671
NH00xx	ABC-DEF	0.794	1.000	Undivided	06-05-17	9.98444	78.02934
NH00xx	ABC-DEF	1.000	2.810	Undivided	06-05-17	9.98341	78.03004
NH00xx	ABC-DEF	2.810	4.335	Undivided	06-05-17	9.98107	78.03078
NH00xx	ABC-DEF	4.335	6.666	Undivided	06-05-17	9.96328	78.04160
NH00xx	ABC-DEF	6.666	12.906	Undivided	06-05-17	9.95385	78.05255

1.3 Road Type

The following table lists the fields which need to be populated for the 'Road Type' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Road Type	Classification of road on basis of number of lanes SingleLane TwoLane IntermediateLane FourLane SixLane	Four Lane
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference:

NHNumber	Section	Start Chainage	End Chainage	RoadType	Dateof Survey	Latitude	Longitude
NH00xx	ABC-DEF	0.000	0.794	Two Lane	06-05-17	9.98897	78.02671
NH00xx	ABC-DEF	0.794	1.000	Two Lane	06-05-17	9.98444	78.02934
NH00xx	ABC-DEF	1.000	2.810	Two Lane	06-05-17	9.98341	78.03004
NH00xx	ABC-DEF	2.810	4.335	Two Lane	06-05-17	9.98107	78.03078
NH00xx	ABC-DEF	4.335	6.666	Two Lane	06-05-17	9.96328	78.04160
NH00xx	ABC-DEF	6.666	12.906	Two Lane	06-05-17	9.95385	78.05255

1.4 PavementType

The following table lists the fields which need to be populated for the 'Pavement Type' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Pavement Type	Classificationofpavementbasedontypeofsurface:	Asphalt

Field	Description	Example
	□ Asphalt	
	□ Cementconcrete	
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

NHNumber	Section	Start Chainage	End Chainage	Direction	Pavement Type	Date of Survey	Latitude	Longitude
NH00xx	ABC- DEF	0.000	0.804	Both	Asphalt	06-05-17	9.98897	78.02671
NH00xx	ABC- DEF	0.804	1.000	Both	Asphalt	06-05-17	9.98444	78.02934
NH00xx	ABC- DEF	1.000	1.172	Both	Asphalt	06-05-17	9.98341	78.03004
NH00xx	ABC- DEF	1.172	2.821	Both	Asphalt	06-05-17	9.98107	78.03078
NH00xx	ABC- DEF	2.821	4.350	Both	Asphalt	06-05-17	9.96328	78.04160
NH00xx	ABC- DEF	4.350	6.710	Both	Asphalt	06-05-17	9.95385	78.05255
NH00xx	ABC- DEF	6.710	12.925	Both	Asphalt	06-05-17	9.93102	78.05648

1.5 PavementWidth

The following table lists the fields which need to be populated for the 'Pavement Width' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Pavement Width	Widthofthepavementinmetres, classified into one of the below categories >= 3.75m and <5.5m >5.5m and <7m >= 7m and <10.5m >=10.5m and <=12.5m >12.5m	>7m and <10.5m
Pavement Width Value	Width of the pavement in metres, rounded to two places after decimal	7.0

Field	Description	Example
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

NHNumber	Section Code	Start Chainage	End Chainage	Direction	Pavement Width	Pavement Width Value	Survey Date	Latitude	Longitude
NH00xx	ABC-DEF	0.000	0.794	Both	7 – 10.5 m	7.00	06-05-17	9.98897	78.02671
NH00xx	ABC-DEF	0.794	1.000	Both	7 – 10.5 m	7.00	06-05-17	9.98444	78.02934
NH00xx	ABC-DEF	1.000	2.810	Both	7 – 10.5 m	7.00	06-05-17	9.98341	78.03004
NH00xx	ABC-DEF	2.810	4.335	Both	7 – 10.5 m	7.00	06-05-17	9.98107	78.03078
NH00xx	ABC-DEF	4.335	6.666	Both	7 – 10.5 m	7.00	06-05-17	9.96328	78.04160
NH00xx	ABC-DEF	6.666	12.906	Both	7 – 10.5 m	7.00	06-05-17	9.95385	78.05255

1.6 ShoulderType

The following table lists the fields which need to be populated for the 'Shoulder Type' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
	Type of shoulder, classified into one of the below categories:	Gravel
Shoulder Tune	□ None □ Paved □ Gravel □ Earth	
Shoulder Type	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Survey Date Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference:

NHNumber	Section Code	StartChainage	End Chainage	Direction	ShoulderType	Survey Date	Latitude	Longitude
NH00xx	ABC-DEF	0.000	0.763	Increasing	No Shoulder	09-01-16	9.98897	78.02671
NH00xx	ABC-DEF	0.763	0.834	Increasing	Gravel	09-01-16	9.98444	78.02934

NH00xx	ABC-DEF	0.834	1.254	Increasing	Gravel	09-01-16	9.98341	78.03004
NH00xx	ABC-DEF	1.254	2.945	Increasing	Gravel	05-01-16	9.98107	78.03078
NH00xx	ABC-DEF	2.945	4.327	Increasing	Gravel	05-01-16	9.96328	78.04160
NH00xx	ABC-DEF	4.327	4.405	Increasing	Gravel	05-01-16	9.95385	78.05255
NH00xx	ABC-DEF	4.405	6.844	Increasing	Gravel	05-01-16	9.93102	78.05648
NH00xx	ABC-DEF	6.844	9.359	Increasing	Gravel	05-01-16	9.91229	78.04961
NH00xx	ABC-DEF	9.359	12.966	Increasing	Gravel	05-01-16	9.89041	78.03458

1.7 ShoulderWidth

The following table lists the fields for the 'Shoulder Width' attribute, which need to be populated. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
	Width of the shoulder in metres, classified into one of the below categories	< 1m
	☐ Noshoulder ☐ <1m ☐ >= 1m and <=2m	
Shoulder Width	□ >2m	0.5
Shoulder Width Value	Widthoftheshoulderinmetres,roundedtooneplace afterdecimal	0.5
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference:

NH Number	Section Code	Start Chainage	End Chainage	Direction	Shoulder Width	Shoulder Width Value	Survey Date	Latitude	Longitude
NH0xxx	ABC-DEF	0.000	0.785	Increasing	No Shoulder	0.0	03-01-16	9.98897	78.02671
NH0xxx	ABC-DEF	0.785	2.612	Increasing	No Shoulder	0.0	03-01-16	9.98444	78.02934
NH0xxx	ABC-DEF	2.612	3.170	Increasing	1-2m	2.0	03-01-16	9.98341	78.03004
NH0xxx	ABC-DEF	3.170	5.194	Increasing	1-2m	2.0	03-01-16	9.98107	78.03078
NH0xxx	ABC-DEF	5.194	6.793	Increasing	1-2m	2.0	03-01-16	9.96328	78.04160
NH0xxx	ABC-DEF	6.793	11.404	Increasing	1-2m	2.0	03-01-16	9.95385	78.05255

1.8 Topography

The following table lists the fields which need to be populated for the 'Topography' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Topography	Topographyoftheroad,classifiedintooneofthe belowcategories Flat Rolling Hilly	Flat
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference:

NH Number	Section Code	Start Chainage	End Chainage	Topography	Survey Date	Latitude	Longitude
NH0xxx	ABC-DEF	0.000	0.808	Flat	05-01-16	9.98897	78.02671
NH0xxx	ABC-DEF	0.808	1.254	Flat	05-01-16	9.98444	78.02934
NH0xxx	ABC-DEF	1.254	2.828	Flat	05-01-16	9.98341	78.03004
NH0xxx	ABC-DEF	2.828	4.363	Flat	05-01-16	9.98107	78.03078
NH0xxx	ABC-DEF	4.363	6.724	Flat	05-01-16	9.96328	78.04160
NH0xxx	ABC-DEF	6.724	12.933	Flat	05-01-16	9.95385	78.05255

1.9 CrossSection

The following table lists the fields which need to be populated for the 'Cross Section' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Cross Section	Crosssectiontype,classifiedintooneofthebelow categories	Fill

Field	Description	Example
	□ Cut	
	o Fill	
	□ Cut andFill	
	□ Level	
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

NH Number	Section Code	Start Chainage	End Chainage	Direction	Cross Section	Survey Date	Latitude	Longitude
NH0xxx	ABC-DEF	0.000	0.822	Increasing	Level	03-01-16	9.98897	78.02671
NH0xxx	ABC-DEF	0.822	2.642	Increasing	Level	03-01-16	9.98444	78.02934
NH0xxx	ABC-DEF	2.642	3.199	Increasing	Level	03-01-16	9.98341	78.03004
NH0xxx	ABC-DEF	3.199	5.360	Increasing	Level	03-01-16	9.98107	78.03078
NH0xxx	ABC-DEF	5.360	5.715	Increasing	Fill	03-01-16	9.96328	78.04160
NH0xxx	ABC-DEF	5.715	6.941	Increasing	Level	03-01-16	9.95385	78.05255
NH0xxx	ABC-DEF	6.941	11.163	Increasing	Level	03-01-16	9.93102	78.05648

1.10 Drain Type

The following table lists the fields which need to be populated for the 'Drain Type' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
	Type of drain, classified into one of the below categories	Open lined drain
Drain Type	Open unlineddrainOpen lineddrainCovered linedrainNodrain	
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

NHNumber	SectionCode	StartChainage	EndChainage	Direction	DrainType	SurveyDate	Latitude	Longitude
NH0xxx	ABC-DEF	0.000	0.069	Increasing	Open Unlined Drain	09-01-16	9.98897	78.02671
NH0xxx	ABC-DEF	0.069	0.782	Increasing	OpenLinedDrain	09-01-16	9.98444	78.02934
NH0xxx	ABC-DEF	0.288	0.000	Decreasing	Open Unlined Drain	09-01-16	9.98341	78.03004
NH0xxx	ABC-DEF	0.782	0.846	Increasing	Open Unlined Drain	09-01-16	9.98107	78.03078
NH0xxx	ABC-DEF	0.846	1.254	Increasing	Open Unlined Drain	09-01-16	9.96328	78.04160
NH0xxx	ABC-DEF	1.254	2.265	Increasing	Open Unlined Drain	05-01-16	9.95385	78.05255
NH0xxx	ABC-DEF	1.929	0.288	Decreasing	Open Unlined Drain	09-01-16	9.93102	78.05648
NH0xxx	ABC-DEF	1.952	1.929	Decreasing	No Drain	09-01-16	9.91229	78.04961
NH0xxx	ABC-DEF	2.265	3.005	Increasing	Open Unlined Drain	05-01-16	9.89041	78.03458
NH0xxx	ABC-DEF	2.680	1.952	Decreasing	Open Unlined Drain	09-01-16	9.88489	78.02995
NH0xxx	ABC-DEF	3.005	4.424	Increasing	Open Unlined Drain	05-01-16	9.87474	78.02828
NH0xxx	ABC-DEF	3.109	2.680	Decreasing	Open Unlined Drain	09-01-16	9.87363	78.02744
NH0xxx	ABC-DEF	3.320	3.109	Decreasing	Covered Line Drain	09-01-16	9.84857	78.01535
NH0xxx	ABC-DEF	3.917	3.320	Decreasing	Open Unlined Drain	09-01-16	9.83764	78.00392
NH0xxx	ABC-DEF	4.424	4.601	Increasing	Open Unlined Drain	05-01-16	9.83711	77.98576
NH0xxx	ABC-DEF	4.601	5.693	Increasing	Open Unlined Drain	05-01-16	9.83386	77.97729

1.11 MedianOpening

The following table lists the fields which need to be populated for the 'Median Opening' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
	Type of median, classified into one of the below categories	Raised
	□ Raised;	
	Depressed;	
	□ Barrier;	
Median Type	□ None.	
Field	Description	Example

Median Width	Width of the median in metres, rounded to one place after decimal	0.5
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

NHNumber	Section Code	Start Chainage	End Chainage	Direction	Median Type	Median Width	Survey Date	Latitude	Longitude
NH00xx	ABC-DEF	0.000	0.794	Both	Raised	0.5	05-01-16	9.98897	78.02671
NH00xx	ABC-DEF	0.794	1.000	Both	Raised	0.5	05-01-16	9.98444	78.02934
NH00xx	ABC-DEF	1.000	2.810	Both	No Median	0.0	05-01-16	9.98341	78.03004
NH00xx	ABC-DEF	2.810	4.335	Both	Raised	1.5	05-01-16	9.98107	78.03078
NH00xx	ABC-DEF	4.335	6.666	Both	No Median	0.0	05-01-16	9.96328	78.04160
NH00xx	ABC-DEF	6.666	12.906	Both	No Median	0.0	05-01-16	9.95385	78.05255

1.12 Right Of Way

The following table lists the fields which need to be populated for the 'Right of Way' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Row Width	Width of Right of Way (in metres)	24
Remarks		
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference:

NHNumber	Section Code	Start Chainage	End Chainage	Direction	ROW Width	Remarks	Survey Date	Latitude	Longitude
NH0xxx	ABC-DEF	0.000	1.000	Increasing	28		05-05-15	9.98897	78.02671
NH0xxx	ABC-DEF	1.000	2.000	Increasing	24		05-05-15	9.98444	78.02934
NH0xxx	ABC-DEF	2.000	3.000	Increasing	30		05-05-15	9.98341	78.03004
NH0xxx	ABC-DEF	3.000	4.000	Increasing	26		05-05-15	9.98107	78.03078
NH0xxx	ABC-DEF	4.000	11.000	Increasing	24		05-05-15	9.96328	78.04160

1.13 Pavementcomposition

The following table lists the fields which need to be populated for the 'Pavement composition' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Pavement Type	Type of pavement Asphalt Cementconcrete	Asphalt
Bituminous Surface Course Type	Type of bituminous surface course	BC
Bituminous Surface Course Thickness MM	Thickness of BSC layer in mm	40
BSC Construction Year	YearofconstructionofBSClayerinflexiblepavements	2015
Bituminous Base Course Type	Type of bituminous base course	DBM
Bituminous Base Course Thick—ness	Thickness of BBC layer in mm	100
BBC Construction Year	YearofconstructionofBBClayerinflexiblepavements	2015
Granular Base Type	Type of granular base	WMM
Granular Base Thick- Ness	Thickness of GB layer in mm	250
GB Construction Year	Year of construction of GB layer in flexible pavements	2015
Pavement Quality Concrete Type	Type of pavement quality concrete	PQC
Pavement Quality Concrete Thickness	Thickness of PQC layer in mm	300
PQC Construction Year	YearofconstructionofPQClayerinrigidpavements	2015
Dry Lean Concrete Thickness MM	Thickness of DLC layer in mm	100
Dry Lean Concrete Type	Type of dry lean concrete	DLC
DLCConstructionYear	YearofconstructionofDLClayerinrigidpavements	2015
Granular Sub Base Type	Type of granular sub base	GSB
Granular Sub Base Thickness	Thickness of GSB layer in mm	200
GSB Construction Year	Year of construction of GSB layer	2014
Design CBR	Design CBR of the subgrade, expressed in %	5%
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897

Field	Description	Example
Longitude	Longitude of survey point	78.02671

NO	Sec- tion Code	Start Chai nage	Chai	Direc- tion	Paveme nt Type	Bituminou s Surface Course Type	Bituminou s Surface Course Thickness	Constru c-tion	Bitumino us Base Course Type	Bitumino us Base Course Thicknes s	BBC Constru c-tion Year	Granul arBase Type	Granular Base Thickne ss
NH00x	ABC- DEF	0.0	5.0	Both side	Asphalt	ВС	40.0	2015	DBM	100	2015	WMM	250
NH00x	ABC- DEF	5.0	11.0	Both side	Asphalt	ВС	40.0	2015	DBM	80	2015	WMM	250
NH00x	ABC- DEF	11.0	20.0	Both side	Asphalt	SDBC	25.0	2015	ВМ	115	2015	WMM	250
NH00x	ABC- DEF	20.0	22.0	Both side	Asphalt	ВС	40.0	2015	DBM	100	2015	WMM	250
NH00x	ABC- DEF	22.0	30.0	Both side	Asphalt	SDBC	25.0	2015	ВМ	115	2015	WMM	250
NH00x	ABC- DEF	30.0	31.0	Both side	Asphalt	ВС	40.0	2015	DBM	100	2015	WMM	250

(table continued...)

GB Constr uction Year	Concret	Quality Concret	PQC Constr uction Vear	Dry Lean Concret e Thickn ess	Dry Lean Concret e Type	uction	Granul arSubB as e Type	Granula r SubBase Thickne ss	GSB Constru	Desig n CBR	Survey Date	Latit ude	Longit ude
2015	NA	NA	NA	NA	NA	NA	GSB	300	2015	5%	05-05- 15	9.99	78.03
2015	NA	NA	NA	NA	NA	NA	GSB	300	2015	5%	05-05- 15	9.98	78.03
2015	NA	NA	NA	NA	NA	NA	GSB	300	2015	5%	05-05- 15	9.98	78.03
2015	NA	NA	NA	NA	NA	NA	GSB	300	2015	5%	05-05- 15	9.98	78.03
2015	NA	NA	NA	NA	NA	NA	GSB	300	2015	5%	05-05- 15	9.96	78.04
2015	NA	NA	NA	NA	NA	NA	GSB	300	2015	5%	05-05- 15	9.95	78.05

1.14 CarriagewayFurniture

The following table lists the fields which need to be populated for the 'Carriageway Furniture' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Chainage	Chainage of the point (in km)	0.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Field	Description	Example

	Wayside amenities classified into one of the below categories:	Road sign
Mariala Amanita Tura	□ Crashbarriers	
Wayside Amenity Type	□ Signs	
	□ StreetLights	
	□ Kmstone	
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	78.02671	

NHNumber	SectionCode	Chainage	Direction	EventType	SurveyDate	Latitude	Longitude
NH00xx	ABC-DEF	0.012	Increasing	Street Light Start	03-01-16	9.98897	78.02671
NH00xx	ABC-DEF	0.287	Increasing	Street Light End	03-01-16	9.98444	78.02934
NH00xx	ABC-DEF	2.491	Decreasing	Road Sign	03-01-16	9.98341	78.03004
NH00xx	ABC-DEF	2.708	Decreasing	Road Sign	03-01-16	9.98107	78.03078
NH00xx	ABC-DEF	3.496	Increasing	Road Sign	03-01-16	9.96328	78.04160
NH00xx	ABC-DEF	5.160	Increasing	Road Sign	03-01-16	9.95385	78.05255
NH00xx	ABC-DEF	5.356	Decreasing	Road Sign	03-01-16	9.93102	78.05648
NH00xx	ABC-DEF	8.402	Decreasing	Road Sign	03-01-16	9.91229	78.04961
NH00xx	ABC-DEF	10.966	Decreasing	Road Sign	03-01-16	9.89041	78.03458

1.15 WaysideAmenities

The following table lists the fields which need to be populated for the 'Wayside Amenities' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Chainage	Chainage of the point (in km)	0.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Wayside Amenity	Wayside amenities classified into one of the below categories: Busshelter; Culverts; Restaurant/Motel; Restaurant/Motel; Toilet/Publicconvenience; RestRoomsforshortstay; TollPlaza; First aid/Medicalcentre;	Restaurant/Motel

Field	Description	Example
	 Telephonebooth; Petrolpump/minorrepairshop(optional); PoliceStation; Temple/Mosque; Bridges. 	
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Data Source		
Remarks		
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

NH Number	Section Code	Chainage	Direction	Wayside Amenity	Survey Date	Data Source	Remarks	Latitude	Longitude
NH00xx	ABC- DEF	0.650	Increasing	Restaurant/Motel	05-01-16			9.98897	78.02671
NH00xx	ABC- DEF	1.998	Increasing	Restaurant/Motel	05-01-16			9.98444	78.02934
NH00xx	ABC- DEF	5.524	Increasing	Petrol Pump	05-01-16			9.98341	78.03004
NH00xx	ABC- DEF	11.413	Increasing	Restaurant/Motel	05-01-16			9.98107	78.03078

1.16 Land Use

The following table lists the fields which need to be populated for the 'Land Use' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Land Use	Landuseclassifiedintooneofthebelowcategories: Residential; Commercial; Industrial; Agricultural; Waterbodies; Mixed.	Commercial
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897

Field	Description	Example
Longitude	Longitude of survey point	78.02671

NHNumber	SectionCode	StartChainage	EndChainage	Direction	LandUse	SurveyDate	Latitude	Longitude
NH00xx	ABC-DEF	0.000	0.797	Increasing	Mixed	03-01-16	9.98897	78.02671
NH00xx	ABC-DEF	0.511	0	Decreasing	Mixed	03-01-16	9.98444	78.02934
NH00xx	ABC-DEF	0.797	2.699	Increasing	Mixed	03-01-16	9.98341	78.03004
NH00xx	ABC-DEF	0.835	0.511	Decreasing	Mixed	03-01-16	9.98107	78.03078
NH00xx	ABC-DEF	0.987	0.835	Decreasing	Mixed	03-01-16	9.96328	78.04160
NH00xx	ABC-DEF	1.641	0.987	Decreasing	Agriculture	03-01-16	9.95385	78.05255
NH00xx	ABC-DEF	2.081	1.641	Decreasing	Barren Land	03-01-16	9.93102	78.05648
NH00xx	ABC-DEF	2.378	2.081	Decreasing	Agriculture	03-01-16	9.91229	78.04961
NH00xx	ABC-DEF	2.458	2.378	Decreasing	Agriculture	03-01-16	9.89041	78.03458
NH00xx	ABC-DEF	2.699	3.234	Increasing	Agriculture	03-01-16	9.88489	78.02995

SECTION 2 - ROAD CONDITION DATA

Roadconditiondataconsistsofparameterswhichdirectlyaffectmaintenancerequirementsof the road. These parameters are dynamic in nature, and therefore a survey to update this dataset shall be conducted annually for FWD testing and every six months as per Annexure IV for network survey vehicle testing. The first survey shall be conducted at the time of completiontestingandtheremainingsurveysshallbeconductedasperthedefinedfrequency.

As an example, if majority of highway length (>50%) passes through a state, where defined survey months are May and November, if completion testing is conducted in April, then the first network survey shall be conducted in the month of April. This shall be considered as the network survey to be conducted in the month of May. The 2ndsurvey shall be conducted in the month of May and so on. As regards FWD, the first test/survey shall be conducted at the time of completion in April. The 2ndtest/survey shall be conducted in April of next year and so on.

The road condition data shall be used to update specific worksheets, which are listed below.

2.1 Visual condition

The following table lists the fields which need to be populated for the 'Visual Condition' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065

Field	Description	Example
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
	Direction of survey	Increasing
Direction	□ Increasing(chainage)	-
	Decreasing(chainage)	
	Numberofthelane:L1,L2,R1,R2,etc.,L1being1stlan	L1
Lane Number	eontheleftfromcentrelineofcarriageway,L2being	
	2 nd laneontheleftfromcenterlineandsoon	
	Percentofpavementareaaffectedbyravelling,which isconvertedtothefollowingratingscale:	2
	1-VeryPoor(>30%)	
Ravelling	□ 2 - Poor(11-30%)	
rtavelling	□ 3-Fair(6-10%)	
	□ 4-Good(1-5%)	
	□ 5 - Very Good(0%)	
	No.ofpotholes,whichisconvertedtothefollowing	1
	ratingscale:	
	□ 1 - Very Poor (>5)	
Pot Holes	□ 2 - Poor(3-5)	
	□ 3 - Fair(2)	
	□ 4 - Good(1)	
	□ 5 - Very Good(0)	
	Pavement area containing edge breaks, which is converted to the following rating scale:	3
	☐ 1-VeryPoor(>5m²)	
Edge Break	□ 2-Poor(1-5m²)	
Lage break	□ 3-Fair(0.5-1m²)	
	□ 4 - Good(0-0.5m²)	
	5 - Very Good(0m²)	
	Percentofpavementareaaffectedbycracking,which	3
	isconvertedtothefollowingratingscale:	
	□ 1-VeryPoor(>30%)	
Cracking	□ 2 - Poor(21-30%)	
0	□ 3-Fair(11-20%)	
	□ 4-Good(5-10%)	
	□ 5 - Very Good(<5%)	
	Percent of pavement area affected by disintegration, whichisconvertedtothefollowingratingscale:	2
	□ 1-VeryPoor(>50%)	
Disintegration	□ 2 - Poor(20-50%)	
Ü	□ 3-Fair(10-20%)	
	□ 4-Good(1-10%)	
	□ 5 - Very Good(<1%)	
	, , ,	

Field	Description	Example
	Percent of pavement area affected by depression, which is converted to the following rating scale:	5
	□ 1-VeryPoor(>5%)	
Depression	□ 2 - Poor(3-5%)	
	□ 3 - Fair(1-2%)	
	□ 4 - Good(0-1%)	
	□ 5 - Very Good(0)	
	Percentofpavementareaaffectedbybleeding,which isconvertedtothefollowingratingscale:	3
	□ 1-VeryPoor(>50%)	
Bleeding	□ 2 - Poor(20-50%)	
	□ 3-Fair(10-20%)	
	□ 4-Good(1-10%)	
	□ 5 - Very Good(<1%)	
	Percentofpavementareaaffectedbypatching,which isconvertedtothefollowingratingscale:	4
	□ 1-VeryPoor(>30%)	
Patching	□ 2 - Poor(16-30%)	
	□ 3-Fair(6-15%)	
	□ 4-Good(2-5%)	
	□ 5 - Very Good(<2%)	
	Condition of the drain, which is converted to the following rating scale:	2
Drain Condition	□ 1 -Poor	
	□ 2 -Fair	
	□ 3 -Good	
	Conditionoftheshoulder, which is converted to the following rating scale:	Fair
Shoulder Condition	□ 1-Poor	
	□ 2-Fair	
	□ 3-Good	
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

NHNumber	Section	Start Chainage	End Chainage	Direction	Lane Number	Ravelling	PotHoles	EdgeBreak	Cracking
NH00xx	ABC-DEF	0.000	0.500	Increasing	L1	4	4	4	4
NH00xx	ABC-DEF	0.500	1.000	Increasing	L1	4	4	4	5
NH00xx	ABC-DEF	1.000	1.500	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	1.500	2.000	Increasing	L1	5	5	5	5
NH00xx	ABC-DEF	2.000	2.500	Increasing	L1	5	5	5	5
NH00xx	ABC-DEF	2.500	3.000	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	3.000	3.500	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	3.500	4.000	Increasing	L1	5	4	3	5

NHNumber	Section	Start Chainage	End Chainage	Direction	Lane Number	Ravelling	PotHoles	EdgeBreak	Cracking
NH00xx	ABC-DEF	4.000	4.500	Increasing	L1	4	4	4	5
NH00xx	ABC-DEF	4.500	5.000	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	5.000	5.500	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	5.500	6.000	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	6.000	6.500	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	6.500	7.000	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	7.000	7.500	Increasing	L1	5	5	5	5
NH00xx	ABC-DEF	7.500	8.000	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	8.000	8.500	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	8.500	9.000	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	9.000	9.500	Increasing	L1	5	5	4	5
NH00xx	ABC-DEF	9.500	10.000	Increasing	L1	5	5	3	5

(table continued...)

Disintegration	Depression	Bleeding	Patching	Drain Condition	ShoulderCondition	Date of Survey	Latitude	Longitude
4	4	4	4	2	2	06-05-17	9.98897	78.02671
4	4	4	4	2	2	06-05-17	9.98444	78.02934
5	5	5	4	2	2	06-05-17	9.98341	78.03004
5	5	5	5	2	2	06-05-17	9.98107	78.03078
5	5	5	5	2	2	06-05-17	9.96328	78.04160
5	5	5	5	2	2	06-05-17	9.95385	78.05255
5	5	5	5	2	3	06-05-17	9.93102	78.05648
4	4	4	4	2	3	06-05-17	9.91229	78.04961
4	4	4	4	2	2	06-05-17	9.89041	78.03458
5	5	5	5	2	2	06-05-17	9.88489	78.02995
5	5	5	5	2	2	06-05-17	9.87474	78.02828
5	5	5	5	2	2	06-05-17	9.87363	78.02744
5	5	5	5	2	2	06-05-17	9.84857	78.01535
5	5	5	5	2	2	06-05-17	9.83764	78.00392
5	5	5	5	2	2	06-05-17	9.83711	77.98576
5	5	5	5	1	2	06-05-17	9.83386	77.97729
5	5	5	5	2	2	06-05-17	9.81804	77.97875
5	5	5	5	2	2	06-05-17	9.77426	77.98129
5	4	4	4	2	2	06-05-17	9.73071	77.97999
5	5	5	3	2	2	06-05-17	9.68686	77.97017

2.2 Roughness

The following table lists the fields which need to be populated for the 'Roughness' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsof section	HYD-VIJ (Hyderabad- Vijayawada)

Field	Description	Example
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Lwplri	International roughness index (IRI) of left wheel path measured from laser profilometer	2.33
Rwplri	Internationalroughnessindex(IRI)ofrightwheelpath measured from laserprofilometer	1.97
Lanelri	Average of the International roughness index (IRI) of left and right wheel paths	2.15
Speed	Speed of vehicle in km/h	42
Survey Date	Date of survey in the format <dd-mm-yyyy></dd-mm-yyyy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

NH Number	Section Code	Start Chainage	End Chainage	Direction	Lane Number	Lwplri	Rwplri	Lanelri	Speed	Survey Date	Latitude	Longitude
NH00xx	ABC- DEF	0.0	0.1	Increasing	L1	3.31	5.16	4.24	20	06-05- 17	9.98897	78.02671
NH00xx	ABC- DEF	0.1	0.2	Increasing	L1	2.81	3.54	3.18	37	06-05- 17	9.98444	78.02934
NH00xx	ABC- DEF	0.2	0.3	Increasing	L1	2.31	1.92	2.12	42	06-05- 17	9.98341	78.03004
NH00xx	ABC- DEF	0.3	0.4	Increasing	L1	2.17	2.37	2.27	46	06-05- 17	9.98107	78.03078
NH00xx	ABC- DEF	0.4	0.5	Increasing	L1	2.11	1.72	1.92	42	06-05- 17	9.96328	78.04160
NH00xx	ABC- DEF	0.5	0.6	Increasing	L1	2.33	1.97	2.15	49	06-05- 17	9.95385	78.05255
NH00xx	ABC- DEF	0.6	0.7	Increasing	L1	2.37	2.00	2.19	42	06-05- 17	9.93102	78.05648
NH00xx	ABC- DEF	0.7	0.8	Increasing	L1	2.15	2.17	2.16	33	06-05- 17	9.91229	78.04961
NH00xx	ABC- DEF	0.8	0.9	Increasing	L1	2.45	2.05	2.25	32	06-05- 17	9.89041	78.03458
NH00xx	ABC- DEF	0.9	1.0	Increasing	L1	2.18	2.51	2.35	48	06-05- 17	9.88489	78.02995

2.3 Rutting

The following table lists the fields which need to be populated for the 'Rutting' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Codeindicatingstartingandendinglocationsofsection	HYD-VIJ (Hyderabad- Vijayawada)
Start Chainage	Chainage of the start point (in km)	0.500

Field	Description	Example
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Lane Number	Numberofthelane:L1,L2,R1,R2,etc.,L1being1stlan eontheleftfromcentrelineofcarriageway,L2being 2ndlaneontheleftfromcenterlineandsoon	L1
Rutting Left	Rut depth in mm, measured from left wheel path	20
Rutting Right	Rut depth in mm, measured from left wheel path	18
Rutting Avg	Average rut depth measured from left and right wheel paths	19
Speed	Speed of vehicle in km/h	42
Survey Date	Date of survey in the format <dd-mm-yyyy></dd-mm-yyyy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

NH Number	Section Code	Start Chainage	End Chainage	Direction	Lane Number		Rutting Right		Speed	Survey Date	Latitude	Longitude
NH00xx	ABC- DEF	0.0	0.5	Increasing	L1	15	14	15	20	06-05- 17	9.98897	78.02671
NH00xx	ABC- DEF	0.5	1.0	Increasing	L1	20	18	19	37	06-05- 17	9.98444	78.02934
NH00xx	ABC- DEF	1.0	1.5	Increasing	L1	10	8	9	42	06-05- 17	9.98341	78.03004
NH00xx	ABC- DEF	1.5	2.0	Increasing	L1	5	6	6	46	06-05- 17	9.98107	78.03078
NH00xx	ABC- DEF	2.0	2.5	Increasing	L1	10	10	10	42	06-05- 17	9.96328	78.04160
NH00xx	ABC- DEF	2.5	3.0	Increasing	L1	7	5	6	49	06-05- 17	9.95385	78.05255
NH00xx	ABC- DEF	3.0	3.5	Increasing	L1	20	18	19	42	06-05- 17	9.93102	78.05648
NH00xx	ABC- DEF	3.5	4.5	Increasing	L1	5	5	5	33	06-05- 17	9.91229	78.04961
NH00xx	ABC- DEF	4.5	5.0	Increasing	L1	5	5	5	32	06-05- 17	9.89041	78.03458

2.4 TextureDepth

The following table lists the fields which need to be populated for the 'Texture Depth' attribute. The descriptions of the fields are given below.

Field	Description	Example			
NH Number	New National Highway number	NH0065			
Section Code	Codeindicatingstartingandendinglocationsofsection	HYD-VIJ (Hyderabad- Vijayawada)			
Start Chainage	Chainage of the start point (in km)	0.500			

Field	Description	Example
End Chainage	Chainage of the end point (in km)	1.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Lane Number	Numberofthelane:L1,L2,R1,R2,etc.,L1being1stlan eontheleftfromcentrelineofcarriageway,L2being 2ndlaneontheleftfromcenterlineandsoon	L1
Texture Left	Texturedepthofpavementinmm,measuredfromleft wheelpath	0.40
Texture Right	Texturedepthofpavementinmm,measuredfromleft wheelpath	0.30
Texture Average	Averagetexturedepthmeasuredfromleftandright wheelpaths	0.35
Speed	Speed of vehicle in km/h	42
Survey Date	Date of survey in the format <dd-mm-yyyy></dd-mm-yyyy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference:

NH Number	Section Code	Start Chainage	End Chainage	Direction	Lane Number	Texture Left	Texture Right	Texture Average	Speed	Survey Date	Latitude	Longitude
NH00xx	ABC- DEF	0.0	0.5	Increasing	L1	0.40	0.30	0.35	20	06-05- 17	9.98897	78.02671
NH00xx	ABC- DEF	0.5	1.0	Increasing	L1	0.60	0.50	0.55	37	06-05- 17	9.98444	78.02934
NH00xx	ABC- DEF	1.0	1.5	Increasing	L1	0.80	0.90	0.85	42	06-05- 17	9.98341	78.03004
NH00xx	ABC- DEF	1.5	2.0	Increasing	L1	0.40	0.40	0.4	46	06-05- 17	9.98107	78.03078
NH00xx	ABC- DEF	2.0	2.5	Increasing	L1	0.30	0.30	0.3	42	06-05- 17	9.96328	78.04160
NH00xx	ABC- DEF	2.5	3.0	Increasing	L1	0.70	0.60	0.65	49	06-05- 17	9.95385	78.05255
NH00xx	ABC- DEF	3.0	3.5	Increasing	L1	0.40	0.50	0.45	42	06-05- 17	9.93102	78.05648
NH00xx	ABC- DEF	3.5	4.5	Increasing	L1	0.90	0.80	0.85	33	06-05- 17	9.91229	78.04961
NH00xx	ABC- DEF	4.5	5.0	Increasing	L1	0.40	0.30	0.35	32	06-05- 17	9.89041	78.03458

2.5 SkidResistance

The following table lists the fields which need to be populated for the 'Skid Resistance' attribute. The descriptions of the fields are given below.

Field	Description	Example		
NH Number	New National Highway number	NH0065		
Section Code	Codeindicatingstartingandendinglocationsofsection	HYD-VIJ Vijayawada)	(Hyderabad-	

Field	Description	Example
Start Chainage	Chainage of the start point (in km)	0.500
End Chainage	Chainage of the end point (in km)	1.500
D: 4:	Direction of survey	Increasing
Direction	Increasing(chainage)Decreasing(chainage)	
Lane Number	Numberofthelane:L1,L2,R1,R2,etc.,L1being1stlan eontheleftfromcentrelineofcarriageway,L2being 2ndlaneontheleftfromcenterlineandsoon	L1
Skid Left	Skid resistance of pavement measured as skid number, measured from left wheel path	25
Skid Right	Skidresistanceofpavementmeasuredasskid number,measuredfromleftwheelpath	24
Skid Average	Average skid resistance measured from left and right wheel paths	24.5
Speed	Speed of vehicle in km/h	42
Survey Date	Date of survey in the format <dd-mm-yyyy></dd-mm-yyyy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference:

NH Number	Section Code	Start Chainage	End Chainage	Direction	Lane Number	Skid Left	Skid Right	Skid Average	Speed	Survey Date	Latitude	Longitude
NH00xx	ABC- DEF	0.0	0.5	Increasing	L1	25.0	24.0	24.5	20	06-05- 17	9.98897	78.02671
NH00xx	ABC- DEF	0.5	1.0	Increasing	L1	23.0	23.0	23.0	37	06-05- 17	9.98444	78.02934
NH00xx	ABC- DEF	1.0	1.5	Increasing	L1	23.0	24.0	23.5	42	06-05- 17	9.98341	78.03004
NH00xx	ABC- DEF	1.5	2.0	Increasing	L1	22.0	22.0	22.0	46	06-05- 17	9.98107	78.03078
NH00xx	ABC- DEF	2.0	2.5	Increasing	L1	20.0	21.0	20.5	42	06-05- 17	9.96328	78.04160
NH00xx	ABC- DEF	2.5	3.0	Increasing	L1	24.0	24.0	24.0	49	06-05- 17	9.95385	78.05255
NH00xx	ABC- DEF	3.0	3.5	Increasing	L1	28.0	28.0	28.0	42	06-05- 17	9.93102	78.05648
NH00xx	ABC- DEF	3.5	4.5	Increasing	L1	21.0	21.0	21.0	33	06-05- 17	9.91229	78.04961
NH00xx	ABC- DEF	4.5	5.0	Increasing	L1	25.0	24.0	24.5	32	06-05- 17	9.89041	78.03458

2.6 Falling Weight Deflectometer(FWD)

The following table lists the fields which need to be populated for the 'FWD' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065

Field	Description	Example
Section Code	Code indicating starting and ending locations of section	HYD-VIJ (Hyderabad- Vijayawada)
Chainage	Chainage of survey point (in km)	0.500
Direction	Direction of survey Increasing(chainage) Decreasing(chainage)	Increasing
Lane Number	Numberofthelane:L1,L2,R1,R2,etc.,L1being1stlaneonthe leftfromcentrelineofcarriageway,L2being2ndlaneontheleft from centerline and soon	L1
Air Temperature	Air temperature recorded in °C	33
Surface Temperature	Temperature of the pavement surface, recorded in °C	39.3
Peak Load	Peak impulse load, measured in kN	45.7
Deflection0	Surfacedeflectionatthetestloadcenter, measured in micron	246
Deflection1	Surface deflection at location 1 from the test load center, measured in micron	110
Distance1	Distance of location 1 from the test load center	300
Deflection2	Surface deflection at location 2 from the test load center, measured in micron	153
Distance2	Distance of location 2 from the test load center	600
Deflection3	Surface deflection at location 3 from the test load center, measured in micron	110
Distance3	Distance of location 3 from the test load center	900
Deflection4	Surface deflection at location 4 from the test load center, measured in micron	76
Distance4	Distance of location 4 from the test load center	1200
Deflection5	Surface deflection at location 5 from the test load center, measured in micron	59
Distance5	Distance of location 5 from the test load center	1500
Deflection6	Surface deflection at location 6 from the test load center, measured in micron	44
Distance6	Distance of location 6 from the test load center	1800
Deflection7	Surface deflection at location 7 from the test load center, measured in micron	35
Distance7	Distance of location 7 from the test load center	2100
Deflection8	Surface deflection at location 8 from the test load center, measured in micron	28
Distance8	Distance of location 8 from the test load center	2400
Elastic Modulus BituminousE1	Elastic modulus of bituminous layer, back calculated in MPa	3359
Elastic Modulus GranularE2	Elastic modulus of granular layer, backcalculated in MPa	396
Elastic Modulus SubGradeE3	Elastic modulus of subgrade, back calculated in MPa	90

Field	Description	Example
Corrected Elastic Modulus BituminousE1	Corrected elastic modulus of bituminous layer in MPa	3424
Corrected Elastic Modulus GranularE2	Corrected elastic modulus of granular layer in MPa	300
CorrectedElasticModul usSubGradeE3	Corrected elastic modulus of subgrade in MPa	69
Bituminous Layer	Thickness of bituminous layer in mm	105
Base Layer	Thickness of base layer in mm	230
GSB Layer	Thickness of GSB layer in mm	200
Subgrade CBR	CBR of subgrade	0.08
BituminousLayerCoefficie ntA1	Layer coefficient of the bituminous layer	0.36
BaseLayerCoefficientA 2	Layer coefficient of the base layer	0.17
GranularBaseLayerCoeffi cientA3	Layer coefficient of the GSB layer	0.17
Structural Number	Structural number of the pavement	3.86
Modified Structural Number	Modifiedstructuralnumberincludingcontributionfromsubgrade	4.85
Survey Date	Date of survey in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference:

NH Numbe r	Sectio n Code	Chainag e	Directio n	Lane Numbe r	Air Temperatur e	Surface Temperatur e	Pea k Loa d	Deflection	Deflection 1	Locatio n 1	Deflection 2
NH00xx	ABC- DEF	0.500	RHS	R2	32.6	43.7	45.7	333	188	300	243
NH00xx	ABC- DEF	1.000	LHS	L1	29.9	32.6	45.4	317	163	300	217
NH00xx	ABC- DEF	1.499	RHS	R1	33.0	39.3	45.7	246	110	300	153
NH00xx	ABC- DEF	2.000	LHS	L2	28.7	32.4	46.0	293	130	300	187
NH00xx	ABC- DEF	2.500	RHS	R2	33.7	45.8	45.3	429	232	300	316
NH00xx	ABC- DEF	3.000	LHS	L1	29.0	33.0	45.7	343	204	300	252
NH00xx	ABC- DEF	3.500	RHS	R1	33.5	45.4	44.5	373	194	300	268
NH00xx	ABC- DEF	4.010	LHS	L2	28.9	33.5	45.0	348	201	300	254
NH00xx	ABC- DEF	4.500	RHS	R2	33.3	40.3	46.0	393	241	300	301

(table continued...)

Locatio n 2	Deflection 3	Locatio n 3	Deflection 4	Locatio n 4	Deflection 5	Locatio n 5	Deflection 6	Locatio n 6	Deflection 7	Locatio n 7	Deflection 8
600	180	900	128	1200	102	1500	75	1800	58	2100	42
600	158	900	104	1200	70	1500	48	1800	38	2100	28
600	110	900	76	1200	59	1500	44	1800	35	2100	28
600	126	900	81	1200	62	1500	44	1800	32	2100	23
600	227	900	152	1200	116	1500	86	1800	71	2100	58
600	196	900	144	1200	117	1500	85	1800	65	2100	48
600	187	900	118	1200	83	1500	47	1800	31	2100	22
600	198	900	135	1200	105	1500	64	1800	42	2100	26
600	231	900	162	1200	123	1500	82	1800	62	2100	46

(table continued...)

Loca tion 8				CorrectedElastic ModulusBitumin ousE1					GS BLa	3
2400	6213	185	100	6447	135	78	105	230	200	0.08
2400	5356	195	100	5295	143	78	105	230	200	0.08
2400	3359	396	90	3424	300	69	105	230	200	0.08
2400	4830	226	100	4770	169	78	105	230	200	0.08
2400	4570	137	97	4781	93	75	105	230	200	0.08
2400	8454	135	100	8374	91	78	105	230	200	0.08
2400	4394	165	100	4590	117	78	105	230	200	0.08
2400	7817	139	96	7762	95	74	105	230	200	0.08
2400	7666	123	95	7847	81	73	105	230	200	0.08

(table continued...)

Bituminous Layer Coefficient A1	Base Layer CoefficientA2	Granular Base Layer Coefficient A3	Structural Number	Modified Structural Number	Survey Date	Latitude	Longitude
0.45	0.13	0.13	3.68	4.82	01-07-16	9.98897	78.02671
0.42	0.13	0.13	3.56	4.70	23-06-16	9.98444	78.02934
0.36	0.17	0.17	3.86	4.85	01-07-16	9.98341	78.03004
0.41	0.14	0.14	3.65	4.79	23-06-16	9.98107	78.03078
0.41	0.11	0.11	3.24	4.34	01-07-16	9.96328	78.04160
0.49	0.11	0.11	3.58	4.72	23-06-16	9.95385	78.05255
0.40	0.12	0.12	3.34	4.48	01-07-16	9.93102	78.05648
0.48	0.12	0.12	3.67	4.75	23-06-16	9.91229	78.04961
0.48	0.11	0.11	3.53	4.59	01-07-16	9.89041	78.03458

2.7 Falling Weight Deflectometer (FWD)Rigid

The following table lists the fields which need to be populated for the 'FWD Rigid' attribute. The descriptions of the fields are given below.

Field	Description	Example
NH Number	New National Highway number	NH0065
Section Code	Code indicating starting and ending locations of section	HYD-VIJ (Hyderabad- Vijayawada)
Chainage	Chainage of the point (in km)	0.500
-	Direction of survey	Increasing
Direction	Increasing(chainage)Decreasing(chainage)	
Lane Number	Number of the lane: L1, L2, R1, R2, etc.	L2
Air Temperature	Air temperature recorded in °C	30.1
Surface Temperature	Temperature of the pavement surface, recorded in °C	39.4
Peak Load	Peak impulse load, measured in kN	103.7
Deflection1	Surfacedeflectionatthetestloadcenter,measuredinmicron	140
Deflection2	Surfacedeflectionat300mmfromthetestloadcenter,measured inmicron	121
Deflection3	Surfacedeflectionat600mmfromthetestloadcenter,measured inmicron	108
Deflection4	Surfacedeflectionat900mmfromthetestloadcenter,measured inmicron	101
Concrete Slab Thicknessh	Thickness of concrete slab, measured in mm	300
Area of Deflection Basin	Areaofdeflectionbasin,calculatedfrommeasureddeflections,in cm ²	761
Radius of Relative Stiffness	Radius of relative stiffness, calculated in mm	823
NormalizedDeflectiond 1	Normalized deflection at location 1, in mm	3.1
NormalizedDeflectiond 2	Normalized deflection at location 2, in mm	2.9
NormalizedDeflectiond 3	Normalized deflection at location 3, in mm	2.4
NormalizedDeflectiond 4	Normalized deflection at location 4, in mm	1.9
Modulus of Subgrade Reaction k	Modulus of subgrade reaction, measured in MPa/m	131
Elastic Modulus of Concrete Ec	Elastic modulus of concrete, calculated in MPa	26118
Cube Strength of Concrete fck	Cube strength of concrete, calculated inMPa	27
Flexural strength of concrete fmr	Flexural strength of concrete, calculated in MPa	3.7
Date Of Testing	Date of testing in the format <dd-mm-yy></dd-mm-yy>	06-05-17
Latitude	Latitude of survey point	9.98897
Longitude	Longitude of survey point	78.02671

A sample output is shown below for reference:

NHNo	Sectio n Code	Chain - -age	Directio n	Lan e No.	Air Temperatur e	Surface Temperatur e	Pea k Loa d		Deflectio n 2	Deflectio n 3	Deflectio n 4	Concrete Slab Thickness h
NH00x x	ABC- DEF	0.0	LHS	L2	29.0	34.9	104. 1	167	143	130	119	300
NH00x x	ABC- DEF	0.5	RHS	R2	30.5	38.1	104. 4	141	130	122	115	300
NH00x x	ABC- DEF	1.0	LHS	L1	30.0	35.6	105. 2	147	111	100	91	300
NH00x x	ABC- DEF	1.5	RHS	R1	28.9	38.3	102. 4	140	126	116	107	300
NH00x x	ABC- DEF	2.0	LHS	L2	30.1	39.4	103. 7	140	121	108	101	300
NH00x x	ABC- DEF	2.5	RHS	R2	29.0	37.5	104. 6	150	134	126	117	300
NH00x x	ABC- DEF	3.0	LHS	L1	30.6	38.9	102. 7	124	109	104	92	300
NH00x x	ABC- DEF	3.5	RHS	R1	29.3	39.1	105. 9	149	136	128	119	300
NH00x x	ABC- DEF	4.5	RHS	R2	30.3	41.0	104. 9	138	127	121	114	300

(table continued...)

Area of Deflecti on Basin	Radius of Relative S tiffness	Pd	Normaliz ed Deflectio n d2	Normaliz ed Deflectio n d3	Normaliz ed Deflectio n d4	Subgra	Elastic Modulu s of Concre teEc	Strengt h of	Flexura I strengt hof concre tefmr	Date	Latitu de	Longitu de
759	816	3	3	2	2	112	21590	19	3	25-06- 16	9.9889 7	78.0267 1
821	1214	3	3	3	2	62	58161	135	8	28-06- 16	9.9844 4	78.0293 4
684	580	3	3	2	1	246	12051	6	2	25-06- 16	9.9834 1	78.0300 4
796	1014	3	3	3	2	87	39783	63	6	28-06- 16	9.9810 7	78.0307 8
761	823	3	3	2	2	131	26118	27	4	25-06- 16	9.9632 8	78.0416 0
800	1040	3	3	3	2	79	39908	64	6	28-06- 16	9.9538 5	78.0525 5
789	971	3	3	3	2	107	41290	68	6	25-06- 16	9.9310 2	78.0564 8
814	1150	3	3	3	2	66	50086	100	7	28-06- 16	9.9122 9	78.0496 1
826	1257	3	3	3	2	59	64082	164	9	28-06- 16	9.8904 1	78.0345 8

SECTION 7: DRAFT FORM OF CONTRACT

Note: This draft Agreement is a generic document and shall be modified based on particular of the Project.

CONTRACT FOR CONSULTANT'S SERVICES

Between	
(Name of Client)	
And	
(Name of Consultant)	
Dated:	

CONTENTS

Page No.

I.	FORM OF C	NTRACT				
II	GENERALC	ONDITIONSOFCONTRACT				
	1. Genera	al Provisions				
	1.1 Defini	tions				
	1.2 Relation	on between theParties				
	1.3 Law G	overning theContract				
	1.4 Langu	age				
	1.5 Headi	ngs				
	1.6 Notice	S				
	1.7 Locati	on				
	1.8 Autho	rity of Member incharge				
	1.9 Autho	rizedRepresentatives				
	1.10 Taxes	andDuties				
	2. Comm	encement, Completion, Modification, and Termination ofContract				
	2.1	Effectiveness of Contract				
	2.2	Termination of Contract for Failure to BecomeEffective				
	2.3	Commencement of Services				
	2.4	Expiration of Contract				
	2.5	EntireAgreement				
	2.6	Modification				
	2.7	ForceMajeure				
	2.7.1	Definition				
	2.7.2	No Breach of Contract				
	2.7.3	Measures to betaken				
	2.7.4	Extension of Time				
	2.7.5	Payments				
	2.7.6	Consultation				
	2.8	Suspension				
	2.9	Termination				
	2.9.1	By the Client				
	2.9.2	By the Consultants				
	2.9.3	Cessation of Rights and Obligations				
	2.9.4	Cessation of Services				
	2.9.5	Payment upon Termination				
	2.9.6	Disputes about Events of Termination				
3.	Oblig	ations of the Consultants				
		3.1 General				
		3.1.1 Standard of Performance				
		3.1.2 Law Governing Services				

		3.2	Conflict of Interests
			3.2.1 Consultants not to Benefit from Commissions,
			Discounts, etc
			3.2.2 Procurement Rules of FundingAgencies
			3.2.3 Consultants and Affiliates Not to Engage in certain
			Activities
			3.2.4 Prohibition of Conflicting Activities
		3.3	Confidentiality
		3.4	Liability of the Consultants
		3.5	Insurance to be Taken out by the Consultants
		3.6	Accounting, Inspection and Auditing
		3.7	Consultant's Actions requiring Client's priorApproval
		3.8	Reporting Obligations
		3.9	Documents prepared by the Consultants
			To Be the Property of the Client
		3.10	Equipment and Materials Furnished by theClient
4.	Consu	ıltants' Pe	rsonnel and Sub-consultants
		4.1	General
		4.2	Description of Personnel
		4.3	Approval of Personnel
		4.4	Working Hours, Overtime, Leaveetc.
		4.5	Removal and /or Replacement of Personnel
		4.6	Resident Project Manager
5.	Obliga	ations of t	he Client
		5.1	Assistance and Exemptions
		5.2	Access to Land
		5.3	Change in the Applicable Law
		5.4	Services, Facilities and Property of the Client
		5.5	Payment
		5.6	CounterpartPersonnel
6.	Paym	ents to the	e Consultants
	6.1		stimates, Ceiling Amount
	6.2	Remun	eration and ReimbursableExpenditures
	6.3		cy of Payment
	6.4		of Billing and Payment
7.	Fairne	ess and Go	oodFaith
	7.1.	GoodFa	
	7.2.	-	ion of theContract
8.1.		ableSettlei	
8.2.	Dispu	teSettlem	ent
III	SPECI	AL CONDI	TIONS OF CONTRACT

IV **APPENDICES** Page No. AppendixA **Description of the Services.....** AppendixB : Reporting Requirements AppendixC **Key Personnel and Sub-consultants** AppendixD Medical Certificate AppendixE Hours of Work for Key Personnel...... Duties of the Client AppendixF AppendixG: **Cost Estimates** AppendixH Form of Performance Bank Guarantee AppendixI Form of Bank Guarantee for Advance Payments AppendixJ Letter ofinvitation Letter of Award AppendixK AppendixL Minutes of pre-bid meeting..... Appendix-M: Memorandum of Understanding (in case of JV) Appendix-N: **Format for Bid Security** ANNEXURES..... V

FORM OFCONTRACT

COMPLEX TIME BASED ASSIGNMENTS

1.

			_(hereinafter called"Cor	nsultants")]
				and
obligations	under	this	Contract,	namely,
followingentities,e	,		and, a joint venture co etotheClientforalltheCons	sultants'
[Note*: If the Consamended to read o	•	ore than one entity	v, the above should be pa	rtially
"Client) and, on the	otherhand	hereinaft	er called the"Consultant	ts")
, 201, betv	veen, on theone han	d	(hereinafter Ca	alled the
This CONTRACT (n	ereinafter called the	e Contract Jisma	aetneaay of the M	lonthof

WHEREAS

- (a) the Client has requested the Consultants to provide certain consulting services as defined in the General Conditions of Contract attached to this Contract (hereinafter called the "Services");
- (b) the Consultants, having represented to the Client that they have the required processional skills ,and 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:

[Note: If any of these Appendices are not used, the words "Not Used" should be inserted below next to the title of the Appendix on the sheet attached hereto carrying the title of that Appendix].

AppendixA: Description of the Services

AppendixB: Reporting Requirements

AppendixC: Key Personnel and Sub-consultants

AppendixD : Medical Certificate

AppendixE : Hours of Work for Key Personnel

AppendixF : Duties of theClient

AppendixG : Cost Estimates

AppendixH : Form of Performance Bank Guarantee

AppendixI : Form of Bank Guarantee for Advance Payments

AppendixJ : Letter of invitation

Appendix K: Letter of Award

Appendix-L : Minutes of pre-Bid Meeting

Appendix-M : Memorandum of Understanding (in case of JV)

- 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) The 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 [NAME OF THE CLIENT]

Ву

(Authorized Representative)

FOR AND ON BEHALF OF [NAME OF THE CONSULTANTS]

By

(Authorized Representative)

[Note: If the Consultants consist of more than one entity, all of these entities should appear as signatures, e.g. in the following manner]

FOR AND ON BEHALF OF EACH OF THE MEMBERS OF THECONSULTANTS

[Name of the Member]

By

(Authorized Representative)

[Name of the Member]

Ву

(Authorized Representative)

Page 194 of 238

GENERALCONDITIONS OF CONTRACT

1. GeneralProvisions

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

1.1 Definitions

- (a) "ApplicableLaw" meansthelaws and any other instruments having the force of law in the Government's country [or in such other country as may be specified in the Special Conditions of Contract (SC)], as they may be is sued and inforce 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 signedContract;
- (c) "Effective Date' means the date on which this Contract comes into force and effect pursuant to Clause GC2.1;
- (d) 'foreign currency' means any currency other than the currency of the Government;
- (e) 'GC means these General Conditions of Contract;
- (f) "Government" means the Government of Client's Country;
- (g) 'Local currency' means the IndianRupees;
- (h) "Consultant" wherever mentioned in this Contract Agreement means the "Authority Engineer (AE)" and includes sub-consultants or Associates engaged by the primaryconsultant.
- (i) "Member", in case the Consultants consist of a joint venture of more than one entity, means any of these entities, and "Members" means all of these entities;
- (j) "Party' means the Client or the Consultants, as the case may be, and Parties means both ofthem;
- (k) "Personnel" meanspersonshired by the Consultants or by any Sub-Consultants and or Associates 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 the Government's Country, "Local Personnel" means such persons who at the time of being so hired had their domicile inside the Government's Country; and 'key personnel' means the personnel referred to in Clause GC 4.2 (a).
- (l) "SC" means the Special Conditions of Contract by which these General Conditions of Contract may be amended or supplemented;
- (m) "Services" means the work to be performed by the Consultants pursuant to his contract, as described in Appendix A hereto. The scope of work will be strictly as given in various Clauses in TOR. The approach and methodology tobeadopted by the Consultant for carrying out the assignment as Authority

Engineer may be modified depending on the site requirements and work programmeofthe EPC Contractor aftermutual discussions with Employer, the EPC Contractor and the Authority Engineer. The work plan as indicated by the Consultant may be modified accordingly to the site requirements.

- (n) "Sub-Consultant and or Associates "means any entity to which the Consultants subcontractanypartoftheServicesinaccordancewiththeprovisionsofClause GC 3.7; and
- (o) "Third Party" means any person or entity other than the Government, the Client, the Consultants or aSub-consultant.

1.2 Relation between the Parties

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

1.3 Law GoverningContract

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

1.4 Language

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

1.5 Headings

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

1.6 Notices

- 1.6.1 Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative ofthePartytowhomthecommunicationisaddressed,orwhensentbyregisteredmail, telegram or facsimile to such Party at the address specified in theSC.
- 1.6.2 Notice will be deemed to be effective as specified in the SC.
- 1.6.3 APartymaychangeitsaddressfornoticehereunderbygivingtheotherPartynoticeof suchchangepursuanttotheprovisionslistedintheSCwithrespecttoClauseGC1.6.2.

1.7 Location

TheServicesshallbeperformedatsuchlocationsasarespecifiedinAppendixAhereto and,wherethelocationofaparticulartaskisnotsospecified,atsuchlocationswhether Government's Country or elsewhere, as the Client mayapprove.

1.8 Authority of Member inCharge

IncasetheConsultantsconsistofajointventureofmorethanoneentity,theMembers herebyauthorizetheentityspecifiedintheSCtoactontheirbehalfinexercisingallthe Consultants' rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from theClient.

1.9 AuthorizedRepresentatives

Anyactionrequiredorpermittedtobetaken, and any document requiredorpermitted 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, Sub-consultants and Personnel shall pay such taxes, duties, fees and other impositions as may be levied under the Applicable Law. Goods &Service tax as applicable shall be paid to the Authority's Engineer while making payment for services rendered. The consultants shall then deposit the same with the tax authorities and provide a proof of having done so within next 90 days in line with policy circulars issued by Employer.

2. Commencement, Completion, Modification and Termination of Contract

2.1 Effectiveness of Contract

This Contract shall come into force and effect on the date (the" Effective 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 BecomeEffective

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 Partyshall have any claim against the other Party with respecthereto.

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 GC2.9 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 EntireAgreement

ThisContractcontainsallcovenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forthherein.

2.6 Modification

ModificationofthetermsandconditionsofthisContract,includinganymodificationof thescopeoftheServices,mayonlybemadebywrittenagreementbetweentheParties asthecasemaybe,hasbeenobtained.PursuanttoClauseGC7.2hereof,however,each Partyshall givedueconsiderationtoanyproposalsformodificationmadebytheother Party.

2.7 ForceMajeure

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 governmentagencies.
- (b) Force Majeure shall not include (i) any event which is caused by the negligenceorintentionalactionofapartyorsuchParty'sSub-consultantsor agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both(A) take in to 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 requiredhereunder.

2.7.2 No Breach of Contract

The failure of a Party to fulfill any of its obligations hereunder shall not be considered tobeabreachof, or default under, this Contractins of arassuchinability 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 betaken

(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 ofdelay.

- (b) APartyaffectedbyaneventofForceMajeureshallnotifytheotherParty ofsucheventassoonaspossible,andinanyeventnotlaterthanfourteen (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 ForceMajeure.

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.

Extension of Time for providing Services of the Authority's Engineer may be extended concurrently with the Extension of Time granted, if any, to the EPC Contractor for the project, subject to satisfactory performance of the Authority's Engineer and limited to original period of consultancy and limited services.

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 theClient

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(h)of this Clause GC

2.9.1, terminate this Contract.

- (a) iftheConsultantsfailtoremedyafailureintheperformanceoftheirobligations hereunder, as specified in a notice of suspension pursuant to Clause GC 2.8 herein above, 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 become (or, if the Consultants consist of more than one entity, if any of their Members becomes) in solvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;
- (c) If the Consultants fail to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GC 8hereof;
- (d) 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 befalse;
- (e) if, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or
- (f) if the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.
- (g) if the consultant, in the judgment of the Client has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. For the purpose of this clause:

"corruptpractice"meanstheoffering,giving,receivingorsolicitingofanything 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 prices at artificial non-competitivelevelsandtodeprivetheBorrowerofthebenefitsoffreeandopencomp etition.

(h) if EPCC ontractor represents to Employer that the Consultant is not discharging his duties in a fair, efficient and diligent manner and if the dispute remains unresolved, Employer may terminate this contract.

2.9.2 By the Consultants

TheConsultantsmay,bynotlessthanthirty(30)days'writtennoticetotheClient,such notice to be given after the occurrence of any of the events specified in paragraphs (a)

through (d) of this Clause GC2.9.2, 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 isoverdue;
- (b) iftheClientisinmaterialbreachofitsobligationspursuanttothisContractand 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 suchbreach;
- (c) 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
- (d) if the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GC 8hereof.

2.9.3. Cessation of Rights and Obligations

Upontermination of this Contract pursuant to Clause GC 2.2 or GC2.9 hereof, or upon expiration of this Contract pursuant to Clause GC2.4 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 GC 3.3hereof;
- (iii) the Consultants' obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GC 3.6 (ii) hereof;and
- (iv) any right which a Party may have under the ApplicableLaw

2.9.4 Cessation of Services

Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GC2.9.1 or GC2.9.2 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 tokeep 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 GC 3.9 or GC 3.10 hereof.

2.9.5 Payment uponTermination

Upon termination of this Contract pursuant to Clauses GC 2.9.1 or GC 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):

(a) remuneration pursuant to Clause GC 6 hereof for Services satisfactorily Page **201** of **238**

performed prior to the effective date oftermination;

- (b) reimbursable expenditures pursuant to Clause GC 6 hereof for expenditures actually incurred prior to the effective date of termination; and
- (c) except in the case of termination pursuant to paragraphs (a) through(d) of Clause GC2.9.1 hereof, reimbursement of any reasonable cost incident to the promptandorderlyterminationoftheContractincludingthecostofthereturn travel of the Consultants' personnel and their eligibledependents.

2.9.6. Disputes about Events of Termination

If either Party disputes whether an event specified in paragraphs (a) through (e) of Clause GC 2.9.1 or in Clause GC2.9.2 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 GC8 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. Obligation of the Consultants

3.1 General

3.1.1. Standard of Performance

The Consultants shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professionaltechniquesandpractices, and shall observes ound management practices, and employ appropriate advanced technology and safe and effective equipment, machinery, materials and methods "The Consultants shall always" act, in respecto fany matter relating to this Contractor 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 GoverningServices

The Consultants shall perform the Services in accordance with the Applicable Law and shalltakeallpracticablestepstoensurethatanySub-consultantsandorAssociates,as well as the Personnel of the Consultants and any Sub-consultants andor Associates,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 ofInterests

3.2.1 Consultants Not to Benefit from Commissions, Discounts, etc.

The Remuneration of the Consultants pursuant to Clause GC6 hereof shall constitute the Consultants' sole remuneration in connection with this Contract or the Services and, subject to ClauseGC3.2.2 hereof, 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 Subconsultants and or Associates, as well as the Personnel and agents of either of them, similarly shall not receive any such additional remuneration.

3.2.2 IftheConsultants,aspartoftheServices,havetheresponsibilityofadvisingtheClient ontheprocurementofgoods,worksorservices,theConsultantsshallcomplywithany applicableprocurementguidelinesoftheClient(Employer)andorAssociatesBankor oftheAssociation,asthecasemaybe,andotherfundingagenciesandshallatalltimes exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultants in the exercise of such procurement responsibility shall be for the account of theClient.

3.2.3 Consultants and Affiliates Not to engage in CertainActivities

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 or Associates and any entity affiliated with such Sub Consultant and or Associates, 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 ConflictingActivities

The Consultants shall not engage, and shall cause their Personnel as well as their Subconsultants and or Associates and their Personnel not to 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; and
- (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 relating 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 theConsultants

TheConsultants(i)shalltakeoutandmaintain,andshallcauseanySub-consultantsto 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

coverages, as shall be specified in the 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 andcost, and the basesthereof (including such bases as may be specifically referred to in the SC); (ii) shall permit the Clientorits designated representative periodically, and up to one year from the expiration or termination of this Contract, to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the Client; and (iii) shall permit the client to inspect the Consultant saccounts 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 PriorApproval

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 'C' ("Consultants' Sub-consultants' Key Personnel") merely by title but not by name;
- (b) entering into a subcontract for the performance of any part of the Services, it beingunderstood(i)thattheselectionoftheSub-Consultantandthetermsand conditionsofthesubcontractshallhavebeenapprovedinwritingbytheClient prior to the execution of the subcontract, and (ii) that the Consultants shall remain fully liable for the performance of the Services by the Sub-Consultant and its Personnel pursuant to this Contract; and
- (c) any other action that may be specified in the SC

3.8 ReportingObligations

The Consultants shall submit to the Client the reports and documents specified in Appendix B here to, 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, other documents and software preparedbytheConsultantsfortheClientunderthisContractshallbecomeandremain thepropertyoftheClient,andtheConsultantsshall,notlaterthanuponterminationor expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultants may retain a copy of such documents and software. Restrictions about the future use of these documents and software, if any, shall be specified in theSC.

3.10 Equipment and Materials Furnished by the Client

EquipmentandmaterialsmadeavailabletotheConsultantsbytheClient,orpurchased bytheConsultantswithfundsprovidedbytheClient,shallbethepropertyOftheClient 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 instructions. While in possession of such equipment and materials, the Consultants, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacementvalue.

4. Consultants' Personnel and Sub-consultants and or Associates

4.1 General

The Consultants shall employ and provide such qualified and experienced Personnel and Sub-consultants 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 Personnel are described in Appendix C. If any of the Key Personnel has already been approved by the clients his/her name is listed as well.
- (b) If required to comply with the provisions of Clause GCC 3.1.1 hereof, adjustments with respect to the estimated periods "of engagement of Key Personnel set forth in Appendix C may be made by the Consultants by written notice to the Client, provided (i) that such adjustments shall not alter the originallyestimated periodofengagement of any individual by more than 10% or one week, which ever is larger, and (ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set for thin Clause GC 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 AppendixA, the estimated periods of engagement of KeyPersonnel set for thin Appendix C may be increased by agreement in writing between the Client and the Consultants, provided that any such increase shall not, except as otherwise agreed, cause payments under this Contract to exceed the ceilings set for thin Clause GC 6.1 (b) of this Contract.

4.3 Approval of Personnel

The Key Personnel i.e. Professional Staff and Sub-consultants listed by title as well as By name in Appendix C are hereby approved by the Client. In respect of other Key PersonnelwhichtheConsultantspropose,touseinthecarryingoutoftheServices,the Consultants shall submit to the client for review and approval a copy of their biographical data and (in the case of Key personnel to be used within the country of the Government) a copy of a satisfactory medical certificate in the form attached here to as

Appendix D. If the Client does not object in writing(stating the reasons for the objection)withinthirty(30)calendardaysfromthedateofreceiptofsuchbiographical data and (if applicable) such certificate, 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 Personnel are set forth in Appendix E 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 Ehereto.
- (b) The Personnel of all types engaged by Consultant to provide Services on this Contractshallnotbeentitledtobepaidforovertimenortotakepaidsickleave or vacation leave except as specified. InsuchAppendix,theConsultants'remunerationshallbedeemedto cover these items. All leave to be allowed to the Personnel is included in the staff-monthsofservicesetforinAppendixC. AnytakingofleavebyPersonnel shall be subject to the prior approval by the Client and the Consultants shall ensure that absence for leave purposes will not delay the progress and adequate supervision of theServices.
- (c) All key personnel and sub professional staff fo the Authority Engineer shall use the Aadhaar based biometric attendance/Geo-tagged selfie-based attendance system for marking their daily attendance. Aadhaar based Biometric attendance/ Geo-tagged selfie-based attendance shall be marked at least once a day and anytime during the day. 1 Aadhaar based biometric attendance/Geotagged selfie-based attendance system shall be installed by the Authority Engineer at its own cost at the site office in order to facilitate the attendance marking. More systems can be installed near the project highway upto a maximum of 1 system per 50 km in order to encourage frequent visits of project highway by key personnel and sub professional staff. A copy of monthly Aadhaar based biometric attendance/Geo-tagged selfie-based attendance shall be attached with Monthly Status Report. Proper justification shall be provided for cases of absence of key personnel /sub professional staff which do not have prior approval from Project Director of concerned stretch. Authority Engineer have to provide a certificate that all key personnel as envisaged in the Contract Agreement has been actually deployed in the project.
- (d) Authority Engineer will intimate concerned Project Director/Project Incharge immediately after establishing its site office regarding installation of Aadhaar based biometric attendance/Geo-tagged selfie-based attendance system and complete address of its site office.

4.5 Removal and/or Replacement of Personnel

Removal and/or replacement of Key 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 orderedbyClientwithin120daysofsigningofcontractthekeypersonnelcanexcuse themselvesonvalidgrounds,e.g.,selectiononsomeotherassignment,healthproblemdeve lopedaftersigning of contract,etc.Insuchacasenopenaltyshallbeleviedonthe 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 isordered.
- **4.5.2** In case notice to commence services is given within 120 days of signing of contract the, the Authority expects all the Key Personnel specified in the Proposal to be available during implementation of the Agreement. The Authority will not consider anysubstitutionofKeyPersonnelexceptundercompellingcircumstancesbeyondthe controlof the Consultant and the concerned Key Personnel. Such substitutions hall belimitedtonotmorethanthreeKeyPersonnelsubjecttoequallyorbetterqualifiedand experienced personnel being provided to the satisfaction of the Authority. Replacement of the Team Leader will not normally be considered and may lead to disqualificationoftheApplicantorterminationoftheAgreement.Replacementofone Key Personnel shall be permitted subject to reduction of remuneration equal to 5 % (five per cent) of the total remuneration specified for the Key Personnel who is proposed to be replaced. In case of second replacement the reduction in remuneration shall be equal to 10% (ten per cent) and for third and subsequent replacement, such reduction shall be equal to 15% (fifteen per cent) If the consultant finds that any of the personnel had made false representation regarding his qualification and experience, he may request the Employer for replacement of the personnel. There shall be no reduction in remuneration for such replacement. The replacement shall howeverbeofequalorbetterscore. The personnels or eplaced shall be debarred from future projects for 2 years.
- **4.5.4** Replacement after original contract period isover:

There shall be no limit on the replacements and no reduction in remunerations shall be made. The replacement shall however be of equal or betterscore.

- **4.5.5** 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, forthwithprovide are placement with qualifications and experience acceptable to him. For such replacement there will be no reduction in remuneration.
- **4.5.6** If any member of the approved team of a consultant engaged by NHIDCL leaves that consultant before completion of the job, he shall be barred for a period of 6 months to 18 Months from being engaged as a team member of any other consultant working (or to be appointed) for any other NHIDCL / MoRTHprojects.

4.6 Resident Team Leader and Coordinator

The person designated as the Team Leader of the Consultant's Personnel shall be responsible for the coordinated, timely and efficient functioning of the Personnel. In addition, the Consultant shall designate a suitable person from its Head Office as Project Coordinator who shall be responsible for day to day performance of the Services.

5. Obligations 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:

- (c) 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;
- (d) assist for the Personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in Government'scountry;
- (e) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Personnel and their -eligible dependents;
- (f) 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;
- (g) assist the Consultants and the Personnel and any Sub-consultants and or Associates employed by the Consultants for the Services from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity according to the ApplicableLaw;
- (h) grant to the Consultants, any Sub-consultants and or Associates and the Personnel of either of them the privilege, pursuant to the Applicable Law, of bringing into Government's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Personnel and their dependents and of withdrawing any such amounts as may be earned therein by the Personnel in the execution of the Services:and
- (i) Provide to the Consultants, Sub-consultants and or Associates and Personnel any such other assistance as may be specified in the SC.

5.2 Access toLand

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 performanceoftheServices. 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-Consultant or the Personnel of either of them.

5.3 Change in the ApplicableLaw

If,afterthedateofthisContract,thereisanychangeintheApplicableLawwithrespect 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 correspondingadjustmentsshallbemadetotheceilingamountsspecifiedinClauseGC 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 F at the times and in the manner specified in said Appendix F, 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 it 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 propertyfromothersources,and(iii)theadditionalpayments,ifany,tobemadetothe Consultants as a result thereof pursuant to Clause GC 6.l(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 GC 6 of this Contract.

5.6 Counterpart Personnel

- (a) If so provided in Appendix F hereto, the Client shall make available to the Consultants, as and when provided in such Appendix F, and free of charge, such counterpart personnel to be selected by the Client, with the Consultants' advice, as shall be specified in such Appendix F. Counterpart personnel shall work under the exclusive direction of the Consultants. If any member of the counterpart personnel fails to perform a dequately any work as signed to him by the Consultants which is consistent with the position occupied by such-member, the Consultants may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.
- (b) If counterpart personnel are not provided by the Client to the Consultants as andwhenspecifiedinAppendixF,theClientandtheConsultantsshallagreeon
 (i) how the affected part of the Services shall be carried out, and (ii) the additional payments, if any, to be made by the Client to the Consultants as a result thereof pursuant to Clause GC 6.1(c)hereof.

6. Payments to the Consultants

6.1 Cost Estimates; Ceiling Amount

- (a) An estimate of the cost of the Services payable is set forth in Appendix G.
- (b) ExceptasmaybeotherwiseagreedunderClauseGC2.6andsubjecttoClauseGC 6.1(c), payments under this Contract shall not exceed the ceilings specified in the SC. The Consultants shall notify the Client as soon as cumulative charges incurred for the Services have reached 80% of these ceilings.

(c) NotwithstandingClauseGC6.1(b)hereof,ifpursuanttoclausesGC5.3,5.4or5.6 hereof, the Parties shall agree that additional payments shall be made to the Consultants in order to cover any necessary additional expenditures not envisagedinthecostestimatesreferredtoinClauseGC6.1(a)above,theceiling or ceilings, as the case maybe, set forth in ClauseGC6.1(b) above shall be increasedbytheamountoramounts,asthecasemaybe,ofanysuchadditional payments.

6.2 Remuneration and Reimbursable Expenditures

- (a) SubjecttotheceilingsspecifiedinClauseGC6.1(b)hereof,theClientshallpayto the Consultants (i) remuneration asset for thin Clause GC6.2(b),and(ii) reimbursable expenditures asset forth in Clause GC6.2(c). If specified in the SC, said remuneration shall be subject to price adjustment as specified in the SC.
- (b) Remuneration for the Personnel shall be determined on the basis of time actually spent by such Personnel in the performance of the Services after the date determined in accordance with Clause GC2.3 and Clause SC2.3 (or such other date as the Parties shall agree in writing) (including time for necessary travel via the most direct route) at the rates referred to, and subject to such additional provisions as are set forth, in the SC.
- (c) Reimbursable expenditures actually and reasonably incurred by the Consultants in the performance of the Services, as specified in SC.
- (d) Notwithstanding anything to the contrary stated in the GCC and SCC, it shall be mandatory to deploy the key personnel and sub-professional as per the Man-Months Input specified in the Terms of Reference.

Inadequate deployment of key personnel and sub-professional shall lead to deduction in the monthly payment as per following table. The key personnel and sub-professional shall be considered to be inadequately deployed if he/she is not present for atleast 90% % (Except the leaves as specified in Ill. Special Conditions of Contract, IV. Appendices-Appendix E: Hours of Work for Key Personnel) of the time stipulated in the month, as per the Man Months Input in the Terms of Reference and the Deployment Schedule proposed by the firm.

Sr. No.	Personnel	% reduction in monthly payment		
	Normal Highway Project			
1	Team Leader cum Senior Highway Engineer	20%		
2	Resident Engineer cum Highway Engineer	25%		
3	Bridge/Structural Engineer	20%		
4	Other Key Personnel	20%		
5	Sub- Professional Staff	15%		

Foravoidanceofdoubt,incasetheTeamLeadercumSeniorHighwayEngineer has not been made available for 90% of the stipulated time in the month, then only 80% of the monthly payment shall be released. In the case of "Other Key Personnel (Sr. No. 4)" and "Sub – Professional Staff (Sr. No. 5)", the average availability across the group shall be considered forcalculation.

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 the proof of Aadhaar based biometric attendance/Geotagged selfie-based attendance system at the time of submission of bills to the NHIDCL.

6.3 Currency of Payment

AllpaymentsshallbemadeinIndianRupeesandshallbesubjectedtoapplicableIndian laws withholding taxes if any.

6.4 Mode of Billing and Payment

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

- (a) TheClientshallcausetobepaidtotheConsultantsaninterestbearingadvance payment as specified in the SC, and as otherwise set forth below. The advance payment will be due after provision by the Consultants to the Client of a bank guarantee by a bank acceptable to the Client in an amount (or amounts) and in acurrency(orcurrencies)specifiedintheSC,suchbankguarantee(I)toremain effectiveuntiltheadvancepaymenthasbeenfullysetoffasprovidedintheSC, and(ii)to be in the form set for thin Appendix I hereto or in such other form as the Client shall have approved inwriting.
- (b) As soon as practicable and not later than fifteen (15days)after the end of each calendar month during the period of the Services, the Consultants shall submit to the Client, in duplicate, itemized statements, accompanied by copies of receiptedinvoices, vouchers and other appropriate supporting materials, of the amounts payable pursuant to Clauses GC6.3 and 6.4 for such month. Each monthly statement shall distinguish that portion of the total eligible costs which pertains to remuneration from that portion which pertains to reimbursable expenditures.
- (c) 75% of bill raised by the Consultant shall be paid within 72 Hrs and remaining bill may be paid after due scrutiny. The Client shall cause the payment of the Consultants periodically as given in schedule of payment above withinthirty(30) days after the receipt by the Client of bills with supporting documents. Only such portion of a monthly statement that is not satisfactorily supported may be withheld from payment. Should any discrepancy be found to exist between actual payment and costs authorized to be incurred by the Consultants,theClientmayaddorsubtractthedifferencefromanysubsequent payments. Interest at the rate specified in the SC shall become payable as from the above due date on any amount due by, but not paid on such duedate.
- (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 finalstatementshallbedeemedapprovedbytheClientassatisfactoryninety(90) calendar days after receipt of the final report and final statement by the ClientunlesstheClient,withinsuchninety(90)-dayperiod,giveswrittennotice to the Consultants specifying in detail deficiencies in the Services, the final

reportorfinalstatement. 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 SC.
- (f) Authority Engineer will make payment of salary to all key personnel in their respective bank accounts through electronic mode only. No cash transaction w.r.t. salary will be made. Proof of salary transfer through electronic mode shall be submitted by the Authority Engineer with each Bill.

7. Fairness and GoodFaith

7.1 GoodFaith

The Parties undertake to acting ood faith with respect to each other's right sunder this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

7.2 Operation of theContract

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 herebyagree 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 GC 8 hereof.

8. Settlement of Disputes

8.1 AmicableSettlement

The Parties shall use their best efforts to settle a micably all disputes a rising out of or in connection with this Contractor the interpretation thereof.

8.2 DisputeResolution

8.2.1 Anydispute, difference or controversy of whatevernature how so ever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") shall, in the first instance, be attempted to be resolved a microby in accordance with the

conciliation procedure set forth in Clause8.3.

8.2.2 The Parties agree to use their best efforts for resolving all Disputes arising under or in respect of this Agreement promptly, equitably and in good faith, and further agree to provide each other with reasonable access during normal business hours to all non – privileged records, information and data pertaining to anydispute.

8.3 Conciliation

In the event of any Dispute between the Parties, either Party may call upon [Chairman of NHIDCL] and the Chairman of the Board of Directors of the Consultant or a substitute thereof for amicable settlement, and upon such reference, the said persons shall meet no later than 10(ten) days from the date of reference to discuss and attempt to amicably resolve the Dispute. If such meeting does not take place within the 10(ten) day period or the Dispute is not amicably settled within 15(fifteen) days of the meeting or the Dispute is not resolved as evidenced by the signing of written terms of settlement within 30 (thirty) days of the notice in writing referred to in Clause 8.2.1 or such longer period as may be mutually agreed by the Parties, either Party may refer the Dispute to arbitration in accordance with the Provisions of Clause 8.4.

8.4 Arbitration

- 8.4.1. Any Dispute which is not resolved amicably by conciliation, as provided in Clause 8.3, shall be finally decided by reference to arbitration by an Arbitral Tribunal appointed in accordance with Clause 8.4.2. Such arbitration shall be held in accordance with the Rules of Arbitration of the International Centre for Alternative Dispute Resolution, New Delhi (the "Rules"), or such other rules as may be mutually agreed by the Parties, and shall be subject to the provisions of the Arbitration and Conciliation Act, 1996 as amended. The venue of such arbitration shall be New Delhi and the language of arbitration proceedings shall be English.
 - **8.4.2** Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator to be appointed as per the procedurebelow
 - (a) Parties may agree to appoint a sole arbitrator or, failing agreement on the identityofsuchsolearbitratorwithinthirty(30)daysafterreceiptbytheother 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 for a list of not fewer than five nominees and, on receiptofsuchlist,thePartiesshallalternatelystrikenamestherefrom,andthe last remaining nominee on the list shall be 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, shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter indispute.

8.4.3 SubstituteArbitrator

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.

8.4.4 Qualifications of Arbitrator

The sole arbitrator selected pursuant to Clause 8.2.1 hereof shall be expert with extensive experience in relation to the matter in dispute.

- **8.4.5** The Arbitrators shall make a reasoned award (the "Award"). Any Award made in any arbitration held pursuant to this Clause 8 shall be final and biding on the Parties as from the date it is made, and the Consultant and the Authority agree and undertake to carry out such Award withoutdelay.
- **8.4.6** The Consultant and the Authority agree that an Award may be enforced against the Consultant and/or the Authority, as the case may be, and their respective assets whereversituated.
- 8.4.7.ThisAgreementandtherightsandobligationsofthePartiesshallremaininfullforceand effect, pending the Award in any arbitration proceedingshereunder

8.4.8 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 sole arbitrator shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Partiesherebywaive any objections to or claims of immunity in respect of such enforcement; and
- (d) The schedule of Expenses and Fee payable to the Arbitrator shall be asunder

Sr.	Particulars of Fees and	Maximum amount payable per case
No.	Expenses	
1	Fee	(i) Rs. 25,000/- per day;
		(ii) 25% extra on fee at (i) above in case of fast-track
		procedure as per Section -29 (B) of A&C Act;
		Or
		10%extraonfeeat(i)aboveifawardispublished
		within6monthsfromdateofenteringthereference
		byAT;
		Alternatively,theArbitratormayoptforalump-sumfee
		of Rs. 5.00 Lakh per case including counter –claims.
2	Reading charges- one Time	Rs 25,000/- per case including counter claims.
3	One –time charges for	Rs. 25,000/- per case
	Secretarial Assistance and	
	Incidental Charges	
	(telephone, fax, postage etc.)	
4	One time charges for	Rs. 40,000/-
	publishing/declaration of the	
	Award	
5	Other expenses (As per actu	al against bills subject to celling given below

(i)	Travelling expenses	Economyclass(byair),FirstclassAC(bytrain)andAC		
		Car (by road)		
(ii)	Lodging and Boarding	Rs.15,000/-perday(inmetrocities);or		
		Rs.8000perday(inothercities);or		
		Rs. 5,000/- per day, if any Arbitrator makes their own		
		arrangements.		
6.	Local travel	Rs. 2,000 /- per day		
7	Extra charges for days other	Rs. 5000 /- per ½ day for outstation Arbitrator		
	thanmeetingdays(maximum			
	for 2 X ½days)			
Note	e 1. Lodgingboardingandtravellingexpensesshallbeallowedonlyforthear			
	who is are residing 100 kms	. away from the venue of meeting,		
	2. Delhi, Mumbai, Chennai, K	olkata,BengaluruandHyderabadshallbeconsideredas		
	Metro cities.			

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 <Agency> before appointment of the Arbitrator

9. FakeCV

If any case of fake/incorrect/inflated CV is found, it shall be dealt with very severely andwouldresultinallpossible penalaction including blacklisting from future projects of NHIDCL. This would also apply even when the consulting firm is not successfuling etting the assignment.

If any information is found incorrect/fake/inflated in CV, at any stage, debarment of key personnel from future NHIDCL projects upto 2 years may be taken by NHIDCL.

If case, the information contained in the CV for the duration in which the key personnel was employed by the firm, proposing his candidature is found incorrect/fake/inflated at any stage, action including termination of the consultancy agreement and debarment of the firm upto 2 years from future NHIDCL projects shall be taken by NHIDCL.

In case , the information contained in the CV for the duration in which the key personnel was employed by the firm proposing his candidature is found incorrect/Fake/inflated at any stage, the consultancy firms will have to refund the salary and perks drawn in respect of the person apart from other consequences.

In case, the information contained in the CV for the duration in which the key personnel was not employed by the firm proposing his candidature is found incorrect/Fake/inflated at any stage, the consultancy firms will have to refund the twice of salary and perks drawn in respect of the person.

II. SPECIAL CONDITIONS OF CONTRACT

GC CI	<u>ause</u>				
A.		Amendment Conditions		ments	s to, Clauses in the General
1.1(a) The w	vords" in the Gov	vernment's counti	ry" ar	e amended to read 'in INDIA"
1.4	The la	anguage is:Englis	sh		
1.6.1	The a	ddressesare:			
			Client:		Address of Employer
			Attention:		
			Telex :		
			Facsimile :		_
			Consultant:		Address of Consultant
			Attention:		
			Cable address:		
			Telex		:
			Facsimile		:
			[Note' : Fill in th	he Bla	nks]
1.6.2	Notice	e will be deemed	to be effective as	follov	vs:
	(a)	in the case of p	personal delivery	or reg	gistered mail, ondelivery;
	(b)	in the case of t	elexes, 24 hours f	follow	ing confirmedtransmission;
	(c)	in the case of t	elegrams, 24 hou	rs foll	owing confirmed transmission;and
	(d)	in the case of f	acsimiles, 24 hou	rs foll	owing confirmedtransmission.
1.8	The M	lember in Charg	e is: Member (P)S	sh	
	entity	whose address	is specified in S	C1.6.1	ure of more than one entity, the name of the shouldbeinsertedhere. If the Consultants deleted from the SC)
1.9	The A	uthorised Repre	sentativeare:		
		For th	neClient:		
		For th	naConcultante:		

1.10 TheConsultants,Sub-

consultantsandthePersonnelshallpaythetaxes,duties,fees,leviesandotherimpositionslevied undertheexisting,amendedorenactedlawsduring life of this contract and the client shall performsuchdutiesinregardto the deduction of such tax as may be lawfullyimposed.

- 2.1 The effectiveness conditions are the following:
 - Approval of the Contract by the client
- 2.2 The time period shall be <u>four months</u> or such other time period as the parties may agree inwriting.
- 2.3 The time period shall be <u>one month</u> or such other time period as the Parties may agree inwriting.
- 2.4 The time period shall be <u>48 Months (00 Months for construction period and 48 months for Maintenance period)</u>

3.4 Limitation of the Consultants' Liability towards the Client

- (a) Except in case of gross 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) Consultant will maintain at its expenses; Professional Liability Insurance including coverage for errors 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 Expendituresmadeorexpected to be made to the Consultantshere under OR (B) the proceeds, the Consultantsmay be entitled to receive from any insurance maintained by the Consultants to cover such a liability, which ever 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 "Aggregatelimitonthepolicyperiod" (AOP) and innocase should be for an amount less than stated in the contract.
 - (v) If the Consultant enters into an agreement with Employer in a joint venture or 'in association', the policy must be procured and provided to Employer by the joint venture/in association entity and not by the individual partners of the jointventure/association.
 - (vi) The contract may include a provision thereby the Consultant does not cancel the policy midterm without the consent of the Employer. The insurance company may provide an undertaking in this regard.
 - (b) This limitation of liability shall not affect the Consultants' liability, if any, for damagetoThirdPartiescausedbytheConsultantsoranypersonorfirmacting on behalf of the Consultants in carrying out theServices.

(c) Professional Liability Insurance may be accepted for initially one year which shall be extended annually for five years. PLI shall be uniformly taken for a period of fiveyears.

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, of Rs. 1.0 million for the period of consultancy.
- (c) Professional liability insurance as per 3.4 (a) (ii) of SC of the consultancy, with a minimum coverage equal to estimated remuneration andreimbursable.
- (d) Employer's liability and workers' compensation insurance in respect of the PersonneloftheConsultantsandofanySub-consultant,inaccordancewiththe 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
- (e) Insurance against loss of or damage to(i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultants' property usedintheperformanceoftheServices,and(iii)anydocumentspreparedbythe Consultants in the performance of theServices.

3.7(c) The other actions are

- "(i) taking any action under a civil works contract designating the Consultants as "Authority's Engineer", for which action, pursuant to such civil works contract, the written approval of the Client as "Employer" is required".
- 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 C shall serve in that capacity, as specified in Clause GC4.6."

(10)	mı . llııı b .	
6.1(b)	The amount payable Indian Rupee is:	

- 6.2(a) "Payments for remuneration and reimbursable items made in accordance with Clause GC 6:2(a):
 - (i) Consultants shall be paid billing rates for services rendered by the personnel of all categories namely (i) key Personnel; (ii) sub-Professional personnel and (iii) Support staff on man-month basis . Billing ratesofremaining items of the financial proposal, namely (i) transportation , (ii) Duty travel to site (iii) Office Rent, (iv) office supplies communication etc.
 - (v) reports & document printing and (vi) survey equipment etc. shall be

worked out month wise as per actual expenditure Beginning 13thmonths from the last date of submission of bid, billing rates shall be increased to cover all items of contract i.e. remuneration, vehicle hire, office rent, consumables, furniture etc. @ 5% every 12 months. However, for evaluation and award of the Bid proposals, the quoted initial rate (as applicable for first 12 months from last date of submission of bid) shall be multiplied by the total time input for each position on this contract, i.e. without considering the increase in the billing rates. All payments shall be made in Indian Rupees and shall be subjected to applicable Indian laws withholding taxes if any.

(ii) Remuneration paid pursuant to the rates set forth in Appendix G shall be adjusted every twelve (12) months (and, the first time, with effect for the billing rates earned in the 13th calendar month after the last date of submission of bid) by 5% every 12month forpersonnel.

Notwithstanding any other provisions in the agreement in this regard, this provision will prevail and override any other provision to the contrary in this agreement.

- 6.2(b) (i) (1) Payment of Authority Engineer shall be released on approval of the monthly reports. Report shall be approved by the Authority only if it includes all the sections prescribed in the format and submitted as per specified timelines.
 - (2) PaymentshallbereleasedasperratesquotedinAppendixC3-BreakupofLocal currency costs.
 - However, proof of remuneration paid to professional staffs in previous month shall be submitted alongwith current month's bill. The remuneration to professional staff shall be paid by the Authority's Engineer after adjusting overhead charges as mentioned in Appendix C-1 "Financial proposal submission form".
 - (3) ForequipmentbasedroadinspectiontobeconductedinO&Mphase,payment shall be released as per actual use of equipment on road and rates quoted in Appendix C3- Breakup of Local currencycosts.
 - (4) If any of the report is found to be misleading or containing incorrect information as determined by the Authority, 10% of payment linked to that report shall be deducted aspenalty
 - (5) Itisunderstood(i)thattheremunerationratesshallcover(A)suchsalariesand allowances as the Consultants shall have agreed to pay to the Personnel as well as factors for social charges and overhead, and (B)the cost of back stoppingbyhomeofficestaffnotincludedinthePersonnellistedinAppendix C,and(C)theConsultants'fee;(ii)thatbonusesorothermeansofprofit-sharing shallnotbeallowedasanelementofoverhead,and(iii)thatanyratesspecified for persons not yet appointed shall be provisional and shall be subject to revision, with the written approval of the Client, once the applicable salaries and allowances areknown.
 - (6) Remuneration for periods of less than one month shall be calculated on an hourlybasisforactualtimespentintheConsultants'homeoffice

anddirectlyattributabletotheServices(onehourbeingequivalentto1/240thofa month) and on a calendar-day basis for time spent away from home office(one day being equivalent to 1/30th of amonth).

- 6.2(b)(ii) The rates for foreign and local Personnel are set forth in Appendix G.
- 6.4(a) Thefollowingprovisionsshallapplytotheinterestbearingadvance payment and the advance payment guarantee:
 - An advance payment of 10% of the contract price in proportion to the quoted Indian currency (INR) in the bid shall be made within 60 days after receipt and verification of advance payment bank guarantee. The advance payment along with interest will be set off by the Client in equal installments against the statementsforthefirst12monthsoftheServiceuntiltheadvancepaymenthas been fully set off. The advance payment shall be in IndianRupee.
 - 2) The bank guarantee shall be in the amount and in the currency of theadvancepayment.
 - 3) Interest rateshallbe10% per annum (on outstandingamount).
- 6.4(c) The interest rate is 10% per annum.
- 6.4(e) The accounts are:

[Note: Insert account number, type of account and name and address of the Bank]

8.2 Disputes shall be settled by arbitration in accordance with thefollowing provisions:

IV.APPENDICES

Appendix A: Description of the Services

[Give detailed descriptions of the Services to be provided; dates for completion of various tasks, place of performance for different tasks; specific tasks to be approved by Client, etc.]

Details as per TOR

Appendix B: Reporting Requirements

[List format, frequency, contents of reports and number of copies; persons to receive them; dates of submission etc. If no reports are to be submitted, state here "Not applicable".}

Please refer TOR

Appendix C: Key Personnel and Sub-consultants

[Listunder:C-l

Titles [and names, if already available], detailed job descriptions and minimum qualifications. Experience of Personnel to be assigned to work in India, and staff-months foreach.

- *C-2* Same information as *C-1* for Key localPersonnel.
- C-3 Same as C-l for Key foreign Personnel to be assigned to work outside India.
- C-4 List of approved Sub-consultants [if already available]; same information with respect to their Personnel as in C-l throughC-4)

Please refer TOR

Appendix D: Medical Certificate

[Show here an acceptable form of medical certificate for foreign Personnel to be stationed in India. If there is no need for a medical certificate, state here: "Not applicable."]

The form of Medical Certificate as required under the rules of Govt. of India

Appendix E: Hours of Work for Key Personnel

The Consultants Key personnel and all other Professional / Sub Professional / Support Staff/Sub-Consultancy personnel shall work 6 days (Mondays through Saturday) every week and observe the Gazetted Holidays of Government of India as Holidays. The Consultant shall work as per the work program of the EPC Contractor. In this context in case the work plan of the Consultantneedssuitablemodifications, the same shall be carried out and submitted to the client for consideration. The Consultants hours of work normally shall match with that of Contractor's activities on the site. No extra remuneration shall be claimed or paid for extra hours of work required in the interest of Project completion.

In addition, casual [eave for 12 days shall be permitted in a year to each Key Personnel/ Sub-Profession at with prior intimation to the Authority. Out of this, a maximum of 3 CLs can be availed either separately or together in a quarter and the period of the CLs would be counted as Key Personnel / Sub Profession at being on duty.

In respect of foreign personnel, one day per trip as travel time from and to the country of the Government shall be allowed.

Appendix F: <u>Duties of the Client</u>

[List here under:

- F-1 Services, facilities and property to be made available to the Consultants by the Client.
- F-2 Counterpart personnel to be made available to the Consultants by the Client.]

Please refer TOR

Appendix G: Cost Estimates

List hereunder cost estimate in INR:

- 1. Monthly rates for local Personnel (Key Personnel and otherPersonnel)
- 2. Reimbursable/Rental/Fixed expenditures asfollows:
 - a. Cost of localtransportation.
 - b. Cost of other local services, rentals, utilities, etc.

Appendix H: FORM OF PERFORMANCE SECURITY

(PERFORMANCE)

(Clause-13 of TOR)

To,

National Highways & Infrastructure Development Corporation Ltd. 1 st & 2 nd Floor, World Trade Centre, Nauroji Nagar, New Delhi - 110029.		
WHEREAS[Name and address of Consultants] \(^1\) (hereinafter called "the consultants") has undertaken, in pursuance of Contract Nodated to provides the services on terms and conditions set forth in this Contract[Name of contract and brief description of works) (hereinafter called the "theContract").		
AND WHEREAS it has been stipulated by you in the said Contract that the Consultants shall furnish you with a Bank Guarantee by a recognized bank for the sum specified there in as security for compliance with his obligations in accordance with the Contract;		
AND WHEREAS we have agreed to give the Consultants such a BankGuarantee;		
NOW THEREOF we hereby affirm that we are the Guarantor andresponsible to you, on behalf of of the Consultant suptoatotal of [amount of Guarantee] [in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of [amount of Guarantee] as a foresaid without your needing prove or to show grounds or reasons for your demand for the sum specified therein. We hereby waive the necessity of your demanding the said debt from the Consultants before presenting us with the demand. We further agree that no change or addition to or other modification of the terms of the Contract or of the services to be performed there under or of any of the Contract documents which may be made between you and the Consultants shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.		
The liability of the Bank under this Guarantee shall not be affected by any change in the constitution of the consultants or of the Bank.		
Notwithstanding anything contained herein before, our liability under this guarantee is restricted to Rs		

This guarantee shall be valid for a period of 50Monthsi.e.upto 2 months beyond the expiry of contract of $\frac{48}{2}$ Months.

This guarantee shall also be operatable at our.......Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension / renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

Bank Guarantee has been sent to authority's bank through SFMS gateway as per the details below:

-

Particulars	Details
Name of the Beneficiary National Highways and Infrastructu	
	Development Corporation Limited
Beneficiary Bank Account No.	90621010002659
Beneficiary Bank Branch IFSC	CNRB0019062
Beneficiary Bank Branch Name	Transport Bhawan, New Delhi
Beneficiary Bank Address	Canara Bank, Transport Bhawan, 1st
	Parliament street, New Delhi-110001

Signature and Seal of the Guarantor	In presence of
Name and Designation	
1.	
	(Name, Signature& Occupation)
Name of theBank	
Address 2.	
Address 2	
	(Name &Occupation)
Date	

 $^{{\}bf 1}_{\mbox{Give}}$ names of all partners if the Consultants is a Joint Venture.

Appendix I: Form of Bank Guarantee for Advance Payments

(Reference Clause 6.4(a) of Contract)

(To be stamped in accordance with Stamp Act, if any, of the country of issuing bank) Ref: BankGuarantee: Dear Sir, In consideration of M/s._____(herein after referred as the "Client", which expression shall, unless repugnant to the context or meaning there of include it successors, administrators and assigns) having awardedtoM/s. [herein after referredto as the "Consultant" which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a contract by issue of client's Contract Agreement No.datedand the same having been unequivocally accepted by the Consultant, resulting in a Contractvaluedat For_Contract (hereinafter called the "Contract") (scope of work) and the Client having agreed to make an advance payment to the Consultant for performance of the above Contract amounting to(inwords and figures) as an advance against BankGuarantee to be furnished by the Consultant.We_____(Name of the Bank) having its Head Office at _____(herein after referred to as the Bank), which expressions hall, unlessrepugnanttothecontextormeaningthereof,includeitsuccessors,administratorsexecutors and assigns) do hereby guarantee and undertake to pay the client immediately on demand any or, all monies payable by the Consultant to theextentof______as aforesaid at any time @ 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

TheClientshallhavethefullestlibertywithoutaffectinginanywaytheliabilityoftheBankunder thisGuarantee, fromtimetotimetovarytheadvanceortoextendthetimeforperformanceofthe contractbytheConsultant. TheClientshallhavethefullestlibertywithoutaffectingthisguarantee, topostponefromtimetotimetheexerciseofanypowersvestedinthemorofanyrightwhichthey might have against the Client and to exercise the same at any time in any manner, and either to enforceorto forebeartoenforceanycovenants, containedorimplied, in theContractbetweenthe Client and the Consultant other course or remedy or security available to the Client. The bankshallnotberelievedofitsobligations under the sepresents 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 for bearance 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 what so ever which under law would but for this provision have the effect of relieving the Bank.

continue to be enforceable till the Client discharges this guarantee.

 $The Bank also agrees that the {\it Clientatits} options hall be entitled to enforce this {\it Guarantee} against$

theBankasaprincipaldebtor,inthefirstinstancewithoutproceedingagainsttheConsultantand notwithstanding any security or other guarantee that the Client may have in relation to the Consultant'sliabilities.

Notwithstanding anything contained herein above our liability under this guarantee	is limited	dto
and it shall remain in force uptoand includingAnd shall be extended from	n time to	time
for such period (not exceeding one year), as may be desired by M/sonwhose	behalf	this
guarantee has beengiven.		

The guarantor/bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of [MoRT&H/NHAI/NHIDCL/State PWD/BRO], details of which is as under:

S.No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure
		Development Corporation Limited
2	Beneficiary Bank	Details to be obtained from NHIDCL Regional
	Account No.	Office at Guwahati, Assam
3	Beneficiary Bank	
	Branch	
4	Beneficiary Bank	
	Branch Name	
5	Beneficiary Bank	
	Address	

Dated this	day of	200at
WITNESS:		
1. Signature:		
Name:		
2. Signature: Name:		
(OfficialAddress)		Designation(with Bankstamp)
		Attorney as per Power of Attorney No.

Strike out, whichever is not applicable.

Note1: The stamp papers of appropriate value shall be purchased in the name of bank Who issues the "Bank Guarantee".

Note 2: The bank guarantee shall be from a Nationalized Indian Bank or reputed foreign commercial Bank acceptable to client for Foreign Consultant with counter guarantee from NationalizedBank.BankguaranteefurnishedbyForeignConsultantshallbeconfirmedbyany Nationalized Bank inIndia.

** List of Banks whose BGs are acceptable

I	Scheduled Sector Banks	List of Private Sector Banks	List of Small Finance Bank
1.	Bank of Baroda	1. Axis Bank Ltd.	AU Small finance Bank Ltd
2.	Bank of India	2. Bandhan Bank Ltd.	Equitas small Finance Bank Ltd
3.	Bank of Maharashtra	3. CSB Bank Ltd.	Suryoday Small Finance Bank Ltd
4.	Canara Bank	4. City Union Bank Ltd.	4.Ujjivan small Finance Bank Ltd
5.	Central Bank of India	5. DCB Bank Ltd.	5. Utkarsh Small Finance Bank Ltd
6.	Indian Bank	6. Federal Bank Ltd.	6. ESAF Small Finance Bank Ltd
7.	Indian Overseas Bank	7. HDFC Bank Ltd.	7. Jana Small Finance Bank Ltd.
8.	Punjab National Bank	8. ICICI Bank Ltd.	
9.	Punjab & Sind Bank	9. IndusInd Bank Ltd.	
10.	State Bank of India	10. IDFC First Bank Ltd.	
11.	UCO Bank	11. Jammu & Kashmir Bank Ltd.	
12.	Union Bank of India	12. Karnataka Bank Ltd.	
		13. Karur Vysya Bank Ltd.	
		14. Kotak Mahindra Bank Ltd.	
		15. RBL Bank Ltd.	
		16. South Indian Bank Ltd.	
		17. Tamilnadu	
		Mercantile Bank Ltd.	
		18. YES Bank Ltd.	
		19. IDBI Bank Ltd.	

.

Appendix J

Letter of invitation

Appendix K

Letter ofAward

Appendix L

Minutes of pre-bid meeting

Appendix-M

Memorandum of Understanding between

And	

Whereas for	s the NHIDCL(the 'Employer') has invited proposal for appointment of Authority's Engineer
	(Name of project) hereinafter called theProject.
agreed and	AndWhereas(LeadPartner)andJV partner/shave I to form a Joint Venture to provide the said services to the Employer as Authority's Engineer;
	Now, therefore, it is hereby agreed by and on behalf of the partners as follows:
(i)	will be the leadpartnerandwill be the other JVpartner/s.
(ii)	(lead partner) shall be the incharge of overall administration of contract and shall be authorised representative of all JV partners for conducting all business for and on behalf of the JV for all contractual matters for dealing with the Employer/EPC Contractor if Consultancy work is awarded to JV.
(iii)	All JV partners do hereby undertake to be jointly and severely responsible for all the obligation and liabilities relating to the consultancy work and in accordance with the Terms of Reference of the Request for Proposal for the ConsultancyServices.
(iv)	Subsequently,iftheJVisselectedtoprovidethedesiredconsultancyservices,adetailed MOU indicating the specific project inputs and role of each partner/s along with percentage sharing of cost of services shall be submitted to the Employer (Consultant may submit the detailed MOU along with percentage sharing of cost at the time of biddingalso).
For	(Name of Leadpartner)
For	Managing Director/Head of theFirm Address(Name of JVpartner/s)
For	Managing Director/Head of theFirm (Name of Associate Partner/s) Address

DISCLAIMER

The Applicant must read all the instructions in the RFP and submit the same accordingly.

Appendix-N

BANK GUARANTEE FORMAT FOR BID SECURITY

(To be stamped in accordance with Stamp Act if any, of the country of issuing bank)

Ref.:	Tender No, dated
Bank C	Guarantee:
Date:	WHEREAS,(Name of Bidder) (hereinafter called "the bidder") has submitted his bid(date) for the Tender No, dated (hereinafter called "the Bid")
Employ said En	KNOW ALL MEN by these presents that We, [Name of Bank) or [Name of Country] having our registered office a (hereinafter called "the Bank") are bound unto [Name of Employer] (hereinafter called "the yer") in the sum of Rs (Rupees Lakhs Only) for which payment will and truly to be made to the imployer the Bank binds himself, his successors and assigns by these presents.
SEALE	ED with the Common Seal of the said Bank thisday of 201_
4. If to to 6. If a. b. we und having	the Bidder withdraws his Bid during the period of bid validity specified in the Bid document; or the Bidder does not accept the correction of arithmetical errors of his Bid Price in accordance with the Instructions Bidder; or the Bidder having been notified of the acceptance of his Bid by the Employer during the period of bid validity, fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders, lertake to pay the Employer up to the above amount upon receipt of his first written demand, without the Employer to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him to him owing to the occurrence of one or any of the conditions, specifying the occurred condition or conditions.
for sub	uarantee will remain in force up to and including the date 180 (one hundred and eighty) days after the deadline mission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the lot later than the above date.
Notwit (Rs writing	hstanding anything contained herein before, our liability under this guarantee is restricted to Rs and the guarantee shall remain valid till Unless a claim or a demand in a sis made upon us on or before all our liability under this guarantee shall cease.
regardi of this	uarantee shall also be operatable at our New Delhi Branch located at, from whom, confirmation ing the issue of this guarantee or extension / renewal thereof shall be made available on demand. In the contingency guarantee being invoked and payment there under claimed, the said branch shall accept such invocation letter and payment of amounts so demanded under the said invocation
DATE	
SEAL SIGNA	ATURE OF THE BANK OF THE BANK ATURE OF THE WITNESS and Address of the Witness
The ha	nk quarantee shall be issued by a bank (Nationalized/Scheduled) located in India

NOTE for Issuing Bank (Not to be included in the BG):-

- 1. The stamp papers of appropriate value shall be purchased in the name of bank, who issues the "Bank Guarantee".
- 2. The bank guarantee shall be from a Nationalized Indian Bank or reputed foreign commercial Bank acceptable to client for Foreign Consultant with counter guarantee from Nationalized Bank. Bank guarantee furnished by Foreign consultant shall be confirmed by any Nationalized Bank in India.
- 3. The bank guarantee(s) contain(s) the name, designation and Code number of the officer(s) signing the guarantee(s).
- 4. 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.
- 5. 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).
- 6. The Bank Guarantee shall be transmitted through SFMS gateway to our banker with following details:
- 7. The confirmation with supporting details if any shall be specifically mentioned in the covering letter issued with the Bank Guarantee.